The GCI Archive

1989 - 2004


"Contraction
[of global emissions to respect the Earth's capacity]
& Convergence"
[of all nations' emission-rights to per-capita parity]
~ "is the logical conclusion of an equitable approach to resolving Climate Change."
Ambassador Estrada: Chair, Kyoto Conference.
~ Global Commons Institute ~ www.gci.org.uk

2002

JANUARY

New Internationalist
A Parliament for the Planet

"The only fair and lasting means of reducing CO2 (namely 'contraction and convergence',

-which means working out how much pollution the planet can take, then allocating an equal pollution quota to everyone on earth) would surely be impossible to implement without a world parliament."

George Monbiot, Author Captive State

www.newint.org

JANUARY

Green Futures
The Just Capitalist

Martin Wright talks to Adair Turner, former CBI head,

(His) " . . . . analysis really starts to pack a punch when he turns to the environment. Here, after all, is a case of massive market failure.

Take climate change, which "is likely to impose massive economic costs... The case for being prepared to spend huge resources to limit it is clear," he says, arguing that the cost will be repaid many times over by the avoidance of disaster.

In any case, "the developed world does not have the moral right to increase the risk of flooding in Bangladesh", and, he adds acidly, "European executives worried about the cost of action should perhaps consider it the necessary price for preserving at least some skiing in the Alps."

Long term, says Turner, the only sound strategy is that of 'contraction and convergence' – cutting greenhouse emissions to the point where they are shared equally, worldwide, on a per capita basis."

www.greenfutures.org.uk/features/default.asp?id=905

JANUARY

SERA
International Climate Change Position

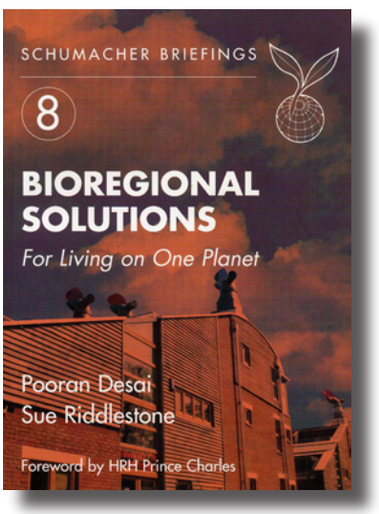
"SERA recommends to the UK Government:

5. Champion an accelerated round of UN negotiations leading to emissions reductions based on safe, global per capita limits to greenhouse gases (so-called Contraction and Convergence)....."

www.gci.org.uk/papers/globalclimate.pdf

2002

Desai, Riddlestone
Bioregional Solutions



Publisher: Schumacher Society ISBN: 903998 077

Our target to reduce the UK's ecological footprint by two-thirds is mirrored in a recent report by the Royal Commission on Environmental Pollution funded by the UK government.2 The Commission investigated the need to stabilise C02 in the atmosphere and the possibility of reducing C02 levels by locking it up through planting trees. However, planting trees, even on a global scale, could only compensate for a small amount of the rising emissions. Therefore, in order to stabilise C02 levels, the Commission recommended that the UK should reduce fossil fuel use by 60 by 2050. This would also allow us to converge to a global per capita quota. Global quotas, based on the principle of Contraction and Convergence, were seen as the only viable basis for agreeing international limits in the atmospheric C02. Technological fixes alone will not allow us to reduce our ecological footprint. For instance, increases in agricultural productivity brought about by the Green Revolution have been achieved by using mineral fertilisers, themselves requiring fossil fuel inputs. As a result, modern farming has a much bigger ecological footprint per tonne of food produced than many traditional forms of agriculture and so is less efficient. Another example is modern car engines, which have increased in efficiency over the years. But because there are more cars (and more big- engine cars) on our roads than ever before, any possible environmental benefit has been cancelled out. Technology will not save us from having to confront the simple issue of limits to consumption.

FEBRUARY

Berk & den Elzen
Future Options

"Options for differentiation of future commitments in climate policy: how to realise timely participation to meet stringent climate goals?"

"Where climate change limits are stringent, a C&C regime seems to provide more incentives for a timely participation of developing countries, and better opportunities for an effective and efficient regime for controlling global GHG emission control than increasing participation."

Netherlands National Institute for Public Health and the Environment (RIVM), P.O. Box 1, 3720 BA Bilthoven, The Netherlands

www.gci.org.uk/papers/berkelz.pdf

FEBRUARY

Swedish Foreign Ministry
Financing and Providing Global Public Goods

"Inter-generational justice also enters the climate change equation. Many of the rationales for taking costly action now in order to tackle a problem whose worst effects may not be felt for many decades, is that we have a responsibility to future generations.

Both the 'precautionary principle' and the principle of 'contraction and convergence', which has entered the climate negotiations in recent years are aimed at addressing these problems. They provide a road map for policy responses, by, in the latter case, establishing ceilings for GHG emissions

-above which dangerous climate change is likely, and then devising a global carbon budget within which nations have a per capita entitlement to use carbon. Moving towards an optimal and safe level of carbon usage requires that some nations, in the first instance developed countries, would have to contract their use of carbon-intensive activities and others, primarily developing countries, would be entitled to expand their use of fossil fuels to meet basic development needs and so converge towards a per capita entitlement, which applies equally to all countries."

www.ud.se/prefak/files/gpg.pdf

JANUARY

New Internationalist
Going Down in History

"The legacy of ecological debt can be recognized and dealt with by adopting a forward-looking plan on climate change. Developing countries can argue for a global deal that acknowledges their logical entitlement to an equal share of the global commons of the atmosphere. Instead of the historical expansion of greenhouse-gas emissions and divergence between the world's rich and poor, there needs to be a plan for both contraction and convergence.

Fortunately, just such a plan, stemming from the London-based Global Commons Institute, is gaining favour among governments, the financial community and in developing countries.

Contraction and convergence requires setting a maximum greenhouse-gas concentration target for the atmosphere. After that, all countries logically claim their right to share the 'emissions pie', but can trade their entitlements if they wish.

This way, if rich countries want to continue taking up more than their fair share of the world's environmental space, they will at least have to pay for the privilege, generating much-needed resources for countries that need them."

Andrew Simms,

Policy Director, New Economics Foundation, LONDON

www.newint.org

JANUARY 15

Euromoney.com
Emissions

"It seems like the perfect marriage of market forces and global ethics.

Emissions trading reduces greenhouse gas levels while giving companies and countries room to manoeuvre if they are willing to pay. And there's money in it for the brokers that get involved early . . . . . This method, which moves beyond Kyoto, is known as Contraction and Convergence."

FEBRUARY

Hans H.Kolshus
Cicerone

”While the Kyoto Protocol may represent an important political achievement, its expected impact on the climate is marginal at best. The agreement is nowhere near sufficient for stabilizing or reducing the concentration of greenhouse gases in the atmosphere, partly because developing countries have not committed to reducing their emissions in this round.

Future climate negotiations must therefore contain more ambitious targets as well as the participation of developing countries. In an attempt to realize this aim, the Global Commons Institute has proposed that emissions entitlements be allocated on a per capita basis....

The method, called “contraction and convergence” (C&C), was first developed by Tony Cooper and Aubrey Meyer in the spring of 1996....

A team from GCI then presented the idea to the second Conference of the Parties (COP 2) in Geneva, in July 1996. Since then, the idea has garnered support from more and more governments and NGOs.”

www.cicero.uio.no/media/549.pdf

FEBRUARY

Delhi Summit
Challenges for Rio+10

“The UNFCCC addresses the equity issue through ‘common but differentiated responsibility’.

Per capita energy consumption and GHG emissions of developing countries are far lower than that of the industrialized world.

In a convergence of emissions at a sustainable level, developing countries can increase emissions to a safe limit while developed ones reduce to the same level.”

www.teriin.org/dsds/dsds2002/day4/plenary8.htm

2002

UNEP Finance Initiatives
Climate Risk to Global Economy

For the long term, the agreement of an international policy based on the principles of precaution, equity and economic efficiency is critical if we are to reduce the risk and engage all parties in the endeavour. A number of approaches have been proposed, including the 'historical' method, under which a nation's future emissions goals would be determined by its past GHG output; the carbonintensity approach, in which future emissions goals would be indexed to GDP; and "Contraction and Convergence"2 which would aim to achieve equal per capita emissions for all nations by an agreed date. Up to now, however, most of the work under the United Nations Framework Convention on Climate Change (UNFCCC) has been directed at finalising and ratifying the Kyoto Protocol.

http://www.gci.org.uk/Insurers/ClimateCEOBriefing_ccwg_unepfi.pdf

FEBRUARY

Dutch Parliament
second chamber, meeting doc 27801

"It is left to the next cabinet (there will be national elections in the Netherlands in spring 2002) to develop a formal position on a preferred option for the future differentiation of commitments, but it closes off in stating that

> -a distribution of global emission space on a per capita basis in the course of the century (2030/2050) seems an obvious choice."

FEBRUARY

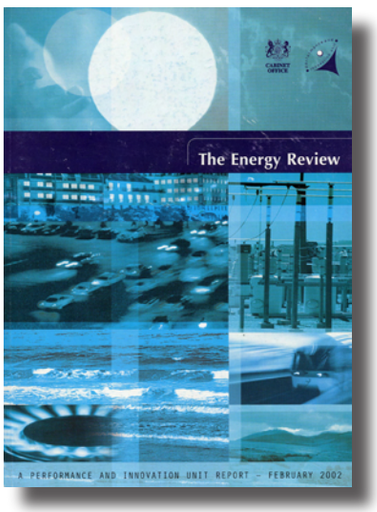
UK DTI
Inter Agency Group

"The Royal Commission on Environmental Pollution (RCEP) recommends that the Government should press for a future global climate agreement on a contraction and convergence (C&C) approach, allowing also for emissions trading.

It selects one path for achieving stabilisation of CO2 concentrations in the atmosphere at 550ppm that implies a convergence date of 2050. Many other paths to stabilisation at this level could be taken. The Government is keen to establish a dialogue on possible approaches to future target setting."

www.gci.org.uk/UKGovernment/DTIIAG.pdf

FEBRUARY



PIU Energy Review
UK Cabinet Office

"The project's outputs will be a key input to the UK Government's future policy on security and diversity of energy supply and on climate change including its response to the Royal Commission on Environmental Pollution (RCEP) report on 'Energy, the Changing Climate.

The UK practices a 'leading' approach to climate change. This approach to climate change implies 3 separate policy timelines: measures to: -

1 comply with agreed targets;

2 prepare for future targets not yet agreed but probably involving not all countries and operating for limited time periods, and

3 prepare for a world of long-term emission limits agreed between all countries, possibly based on the principles of contraction and convergence."

"The centrality of carbon and the climate change issue"

3.69 A "leading" approach to climate change implies three separate policy timelines:

- measures to comply with agreed targets;
- measures to prepare for future targets not yet agreed but probably involving not all countries and operating for limited time-periods;

measures to prepare for a world of long-term emission limits agreed between all countries, possibly based on the principles of contraction and convergence. (16)

3.70 There is no clear dividing line between these phases.

Post-Kyoto targets affecting the UK could be finalised by 2005 but agreement might take longer, perhaps a lot longer, and the scale of the next targets is uncertain. Likewise, it is possible that we could be in a world of long-term universal targets by 2010.

There is even a remote possibility of moving directly to the final phase from the current position.

3.71 In the same way, it is far from clear what the scale of future targets will be. The RCEP suggested that a 60% reduction for the UK by 2050 would be needed within a contraction and convergence agreement, but the exact figure is very uncertain.

All that is certain, whether we move to a contraction and convergence world, as suggested by the RCEP, or follow the guidance produced by the IPCC about global levels of emission reductions that will be needed to avoid dangerous climate change, is that developed countries will need to make very substantial cuts from current emission levels over the century ahead.

FEBRUARY

IIED/RING

International Institute for Environment and Development (IIED) with the Regional and International Networking Group (RING)

"Even if the Kyoto Protocol is implemented in full, the impacts of global climate change will start being felt within the next few decades and the most vulnerable communities and countries are those which are already the poorest and least able to adapt to these changes.....

It is time now to refocus on the longer-term objectives of the UNFCCC, particularly its stated goals regarding sustainable development..

WSSD provides an opportunity to re-initiate the discussion on the larger architecture of the future climate regime. The goal of the post-Kyoto phase should be clearly tied to atmospheric stabilization with a defined focus on emissions limitation and a clear sense of the rules for the future entry of developing countries into the regime.

In all likelihood this will require moving to per capita emission targets and a 'contraction and convergence' policy scenario."

http://www.gci.org.uk/papers/C&CIIEDShort.pdf

http://www.gci.org.uk/papers/C&CIIEDLong.pdf

FEBRUARY

World Bank

Summary of the E-Discussion on the Environment and Poverty Linkages: Week 1 - February 1 – 7, 2002

4. Climate change, greenhouse gas emissions and environment

A binding environmental agreement that effectively and equitably reduces emissions calls for "Contraction and Convergence"

-(C&C) to be the framework in which this development should take place. The potential of C&C to use a deliberate poverty reduction strategy to arrest dangerous rates of climate change needs to be explored.

The big reinsurance companies (Swiss Re and Much Re) have kept records of estimates of the 'uninsured losses' from 'great weather disasters' over the last 50 years (such as Honduras, Mozambique, Orissa). These show rates of damages exceeding the economic growth rate by a factor of four. This is one reason why the Institutions of the UNEP Financial Initiative have come out in favour of arrangements such as C&C. It would be appropriate for the present discussion to took a look at the potential of this proposition.

Authors' Responses to the Summary of the e-Discussion on Environment and Poverty Links – Week 1

4. Climate change, GHG emission:

Thanks for drawing our attention to the approach for "Contradiction and Convergence" and providing several useful references to sites where this is further discussed. This is the kind of constructive feedback that we hope to get more of! We will pursue those as a team, and discuss how we might discuss this approach in the final version of the paper. In our final summary of the e-Dialog in July, we will come back to the details of this.

Jan Bojö

The World Bank

On behalf of the authors of the Consultation Draft.

FEBRUARY 25

American Prospect
Beyond Kyoto Lite

The Bush administration's absence from the global-warming talks could actually lead other nations to pursue a bolder approach.

At the end of the hottest October on record, delegates from 165 countries met in Marrakech last fall to finalize the Kyoto Protocol on global climate change. At first glance, the Kyoto goals seem negligible: By 2012, greenhouse gases must be cut to slightly below 1990 levels—a reduction to be realized through a loophole-ridden system of emissions trading. And thanks to the Bush administration, the 165 signatory nations do not include the United States, the superpower superpolluter that emits a quarter of the world's greenhouse gases.

But the agreement's puny goals may have masked the beginning of a seismic shift in the global balance of political power—away from the United States and toward the European Union. "The view is nonetheless widespread in Europe," Jessica Tuchman Matthews wrote recently in Foreign Policy magazine, "that the U.S. decision on Kyoto could become a turning point in trans-Atlantic relations." Some European officials actually exulted because U.S. delegates were not present. Indeed, with the United States not involved, the agreement may prefigure more aggressive solutions to global warming. The European Union has already insisted that the World Trade Organization address environmental impacts—a requirement that could dampen President Bush's ability to make use of his anticipated new trade-negotiating authority from Congress.

Time and again, the Bush administration has isolated itself by refusing to join international agreements on everything from land mines and international criminal courts to biological weapons and global climate change. Domestically, Bush reneged on a campaign promise to cap carbon emissions from power plants. His energy plan calls for construction of at least 1,300 new plants over the next 20 years. Bush's withdrawal from the six-year-old international climate negotiations, then, epitomized his views both on energy and on international agreements.

Bush's dismissal of Kyoto sparked hostile demonstrations in Madrid, Stockholm, and Geneva, and drew angry words from EU officials. Even Tony Blair, America's staunchest ally in the antiterrorism campaign, declared just weeks after September 11 that "we could defeat climate change if we chose to. We will implement [Kyoto]," he said. "But it's only a start. With imagination, we could use technologies that create energy without destroying our planet."

In the face of the U.S. withdrawal, the other nations gamely struggled to produce a consensus plan to address the climate crisis. Having already made significant concessions in a futile effort to secure U.S. participation, negotiators inserted more loopholes into the Marrakech version to overcome objections from Russia, Australia, and Japan.

Critics dubbed the resulting product "Kyoto Lite." On its face, the treaty obligates the world's 38 industrial nations (minus the United States) to reduce carbon emissions an average of 5.2 percent below 1990 levels by 2012. But given the additional loopholes—chiefly, the inflation of allowances for carbon absorbing trees—the real reductions will barely amount to 3 percent below 1990 levels, several analyses show. (The use of forests to offset global warming is dubious at best. If all the world's forests were preserved and its deforested areas reforested, all those trees would absorb only about 15 percent of the fossil-fuel emissions necessary to stabilize the climate, according to the UN-sponsored IPCC, the Intergovernmental Panel on Climate Change, which includes more than 2,000 scientists from 100 countries.) Most European nations will meet the Kyoto Lite goals through such relatively painless domestic efforts as increased energy efficiency, small carbon taxes, or internal emissions trading.

Still, the Kyoto Protocol was a real diplomatic accomplishment. Despite its loopholes, minimal goals, and lack of an enforcement mechanism, it does at last provide an international framework for diminishing the climate crisis. And with the absence of recalcitrant, foot-dragging U.S. delegates, other countries may find it easier to promote more aggressive approaches to reversing climate change.

There is, in fact, a range of cost-effective solutions that could both pacify the climate and begin to reverse the grotesque economic inequities that fuel anti-U.S. hostility in the third world. Three years ago, more than 2,500 economists, including six Nobel laureates, declared that we can cut our emissions—up to 30 percent, by some estimates—simply through efficiencies and conservation, with a net gain in jobs and productivity. A report issued in early December 2001 by the Tellus Institute, the Union of Concerned Scientists, and the American Council for an Energy-Efficient Economy, found that by 2020, the United States could meet 20 percent of its electricity needs with renewables, save consumers $440 billion, and avoid having to build 975 new power plants.

The world needs global strategies that will enable countries like India, China, Mexico, and Venezuela to replace their coal and oil-based energy economies with wind, solar, hydrogen, and biomass sources—and provide sufficient clean energy for future development. That transition would create huge numbers of jobs abroad and allow the world's poorest citizens—many of

whom feel abused and exploited by the wealthy nations—higher living standards, without the assault on the environment that characterized Western development.

One such plan, called Contraction and Convergence, was developed by the Global Commons Institute in Britain. It addresses a fundamental inequity embedded in the Kyoto Protocol, which essentially allows high-polluting nations to keep on polluting by using their past emissions levels as a baseline. The burden of reducing global emissions would fall disproportionately on less-developed nations. Not surprisingly, those nations want a single global per capita allowance for carbon emissions so that they have room to develop.

Contraction and Convergence provides an ingenious mechanism for the world both to set a maximum carbon limit by a date certain and to achieve convergence in the nations' emissions rights, which would gradually be redistributed so that the world would achieve a uniform per capita allocation. This would put appropriate pressure on rich nations, which generate the most pollutants, to shift to nonpolluting renewables.....

Ross Gelbspan

MARCH

World Bank Report
Globalization, Growth & Poverty

"Global warming requires international collective action. There are many ways of achieving effective restraint. The Kyoto protocol approach is for rich countries to set themselves targets for emissions reductions, and the recent agreement between European nations and Japan to move ahead with the protocol is a positive step forward. Looking further down the road, it is critically important to get at least all of the G-7 involved.

The Global Commons Institute, an NGO, has come up with an innovative proposal for how to do this. The proposal entails agreeing on a target level of emissions by the year 2015 and then allocating these emissions to everyone in the world proportionally. Rich countries would get allocations well below their current level of emissions, while poor countries would get allocations well above. There would then be a market for emission permits.

Poor countries could earn income selling some of their permits; rich and poor countries alike would have strong incentives to put energy-saving policies into place; and private industry would have strong incentives to invent new, cleaner technologies.

One of the hopeful things about globalization is how an innovative idea like this can quickly gain currency and support."

Koos Richelle
Director, EC Development

EUROPEAN COMMISSION
DG DEVELOPMENT

The Director-General

Brussels, 08 -03- 2002
B4*2(02) D/942

Mrs Audrey Meyer
Global Commons Institute (GCI)
37 Ravenswood Road
London E17 9LY
United Kingdom

Subject: Linking Poverty Reduction and Environmental Management

Dear Mrs. Meyer,

I would like to thank you for your interest in the discussion document on "Linking Poverty Reduction and Environmental Management", and I find it heartening that this document receives such positive response.

Furthermore, I fully agree that our tasks will become easier as the political and financial community become advocates of "Contraction and Convergence". In this respect, however, I believe that we have still a long road ahead of us.

Yours sincerely,

p.p. Koos RICHELLE

Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Telephone: (32-2)299 11 11.
Office: G-12 8/94. Telephone: direct line (32-2)296.65.56. Fax: (32-2)299.29.08.

MARCH 19

Jan Bojo
World Bank

The World Bank
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

1318 H street N.W.
Washington, D.C 20433
U.S.A.

(202)477-1234
Cable Address: BAFRAD
Cable Address: INDEVAS

March 19, 2002

Aubrey Meyer
Global Commons Institute
37 Ravenswood Road
London E 17 9LY
United Kingdom

Dear Aubrey Meyer:

Your letter to Mr. lan Johnson of February 5, 2002 on "Contraction and Convergence"

Thank you for your letter and the enclosed documents making your case for Contraction and Convergence. I have been asked to respond on Mr. Johnson's behalf, as one of the co-authors of the report on "Linking Poverty Reduction and Environmental Management."

Your agreement with the report's main statements on climate change, poverty impact, and the need for an international agreement on greenhouse gas emissions, is noted.

As the Consultation Draft version of our paper will be revised, I will discuss with my co-authors how we might introduce the notion of C&C in this context. However, many reviewers have encouraged us to maintain a brief, accessible style, and not expand further into a number of tempting subjects that have been suggested. I would therefore expect that any extensions on this subject in the final version of the paper would be rather limited in scope.

A better opportunity for your C&C approach to be fully discussed might open itself shortly. There is interest within the World Bank, DFID, EC, and UNDP, to pursue a separate, joint paper specifically on Climate Change. The Bank's contact person for this discussion is Mr. Ajay Mathur, Sr. Environmental Specialist (amathur@worldbank.org). I will share your communication with him.

Thanks again for your endorsement of the key climate change messages in "Linking Poverty Reduction and Environmental Management" and for sharing a selection of supporting documents with us.

Sincerely,
Jan Bojo

Lead Environmental Economist
Environment Department

Cc: lan Johnson, Ajay Mathur

RCA 248423. WUI 64145 £3 FAX (202) 477-6391

MARCH/APRIL

Green Futures
Energy.....Environment

If we want to create a more secure and sustainable world, we need some pretty fundamental rethinking of traditional policy divisions. So is it happening?

Caspar Henderson scans Whitehall for signs of some strategic joinery, and comes out sceptical. But, over the page, Foreign Office Minister is more optimistic . . . .

Energy - where we get it and how much pollution it causes - lies at a crossroads of many concerns about security and the environment. Wars are fought over oil, and climate change threatens the security of millions. How, then, to deliver durable and affordable supplies of energy to British industry and consumers, while reducing the risks of conflict over resources and the impacts of climate change?

This is a bigger challenge than, say, making the trains run on time or organising a system to recycle refrigerators. Some call it the ultimate test of joined-up government, requiring reform in everything from transport to toasters. Making links between energy solutions and security strategy has been a popular pastime since at least the late 1980s. In the green hats, environmentalists call for a new 'Manhattan Project' (bringing the same scale of commitment and urgency to building a renewable economy as was applied to making the atomic bomb in the early 1940s). In the tin hats, military analysts point to the dangers of relying on energy supplies from far flung sources, and acknowledge in forward strategy documents that climate change may lead to serious destabilisation of nations and whole regions.

So who's pulling these together into a coherent policy framework?

Britain, with roughly 1% of the world's population, consuming 2% of its energy and producing 3% of GDP, is a small to middle-sized player, which nevertheless likes to see itself at the forefront of finding solutions. We have a climate strategy intended to deliver a 20% cut in greenhouse gas emissions on 1990 levels by 2010 - one of the most ambitious targets of any industrialised country. We have a cautious, yet solid and growing commitment to renewables. The Foreign Office has a team dedicated to finding solutions to energy challenges with both an environment and a security aspect. Looks like a pretty coherent agenda. So are we on target for a more peaceful, renewable world? After 11 September, almost nobody thinks that. Speaking to military analysts a few weeks after the event, Peter Hain painted a telling image: "A significant proportion of the funding for the Taliban came from consumer choices made in our midst, the sale of heroin in our backyard funded

Bin Laden." But there is another consumer choice made by millions every day that links us even more strongly than drugs to the Middle East and Central Asia: the oil habit. For all our carping about American gas-guzzlers, Europeans are actually more dependent on this supply than the New World. Britain has its own, rapidly dwindling stash, and is teetering on the edge of becoming a hungry importer. In the two months after 11 September, British purchases of large, fuel-hungry vehicles grew by a massive 15% - a growth rate exceeded only in the US itself. Oil, and to a lesser extent gas, is at the heart of the matter, because the hyper mobile economies of the West are ineluctably dependent on these fuels, and are set to remain so. Even the most optimistic forecasts for technological innovation don't see a phase out of oil within 30 years. And the serious money in capital investment - from Airbus's new generation of super-planes designed to cater to the anticipated annual 5% growth in demand for long haul flights, to the next generation of motor cars (including those that will run on fuel cells) - is predicated on a virtually endless supply of affordable petroleum.

What to do? Price rises may be an option, but they're hardly seen as politically feasible. In Britain, the government notoriously ran for cover when one of its most progressive environmental taxes, fuel price escalator, started to hurt. Even in Germany, with its comparatively excellent public transport alternatives, environmentalists got clobbered at the polls when they tried to raise fuel prices to a degree that would affect demand.

In the light of this, some suggest that only a price rise somehow imposed from outside could do the trick. Islamic fundamentalist activists in the Gulf have of course been touting this for years. Osama Bin Laden, no less, proposed $144 as a fair price - at which rate the hydrogen economy so beloved of environmentalists would become the cheap, and much more cheerful, alternative. Such a scenario is, of course, unlikely - to say the least. Even if the Saudi oil fields fell under the control of a fundamentalist regime, OPEC is notoriously fickle, and the global market would doubtless deliver a price well within the realms of affordability, whoever held the reins in Riyadh. There is also the small matter of a hefty western military presence in the region.

Britain's self-appointed role as leading peacekeeper in Afghanistan may indeed be a noble thing. But it is not the whole story: companies such as BP have major interests in this area and the French have not positioned a nuclear-powered battle group in the Arabian Sea for humanitarian purposes. Whatever our differences with the US over, say, the Kyoto Protocol, or the wisdom of gung-ho interventionism, British defence policy still looks to be fused at the hip to that of America.

OK, you might say, the situation is far from ideal, but we have to start from where we are. The answer is clear strategic goals for the longer term, and incremental steps in the meanwhile.

The government's review of energy supply, which aims to set a framework for the next 50 years, looks like a good place to start. This recommends 20% of electricity should come from renewables by 2020 - a less ambitious target than most of the EU, but a big change for Britain. Absent from the review, however, is transport - the fastest growing source of greenhouse gas emissions. National programmes to increase fuel efficiency in the vehicle fleet will at best marginally reduce the race of growth in the consumption of fuel that will increasingly be imported from further away. The 10-year transport plan is predicted to knock one minute off journey times, but will not reduce petrol consumption. The energy review also skates around some knotty concerns to do with nuclear power. The House of Commons Defence Committee hears that a terrorist attack on Sellafield could take out a large part of northern England. The government tells us that the, er . . . . Territorial Army will help prevent such an eventuality, keeps fighters on standby at northern airfields to shoot down any rogue airliners - and clears the decks for a large programme of nuclear new build.

Meanwhile, the Ministry of Defence gives a good impression of a left hand not knowing what the right is up to. Its performance in countryside management on its ranges wins plaudits from wildlife groups; its willingness to engage in peacekeeping and conflict prevention is a welcome contrast to some of the more bellicose rhetoric from its Ministers. But where is the link for example, the visionary concern expressed in its strategy documents about insecurity and climate change, and its opposition to the construction of offshore wind farms?

Nor is our record overseas anything to shout about. Since the Rio Summit in 1992, the Export Credit Guarantee Department has supported £15 billion or more in fossil fuel and nuclear projects in developing countries, effectively accounting for additional greenhouse gas emissions around one third the size of the UK's own. Over the same period, it has supported virtually no renewable energy schemes. Only in the last year has the ECGD, together with other leading export credit agencies, begun to take steps to monitor emissions from the projects it supports. The Department for International Development is estimated to spend less than 0.7% of its assistance on renewables. But there are 2 billion people living off grid whose lives could be greatly improved by the deployment of technologies such as solar panels to schools and hospitals. So the recent signs of a priority shift in Foreign Office policy in this direction is both welcome, and overdue.

Indeed, it is perhaps ironic that some of the most promising signs of joined-up thinking in government come from the diplomatic, rather than domestic, quarters of Whitehall.

But if government efforts to turn round the super tanker are only beginning, could investors, chastened by deteriorating security and hardened by market discipline, stimulate more rapid change? Tough commercial interests have fostered fast growth in renewables. Generation from wind power, the premier renewable, jumped a stunning 58% worldwide last year. So has the changed atmosphere of the last six months made any difference?

"No," says James Stetler, head of renewables at Dresdner Kleinwort Wasserstiens London office. "September 11th and security issues more generally have had no discernible effect." Such matters are beyond the horizon of most investors, he thinks. And in any case, for all their fast growth rate, almost no one believes renewables are near to a scale where they could make a meaningful difference to the energy demands of industrialised economies as a whole. (Stetler suggests wind power growth will slip to a 'mere' 17% this year.)

So what would help?

"A production tax credit for renewables - especially in the US, the market with far the biggest potential," says Stetler, placing the ball firmly back in a government court.

Nick Robins, head of research at the Socially Responsible Investment team at Henderson Global Investors, points to other problems. "Most fund management operates on a very short term view, which simply does not take account of this sort of thing. Tracking and index funds make it hard to pick out renewable energy even if you want to, and there are very few "pure plays' in renewables that are not tied up in energy companies with other operations".

Add to that "the performance of renewable energy stocks over the last year has been abysmal - worse even than other speciality stocks like high technology. It's been a sobering year." Like Stetler, Robins says a clear lead from government is crucial.

"Ultimately, it is only government that can change market conditions - integrating long-term security questions into the City's time horizons. The challenge for socially responsible investors is to move beyond micro-questions of which is the best renewable stock, and get our voice heard there."

And there are indeed rumblings that some major investors are beginning to speak with a coherent voice to government.

Signs, for example, that some big insurers and pension funds may endorse ideas as radical as 'contraction and convergence' - the quiet revolutionary in the ranks of climate change strategies, which requires equal greenhouse gas emissions for all, and big cuts for the rich countries.

Meanwhile, notions of rapid and radical change look set to remain peripheral to the 'real' economy and the awareness of most voters, many of whom will be climbing on those extra long haul flights. While some hope that a rising wave of popular awareness, coupled with technical advances in areas such as renewables and energy efficiency, might indeed be enough to affect a smooth about turn of this rogue super tanker, others are not so sanguine.

In the words of Paul Hirst, author of War and Power in the 21st Century, a dispassionate, and rather scary view of the future,

"it will take something that frightens the pants off people" to change things.

Caspar Henderson is senior correspondent for GREEN FUTURES

APRIL 18

Christian Ecology Link
Contraction and Convergence

Contraction and Convergence provides a framework within which the world's emissions can be reduced safely and fairly. It proposes that countries agree a safe global greenhouse gas emissions budget and agree a date by which all countries will have the same emissions rights per capita. Countries unable to reduce their emissions by this date would be able to buy the unused rights of other countries, giving less developed countries the income to fund development in zero-emission ways.

The idea is well accepted as the best way forward by the experts. According to the Royal Commission on Environmental Pollution "The government should press for a future global climate agreement based on the Contraction and Convergence approach, combined with international trading in emission permits. Together, these offer the best long-term prospect of securing equity, economy and international consensus." The recent Third Assessment Report of the IPCC (Intergovernmental Panel on Climate Change) observes "...the formulation that carries the rights-based approach to its logical conclusion is that of Contraction and Convergence."

FEASTA
Global Monetary Reform

4. The supply of the new currency should be limited in a way which ensures that the overall volume of world trade is compatible with the most crucial area of global sustainability.

To deliver the maximum level of human welfare, every economic system should try to work out which scarce resource places the tightest constraint on its development and expansion. It should then adjust its systems and technologies so that they work within the limits imposed by that constraint. In line with this,

> -an international currency should be linked to the availability of the scarcest global resource so that, since people always try to minimise their use of money, they automatically minimise their use of that scarce resource.

What global resource do we most need to use much less of at present? Labour and capital can be immediately ruled out. There is unemployment in most countries and, in comparison with a century ago, the physical capital stock is huge and under-utilised. By contrast, the natural environment is grossly overused especially as a sink for human pollutants. For example, the Intergovernmental Panel on Climate Change (IPCC) believes that 60-80% cuts in emissions of one category of pollutants - greenhouse gases, which come largely from the burning of fossil fuels - are urgently needed to lessen the risk of humanity being exposed to the catastrophic consequences of a runaway global warming. Feasta believes that this is the most serious resource threat facing humankind at present, and that, consequently, the basis of the new world currency should be selected accordingly.

> Contraction and Convergence (C&C), a plan for reducing greenhouse gas emissions developed by the Global Commons Institute in London, provides a way of linking a global currency with the limited capacity of the planet to absorb or break down greenhouse gas emissions.

Under the C&C approach which has gained the support of a majority of the nations of the world, the international community agrees how much the level of the main greenhouse gas, carbon dioxide (CO2), in the atmosphere can be allowed to rise. There is considerable uncertainty over this. The EU considers a doubling from pre-industrial levels to around 550 parts per million (ppm) might be safe while Bert Bolin, the former chairman of the IPCC, has suggested that 450 ppm should be considered the absolute upper limit. Even the present level of roughly 360ppm may prove too high though, because of the time lag between a rise in concentration and the climate changes it brings about. Indeed, in view of the lag, it is worrying that so many harmful effects of warming such as melting icecaps, dryer summers, rougher seas and more frequent storms have already appeared.

www.earthsummit-ireland.org/feastaproposals.htm

APRIL 24

DTQs

"There are a number of reasons for believing that Domestic Tradable Quotas (DTQs) could play an important role in combating climate change.

DTQs - with their annual reduction in the carbon budget and equal per capita emissions entitlements - are in keeping with the principles of contraction and convergence recently endorsed by the Royal Commission on Environmental Pollution."

www.dtqs.org/summary.htm

APRIL 24

EC Letter

"Thank you for your letter of 5th February and appended information on the contraction and convergence approach, which I studied with interest.

The negotiations on the next commitment period will have to start by 2005 and to finish by the end of 2007, In these negotiations, all options to limit and reduce emissions in a fair and equitable way will be discussed. Contraction and convergence is one of the interesting alternatives in this regard."

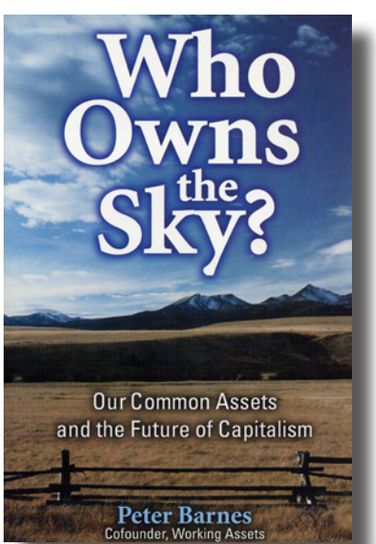
Jean-Francois Verstrynge

Acting Director-General, DG Environment,

European Commission

www.gci.org.uk/correspondence/Verstrynge1.pdf

APRIL



Peter Barnes
Who Owns the Sky?

Publisher: Island Press. **ISBN:** 1-55963-855-9

On the question of global equity, which I have avoided in this book, the reader may want to explore the Web site of the London-based Global Commons Institute. GCI is promoting the concept of "contract and converge" as a way to resolve the dispute between rich and poor countries about how to share the global atmosphere. Under "contract and converge, the per capita emissions of the rich and poor would converge to equality over' say fifty years. During this time, total global emissions would contract. But because poor countries per capita emissions are far below the rich countries' (the average American emits six times as much carbon dioxide as the average Chinese person), the poor countries' emissions would actually rise at first. Though considered a radical idea just a few years ago, "contract and converge" is slowly gaining acceptance.

MAY

Heinrich Boell Foundation
Report for WSSD

The Heinrich Boell Foundation published a detailed report on the issues for the World Summit on Sustainable Development (WSSD) taking a clear position in favour of C&C beyond Kyoto.

> "The vision of "contraction and convergence" combines ecology and equity most elegantly;

-it starts with the insight that the global environmental space is finite and attempts to fairly share its permissible use among all world citizens taking into account the future generations as well."

(Contraction &Convergence – The Global Solution to Climate Change, Meyer 2000)

www.worldsummit2002.org/publications/memo-mF.pdf

MAY 23

Richard Douthwaite
Fossil Energy/World Monetary System

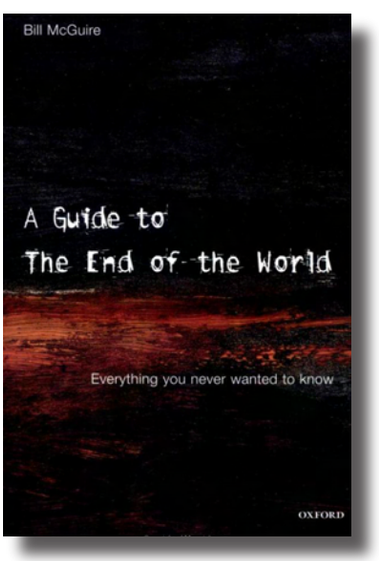
Presented at the International Workshop on Oil Depletion

"Contraction and Convergence (C&C), a plan for reducing greenhouse gas emissions developed by the Global Commons Institute in London which has gained the support of a majority of the nations of the world, provides a way of linking a global currency with the limited capacity of the planet to absorb or break down greenhouse gas emissions."

www.gci.org.uk/papers/EBCUS.pdf

MAY

Bill McGuire
A Guide To The End Of The World



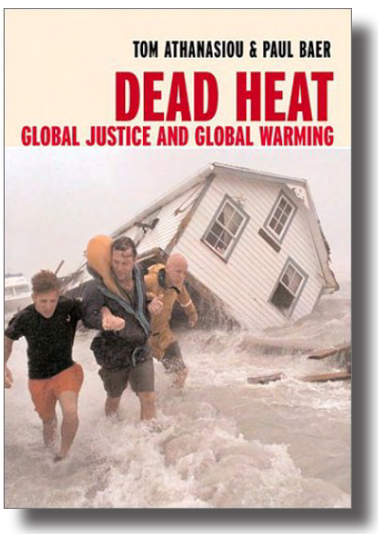
Publisher: Oxford University Press ISBN: 0192802976

[Page 62]

Despite the gloom after the collapse of the Kyoto Protocol, there is an alternative plan to reduce greenhouse gas emissions on the table that might just start things moving on the long road to stabilization and even reduction. Called "Contraction and Convergence" or simply C&C, the new way forward was thought up by London's Global Commons Institute. This ingenious plan is based upon two principles. First, that greenhouse gas emissions must be reduced and second, that the means by which this is accomplished must be fair to all. C&C therefore proposes reducing emissions on a per capita basis. International agreement will

determine by how much emissions must contract each year, and then permits to emit will be allocated to all countries on the basis of their populations. The emission permits would be tradable so that countries such as the USA and Australia that could not manage within their allocations could buy extra ones from populous developing countries with a surplus. This remarkably simple scheme has not yet entered the limelight, but it does have many powerful supporters in the UN, Europe, and China, and even amongst developing countries and US senators.

It is now inevitable that we and our descendants are going to face a long and hard struggle as our temperate world draws to a close and we enter the time of hothouse Earth. Perhaps, however, C&C can help to make the transition a little less desperate.



Athanasiou & Baer
Dead Heat

Publisher: Seven Stories Press, **ISBN:** 1583224777

"Contraction & Convergence"

The idea here is not ours. The merits and demerits of a climate treaty based on tradable per capita emissions allocations have been discussed in academic, activist, and policy circles for more than a decade, though it was Global Warming in an Unequal World, published in 1991 by the late Anil Argawal and Sunita Narain of New Delhi's Centre for Science and Environment (CSE), that put the core idea- equal per capita rights to the atmospheric commons—into political motion.2

The best-known articulation of the idea is "contraction and convergence," which Aubrey Meyer, director of London's Global Commons Institute, has been tirelessly promoting for many years.3 The term "contraction" refers to a reduction of global emissions from today's unsustainable levels to future "safe" levels, while "convergence" implies that at the same time, developing country emissions allocations would be allowed to increase in the interests of development, while rich-world allocations would drop. The result of these transitions would be a global convergence to equal, and low, per capita allotments.

The contraction-and-convergence framework assumes that convergence takes place over some transition period (by, say, 2030) and that allocations are tradable, so that per capita emissions themselves may or may not actually converge.

This is a key point, so note that it's not some sort of rich-world trick, and that, for example, India's Centre for Science and Environment takes the same position. The goal is convergence of emissions rights, and decarbonization of energy systems, not convergence of emissions themselves.

Beyond particular schemes, key Southern voices have long insisted on rights-based (per capita) allocations. Examples are many, but the declaration of the 1998 meeting of the Non-aligned Movement can perhaps stand for them all:

> Emissions trading for implementation of (CHG reduction/limitation) commitments can only commence after issues relating to the principles, modalities etc., of such trading, including the initial allocations of emissions entitlements on an equitable basis to all countries, has been agreed upon by the Parties to the Framework Convention on Climate Change.

Also, it's worth noting that Dr. R. K. Pachauri, the new chairman of the IPCC, is the director of the Indian group TERI, which called, in early 2002, for climate action

> through comprehensive international participation and agreement on the final level at which to stabilize the concentrations of GHGs and on medium-term targets for reducing emissions. Carbon trading

arrangements based on an equitable per capita allocation also need to be adopted.

The idea, in other words, is pervasive, though not, so far, within the climate negotiations themselves. An increasing number of organizations and politicos, including a bloc of European environment ministers, a variety of international environmental nongovernmental organizations (NGOs) as well as traditional NGOs such as the Red Cross and Christian Aid, Britain's influential Royal Commission on Environmental Pollution, the former co-chair of the IPCC's Working Group One, and a rich variety of Southern politicians, have explicitly endorsed it, and many others have adopted the per capita framework, though not the term "contraction and convergence." Further, both India and China have repeatedly signalled (or so we've heard, for these things are rarely written down) that when the time comes for them to accept emissions targets, nothing but per capita allocations will even be considered. The terms by which allocations are defined must, as a Chinese delegate to the climate negotiations once insisted, be "rational."

We agree. For, from the point of view of both basic ethics and enlightenment philosophy, the case for equal per capita rights is an obvious one. Yet, at the same time, human rights are under siege around the world, and this proposal implies a radical expansion of such rights, one that actually expands

them into the new territory of economic rights to global environmental resources. Why, then, do we imagine that the idea will find political traction in the "real world"?

The easy answer is that, as the references to India and China imply, nothing else will yield a global climate accord.

A historic choice will be made during the next decade, as the next phase of the climate treaty is thrashed out, and appeals to "realism" and incremental decision making do nothing to alter this rather brute fact. Explosive as the per capita issue is, we do not believe that it can be finessed.

JUNE 1

Rodney R. White
University of Toronto

Today I am going to take the position that an essential part of a successful implementation phase for the (Kyoto) Protocol is a progressive reduction in emissions, moving towards equal per capita emissions rights throughout the world.

This position is sometimes called 'contraction and convergence'. It may seem like the other end of the traditional ideological spectrum compared with a position that espouses emissions trading.

Contraction and convergence is based on equity – in the justice sense. It may seem absurdly optimistic. However, I think it has to be part of the plan, so that we can all share a common sense of direction."

www.gci.org.uk/papers/SilvLining.pdf

JUNE 6

Climate Change Knowledge Network
A Quickly Changing Tune

"The mixed response to the Bush administration's move partly reflects the perception that tackling climate change will create winners as well as losers. Some companies would benefit from curbs on carbon dioxide emissions. Others might not benefit but would prefer governments to face the issue rather than be left in a state of uncertainty about when and how it will be tackled. Continuing support for limits on carbon emissions comes largely from companies that make energy-efficient products and sophisticated controls. A more surprising source of support comes from certain car companies, despite the industry having to cope with more stringent regulations. The explanation, according to an article in Harvard Business Review in July, was that companies such as General Motors and Ford Motor "see climate change as an opportunity to gain advantage over their less technologically sophisticated rivals." Some go so far as to claim that Bush's stance could damage the US economy because it would give its competitors a head start in developing and using climate-friendly technologies. They draw an analogy with the oil price shock of the 1970s, which spurred the Japanese car industry into producing highly efficient cars that won new markets.

At the other end of the spectrum, some companies are now lobbying for surprisingly radical solutions to the problem of climate change.

> The Chartered Insurance Institute, a professional body for the UK insurance industry, recently called on governments to replace the Kyoto protocol, which calls for a 5 per cent cut in emissions by 2010, with a proposal known as "contraction and convergence",

-a longer-term plan to reduce global emissions by 60 per cent. The Respect Group, a Europe-wide business network based in Stockholm, is putting another business initiative forward. It says it is "critical" that the EU introduce policies that make the use of fossil fuel more expensive. Most businesses will take the opposite tack. Lobbying efforts will center on avoiding extra taxation and promoting flexible, cost-effective ways of reducing emissions."

www.cckn.net/compendium/business_background.asp

JUNE 8

Uranium Institute
Climate Change Policy & Nuclear Power

Jonathan Cobb at 25th Annual Sumposium 2000

"In order for atmospheric greenhouse gas concentrations to be stabilised at a sustainable level it will be necessary to reduce missions by around 60% from the 1990 level. Advocates of a policy of "convergence and contraction", where developed and developing countries are to be allowed similar levels of emissions on a per capita basis, state that developed countries may have to reduce emissions by 80%."

www.world-nuclear.org/sym/2000/cobb.htm

JUNE 8

Tyndall Centre UK
Saving or Sinking the Kyoto Protocol?

Suraje Dessai

4. The Bonn Agreement

> "The other 'crunch issue' the Bonn Agreement tackles are the Kyoto mechanisms. Surprisingly, the text's language referring that emissions should be reduced "in a manner conducive to narrowing percapita differences between developed and developing countries" paves the way for a contraction and convergence framework (Meyer, 2001)."

www.tyndall.ac.uk/publications/working_papers/wp12.pdf

JUNE 8

Tyndall Centre UK
Integrated Assessment

Simon Shackley and Clair Gough

Box 1 - The Dilemma of Complexity

" . . . . by contrast, the 'Contraction and Convergence' idea developed by the Global Commons Institute has been rather widely adopted (Meyer 2000).

It connects well with the more explicitly political formulation of the climate change issue in equity terms of the North-South divide, and allows for national differences to be acknowledged in the short to medium term.

Its lack of integration (e.g. through not including analysis of the economic costs of mitigation) may be an advantage in its acceptability to policymakers.

Interestingly, the contraction and convergence concept has engendered significant political support as well as attracting support from assessment organisations (e.g. the influential Royal Commission on Environmental Pollution in the UK (2000)) without recourse to a complex numerical model.

www.tyndall.ac.uk/publications/working_papers/wp14.pdf

JUNE 13

Le Monde Diplomatique
C&C The Global Framework Solution

" . . . . Asymmetric conditions in the economy make 'carbon' cheap and renewables expensive. They also decrease sustainability and increase poverty.

However, imagine a future where climate change has been avoided and humanity's longterm prospects are more secure than now. Looking back from there we see that by definition greenhouse gas emissions have contracted to a safe level and that within this contraction, the per capita emissions levels of different countries have converged.

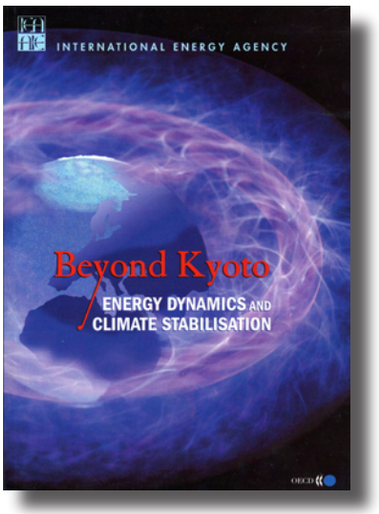
The fact is this "Contraction and Convergence" process is intrinsic to any emissions scenario that stabilises the rising concentrations of greenhouse gases in the atmosphere.

So the real questions are only, does this come about by chance and guesswork or by building it formally into an international framework. This largely determines the second question; - at what rate will C&C occur?"

www.amisuk.f9.co.uk/ourarticles/Apr02art4.html

2002

IEA
Beyond Kyoto



Publisher: OECD/IEA ISBN: 9264198385

Contraction and Convergence (CO2 emissions in GtC)

Source: Global Commons Institute, 2000.

Contraction and convergence

Given the obvious shortcomings of an immediate "equal per capita" allocation of emission rights that would be compatible with scenarios leading to stabilising GHG concentrations at low levels, their proponents usually see it as a longer-term objective (see, e.g., Agarwal & Narain, 1998; Meyer, 2000).

Allocation for near-term targets would thus be an interpolation between current emission levels and a longer-term equal per capita allocation (see Figure 11). Others recognise that per capita allocation does not fully account for differing national circumstances, and suggest that a better solution to the allocation problem would be to mix per capita and other criteria (see, e.g., Aslam, 2002). This view is partly reflected in the Marrakech Accords (Decision 15/CP7) that states that Annex I Parties shall implement domestic action " with a view to reducing emissions in a manner conducive to narrowing per capita differences between developed and developing country Parties while working towards achievement of the ultimate objective of the Convention". If this is the case for domestic action, it may, a fortiori, also be the case for emission allocations. Berk and den Elzen (2001) suggest distributing emission allowances with a global C02 emission profile for stabilising CO2 concentration at 450 ppm, with a linear convergence in per capita emission rights either in 2030 or in 2050. In the case of convergence as early as 2030, allocations for countries like China and India remain constantly above baseline needs, while for industrialised countries reductions by 2030 would be in the range of minus 60 per cent (Western Europe) to minus 75 per cent (North America). In comparison with the "multi-stage" approach (see above), Berk and den Elzen find that the "convergence regime offers the best opportunities for exploring cost-reduction options as all parties can fully participate in global emission trading. There may be excess emission allowances (hot air), but this will not affect the effectiveness nor the efficiency of the regime, only the distribution of costs. Second, there will be no so-called carbon leakage" However, it should be noted that these advantages are those of any scheme allowing immediate global participation in emissions trading - and not necessarily those of the suggested distribution. This "contraction and convergence" proposal has some of the shortcomings of an equal per capita allocation — although to a lesser extent - notably creating hot air that

should be bought back by industrialised countries. Such an approach might be superior to the "multi-stage" approach in delivering the desired concentration level, as it requires that actual emission reductions begin in developing countries before they reach a given threshold. However, as with all longer-term commitments, there is a problem in ensuring that future governments in these countries will feel bound by such agreements after they cease to deliver surplus allowances but instead become constraints. In actual practice, this discussion may be entirely moot: developing countries are currently refusing to take on fixed and binding commitments, and no proposal for short-term generous allocation seems to have much likelihood of being accepted. The fear (with this as with other proposals for current commitments, no matter how weak) is of a progressive "ratcheting" process leading at some future point in time to real constraints on their economic development - and even worse, that such constraints would begin to take effect long before they reach current industrialised countries' levels.

JUNE

Wilton Park Conference
Climate Change: What Can Be Done?

Roger Williamson

Report based on Wilton Park Conference WP663 13-17 May 2002:

Contraction and convergence

One candidate for the comprehensive framework and overarching vision for climate change policy is "Contraction and Convergence", advocated by the Global Commons Institute.1 If this approach were to be adopted, it would require considerably more far reaching commitments than those developed within the Kyoto framework.2 The key elements of contraction and convergence are outlined as follows by the initiator of the proposal, Aubrey Meyer:

'essentially, it has three steps: (1) an international agreement is reached on how much further the level of carbon dioxide (CO2) in the atmosphere can be allowed to rise before the changes in climate it produces become totally unacceptable. Fixing this target level is very difficult, particularly as concentrations are too high already. (2) Once the ultimate overall limits to CO2 concentrations has been agreed, it is a simple matter to use an estimate of the proportion of the gas released which is retained in the atmosphere to work out how quickly we need to cut back on the current global emissions in order to reach the target. This cutting back is the Contraction part of Contraction and Convergence. (3) Once we know by what percentage the

world has to cut back its CO2 emissions each year to hit the concentration target, we have to decide how to allocate the fossil fuel consumption that those emissions represent.

The contraction and convergence approach says that the right to emit carbon dioxide is a human right there should be allocated on an equal basis to all of humankind. This might appeal to a majority of the countries of the world, but the over-consuming countries would have to be allowed an adjustment period in which to bring their emissions down before the Convergence on the universal level.3

In more detail, the essential proposition of contraction and convergence has four elements.

'After the initial agreement by countries for a reviewable global greenhouse gas emissions 'contraction budget' targeted at a precautionary, stable value for atmospheric greenhouse gas concentrations, the internationally tradable shares of this Budget are then agreed on the basis of convergence from the current situation; the shares should be broadly proportional to income. The convergence should be towards a target date in the budget timeline after which they remain proportional to an agreed base year of global population. Revenues from this trade can be directed to the deployment of zero emissions technology.

Contraction: on the basis of precaution, all governments collectively agree to be bound by such an atmospheric target. This makes it possible to calculate the diminishing amount of greenhouse gases that the world can release for each year in the coming century. Subject to annual review, this event is the contraction part of the process.

Convergence: On the basis of equity, convergence means that each year's ration of this global emissions budget is shared out so that every country progressively converges on the same allocation per inhabitant by an agreed date, for example by 2030. It recognises the need for access rights to the Global Commons of the atmosphere with the fundamental principle of globally equal rights for per capita, to be achieved by smooth transition.

Emissions permit trading: Countries unable to manage within their shares would, subject to agreed rules, be able to buy the unused parts of the allocations are other countries. Sales of unused allocations would give the less developed countries the income to fund development in zero-emission ways. Industries in the developed countries would benefit from the export markets this restructuring would create.

Sustainable growth: Contraction and Convergence does not place a straitjacket on growth per se by its limitation on fossil fuels. Instead it averts catastrophic losses by promoting the development and growth of zero carbon energy technologies necessary for prosperity and sustainable development.4

The strength of this model, to quote the IPCC Third Assessment (2000), is that it represents '... the logical conclusion of a rights based approach'.

Most of the objections which can be made questioning the practicality of the model are, simultaneously, objections to any scheme radical enough to achieve a long-term stabilisation of greenhouse gas concentrations in the atmosphere.

Taking standardised per capita emissions as the basis for calculation fulfils the equity criterion, but raises concerns that populous countries, in particular China and India, will increase their emissions at the same time as developed (OECD) countries have radically to decrease theirs. Proponents of the contraction and convergence thesis contrast it with the current approach of 'expansion and divergence' which is increasingly recognised as unsustainable. The fundamental dilemma of long-term climate change negotiations is that developed countries, and the main emitters among the industrialising nations of the South (particularly those with large populations including China, India and Brazil) are likely to resist signing up to targets which are sufficiently far-reaching to stabilise greenhouse gas concentrations at a sustainable level but, if these countries do not accept radical proposals for reductions to their emissions, the cumulative effects of global warming will continue. The impacts on all countries, but most obviously among developing countries (whose societies are more vulnerable) will be increasingly severe.

Much of the US opposition to the Kyoto Protocol approach has been focused around the argument that it is unfair for industrialised countries to have to cut their emissions while industrialising countries are under no such restriction. The Byrd-Hagel Resolution, passed 95-0 in the US Senate in 1997, expresses this concern , but in the framework of seeking a solution to global warming by determining which countries should limit and which should cut their emissions. The approach is consistent with Contraction and Convergence.

JULY

UNPO
Indigenous Peoples & Climate Change

"18. Balance narrow econometric and technical approaches in the climate negotiations by applying the principles of contraction and convergence, full and effective participation of indigenous peoples and civil society and complementary scientific and indigenous knowledge."

JULY

DFID
Select Committee Report

Setting (greenhouse gas) emissions targets fairly - "82. Both atmospheric stabilisation of greenhouse gases and the entry of developing countries into the climate regime are likely to require a move to per capita emission targets. [243] David Crichton and the Corner House both suggested DFID should consider the 'contraction and convergence' model set out by the Global Commons Institute. [244] Contraction and convergence is based on per capita emissions and offers an opportunity to address issues of equity. With emissions shared on a per capita basis, developed and developing countries could trade surplus emissions rights.

> [245] Advocates of contraction and convergence point to its inherent equity and its ability to bring together developed and developing countries in a single framework.

However, contraction and convergence recognises that emissions from developing countries will grow and does *not* hold back their development in order to rectify damage caused by developed countries." [246]

JULY 2

World Nuclear Association
Directors Speech

> " . . . . . A serious climate regime – if one is to evolve – must go far beyond Kyoto, by encompassing all nations and by employing some variation of the concept known as "contraction and convergence":

Contraction means that over the century ahead we must plot a path that will reduce overall global emissions by at least 50% – even as populations and economies expand.

Convergence means that, in this process, we must accept the principle that every person on Earth is entitled to an equal per-capita level of emissions.

Stated in this stark manner, the goal of 50% contraction seems draconian, while the principle of equal entitlement to emissions seems utopian. In fact, both concepts are eminently practical.

As to contraction, nothing short of a 50% emissions reduction offers any hope of averting catastrophic climate change. This cutback – entailing a 75% reduction in today's advanced economies – accomplishes no more than stabilizing global greenhouse gases at a level over twice that which existed just two centuries ago.

As to convergence, nothing other than the principle of equal entitlement offers a basis for the global consensus on which an effective climate regime must depend.

Equal entitlement does not mean equal emissions; it is, rather, the basis for an allocation of rights on which a fair and rational emissions trading system can be built.

A system based on this principle – and, I venture to say, only a system based on this principle – can be designed to produce the sense of equity, the predictability, and the sound economic incentives needed for smooth transition into a clean-energy future.

These incentives can work constructively in developed and developing countries alike.

In this schema, the sense of equity and predictability are created at the very outset of the regime. A nation's population size at an agreed point would be the basis for establishing its long-term emissions ceiling, toward which it would be committed to move on a steady path.

To facilitate a smooth and economically rational transition toward that goal, emissions trading would enable countries and companies to chart their own best path – selling permits where possible, buying them when necessary.

The rate of convergence to a common level would be designed to ensure that, during the long transition, already-industrialized nations as a whole would find it advantageous to purchase emissions permits from countries less developed.

This capital flow could serve the common interest in sustainable development by financing clean-energy infrastructure in the developing world.

Building this regime is not beyond human wit. Indeed, its simplicity and feasibility stand in favourable contrast to the chaos, social dislocation, vast expense and human misery that unrestrained climate change could bring – and from which no nation would be immune."

www.world-nuclear.org/speeches/bnes2002.htm

Nicci Collins
DEFRA

DEFRA
Department for
Environment,
Food & Rural Affairs

Email: nicci.collins@defra.gsi.gov.uk

Mr A Meyer
Director
Global Commons Institute (GCI)
37 Ravenswood Road
London
E17 9LY

18 July 2002

Dear Aubrey Meyer

Thank you for your letter dated 5th July enclosing the material on "Contraction and Convergence" (C&C) – it makes interesting reading. As you stated, our officials within the Global Atmosphere Division are aware of these proposals but it was kind of you to bring this to my attention.

Yours sincerely,

pp Amanda Stark

Nicci Collins
Special Adviser
to Rt. Hon. Margaret Beckett, MP

(Dictated by Nicci Collins
and signed in her absence)

L:\Advisers/Nicci/AMeyer 18-07-02

JULY 19

World Review of Books
C&C, The Climate Solution

Schumacher Briefing number 5 by Aubrey Meyer

Some comments by the author on the book, the issues and the state of play.

In 1989 I made a decision that rearranged my life. I joined the efforts by the Greens to prevent global ecological collapse.

For years prior to that decision, I had been a professional musician. At the time I had wanted to write a 'musical' and unexpectedly, the search for subject matter got out of control. The assassination of Chico Mendez reported in the Observer the previous December had seemed like a possible idea for the musical. But researching this horrible murder became a crash course on the growing environmental crisis. In a moment of revulsion and anxiety that has never really gone away, I joined the UK Green Party. Instead of writing the musical, I read things like Jonathon Porritt's, "Seeing Green" and the 'Penang Manifesto' of the World Rainforest Movement and so became involved in what was already called, the struggle to save the planet.

"Contraction and Convergence – the Global Solution to Climate change" is the little book I wrote ten years later about what happened because of that decision. With three friends from the Green Party I formed the Global Commons Institute (GCI).

From the outset Dave Bradney, Jim Berreen, Tony Cooper and I agreed that more than anything else, by changing the global climate, humanity was on a collision course with itself and with the planet. We adopted the simple formulation of "Equity and Survival". And as we analysed the destructive trends of expansion and divergence in the global economy, we came to formulate and campaign for "Contraction and Convergence" (C&C) as the remedy.

Looking at the data, it was obvious from the outset that the wealthy countries of the world had grown rich and powerful while running up on the global account a massive environmental debt that exposed the countries already impoverished by this process to shrinking development opportunities and a growing vulnerability to damages from climate change.

The book recalls getting to grips with this. It describes how for ten years GCI reasoned with the diplomats, negotiators, experts and policy makers all over the word. It explains how and why C&C evolved in the light of this considerable struggle. It details how we won a great struggle of ideas in the policy debate in the mid 1990s in the Second Assessment of the Intergovernmental Panel on Climate Change (IPCC). The book

also reproduces miniatures of some of the quite startling mural-size graphic C&C imagery we created for use at the UN climate negotiations and recalls the effects of this and how reactions to the campaign changed as a result over the years. However the C&C book was published before the Third IPCC Assessment was published (June 2001) in which we had built on that success to the IPCC's recognition that, "C&C takes the rights-based approach to its logical conclusion."

Increasingly in recent years the reactions are positive. The Financial and Insurance Initiative of the UNEP has adopted a position in favour of C&C. Numerous ordinary and eminent individuals and institutions have added their support. But early on there were very trying times as everyone struggled to confront this awesome new problem with arcane and archaic habits. In essence,

> -GCI challenged the formulations of the neo-classical economists who had presumed to dominate the policy debate, for what they were - marginal.

We sought to enclose their methods within the more durable formulation of securing prosperity through precaution, equity and efficiency in that order. This is what C&C does and while real policy thinking matures slowly in favour of C&C, lack of its real application keeps us on the collision course.

As it grows, the global economy has become almost seamless, because money - like air - penetrates all the available space.

And there is no pretending that people don't go after both. At the same time, because of interdependence, this now means that every unit of activity in this economy is in some measure linked to the effects of burning fossil fuels. In other words, rich or poor and whether we burn fossil fuel or wood copiously or frugally, we are all now linked via the economy and the environment to both the causes and the effects of human induced global climate change.

The 'greenhouse-gas' (ghg) emissions from this fossil fuel burning are accumulating in the global atmosphere and slowly but surely trapping more and more of the sun's heat as time goes by. While the rise in global temperature is uneven over time and space, altogether this trend of enhancing of the natural greenhouse effect is causing global weather patterns to become progressively more violent and erratic with more floods, droughts, storms and sea-level rise. According to the estimates of the big re-insurance companies, this overall syndrome is causing a rate of economic losses that is now rising at four times the rate of economic growth. In a nutshell, this is already a death knell for low-lying coastal areas in Holland, Bangladesh, Egypt and the South Pacific because of rising sea level. In a hideous asymmetry, while the GDP rich get richer, the CO2 poorer get moved on and even wiped out. Tuvalu is already being evacuated and hundreds of thousands of people living on

the margins have already died in catastrophic climate-change-related hurricanes in Central America and cyclones in Africa and in Asia.

Worse, much worse, is yet to come. If we project the current rates of GDP/CO2 growth and climate related damages, the value of the damages will exceed the value of the global economy within about 60 years.

If humanity succeeds in stopping this from running completely out of control, construction of the Great Wall of China will seem by comparison like a weekend in Lego Land. The post-war Marshall Plan will seem like the redeeming of so many book tokens. If we succeed, security through rigorously planned international cooperation will have superseded economic competition, coercion, conflict and terror as the primary framework of security with the ethos of conserving and sharing the resources that preserve civilization.

In its report "Energy – the Changing Climate" (June 2000) the Royal Commission on Environmental Pollution made the advocacy of C&C the third of its 87 recommendations to the UK Government. A leading British broadsheet claimed, "little man's big idea could save the world" and I winked. Now that the recent UK Energy Review by the Cabinet Office has broadly supported C&C, some people feel the argument has won. Campaigners are joining hands in calling for it to be part of Tony Blair's 'big idea' at the World Summit on Sustainable Development in Johannesburg later this year. While the Kyoto Protocol is seen as 'a first step' it is widely recognized as a profoundly inadequate response to this looming crisis.

Sadly though, winning the argument is not winning the war. As the C&C book only partly records, it already had many powerful backers around the world at the time it was published in November 2000 and it has acquired many more since then.

As a single coherent proposition it probably now has more support than any other.

At the same time, getting off the collision course to catastrophic global climate change is going to require much more than this and the advocates of C&C face the numbing counter-culture of military-commercial priorities centered in Washington DC. Recent developments show how incongruously easy it is to be blind to the enormity of the obstacles against rising effectively to the global climate challenge.

President George Bush has just aptly - if unintentionally - demonstrated again that leading with economic 'efficiency' (in his parlance 'intensity') arguments can be utterly misleading. As a US 'alternative' to what he called the 'unfair' Kyoto Protocol, he recently had the sauce to commit the US to 'voluntary' gains against their current efficiency value of $5,464 per tonne of carbon rising to $6,623 per tonne over the next ten years.

While this roundly commits the US to carry on with business-as-usual, this is held up by the administration as, "a more practical way to discuss goals with developing countries."

However, with their currencies corrected for exchange rate distortions, developing countries (on this measure) remain consistently orders of magnitude more efficient than the countries of the OECD. In other words they may be poor, but the awkward bit for the US is that they are more efficient.(1) At the rate of gain projected by the White House, the US might become as efficient as Nepal or Namibia ($100,000/tonne) by the late 22nd Century.

Furthermore, depreciating for the energy content of its imports, the US produces net probably nearer $3,000 than $5,000 of income per tonne of fossil fuel burned domestically.

With the US' global trade deficit alone now accumulated at nearly three trillion dollars, this is equivalent to 1 billion tonnes of the extra atmospheric carbon now forcing Tuvaluans to flee the rising seas of climate change. To get some sense of perspective, 1 billion tonnes is almost what the US emits annually. This is the figure that by mid-term the world should limit emissions to annually if rising ghg concentrations, temperature and damages are to be slowed and stabilised.

As if that wasn't bad enough, Dr. Thomas Barnett(2) in U.S. Naval Institute, 2002 (January issue, pp. 53-56) under the title 'Asia: The Military-Market Link' clearly foresees that this little 'deficit' ensures we're all on our way to Tuvalu . . . . .

He says: -

"The good news is that there's plenty of fossil fuel to go around. Confirmed oil reserves have jumped almost two-thirds over the past 20 years, according to the Department of Energy, while natural gas reserves have roughly doubled. Our best estimates on coal say we have enough for the next two centuries. So supply is not the issue, and neither is demand, leaving only the question of moving the energy from those who have it to those who need it - and therein lies the rub.

U.S. naval presence in Asia is becoming far less an expression of our nation's forward presence than an "exporting" of security to the global marketplace. In that regard, we truly do move into the Leviathan category, for the "product" we provide is increasingly a collective good less directly tied to our particularistic national interests and far more intimately wrapped up with our global responsibilities.

And in the end, this is a pretty good deal. We trade little pieces of paper (our currency, in the form of a trade deficit) for Asia's amazing array of products and services. We are smart enough to know this is a patently unfair deal unless we offer something of great value along with those little pieces of paper.

That product is a strong U.S. Pacific Fleet, which squares the transaction nicely."

[Dr. Thomas Barnett,

U.S. Naval Institute]

Is it any wonder the US Government slipped that little clause in just before the original Kyoto meeting in December 1997 which established that military emissions would be on the global account.

However valiant the many and varied efforts to rebut this litany of complacency are, they will remain divided and ruled by this arrogance until there is a really coherent and united global campaign for C&C based on the realisation of equity and survival.

But then I'm just a musician and what do I know?

Aubrey Meyer

Director

Global Commons Institute (GCI)

www.gci.org.uk/images/Efficiency.pdf

2 Professor at the U.S. Naval War College, currently serving as the Assistant for Strategic Futures in the Office of Force Transformation within the Office of the Secretary of Defense

Aubrey Meyer was born in Bradford in 1947. He grew up in South Africa and studied music at the University of Cape Town during the 1960s, from where he graduated B. Mus. in 1968 and later M. Mus. After a brief period at the Royal College of Music in London in 1970, he played as Principal Viola in the Ulster Orchestra in Belfast, the Gulbenkian Orchestra in Lisbon, the CAPAB Orchestra in Cape Town and then as a section player in the London Philharmonic Orchestra in the 1980s. Intermittently throughout this period he wrote music for various ensembles including two prize-winning orchestral ballet scores.

It was while searching for a subject for a musical in 1988 that stories of the death of the Brazilian social activist Chico Mendez led him to join the UK Green Party in 1989 and then to co-found the Global Commons Institute (GCI) in London in 1990.

He spent the next decade contributing to the policy working group of the Intergovernmental Panel on Climate Change (IPCC), and campaigning at the United Nations negotiations on climate change to win acceptance of the global ethic of 'equity

and survival' and the policy framework known as 'Contraction and Convergence' (C&C). C&C is now becoming the most widely supported global framework within which to resolve policies and measures to avert dangerous climate change.

In 1998 he won the Andrew Lees Memorial Award with the following citation: "Aubrey Meyer, almost single-handedly and with minimal resources, has made an extraordinary impact on the negotiations on the Climate Change Treaty, one of the most important of our time, through his campaign for a goal of equal per capita emissions, which is now the official negotiating position of many governments, and is gaining acceptance in developed and developing countries alike." In 2000 he received the Schumacher Award for the continuation of these efforts.

JULY 30

Panel on Public Affairs (POPA)

Report for American Physical Society

http://www.aps.org/index.html

WA Edelstein, Rensselaer Polytechnic Institute, Troy, NY, and GE R&D, Schenectady, NY (retired), POPA Member.

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"The world population was 6.1 billion in 2000. If we divide the total C emissions in 1990 (5.8 GtC, Fig. 7) by his figure we get 0.94 tC per capita per year. Thus, if the 1990 global Carbon emissions were spread uniformly over the globe, the world average per capita Carbon emissions in 2010 and 2020 would be about what people in China and South America are producing now (Fig. 9).

There is little room for increase for the Chinese or South Americans, and people in the USA would have to cut back their Carbon emission by a factor of five from present levels in order to achieve the required world average.

The idea that the developing world might be willing to consider limiting their Carbon emissions if, in the long run, everyone will have the opportunity to use approximately the same amount of energy is the issue of "equity."

The Global Commons Institute of the UK advocates this idea in their plan of "Contraction and Convergence," and their graphs show the US reducing its output by a factor of 10 or more to achieve equity [20]. The basic idea is that the goal

is to equalize C output, and the pace of change would be internationally negotiated. While inequality exists, Carbon emission rights could be bought, sold and traded. In general this would result in a flow of money from rich to poor countries.

Exactly how the Carbon reduction would occur is not specified, but rich countries would be highly motivated to reduce Carbon emission through technology. It must be noted that this kind of reduction is at least an order of magnitude greater than the Kyoto figures, so correspondingly more ambitious and longer-lasting steps must be taken. This could include, for example: a massive increase in electric power production by non-burning methods, i.e., wind power, hydro power, solar power or nuclear power; a widespread use of H fuel; a highly successful way of capturing Carbon output and putting it back into the ground, trees, water, etc (C sequestering).

Figure 11 shows a "C&C" scenario that gets everybody in synch by 2030. It is hard to envision the world accomplishing such a radical change by this time, but it may be desirable to keep this goal in mind, even if it is carried out over a longer period."

www.aps.org/public_affairs/popa/reports/kyoto-energy6-1.pdf

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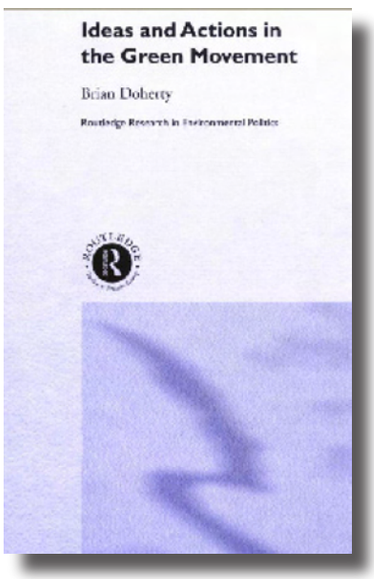


Brian Doherty
Ideas and Action in the Green Movement

Publisher: Routledge ISBN: 0415174015

[Page 216]

"The green movement as analysed in this book is very much a product of western structures and culture. There are points of connection and common interest between western greens and radical environmentalists in the south, but also major differences of context and tradition. More certain is that the agendas of western greens and non-western environmentalists will continue to change as a result of mutual contacts and engagement with global ecological governance.

Although they have long been committed to seeking global solutions, the main challenge faced by radical environmentalists is how to build an argument that combines social justice in a form that is acceptable and persuasive in both north and south.

Ideas such as contraction and convergence, developed by the Global Commons Institute, in order to seek a means of furthering international agreement on climate change, have widespread support in the green movement.

Contraction and convergence is based on the idea that the western countries need to reduce their emissions of greenhouse gases in order that non-western countries can expand economically, but this redistribution must occur within a framework compatible with sustainability Through this and similar ideas such as that of "environmental space" which, as the Danish group NOAH puts it, means "that every person in the world has the right (but not the duty) to use the same amount of natural resources and produce the same amount of pollution" and 'ecological debt', according to which the West owes other countries for the greater ecological damage it has produced, the greens are seeking ways to develop the arguments for global ecological solutions alongside a recognition of the need for the west to reduce its consumption."

AUGUST

World Council of Churches two requirements:

1. Stabilisation of greenhouse gases in the atmosphere at a level that is in accordance with the overall objective of the Climate Convention.

> 2. A fair distribution of rights and obligations, i.e. establishing per capita emissions rights for all countries as proposed in the 'Contraction and Convergence' scheme.

The goal is to prevent increasing dangerous interference with the natural climate system. The IPCC Third Assessment Report indicates that the six Kyoto greenhouse gases, measured as carbon dioxide equivalents, should not exceed the level of 450-550 ppm.

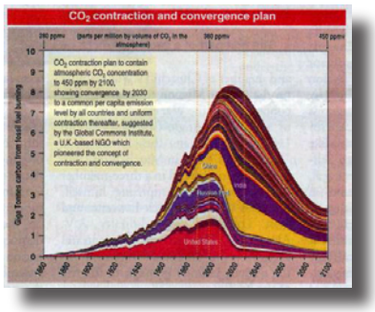
This leads us to the conclusion that the next commitment period must start building a system for targets related to a specific "secure" greenhouse gas concentration in the atmosphere and an equity burden of the emissions that allows for this. We foresee targets related to per capita emissions.

Proposals of the Global Commons Institute (United Kingdom) on

> "Contraction and Convergence" have gained support from churches and Christian development agencies.

For high emitters this would lead to a step-by-step approach over the commitment period during which the emissions are reduced, while for the least developed countries and low emitters, a step-by-step approach for the possibility to increase emissions, while at the same time building up and investing in sustainable energy use, could be foreseen."

AUGUST 2



Frontline Magazine - The Hindu

For climate justice

If the world is to be saved from an environmental catastrophe, it is essential for the civil society in Third World countries to take an active role in pressuring their governments and in moulding opinion to move in the direction of a solution based on the principle of equal atmospheric rights for all.

The final part of a three-part series.

THE atmosphere, like the air we breathe, belongs to everyone. It has now become obvious that the extent to which it can be polluted by carbon dioxide (CO2) and other greenhouse gases (GHG) in the course of our normal living has a ceiling; that is, the pollution space that we collectively possess is finite and limited.

The only enduring basis by which this space can be shared is to divide it equally among all human beings. Any method that is established on the strength of the present power relations, and is thus iniquitous, cannot be sustained for long.

It is this realisation that has made far-sighted persons such as French Environment Minister Dominique Voynet support the strategy of contraction and convergence.

According to this strategy, all countries will be allotted entitlements to pollute on the basis of a single per capita allowance. While the rich countries will have to contract their emission levels to reach this target, the poor countries will be allowed to develop their economies by increasing their emission to that level. This convergence target will have to be reached in a given time-period and, thereafter, will decline uniformly for all countries.

The per capita emission and the time for convergence will have to be negotiated internationally, taking into account the safe levels of CO2 concentration that can be allowed in the atmosphere. If these entitlements are permitted to be traded, developing countries can get substantial resources as a matter of right and not as handouts. These resources would help them leapfrog into clean technologies for power and transport and for overall development as well, without having to worry about losing their bargaining positions.

A sub-text to this argument is that within countries, depressed sections of people have an ecological debt that the affluent sections owe them and they have a right to claim it. A study by the Indira Gandhi Institute for Development Research found that in 1989-90 the per capita carbon emission of the top 10 per cent of the urban population in India was 13 times that of the bottom half of the rural population. It is the poverty-stricken Dalit woman who fetches headloads of shrub from long

distances for the day's kitchen fire and her children who pore over their books in the glow of the kerosene lamp who have saved this planet from a worse disaster than it faces now. If the excluded and oppressed sections in the Third World countries demand their rightful share of equitably distributed CDM (Clean Development Mechanism) funds for their own development, it could lead to social dynamics that are different from what these societies are used to at present.

But, for now, the dominant discourse in the dominant country is focused on the 'non-responsible' emissions by the populous developing nations. Green movements in that country are quick to point out to their government that it is the countries that are non-accountable to Kyoto that are behaving more responsibly than those that are accountable to it. For instance, according to researchers at the Lawrence Berkeley National Laboratory in California, China has reduced its emission by 17 per cent since the mid-1990s, a period when its gross domestic product increased by 36 per cent. Said Zhou Dadi, Director of the Energy Research Institute, China: "Strategically, we have adopted climate change as an important concern in our energy planning. Before 1980, China's energy use increased 1.6 times as fast as the economy. But in the last 20 years, energy use has grown at less than half the rate of the economy... Our per capita energy use is just one-tenth of that in the United States and one-seventh of that in Europe. Americans drive cars while we ride bicycles; you live in houses while we live in dormitories."

India has also done much to conserve, though its record is not as spectacular as that of China. India is now the world's fifth largest fossil-fuel CO2-emitting country; the emissions having grown at 6 per cent a year since 1950. It is the world's third largest coal-producing country and coal accounts for 70 per cent of fossil emissions. However, at less than 0.3 metric tonnes of carbon emission per head, it is the lowest for any large country, far lower than the global average of 1.13 tonnes and one-twentieth of the U.S. per capita emission.

There have been several studies of the impact of global warming on India, especially on food production and on coastal areas. The United Nations Environment Programme (UNEP) lists India among the 27 countries that are most vulnerable to a rise in sea level. A study by the Jawaharlal Nehru University in 1993 found that a one-metre rise in sea level would inundate approximately 5,800 square kilometres of coastal area and directly affect 70 lakh people; the economic loss would range from Rs.2,30,300 crores for Mumbai to Rs.400 crores for Balasore, at current prices. India is already reeling under weather disasters of unprecedentedly large scales. Most environmentalists link this to global warming. A heat wave in Orissa in 1998, the hottest year of the millennium, claimed 650 lives; the next year, 10,000 people perished in Orissa's worst-ever floods.

This year's heat wave was worse than that of 1998 and claimed more than 600 lives in Andhra Pradesh alone, despite prior warning to the people and some preparations. A UNEP team that went to the Himalayas recently found that a glacier near the first camp that Edmund Hillary and Tenzing Norgay set up during their conquest of the Everest in 1953 had receded by 5 km and that a series of small ponds had now formed a big lake.

The lack of sufficient data and research on the impacts of climate change has prevented India, and other developing countries, from playing an assertive role in global negotiations. India cannot hope to make the kind of investment that the U.S. has made. (Two national laboratories in the U.S. have launched a $20 million project, with 1.5 teraflops of computing power, to evaluate scientifically the policy options on climate change.) Also, the 'expert' advice India gets on policy matters is less than neutral. In a briefing paper sent by the Centre for Science and Environment to the Members of Parliament in India before The Hague conference, the late Anil Agarwal pointed out that Bill Clinton's principal environmental adviser Kathleen McGinty stationed herself at the Tata Energy Research Institute in Delhi for a year and went round the country to paint an alluring picture of the CDM, without pointing out its inequity in the absence of established entitlements. According to him, the Confederation of Indian Industry (CII) was among those who fell for her argument. It is only to be expected that private industry everywhere will be short-term-oriented.

The government and the politicians too have little incentive to take a long-term view. In fact, the subject gets very low priority and the public awareness of the issues involved is also abysmally low as compared to the awareness levels in the industrialised countries. Besides, when push comes to shove, the only superpower of the world will not hesitate to apply open pressure on national governments, using its leverage. In fact, some non-governmental organisations (NGOs) in the North, such as the World Resources Institute in Washington D.C., want international financial institutions to use aid, loan and trade to pressure developing countries to adopt climate-friendly, and obviously costly, technologies. Thus one cannot assume that the Indian government will automatically act in such a way as to protect the long-term interests of the people.

So, if the world is to be saved from a looming catastrophe and international and inter-generational justice is to be maintained, it is essential for civil society in Third World countries to take an active role in pressuring their own governments and in moulding world opinion to move in the direction of a swift 'equal rights for all' solution. In this effort, they need to contend with, and engage in dialogue, even well-meaning NGOs in the North, which, in their anxiety to get some action off the ground, are prone to seek accommodation from the nations in

the South. Attending a conference of northern NGOs on climate change, an activist from the South found to her dismay that the question equity ranked lowest in the delegates' priorities.

The forces ranged against a credible and just solution are many and mighty. One silver lining is that the extremism of the Bush variety is creating a backlash of public opinion and pulling together environmentalists for vigorous joint actions. An example is the largest ever paid media campaign by any environmental group during August and September 2001 in the United States. Americans in 23 States were educated by a clutch of environment groups on how their Congressmen listened when (oil) money talked, how they voted for $30 billion in taxpayer handouts to oil, coal and nuclear power companies, how they "voted time and time again for more pollution, and more global warming" instead of for lower energy bills and a healthier environment, how they should not now allow their Senator to do the same when the bills come up for approval.

There is a need for similar concerted action by the NGOs of the South. This need not be, and probably ought not to be, limited to advocacy of the equal-rights-to-the-air-above principle; it can extend to the issue of reparations for the damage caused to the environment in the past. Even as voices are raised now for reparations for slavery and colonialism, just recompense for environmental imperialism is bound to become a major issue several years hence. But raising it now has the advantage of driving home the equal rights message with greater force. In fact, the current environmental intransigence of the U.S. President can be countered by taking him to court for the economic costs of the disasters faced by the poorer countries because of climate change - up to $9.5 trillion over the next two decades, according to one estimate by development groups. The Red Cross suggests in a report that poor countries could seek legal compensation to pay for reconstruction through an "international tort climate court". It says: "Increasingly sophisticated analysis of climate change means that ignorance of the consequences of industrial consumption and pollution can be no defence for inaction."

In a recent article in The Guardian, Stephen Timms of the Global Economy Programme at the New Economics Foundation points to the establishment of a principle in a U.S. court that no State had the right to cause injury to another by emitting "fumes". This was in a case relating to a Canadian smelter plant damaging crops and livestock in Washington State in the U.S. Timms says: "The next message G-7 heads of state receive from their poorer cousins may not be an invitation to a reception, or a plea for more aid. It may be much more abrupt: 'We'll see you in court for global warming.' A concrete step towards this was taken recently when two dozen lawyers representing environmental groups met in Washington to explore the possibility of class-action lawsuits against the U.S. government and corporations on behalf of Tuvalu - whose

10,000 residents are emigrating to New Zealand as the island nation faces total submergence by 2050 - or the Maldives or Jamaica, like those filed by the Holocaust victims or those filed against the tobacco companies. Tuvalu's new Prime Minister has signalled his intention to sue.

The principle of contraction and convergence is gaining ground, albeit very slowly. The Environment Ministers of Denmark, the Netherlands and the United Kingdom have voiced their personal support to it; Britain's Royal Commission on Environmental Pollution, in a report on climate change published recently, has endorsed it. However, it is nowhere near claiming serious attention at Kyoto discussions. A large part of the responsibility to see that this happens rests on the NGOs in India and in the other countries of the South.

C.E. Karunakaran is an engineer who has studied and worked on issues relating to carbon credit trading.

AUGUST 6

Matthew Gold
Office of Science and Technology

Office of Science and Technology

Aubrey Meyer,
Global Commons Institute,
37 Ravenswood Road,
London,
E17 9LY

6 August 2002

Dear Aubrey,

Professor King would like to thank you for the information on "Contraction and Convergence". He feels that the reduction of global greenhouse gas emissions is an urgent matter and welcomes ideas, including the C&C concept, which could contribute to a global climate strategy.

We would be pleased to receive any updates.

Yours sincerely,

Matthew Gold

23.09.02 MG has left
now Adrian Butt

John Fawcett | Climate Change
7215 3921

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AUGUST 8

Michael Meacher MP
Minister for the Environment

FROM THE RT HON MICHAEL MEACHER MP
MINISTER FOR THE ENVIRONMENT

Copy Aubrey Meyer
Simon -

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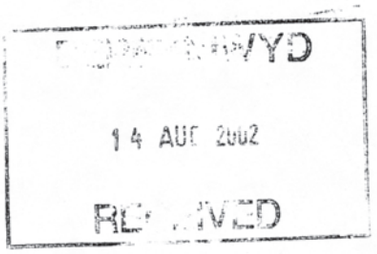


Our ref: 166031

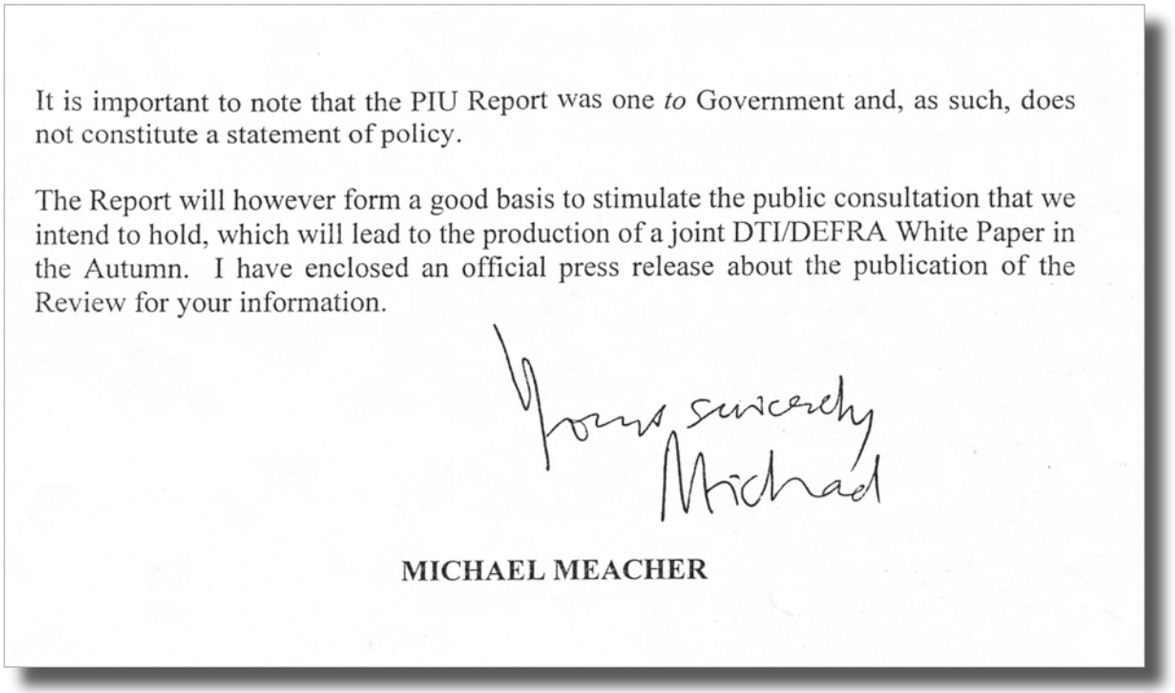
8 August 2002

Dear Cynog

Thank you for your letter of 18 December to the Prime Minister, which advocates the "contraction and convergence" model as a potential mechanism for tackling climate change through international agreement. As Environment Minister, I have been asked to reply. I am sorry for the delay in replying.

I understand that you were keen for contraction and convergence to be acknowledged in the Performance and Innovation Unit's Energy Review. I can confirm that the briefing paper from the Global Commons Institute on contraction and convergence was sent to the PIU, and that it was considered alongside other submissions received. The published Review does in fact mention contraction and convergence (paragraph 3.69). However, the main aim of the PIU Review was to set out objectives for UK energy policy, and to develop a strategy that ensures current policy commitments are consistent with longer term goals. As such, the Review, which was published on 14 February 2002, has not analysed options for how the international community as a whole might respond in future to the challenge of climate change.

Tackling the global climate change threat will require a future approach which leads to significant emissions reductions while being acceptable to as many countries as possible. Some aspects of the contraction and convergence model are certainly attractive. However, the debate is still in its very early stages, and other ideas and approaches have been proposed that warrant careful consideration. One of our main concerns at present must be to build on comprehensive world-wide support for the Kyoto process. The UK intends to play a proactive role in the debate on future commitments and we are already engaging our international partners on this issue.



It is important to note that the PIU Report was one *to* Government and, as such, does not constitute a statement of policy.

The Report will however form a good basis to stimulate the public consultation that we intend to hold, which will lead to the production of a joint DTI/DEFRA White Paper in the Autumn. I have enclosed an official press release about the publication of the Review for your information.

Yours sincerely
Michael

MICHAEL MEACHER

AUGUST 23

Church Times
Anglicans urge greater concern

by Vanya Walker-Leigh in South Africa

BISHOPS attending the Anglican Congress on the Stewardship of Creation at Hartebeestpoort Dam, near Johannesburg, this week, urged the Anglican Communion to take a stronger stand on climate change and related environmental issues.

"Christian theology drives us. As partners with God in Jesus, we Christians are responsible for the whole created order," the Bishop of Canberra & Goulburn, the Rt Revd George Browning, told one of the sessions. He was echoing the Archbishop of Canterbury's message to the Congress, that "We have an inescapable obligation to cherish the living planet entrusted to us by our Creator."

The Congress, which ends today, intends to submit a statement to the forthcoming World Summit on Sustainable Development, which begins next Monday in Johannesburg. It will also submit a policy document to the next Anglican Consultative Council meeting, in Hong Kong, in September.

Bishop warns of "desperate plight"

Bishop Browning's appeal was endorsed by the Bishop of Hereford, the Rt Revd John Oliver, who is the Church of England's spokesman on environmental affairs in the House of Lords. "We are in a desperate plight as regards global warming and climate change. The planet is going to the buffers very much sooner than people realise," the Bishop said.

He strongly supported the "Contraction and Convergence" (C&C) approach to cutting emissions of greenhouse gas. This meets US concerns, "and is supported by China, India, France, Belgium, Sweden, the European Parliament, the Non-aligned Group, and South Africa", he said. "I hope the Anglican Communion will formally endorse C & C in Hong Kong."

A grim picture of the present state of world agriculture and rural poverty emerged in presentations to sessions on food-security and water. Peter Mann, a former Benedictine monk and a director of World Hunger Year, said that the world needed to make a transition from "the agribusiness-dominated 'industrial agriculture', which is destroying soil quality, and rural livelihoods".

The co-ordinator of the emerging Anglican Environment Network, Canon Eric Beresford, a geneticist, said that, though it was suggested that genetically modified (GM) crops might feed the world, their yields were 15-20 per cent below those of non-GM crops. The earth's produce and species must not be patented for corporate profit, he said.

The 50 participants from 20 Churches had gathered on Monday at the Good Shepherd Roman Catholic Retreat Centre, a hillside collection of small African thatched buildings set in gardens, with a panoramic view of the Hartebeespoort dam and the Magaliesberg mountains, near Pretoria. The daily eucharists were held in a mixture of English and one of South Africa's nine native languages.

Calls to prayer and action

The World Bank on Wednesday urged a more global approach to development. In its World Development Report, it urged rich nations to stop spending $1 billion a day on agricultural subsidies, to accelerate the transfer of new technologies, and to provide more aid, particularly to sub-Saharan Afria. This would help the poorest in the world boost their incomes.

New alliances were needed, at national and global levels, to address these issues, the World Bank said. Governments must act now to avert a growing risk of damage to the environment.

Four Christian environmental organisations have joined in urging Christians to support the Summit with prayer. There are briefings, for those interested, at www.churchesearthsummit.org.uk, and also a "Creation Care" prayer that they hope churches will use in services on Sunday, which is the eve of the Summit.

AUGUST

Open Democracy
Meyer corrects Müller on C&C

Benito Müller :

> "As for the issue of an equitable distribution of (global) emission targets, there have been, as you know, numerous proposals.
>
> One of the best known is the 'contraction and convergence' model suggested by the Global Commons Institute."

Open Democracy :

"This is based on the idea that, ultimately, everyone in the world has an equal right, as it were, to emit greenhouse gases; and that the expression of this right must be limited, so that the aggregate amount of emissions is safe for the global climate . . . . "

Benito Müller :

"In my view, the main drawback with 'contraction and convergence' is that it starts out with a 'grandfathering' allocation – essentially a uniform percentage target across the board – and only moves towards presumably the fair per capita solution over time.

Depending on the speed of the convergence and the contraction, it is thus not only likely to impose initial reduction targets on even the least developed countries, but it deprives them of their legitimate surplus permits at the time when they need these most in their quest to reach a path of sustainable development – namely now.

In contrast, I think it would be feasible, affordable, fair and sensible to give everyone in the world an equal per capita allocation now. Each person would also have the right to trade emissions so that the poor low emitters could benefit from this legitimate asset . . . . . "

Aubrey Meyer:

"In fact, the C&C model remains possibly the only calculating device put forward so far that not only embraces exactly what Benito is arguing for, but which is capable of calculating in full the necessary international accounting figures.

It is not accurate to say that C&C "starts out with a 'grand-fathering' allocation, essentially a uniform percentage target across the board".

From day one, C&C removes grandfather rights at a rate that is determined by the disparate initial per capita emissions levels internationally, in favour of equal rights by an agreed date.

However, this process would apply the principles of C&C at rates that have been negotiated by the parties themselves, rather than those pre-determined and handed down by experts and observers.

If the international community commands an immediate convergence within a staged contraction, the model will calculate it.

It is not GCI's role to decree the content of decisions that can only be reached by negotiation, but it is our role to point out their detailed consequences in the light of the C&C model."

www.opendemocracy.net/forum/document_details.asp?CatID=99&DocID=1638&DebateID=177

www.opendemocracy.net/forum/Message_Details.asp?StrandID=83&DebateID=177&CatID=99&M=1308&T=1308&F=177

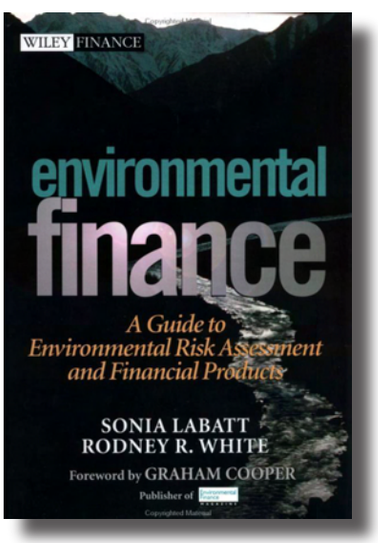
2002

GCI
Wilton Park Slide Show

With Notes

www.gci.org.uk/slideshow/C&CSlideshow.ppt

SEPTEMBER



Labatt & White
Environmental Finance

Publisher: John Wiley & Sons. ISBN: 0471123625

[Page 210]

Developing, or poorer countries are Annex One are not signatories to the Kyoto Protocol and therefore have been placed under no obligation to reduce their emissions. Their sole obligation, at this time, is to measure those emissions. This lack of commitment has been criticized by the governments of the United States and offered as a reason for its withdrawal from the negotiations. For the obvious reasons stated earlier, at some point there must be a commitment from every country, poor as well as rich. The question revolves around the timing and the distribution of responsibilities for reducing emissions.

One such proposal is know as "Contraction and Convergence" (Global Commons Institute 1999; Meyer and Cooper 2000). It is based on the principle of equal per capita rights to use of the atmosphere as a sink for greenhouse gas emissions. As with all other approaches, there would be a need for capping of emissions and the steady reduction of this cap, hence "contraction". Eventually everyone will be accorded the same right either to use or to sell, hence "convergence".

SEPTEMBER

Architects & Engineers for Social Responsibility
Response to: PIU Energy Review

The UK should take a leading role in reducing greenhouse gas emissions. We believe that Contraction and Convergence (where over a period of time, all countries emissions quotas per capita converge within a global total that reduces to a value that should avoid catastrophic climate change) could form an equitable basis for such a framework. It has been inferred from the IPCC reports that a global reduction of ~60% in greenhouse gas emissions is needed to stabilise emissions at a level which will limit the risk of catastrophic climate change. Because the UK, along with most other industrialised countries, produces significantly greater emissions per capita than the world average, on a basis of equity of per capita emissions between countries, the UK would require even deeper reductions in the long term, unless it buys emissions credits through emissions trading.

In negotiations within the UNFCCC the UK should press for a framework of Contraction and Convergence to come into effect after the Kyoto first commitment period, within which international emissions trading could be beneficial to countries at different stages of development.

SEPTEMBER

Ethics Science Politics
The challenges of energy

A Response to Sir Mark Moody-Stewart by John Houghton

" . . . . A feature of the Contraction and Convergence proposal is that, because of its comparative simplicity, it can concentrate the minds of decision makers on the scale of the problem and its challenge."
http://www.int-res.com/articles/esep/2002/E15.pdf

SEPTEMBER

Dept. Physical Resource Theory
Göteborg University, Sweden

"An allocation approach based on contraction and convergence is suggested in the Paper. The allowances are assumed to follow a linear trend from their present per capita level for industrial regions and the per capita emission by 2012 for developing regions towards an equal per capita allocation by 2050. The per capita emission allowances are then assumed to follow the per capita emission profile towards the stabilization target."

SEPTEMBER

New Economy
Towards a global new deal?

from the Institute for Public Policy Research (IPPR)

" . . . . perhaps the single most useful action that negotiators could take at WSSD would be to acknowledge explicitly the need for this logic to be applied to the most pressing environmental challenge of all: climate change. The London-based Global Commons Institute, which originated the concept of Contraction & Convergence, has assembled a wide coalition of support for applying the proposal to the area of climate change, which would involve defining a safe upper limit for greenhouse gas concentrations in the atmosphere (which would by definition require all countries to accept emissions targets), and a date by which national emission entitlements would reach per capita equality."

SEPTEMBER

World Bank
Development Report for WSSD

The Bank's annual World Development Report (WDR) for 2003 published for WSSD.

The WDR 1992 was published in time for the Rio Summit. In this the bank said "grandfathering" emissions rights was "the most feasible option".

In the current report they say . . .

"How can emissions reductions—beyond those that pay for themselves—be financed? This remains the most contentious issue in climate change mitigation. In carbon markets, for instance, the allocation of emission allowances determines who pays for reductions.

In the view of many, equal per capita allocation of allowances across the world—perhaps entailing transfers from rich emitters to poor countries—would constitute an equitable allocation. But such an allocation rule, if imposed abruptly, might disrupt the rich emitters' economies and thus would not secure their participation in the scheme. On the other hand, a strong link between past emissions and current allowances, applied globally, would hurt the development prospects of poor nations and thus be unacceptable.

Hybrid allocation schemes that blend per capita and "grandfathered" allocations and shift toward the former over time have been proposed as a compromise."

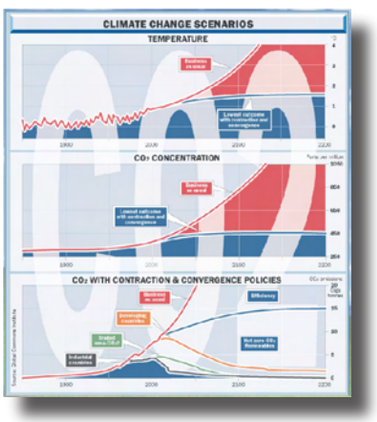
SEPTEMBER 3

Times

Capitalism best way to save the planet

Economic View by Anatole Kaletsky

THE Johannesburg summit on sustainable development has been widely ridiculed for emitting more hot air than a coal-fired power station. Tony Blair's African speeches have certainly left us no wiser about his personal plan to save the world. Yet behind all the empty rhetoric, the cynical photo-opportunities and the bureaucratic self-indulgence, some enormously important issues have been opened up for discussion in the past two weeks.



In saying this, I do not mean to contribute to the hysteria about mankind's survival and the threat posed by global warming to life on earth. Still less do I believe that "Africa is a scar on the conscience of our world and the world has a duty to heal it", to quote Mr Blair.

Global warming may well be a serious threat to human welfare. The poverty, disease and barbarism rampant in much of Africa is certainly an indictment of the way that almost all African countries have been run in the colonial era and the post-colonial decades. But the outside world has neither the moral authority nor the will to stop Africans committing mass suicide through Aids. The true scale of climate change and its effect on mankind's future, will be unclear for many decades, probably until most of us are dead.

Both as an economist and a human being I have always believed in focusing on the present and the immediate future, leaving the long-term to look after itself. The reason for doing this is not a contempt for future generations, but quite the contrary. Any attempt to look many decades ahead and then to inflict our flawed ideas on future generations, is an exercise in overweening arrogance.

Moreover, the experience of the past two centuries suggests that the generations of the future will be infinitely cleverer than we are. They will devise solutions to their problems with an ingenuity that we cannot begin to imagine today. It is not just lazy and selfish to leave the solution of many long-term problems to future generations; it is rational. It is right to delay difficult decisions as long as possible in the hope that "something will turn up" and only to make painful choices at the eleventh hour.

Having laid out this sceptical credo, let me jump straight to my personal conclusions from Johannesburg. The homilies on aid, disease and sanitation will be of little value until we see dramatic political changes in the poor countries themselves. The fact is that competent and honest economic management, plus the avoidance of wars, are infinitely more important conditions

for development than any conceivable inflow of external aid. But turning from the pieties on poverty to the environmental negotiations which were the summit's real issue, Johannesburg could go down in history as one of the major events of the early 21st century, eclipsing even September 11.

Firstly, the summit has made progress on such urgent environmental issues as fish stocks, deforestation and water supplies. The damage to human welfare from overfishing, uncontrolled logging and water pollution has gone so far and has become so palpable that these problems easily pass the eleventh-hour test suggested above. Secondly, and even more importantly, the summit has brought climate change to the centre of attention. It could mark the start of a period of much more intensive government intervention and business activity on carbon emissions and energy policy, at least outside the US.

Despite my general scepticism about long-term planning, I think such action could be beneficial, not only to our children's environmental future, but also to our own prosperity and safety and even to global economic growth.

The idea that trying to control the human contribution to climate change could be an economic opportunity, and not just a sacrifice, has long been the missing element in the global warming debate. The fact is that a concerted global campaign against climate change could present opportunities of at least three kinds.

The first benefit would be scientific and technological progress, as moribund industries such as carmaking and energy extraction were given incentives to move to the cutting edge of technological progress. Government subsidies for energy research could have far more productive spin-offs than defence and space programmes. It has always struck me that car manufacturers and oil companies reveal extraordinary managerial incompetence when they oppose government regulations to reduce emissions, increase fuel economy and develop new zero-emission engines. These companies are at present stuck in commodity businesses with ever-dwindling profit margins, few competitive advantages and a dinosaur image among investors, leading to extremely low stock market valuations. They would be far better off emulating computer companies and competing in the development of new technology. Government regulations to reduce emissions would help them to limit competition, thereby increasing, rather than stunting, their profits.

The second benefit would be geopolitical stabilisation, as fundamentalist Islamic countries such as Saudi Arabia and Iran lost their grip on the world's jugular through the oil price.

The third benefit would be greater trade integration and the possibility of a moderate redistribution of income from rich countries to poor.

To see why this might be so, consider the ambitious target for reducing carbon emissions suggested two years ago by Britain's Royal Commission on Environmental Pollution. Its proposal was to reduce emissions by 60 per cent by 2050, possibly through an international agreement called Contraction and Convergence, which has been much discussed in Johannesburg. This would give every country a quota for carbon emissions, based on its population and would allow countries to trade these emission rights. This would gradually reduce worldwide carbon emission and encourage the development of more efficient technologies. In the meantime, it would ensure a flow of funds from rich countries to poor ones, which, because of their lower levels of car ownership and industrialisation, would have surplus emission rights.

This Contraction and Convergence concept, illustrated in the charts above from the website of the Global Commons Institute, is only one of many market-based proposals designed to create incentives for big emissions cuts without unduly disrupting global economic growth.

Yet politicians, business lobbies and anti-growth environmentalists have all, for their own reasons, emphasised the economic sacrifices required to control climate change. We hear constantly of the limits to growth implied by energy conservation and the mind-boggling trillions of dollars that will have to be sacrificed either to reduce global warming or to cope with its destruction.

Yet all these horrific figures are meaningless unless presented in context. For example, Mr Blair noted in Africa that the Kyoto protocol would only reduce greenhouse emissions by 1 per cent, whereas the British Government believes that a 60 per cent reduction is needed. Given that President Bush has put the cost of meeting the Kyoto targets at several hundred billion dollars, a price he regards as unacceptable, what hope could there possibly be of making any worthwhile progress? But what Mr Blair has failed to point out in his messianic fervour, is that the ambitious 60 per cent target is only due to be achieved by 2050. The magic of compound interest could make this quite feasible without any undue economic sacrifice. According to the authoritative report published in February this year by the DTI's inter-departmental analysts group for Britain to meet the 60 per cent target would require a reduction of 4.3 per cent a year in the intensity of carbon emissions, assuming GDP growth continued at its long-term trend rate of 2.25 per cent.

This would be only slightly higher than the historic trend of carbon intensity reduction, which has been running at 3 per cent a year since 1970. Using a slightly different methodology, the same report concludes that the cost of reducing carbon emissions by 60 per cent in 2050 and then stabilising them from that point onwards would be equivalent to between 0.2 per cent and 1.5 per cent of GDP.

Even in the absence of firm evidence on the precise scale or effects of global warming, this would be a very small price to pay for the potential benefits of reducing air pollution, not to mention the political and technological breakthroughs mentioned above.

In Johannesburg, the concept that global action on climate change could be an economically beneficial exercise, instead of an immense sacrifice began to make an appearance.

This was partly because many environmental organisations started to engage in a more constructive economic dialogue with businesses and governments instead of trying to turn the global warming issue into a weapon in a global war against capitalism and modern science.

Modern science and market economics, far from being the enemy of the environment, are by far the most powerful mechanisms ever developed for achieving human objectives. If the world needs to be saved, they are by far the best tools available to mankind. It is time to put them to good use.

OCTOBER

The German Advisory Council
World in Transition 2

Raising and Allocating Funds for Global Environmental Policy
E 3.2.3.1

"The Earth's atmosphere may be understood as a global common resource. As global warming shows, the global community is jointly affected by impacts upon the atmosphere. Increasing scarcity raises questions concerning how to manage this scarce resource efficiently and how to finance the necessary measures to reduce emissions.
A starting point is to define rights of use with regard to the Earth's atmosphere. This is the hotly debated granting of emissions rights in climate policy.

In the first instance, the Conference of the Parties (COP) must define and allocate emissions rights.
Here, the key political problem with emissions rights trading is the initial allocation of emissions rights.

If allocation were based on a country's emissions per head of population, then all developing countries would remain sellers in this market in the long term, with the result that there would be a significant north south transfer of funds.
If, on the other hand, emissions rights were allocated on the basis of existing emissions ('grandfathering'), industrialized countries would be able to profit from their already considerable emissions level."

OCTOBER 7

UNEP-FI CEO Briefing
Climate Risk to the Global Economy

Published for Swiss Re Climate Conference in Zurich: -
"Policy-makers should reach consensus on a global framework for climate stability based on precaution and equity.
A number of approaches have been proposed, including the: -

(1) 'historical' method [1], under which a nation's future emissions goals would be determined by its past GHG output;

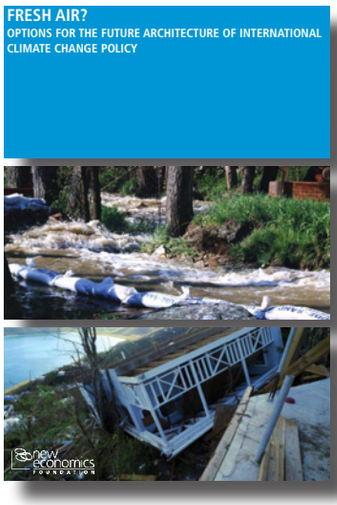
(2) carbon-intensity approach [2], in which future emissions goals would be indexed to GDP; and

(3) "Contraction and Convergence" [3] which would aim to achieve equal per capita emissions for all nations by an agreed date." [1] - "The 'historical' approach (sometimes called the 'Brazilian Proposal'), which holds that on the basis of equity, each country's responsibilities are proportional to the emissions it has Accumulated in the atmosphere since industrialization began. Initially only the long-term emitters i.e. Annex 1 (developed) countries formally accept emissions controls. The proposal replaces full international emissions trading with a Clean Development Mechanism, which enables less developed countries to barter emission credits to the value of clean technology provided. The Kyoto Protocol is closest to this approach, but it features the use of emissions trading along with other market mechanisms.

[2] - The "carbon-intensity" approach, that - on the basis of cost-effectiveness - disregards the past and advocates future voluntary emissions targets indexed to the GDP in each country. Under this approach, for the foreseeable future all countries voluntarily accept the need to limit the growth of their GHG emissions per unit of national economic output (via reduced fossil fuel dependency and greater energy efficiency) while pursuing economic development. This essentially waives the equity argument in favour of efficiency, but it does not guarantee contraction to safe emission concentrations

[3] - "Contraction and Convergence" (C&C) which on the basis of precaution advocates the adoption of a "safe" steady-state level for GHG concentrations in the atmosphere. The approach demands that global emissions will contract progressively through a budgeting process to deliver the predetermined "safe" level of GHG Concentrations. On the basis of equity, these emission budgets will be distributed so that entitlements converge from today's very different national levels to a figure that is equal per capita for all nations by an agreed date. To satisfy the aim of cost-effectiveness, surpluses or deficits in emissions entitlements would be internationally tradable, ideally redeemable for clean technology."
http://www.unepfi.net/cc/ceobriefing_ccwg_unepfi.pdf

OCTOBER 28



New Economics Foundation
Fresh Air - Evaluating Climate Policy Options

Written by Alex Evans of the Institute for Public Policy Research.
Conclusion - Why delay is not an option

The decision to undertake Contraction and Convergence will require a level of political resolve which hasn't been seen so far in multi-lateral environmental negotiations. Many will argue that while international policy will in the end need to rest on the principles of Contraction and Convergence, a climate policy like that is unrealistic in the short-term. Would it not be better to opt for an evolutionary approach in the meantime, perhaps along Kyoto lines? Even if such proposals are not the definitive answer to climate change, aren't they at least a step in the right direction?

But this 'softly softly' approach is increasingly untenable. First, atmospheric concentrations of greenhouse gases are rising inexorably, and so is the damage caused by climate change. The longer a fixed target is delayed, the higher atmospheric concentrations will climb. There is therefore a high risk that carrying on prevaricating will rule out any possibility of stabilising concentrations at 450 or even 550ppmv.

Second, positive feedbacks in the climate system could start any time, with the potential for a catastrophe 'runaway greenhouse effect' scenario.

Third, we don't know what atmospheric concentration these positive feedbacks will start at. Despite the fact that scientists' understanding of these dynamics is improving all the time, we are still essentially working without a clock, and no-one knows how much time we have left.

The political need for urgency

Environmental drivers are not the only reason why delay is no longer an option. There is also a strong political basis for proceeding with Non-Annex I participation on the terms outlined above sooner rather than later, and for distrusting evolutionary approaches.

. . . . it is often argued that developed countries should take a lead in combating climate change, to be joined in due course by developing countries accepting quantified targets. But, whilst many G77 countries may be happy enough with such an approach for now, the ever increasing risk of catastrophic

climatic events means that they have to take part sooner or later.

Despite all of the uncertainties about climate science, there is every chance that the projections will become worse as the decades go by. As time goes by, it will probably become necessary to make faster and deeper reductions. In other words, the downward slope of the contraction curve will become steeper – and the size of the global carbon budget diminish – just when participation by developing countries in quantified commitments would be most urgent.

In this scenario, therefore, the diminished carbon budget would mean that developing countries would have far lower entitlements – even under an immediate convergence scenario – than they would have done had they been allocated quantified commitments at an earlier stage.

> A climate policy based from the outset on a constitutional framework for formal convergence would provide the additional benefit of offering developing countries a surplus that could be sold on the international emissions market. In a late participation scenario, on the other hand, the smaller carbon budget would mean that any surplus for developing countries would be far lower – if indeed there was one at all.

The reaction of developing countries to such a situation would be fairly predictable. The surplus emissions they could have owned and sold had, in effect, been used up by Annex I countries, without any payment. Developing countries might reasonably feel that Annex I countries were doing precisely what they had said throughout the climate process that they would not do – 'pulling the ladder up after them'.

The irony of such a scenario would be painful. By persevering with a strategy geared towards making sure developing countries take part, the climate process would have lost any chance of 'taking the lead' after all.

This is the central reason why we have to implement both a managed contraction curve, aimed from its inception at a specific CO2 concentration in the atmosphere, and a convergence date within this that is capable of being accelerated. The alternative means waiting until feedback kicks in and then having to make sudden, sharp adjustments in the overall emissions profile and dealing with the distributional chaos that would result.

The world has no time to waste on short-term palliatives offered for purposes of political expediency. As the EU Commissioner for the Environment, Margot Wallstrom, said before this year's Bonn talks: "We can negotiate with each other, but we cannot negotiate with the weather." The people

of Tuvalu know this truth better than most. Whether the rest of humanity realises it early enough is ultimately a simple matter of choice."

www.gci.org.uk/consolidation/freshair.pdf

OCTOBER

Positive News UK
C&C - AMEN to Climate Change

For the last twelve years scientific reports have demonstrated that human pollution has begun to change global climate. Carbon emissions from fossil fuel burning are accumulating in the atmosphere and trapping more of the sun's heat. As the climate becomes less stable what the insurance industry calls 'Great Weather Disasters' are causing more damages through floods, storms, droughts and crop failures. Coastal areas are being lost and small islands are disappearing in the rising seas.

Twelve years ago, I interrupted a musical career to co-found the tiny organisation GCI (Global Commons Institute) based in London to undertake a mission to avert these devastating trends. By 1992 the UN Climate Convention had been created on principles GCI - and others - believed were fundamental: - precaution and equity. For the next three years GCI struggled against mainstream economists at the UN whose cost/benefit analysis of prospects under climate change tried to subdue these principles in favour of profits and pollution - on slippery slopes called 'no-regrets' and 'efficiency'. Many people will die because of climate disasters and we sank the cost/benefit exercise not least by exposing its daft global dictum that fifteen dead poor people equalled one dead rich person. Planetary Connections - the predecessor of 'Positive News' - published a cartoon to celebrate this saying, "Triumph for GCI – climate economists told to try again." We didn't give up. We kept on with our main climate mission, which was to synthesize the principles of precaution and equity into a fully international framework for policies and practices to avert the devastating climate trends.

In June 1996 GCI launched the first images of this synthesis at the UN. The programme was called "Contraction and Convergence" (C&C).

In a nutshell C&C simply shows the fossil fuel consumption or emissions for all countries into the future. As the very much-simplified graphic above shows the global total of emissions is shrinking - contraction - by an amount that stops the rise of their atmospheric concentration. At the same time the international sharing of this goes from the present distribution that is proportional to income to a future distribution that has become proportional to population - convergence - after an

agreed date. This has the virtues of equity, logic and simplicity. This value of this in a negotiation that has been marred by intense inequity and discord is immense.

> C&C is like a perfect cadence in music. While the notation of C&C is little more elaborate. In principle it is as simple as singing Amen.

As the dangers of climate change become ever more apparent, the insurance industry has revealed that the rate at which damages are occurring is considerably faster than the rate of growth in the economy. Consequently, governments and policy makers begin to accept C&C as the sensible way ahead in the negotiations. It provides a simple way of synthesizing precaution and equity into a science-guided political agreement. Once the tradability of the international shares that are created by C&C is added, an economics of avoiding climate damages becomes possible guided by a shared sense of what is safe and how the asymmetric conditions that are changing the climate can be resolved.

C&C is now attracting numerous supporters from all over the world from individuals and institutions both eminent and ordinary. The government here are poised to accept the recommendation of the Royal Commission on Environmental Pollution to champion C&C at the UN. This would sit nicely with the rest of the degrees of enthusiasm for the concept. The UK Environment Minister Michael Meacher: - "C&C is a very powerful idea and we are moving remorselessly towards it." All this reflects the growing realisation that

> the "Contraction and Convergence" process is intrinsic to any emissions scenario that stabilises the rising concentrations of greenhouse gases in the atmosphere. The only questions are will it come about by chance or by formally building it into an international framework.

GCI believes that to start as soon as possible with this contraction of ghg emissions and the logical consequence of international convergence is prudent behaviour. In reality it is as simple as saying, "Amen to climate change." And as someone never said, "all life aspires to the condition of music."

Ed Mayo
New Economics Foundation

new economics FOUNDATION

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Aubrey Meyer
Director
Global Commons Institute (GCI)
37 Ravenswood Road
London
E17 9LY

Monday 7 October 2002

Dear Aubrey,

This letter acts as a formal confirmation that the New Economics Foundation regards the Global Commons Institute as the originator and intellectual author of the idea of 'contraction and convergence'.

I can also confirm that we aim to acknowledge fully the contribution of the Global Commons Institute, and your own entrepreneurship in this regard, in our related work. With your permission, and with attribution, we would like to continue using the range of graphics necessary to explain contraction and convergence.

It is not simply that we respect the innovation you have made. We regard it as no less than the logical starting point for any sustainable future. We value the past and I hope future collaboration GCI and NEF can have, as we develop and innovate in terms of building the case and constituency of support for contraction and convergence.

With best wishes,
yours sincerely

Ed Mayo
Executive Director

OCTOBER

Financial Times

Looking beyond Kyoto

Vanessa Houlder

The United Nations is on the brink of achieving a cherished ambition. Despite its near-fatal rejection by the US, the Kyoto Protocol on climate change is likely to come into force within months.

The protocol has been described by one government as, "probably the most comprehensive and difficult agreement in world history." But policymakers are now beginning to debate the design of what could be an even more comprehensive and difficult agreement: a successor to the Kyoto Protocol that could embrace the US and developing countries.

The impact of implementation

Achieving the protocol's targets for greenhouse emission cuts is likely to spark controversy by requiring countries to transfer billions of dollars to the former Soviet Union.

Formal negotiations are due to begin in three years' time to decide what will happen in the post-Kyoto period after 2012. But already, a number of radical proposals with far-reaching economic and political implications are being discussed within governments. Substantial reports on the issue by organisations such as the International Energy Agency, the New Economics Foundation and the World Resources Institute have been published in recent weeks.*

It is a formidable challenge: a new agreement needs to avoid causing economic disruption and allow developing countries to rise out of poverty, while promising sharp, long-term reductions in the greenhouse gases that are a ubiquitous by-product of industrialised societies. Those cuts could be as much as 60 times deeper than those likely to be achieved under Kyoto, according to a recent speech by Tony Blair, UK prime minister. Mr Blair lamented the fact that Kyoto, while not radical enough, "is at present the most that is politically doable". Getting 185 countries to agree on a fair way to share the burden of curbing climate change is a political minefield, especially as the worst impacts of climate change are expected to affect future generations, rather than today's voters.

The magnitude of the task has provoked demands that new strategies be considered. "The fact is that alternative approaches have not had a serious hearing among natural scientists or among policymakers," says William Nordhaus, a Yale University professor.**

Prof Nordhaus proposes a globally harmonised carbon tax as an alternative approach. Another radical option under discussion is a technology-based successor to the Kyoto Protocol, in which

countries would contribute to a collaborative R&D effort. Yet another mooted approach would shift the short-term emphasis away from carbon dioxide towards other global warming culprits such as soot and methane, which might yield faster results.

But most of the designs for a post-Kyoto agreement involve amending rather than replacing its framework. Many of Kyoto's sternest critics applaud some aspects of its framework, such as its use of "emissions trading", which allows emission cuts to take place where they cost the least, and the so-called clean development mechanism, which promotes "green" investments in developing countries.

However, a radical overhaul of the Kyoto framework may be needed if it is to succeed in its next phase. "The challenge is to find a formulation that builds on Kyoto but is sufficiently different to get the major players into it," says Eileen Claussen, president of the Pew Centre on Climate Change, a US non-profit organisation. "You have to rethink all the parts of it."

A new agreement might not involve Kyoto-style quantified, absolute targets for reducing greenhouse gas emissions. It could, for example, use the "emissions intensity" approach adopted by the US, which would limit greenhouse gas emissions per unit of output. A more promising approach might involve setting tough, quantified targets subject to a "safety valve" that would prevent them from becoming excessively costly to implement.

Perhaps the single most difficult challenge is to design a framework that could prove acceptable to both the US and developing countries. Even the strongest advocates of the Kyoto Protocol acknowledge that it is an inadequate basis for future agreements unless more countries are drawn in. Less than 35 per cent of the world's global emissions are controlled by the protocol.

This issue will be enormously difficult to resolve. Limiting the emissions of developing countries, which by 2030 will replace the industrialised world as the largest group of energy consumers, is widely seen as crucial and may be a condition for US involvement. Yet poor countries are adamant that they will not take on commitments until the industrialised world, most notably the US, has shown leadership by cutting emissions.

Will the US return to the negotiating table? Some experts believe that now it has shrugged off the onerous obligations of the Kyoto Protocol, it may well re-engage in an international agreement later this decade. "The door is completely open for the US in the second budget period to shape a protocol that it could call its own," says Philip Clapp, president of the National Environment Trust, a US environmental organisation.

If the US participated in the agreement, developing countries might agree a timetable by which they would become involved, possibly dependent on their stage of development and possibly not involving quantitative commitments.

New Delhi conference

India on Wednesday highlighted the growing tension between rich and poor countries over climate change when it criticised calls for developing countries to curb greenhouse gas emissions.

But many developing countries - particularly India - fundamentally object to any agreement that lacks a reference to long-term emissions entitlements. As they bear little responsibility for the global warming problem, they believe it would be deeply unfair to accept emissions limits that are many times less than those of developed countries.

The developing countries have put forward radical proposals to redress the balance. Brazil has argued that the burden of emissions reductions should be distributed according to countries' cumulative contribution to the rise in global temperature from 1840 onwards. This formula would give the UK - the birthplace of the industrial revolution - the toughest target; the US target would be relatively light.

> Another idea, which was forcefully promoted during the 1997 Kyoto negotiations by India, China and African countries, would require the right to emit greenhouse gases to be allocated equally to every world citizen

-or at least offer the prospect that these rights would be allocated equally at some point in the future.

This proposal, dubbed "Contraction and Convergence", would involve sharing out each year's ration of a global emissions budget so that every country converges on the same allocation per inhabitant by an agreed date. An international trading scheme would allow countries to buy and sell unused allocations from other countries.

This concept, which has been developed and promoted by the London-based Global Commons Institute, has won widespread support. In 2000, it was endorsed by Jacques Chirac, president of France, who declared that it would "durably ensure the effectiveness, equity and solidarity of our efforts".

But there are potential drawbacks. One concern is that it would be unfair. Different countries have different needs: people in cold countries need more energy to keep warm, while those in sparsely populated countries need more energy for transport.

Limiting the emissions of developing countries is widely seen as crucial and may be a condition for US involvement. Yet poor countries are adamant that they will not take on commitments until the industrialised world, most notably the US, has shown leadership by cutting emissions.

Another concern is that it would give a large share of emissions permits to a very small number of countries - those with the largest populations - which could potentially collude to maintain an artificially high price.

The system might also encourage corruption. "It would probably become common practice for dictators and corrupt administrators to sell part of their permits, pocket the proceeds, and enjoy first-growths and song along the Riviera," says Prof Nordhaus.

Another more fundamental drawback of using a formula of this sort is that it would be resisted by many countries, particularly those required to make rapid, dramatic cuts in emissions.

An unwanted agreement could not be enforced. Countries that opted out of the agreement would suffer few penalties, although consumer boycotts, exclusion from international events such as the Olympic Games and, possibly, trade sanctions might be considered.

If a formula such as Contraction and Convergence is rejected, the next climate agreement is likely to be negotiated in the same way as the Kyoto Protocol, an ad-hoc political process involving hard-bargaining and little transparency.

There is a potential advantage in allowing countries to negotiate targets that they believe are credible. People are more likely to believe that credible commitments will be enforced, giving them more incentive to innovate and change their behaviour.

But by focusing on drawing up a politically acceptable agreement, there is a clear risk of not doing enough. This risk is hard to quantify in the absence of a scientific consensus about what constitutes a dangerous level of warming.

The option of preventing dangerous climate change may close more quickly than often assumed. Even delaying reductions by industrialised countries beyond 2010 may make it impossible to prevent the long-term disintegration of the West Antarctic Ice Sheet and sea level rises of 4 to 6 metres, according to a recent paper in the journal Science.***

Despite the uncertainties about the long-term goal of climate change policy, there is widespread agreement that the Kyoto Protocol is just the first step on a long road. This means that the best test of the efficacy of the agreement is "whether the next steps can be negotiated and if negotiated, can be met," according to the International Energy Agency.

The task of bringing together all the countries required to stabilise greenhouse gas concentrations is urgent. "The longer the US, other industrialised nations and the developing world head down different policy tracks, the harder the necessary participation and co-ordination will be to achieve, says Richard Schmalensee of the MIT Sloan School of Management.****

There is a risk that the controversies and challenges arising from implementing the Kyoto targets will distract attention from the bigger picture. Unless governments turn their attention to the task ahead, the ratification of the Kyoto Protocol could prove a Pyrrhic victory.

* Beyond Kyoto, Energy Dynamics and Climate Stabilisation, by the International Energy Agency; Options for the future architecture of international climate change policy, by the New Economics Foundation; Building on the Kyoto Protocol: Options for protecting the climate, by the World Resources Institute

** After Kyoto: Alternative mechanisms to control global warming, by William Nordhaus, Yale University

*** Dangerous climate impacts and the Kyoto Protocol. Science, vol 296. 14 June 2002

**** The lessons of Kyoto. R Schmalensee, Sloan Management Review. Winter 2002

NOVEMBER

Guardian
A chain reaction

For 30 years Mayer Hillman has been busily turning conventional political thinking on its head. From road safety to renewable energy, he has come up with solutions that are hard to dismiss. Which is probably why you've never heard of him

Anne Karpf

Clip this article. Photocopy it, send it to a friend, file it. In 10 years' time, if the person it's about is right (and doubt doesn't figure in his lexicon), you'll be amazed that the views it expresses ever seemed outlandish or unfeasible. What sounds now like wild ecotopian fantasy will have turned into an unexceptionable statute governing daily life.

.....

Linking all these diverse preoccupations is what Hillman calls "the equity argument". As fellow researcher and activist Stephen Plowden put it, "You have always been interested in the fate of people left behind by 'progress'." Hillman expresses it succinctly: "I abhor exploitation" - a feeling that originated, he readily admits, in being the youngest of three children and the sense that he was being denied his turn.

His current preoccupation is with the social implications of climate change, and here Hillman's conclusions are so dramatic, so jumbo in their tentacles, that they'll probably propel him into prominence. His trigger is the Contraction And Convergence campaign devised by Aubrey Meyer, founder director of the independent Global Commons Institute (GCI). This has charted the vast reduction of carbon emissions required of the western world (that's the contraction bit) in order to equalise it with the rest of the world (the convergence) to avert climate catastrophe and protect the global commons - a process nothing less than "equity for survival". Their calculations make Kyoto look like trying to end a drought with a watering can.

GCI believes that Contraction And Convergence is the only way of resolving the most critical problem that mankind has had to face, and political representatives of both developed and developing countries are reluctantly coming to the same stark realisation.

According to Hillman, our carbon emissions will need to be cut by 10% each and every year for a 25-year period to bring convergence between rich and poor nations. Hillman believes that no sector will feel the impact more than transport. This is how it would work.

Each of us will be allocated an annual fuel allowance, and every time you buy a product or service with a significant energy component - whether paying a gas bill or buying an airline ticket - it will be deducted from your annual account.

There will be trading, of course. If you're clever or frugal, you'll be able sell your surplus fuel coupons on the open market to those willing to buy them. And there'll be takers, since a return flight from London to Florida will consume double the annual fossil fuel ration that each person presently living on the planet can be allowed. Says Hillman, a delightful blend of the libertarian and the interventionist, "You want to fly to America? Fly to America, but you'll be bloody cold for the next couple of years because you'll have run out of coupons."

He's hardly finished talking before I'm in with the objections. How will it ever be implemented? His vision is surely absurdly voluntaristic, as if rich countries and greedy transnationals will simply relinquish their advantages in a grand altruistic gesture for the abstract good of the planet. Where's the politics? Where's the realism? Who will police it on the personal, corporate and international level?

Hillman is undaunted. "I call this carbon rationing because I deliberately want those connotations. When there was a shortage of food in this country during the last war, people didn't say, 'The poor will just have to starve' - it was agreed that the only fair solution was to share it. I'm totally convinced that the same thing will be introduced with fuel over the next 10 years. Increasingly, we'll witness calamitous events, like

when the city of York flooded. If it happens once, people think it's a freak event, but when it happens twice or three times, people will begin to sit up. Already in some southern states of the US, people are finding it difficult to insure themselves against hurricanes."

Hillman professes himself confident that the US will eventually sign Kyoto because September 11 signalled a realisation that the rest of the world impacts upon them. He makes an analogy with apartheid and South Africa refusing to heed international protests until world pressure became irresistible.

"People say technology will solve the problem, for instance, by making more efficient use of fuel, and I say no - if you don't reduce demand first, then by making it more efficient you'll increase demand for it. If you get more miles from the gallon, then you're lowering the cost of travel and effectively promoting it. You've got to reduce demand before you go down the efficiency and renewable energy route, and you reduce demand by rationing. At the start of the war, you didn't have the Tories saying we have to go to war against fascism, and the Labour party saying elect us, we won't go to war against fascism. There was a recognition that there was a joint enemy."

The implications are colossal. Cycling would come into its own. Hillman predicts that the day will come when people in the street will feel sorry for someone passing in a car: it will be a sign of an emergency requiring them to use up a precious part of their annual carbon quota. Bye-bye globalisation and supermarkets (not only couldn't we drive to them regularly, we also couldn't afford foods or other globally traded products that had themselves travelled so far), hello again corner shops and local produce. This is socialism via environmentalism. Will the planet turn out to have been our greatest revolutionary?

"We have no moral right to leave a legacy of damage to the planet. Our children and grandchildren will ask us what we did to prevent global catastrophe." Hillman knows that he'll be accused of exaggerating the risks but maintains, "Governments already realise that they have to deliver their share of reduction. It's a finite amount that the planet can absorb, so you have to set that as your limit, then work out how to get there. Your instinct will be to find fault with these statements.

If you don't think these solutions will work, there's an obligation on you to think up a better one. So often, ideas are rejected on the grounds that they are not perfect in all respects, in favour of the status quo, which is far more imperfect."

As with many crusaders, Hillman's impatience - "I'm increasingly frustrated as I get older at not being able to persuade people to think as I do" - is tempered by his certainty: "I know from experience that ideas need to be floated and then get taken up. I'm not deterred by rejection."

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Aubrey Meyer Esq
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15 November 2002

From the Minister for Environment and Agri-Environment
The Rt Hon Michael Meacher MP

Dear Aubrey

Thank you for your letter of 14 September about references to the "Contraction and Convergence" model in Government publications.

It is unfortunate that the Performance and Innovation Unit's Energy Review omitted to attribute the Contraction and Convergence reference to the Global Commons Institute. I am sure that this was just an oversight and apologise on their behalf.

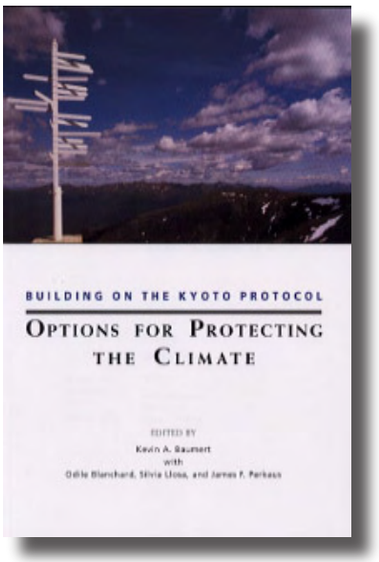
I fully understand your wish to protect the integrity of the Contraction and Convergence model. By this letter, I would like to seek GCI's consent to references to the model in Government publications dealing with climate change and greenhouse gas emissions, and give my assurance that all reasonable steps to ensure that full attribution is given to the GCI in each case. I hope this is acceptable to you and would be grateful if you would confirm in writing that it is.

Yours sincerely
Michael

MICHAEL MEACHER

2002

Kevin A. Baumert et al
Building on the Kyoto Portocol



Publisher: World Resources Institute ISBN: 1569735247
Resource Sharing; Per Capita Entitlements

This approach first establishes an allowable level of global emissions, termed an emissions budget. The emissions budget (i.e., the total "environmental space," as Tynkkynen (2000) terms it) reflects the ultimate level at which to stabilize GHG concentrations over time, or the amount of GHGs that can be safely emitted in the atmosphere while meeting the ultimate objective of the UNFCCC.3 This emissions budget is then distributed equally among the global population, thereby implying an equal right to the atmosphere, with each country getting an entitlement proportional to its population. These global budgets and the subsequent per capita entitlements can also be changed over time as new scientific information becomes available (Table 8.2). Although there are some operational variants of this pure per capita approach, this chapter focuses attention on the "convergence" scheme, which, in political and research circles, has become synonymous with this approach. In any case, all notable variants of this idea follow the generic approach outlined above. The convergence scheme suggests that all countries participate in the emissions commitment scheme after the first commitment period of the Kyoto Protocol, with the ultimate objective of converging to equal per Equal Per Capita Entitlements

This scheme was first introduced by the nongovernmental Global Commons Institute (GCI) in 1990 and has been refined further into what is popularly termed "contraction and convergence." The approach has been consistently advocated at the sidelines of climate politics and, over the years, has received increasing support from some NGOs and governments.6 However, to date, it has not yet been successful in breaking into mainstream climate negotiations.

GCI's approach starts off by defining a tolerable level of climate change based on the scientific assessments of the Intergovernmental Panel on Climate Change (IPCC), which could be adjusted in the future to respond to improved scientific information. Based on such an ecologically sustainable target, a yearly global carbon budget is devised, which "contracts" gradually over time. This contraction continues toward a level where the per capita emission levels of" participating countries "converge" toward an equal level. Thus, convergence claims to allocate shares of the budget to the emitting nations on an equitable basis (GCI 1999), whereby the per capita entitlements of the developed countries decrease while those of most developing countries increase. After reaching convergence, all countries would contract their emission entitlements equally until the requisite global emissions budget is reached. According to GCI, it is not possible to tackle the climate issue without adhering to these two key elements—contraction (environmental integrity) and convergence (equal per capita entitlements) (Meyer 2000).

NOVEMBER 18

Lord Bishop of Hereford
Hansard

Column 209
"The Government's own document about the Johannesburg conference, Reaching the Summit which, incredibly, failed to mention the Kyoto Protocol—although it was doing its best to find some good news stories—emphasised that, "environmental problems affect us all, but they affect the poor most . . . The poor live in the most marginal areas: they are the most vulnerable to natural disasters and they often depend directly on natural resources for their livelihoods".

So for their sake, if not for our own, we must give a higher priority to tackling climate change. Although Kyoto was most welcome as a beginning and the Government's proposed emissions trading Bill is a step in the right direction, all this is totally inadequate to deal with the colossal scale of the problem. I have been involved in correspondence with the noble Lord, Lord Sainsbury of Turville, about this without receiving a lot of satisfaction.

I would urge the Government to look again, with much greater enthusiasm and commitment, at the project called Contraction and Convergence developed by the Global Commons Institute and now vigorously championed by the Institute for Public Policy Research, and specifically affirmed by the Anglican Congress on the Environment,

-which brought together representatives of the 70 million members of the Anglican communion around the world and which met in South Africa in the week before the Johannesburg summit.

In the barest outline, Contraction and Convergence involves calculating the maximum tolerable level of greenhouse gases in the atmosphere—450 parts per million volume. That is a considerable increase on present levels and reflects on what present levels are already doing to the climate. Then one has to calculate the reduction in emissions which would enable us to stabilise that degree of atmospheric pollution by the end of this century. Then one has to allocate to every member of the human race an identical target for per capita emissions—the principle of equity—then place a financial value on that target figure, the "permission to pollute"; and then introduce a system of emissions trading by which the developed countries, which are already grossly exceeding the per capita target which we would have to aim at, would be able to buy from developing countries during the period of convergence the right to continue excessive pollution while they took vigorous measures to bring their own emissions down to the permitted per capita level. That would involve all those wise things which the noble Lord, Lord Ezra, was speaking about, and many others besides, in

terms of biofuels, energy conservation and so on. There would be a dramatic change in our lifestyles and transport systems. It would require an enormous effort.

Contraction and Convergence is scientifically based, as Kyoto was not. It is equitable, as Kyoto is not. It would help developing countries by giving them the means to invest directly in clean energy technology which we in the developed world could provide for them. The most extraordinary thing is that it would overcome every single objection raised by the United States Government to the Kyoto Protocol. It sounds too good to be true, but it is possible.

Let the United Kingdom Government take a vigorous lead in propounding this scheme. There is not much time. Alas, I have not time to quote to your Lordships from an article underlining the desperate urgency of this matter.

But let not the Government of this country simply express vague and polite interest in Contraction and Convergence; let them make every possible effort to bring it about for the salvation of the planet."

http://www.parliament.the-stationery-office.co.uk/pa/ld199697/ldhansrd/pdvn/lds02/text/21118-08.htm

Sir John Oliver
The Bishop of Hereford

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Mr Aubrey Meyer
Director
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20 November 2002

Dear Aubrey

Thank you for your message of the 15th November about my exchange with Lord Sainsbury of Turville about Contraction and Convergence.

I did follow it up, and I am very happy to enclose copies of the correspondence. The Government's attitude towards C & C is lukewarm, to say the least. I suppose the opportunity to have a real debate about it will be in the Energy Bill which is coming to Parliament probably in the New Year.

But I did have another go at them in my contribution to the debate on the Queen's speech on the environment in Parliament yesterday, so you could look that up in Hansard if you were interested. It was simply another attempt by me to outline what C & C is all about, and to encourage a bit more enthusiasm for it on the part of the Government.

I had a copy of Alex Evans' article (I think in something published by the New Economics Forum?), which points out the extreme danger of delaying any implementation of a serious attempt to reduce green house gas emissions. Unfortunately I didn't have time to quote from that document, because I also had to go on and talk about farming.

I have the impression that there is some movement on the part of the Government, but they are not really ready at the moment to grasp the mettle of taking the lead in something as far reaching and demanding as Contraction and Convergence. However, we can but keep on trying.

With best wishes

Yours sincerely

+John

NOVEMBER

Heinrich Boell Foundation Evaluation of World Development Report

”The Report is to be commended for its recognition that climate change poses major threats to developing countries including serious risks of catastrophic and irreversible climate and ecosystem disruption. While the WDR authors propose switching to zero emissions energy sources, a more energy-efficient long-lived capital stock, and increasing incentives for agricultural intensification and forest conservation, etc., they duck the vital debates on equitable global institutional arrangements and approaches to achieve them.

In light of a widely acknowledged impossibility of solving the global warming problem with uncoordinated market-based activity,

-what is a proper constitutional basis for solving the problem the basis of precaution, prevention and equity, as required by the UN Climate Change Treaty?

The Global Commons Institute argues that “Contraction and Convergence” (Meyer, 2000) is logically the only way of resolving this set of problems.

Why does the WDR fail to pick up on today’s vigorous debate about “ecodebt”? Surely, the answer to this question lies in the power politics and industrial lobbying, of which the Report is a “victim”.

What are the consequences of operationalizing notions such as eco-debt vis-à-vis the North/South divide in production and consumption patterns?

Why has the Report’s (potentially powerful) plea for “improved equal access to assets” been compromised by its buying into the Kyoto Protocol’s in egalitarian theory of property rights?

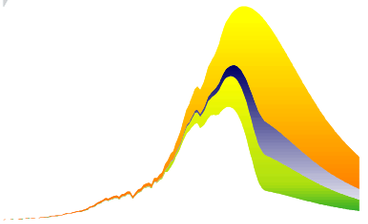
Is it not the case that industrialized societies were allowed such extensive property rights in the world’s carbon dioxide dump, while other countries, which had made sparing historical use of the dump, were given no rights whatsoever (Lohmann, 2002)?

Further, why warrant no mention of the Protocol’s spurious scientific basis and the new carbon-industrial complex it gives rise to (Lohmann,2001)?”

www.boell.de/en/nav/275.html

Aubrey Meyer
Global Commons Institute

GCI - *"equity and survival . . . . . "*



25/11/2002 12:07

The Rt. Hon. Michael Meacher MP
Minister of State (Environment)
Department of Environment, Food and Rural Affairs
Nobel House
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LONDON SW1P 3JR

Dear Michael

"Contraction & Convergence"

Thank you for your letter of the15th of November seeking consent to reference C&C in Government publications. Thank you also for understanding of GCI's principal concern, which is to protect the integrity of the C&C model. It is afteral an approach now widely recognised as constructively focused on the point of the UNFCCC.

I am told that the Government's White Paper on Energy and Climate will be at least part of the Government's response to the Royal Commission on Environmental Pollution (RCEP) and therefore the RCEP's advocacy of C&C.

I imagine Government policy to deal with climate must involve most departments of Government and that Government as a whole will want to speak with one consistent voice on this and the C&C dimension in the White Paper and other related material.

The record to date does show some inconsistent presentation by different parties, inter alia DTI and DFID (see enclosures). There have been erroneous assertions about the properties of C&C that occasionally not only contradict each other, but also the generic epistemology embodied in the C&C model. In a recent letter to the Bishop of Hereford, the Under Secretary of State for DTI even implies that C&C is the problem, rather than a solution to the problem of climate change.

This seems a good moment therefore to protect the integrity of the model. Having C&C correctly presented for what it is, carefully distinguished from the erroneous constructions put on it, seems the sensible basis on which to progress debate.

With this in mind and also in the light of your letter, a member of the White Paper drafting team has asked me to provide some C&C text and imagery that can be used by them as appropriate. I enclose a GCI draft of this with this letter.

Please will you indicate to me whether you feel the Government could regard this as an acceptable basis for their presentation of C&C in the White Paper, or whether there are concerns that need to be resolved?

Yours sincerely

Aubrey Meyer
Director

c.c. Sarah Hendry – DEFRA Global Atmosphere, Peter Brunt DTI.

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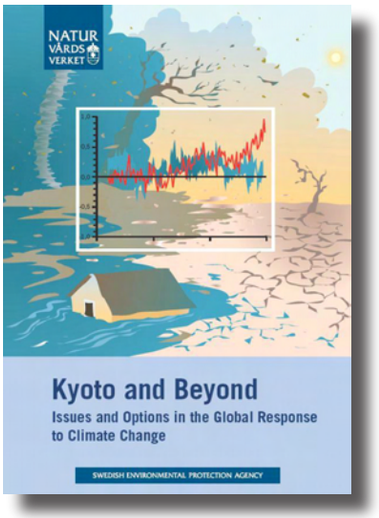
NOVEMBER

Swedish EPA
Kyoto and Beyond



"A good starting point in the search for equitable solutions is the proposal to equalise per capita emissions at some point in time, meaning in effect, to assign everyone the same property rights to the atmosphere. Equalising or converging per capita emissions is the stated objective of the "Contraction and Convergence" proposal developed by the Global Commons Institute (see Box 6)."

> Box 6: Contraction and Convergence
> "Contraction and Convergence is a proposal that was developed by the Global Commons Institute (GCI) several years ago. It is a proposal for burden sharing which has been promoted as an alternative framework for global action on climate change (Evans 2001)."
>
> "Contraction" refers to a global emissions reduction trajectory designed not to exceed a specific greenhouse gas concentration in the atmosphere. "Convergence" refers to national emission entitlements designed to converge at an agreed date at equal per capita emission entitlements for all countries. Emission entitlements would be proportional to population from then on."

www.internat.environ.se/documents/issues/climate/report/Kyoto.pdf

NOVEMBER

INTACT
Transatlantic Workshop, Washington

" . . . . the final aim for climate change policy: - at what level do we consider GHG concentration in the atmosphere a non-dangerous anthropogenic interference?

> The stipulation of a reasonable level of GHGs in the atmosphere could be a precondition for the specification of a global emissions cap. This, in turn, would facilitate the development of a global emission trading system, arguably the most effective and cost-efficient instrument for protecting the earth's climate.

To participants the issue of fairness, i.e., the 'ethical reasoning' behind any such future agreement with the developing countries, is enormous. Many experts believe that the developing countries will never accept a baseline-year-based approach for fixed targets as the one taken by the industrialized countries in the existing Kyoto Protocol ('grandfathering principle').

The challenge in the negotiations of a second commitment period will therefore be to search for an approach which is per-capita based.

Should a pure per-capita approach prove not to be politically feasible within the next two decades, one could also think of a mixture of the grandfathering and the per-capita approach for a second commitment period (2020, 2030), and pure per-capita-based commitments by, for example, 2050 or 2060.

. . . the establishment of a final concentration target keeps the door open for the United States to rejoin the international efforts within the UNFCCC, which had originally seemed to be increasingly impossible since the Kyoto path was designed."

NOVEMBER

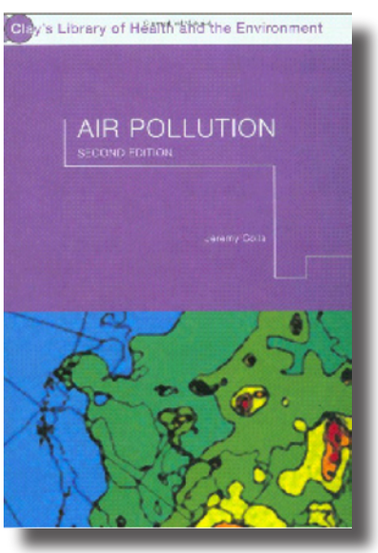
Jeremy Colls
Air Pollution

Publisher: Routledge. ISBN: 0415255651

[Page 470]

The Royal Commission on Environmental Pollution (RCEP) recommended that global CO2 concentration should not be allowed to rise higher than 550 ppm compared to its current value of 370 ppm. In order to 'pull its weight' in achieving this, the UK should cut CO2 emissions by 60% by 2050 and by 80% by 2100.

The RCEP supported the principle of contraction and convergence in which per capita energy consumption would end up the same for all people.

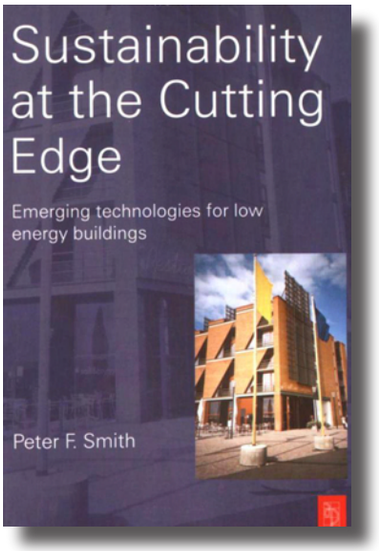


Developed Countries would have to cut their emissions. Developing nations would be able to increase their emissions in order to raise living standards.

Since GHG emissions are mixed into the global atmosphere from wherever they are released, there might be a role for international trading in emission quotas, by which nations that found it costly or difficult to reduce emissions could buy quota from nations that found it easy or cheap to reduce emissions below their quota.

NOVEMBER 20

Peter F. Smith
Sustainability at the Cutting Edge



Publisher: Architectural Press. ISBN: 0750656786

It is not just the problem of us in the developed world reducing emissions, there are developing countries that wish to increase their emissions because they want to industrialize. A great disparity exists in emissions between the rich and the poor nations - that is a big problem and international action is required to address it. The principles that need to underlie such action are the Precautionary Principle, the Polluter Pays Principle (e.g. through measures such as carbon taxes or capping and trading arrangements), the Principle of Sustainable Development and lastly a Principle of Equity across the nations and across the generations.

Figure 1.5 comes from the Global Commons Institute the proposal it describes is called contraction and convergence. It shows emissions of carbon dioxide in the past, in the present and predictions for the next 100 years, the sources of emissions being divided into major country groupings. The overall envelope is an emissions profile that would stabilize carbon dioxide concentrations in the atmosphere at 450 ppm. It peaks within a few decades from now and then comes rocketing down to well below today's value of emissions by the end of the century. An emissions profile stabilizing at 550 ppm has a similar shape but at somewhat higher levels.

How can the burden of emissions reductions be shared equitably between nations? The Global Commons Institute argues that the only fair way to share it out is to give every person in the world the same allocation of carbon dioxide emissions. That is shown in the diagram as applying from the year 2030; between now and 2030 is the period of 'convergence', That is a very radical proposal; for instance the allocation to someone in the UK would be less than 20% of our current average per capita emissions. The only way it could be achieved would be through carbon trading between nations. Industrialized nations would buy carbon credits from countries in the developing world, where the per capita rate of carbon emissions is below the target average so that the carbon gap progressively narrows ultimately to zero,

> This proposal well illustrates the problem and the type and scale of action that is necessary; it is also one that meets to a good degree the four principles we mentioned above.

DECEMBER

Sustainable Development Int.
Climate Change Legislation

The Climate Change Convention in Delhi drew to a close last week, with the final declaration stressing the importance of combining adaptation to the impacts of climate change with traditional mitigation ideas.

The declaration, a result of talks between officials from 170 countries, also pushed for the increased use of less polluting energy sources and other new technologies, together with measures such as governmental promotion of technological advances and the promotion of technology transfers for the reduction of greenhouse gas emissions in major economic sectors, including through public sector approaches.

However, the conference was not without controversy, with Indian Prime Minister Atal Behari Vajpayee saying that developing countries should be exempt from emission cutting targets because they produce just a fraction of the world's emissions and are unable to afford reduction measures. In the last issue of our newsletter we asked our readers' opinions on the subject of exemption.

The replies were varied in their ideas – and unexpected too. Although a large proportion thought developing countries should be made exempt from climate change legislation so that they can foster economic development, many of you had ideas to rival the world's politicians.

"I think the developing countries should be paid to comply with greenhouse gas emission requirements. If they don't comply, they shouldn't get paid," said one reader, who added that funds should be generated by "contributing funds to the worldwide greenhouse account based on the amount of greenhouse gases that are emitted from their countries. The US should contributed 1/4 of the total, since it contributes 1/4 of the total of the world's greenhouse gas emission."

"There should be enough in the account to pay developing countries a dollar for every thousand tons equivalents of GHGs they emit per year that is below the US's, times the ratio of the developing country's population to the US population."

Another wrote that "No one should be exempt from reducing greenhouse gas (GHG) emissions," although he added that the biggest contributors, "should be required to make significant progress in reducing emissions before the developing countries are required to begin implementing previously prepared plans."

"The fairest approach to global emissions targets is contraction and convergence, a strategy proposed by the Global Commons Institute,"

-" said another contributor. "Total emissions should contract to a sustainable level, as advocated by the IPCC, and that the available emissions rights should be shared out on a basis of convergence to an equal per capita level by a specific date in future, such as 2030 or the UN centenary of 2045."

"This means that emissions from countries like India could continue to rise while those of industrial countries would contract." This idea was also echoed by many other readers.

In conclusion, as most of your comments suggested, the most favourable solution seems to be to allow those poorer countries to be exempt for a pre-determined cut off period, until they reach a level of economic security where they can afford to contribute.

Other solutions involve the ploughing of money into the production of alternative energy sources in developing countries, utilising natural resources to ensure the future of poorer countries are less polluting than the developed world.

"If we start investing in alternative energy sources we can start with local production, and instead of developing polluting sources which have to be replaced later, we start developing and expanding on the 'right foot'," said one reader. "In this way, the developing countries can have an advantage over developed countries who are sitting with infrastructures that have to be altered at great cost."

Whatever the solution, something needs to be done drastically. As one reader wrote succinctly we need to change the fact that much of the world's air has become "so thick as to be nearly opaque". So far however, it seems impossible to agree on a definite solution to the problem of human influenced climate change.

Ben Townley

DECEMBER

Quaker Green Action
Friends and Climate Change

Friends have been considering their response to the environmental threats to the planet over a number of years, and climate change is one of the greatest areas of concern. Climate change is likely to lead to droughts, flooding and loss of productive land, affecting particularly poorer countries. In areas like the Middle East, parts of Africa and in South Asia, conflicts over fresh water supplies and productive land would be made worse. Climate change relates directly to Friend's concerns on peace and justice. This note does not try to re-state the facts about climate change, which have been well

covered, for example in papers to the conference in November 2001 organised by the Earth, Our Creative Responsibility Group of QPSW.

This note follows up the enthusiasm shown by a number of those present at this conference, that Friends should consider whether, as well as encouraging in general terms government actions to minimise climate change, we should be specific in pressing for the adoption of the principle of "Contraction and Convergence"

in setting countrys' greenhouse gas emissions quotas. Background Under the UN Framework Convention on Climate Change (UNFCCC) set up at Rio in 1992, virtually all countries agreed on the need to take action to reduce greenhouse gas emissions. Firm targets for emission reductions by the industrialised countries were set at Kyoto in 1997, to be achieved in the first "commitment period", ie by 2008- 2012. These targets were agreed by what might best be described as horse-trading., as reductions (or in some cases, eg Australia, increases) relative to a country's 1990 emissions Thus the larger the level of those emissions, in general, the larger the "Quota" allocated. The overall reduction targets averaged just above 5%, with the UK agreeing to one of the most stringent reductions of 12.5%. Because the emissions from developing countries were relatively low, they were not given any specific emissions targets for the first commitment period. The global reductions agreed were small compared with the reductions implied in the reports of the Intergovernmental Panel on Climate Change (IPCC) as necessary to reduce the risk of catastrophic climate change - a global reduction over a number of decades of ~60%. Even with this quite stringent reduction, there will be significant climate changes. Within the Kyoto agreement were a number of so-called "Flexibility Mechanisms". These include "Emissions Trading" between industrialised countries, whereby a country which has reduced its emissions more than required to meet its target can sell surplus quota to a country which is not meeting its reduction target. At the conferences since Kyoto which were to finalise the details of the agreements, the extent to which emissions trading should be allowed was a major point of difference. The EU wanted a limit on what proportion of a country's reduction target could be met by emissions trading, while the USA, Russia and others wanted unrestricted emissions trading. One objection to emissions trading is that it would allow the USA to take virtually no action to reduce its emissions, by buying Russian "hot air" - ie surplus emissions quotas based on large reductions in Russia's greenhouse gas emissions since 1990 due to massive de-industrialisation. A more fundamental objection is that the trading is on quotas negotiated at Kyoto, based relative to current emissions (see above) . Another flexibility mechanism is the "Clean Development Mechanism" whereby industrialised countries can claim benefits from emissions saved by projects they undertake in developing countries. Despite

negotiating an emissions quota per head much larger than nearly every other country, the USA pulled out of the Kyoto agreement in 2001, one of their objections being that emissions limits were not set for developing countries. It is thought the USA is particularly concerned about the rapid industrialisation of China. Negotiations are needed soon on the framework for setting emissions quotas in the medium and longer term. This framework must be seen as fair, and should be such as to make US participation likely.

"Contraction and Convergence" is a framework which bridges the gap between national emissions targets based on existing emissions and fully equable targets based on equal emissions per head of population. Over a period of a few decades, the global total of emission permits would be progressively reduced to a value reckoned to limit the risk of catastrophic climate change. Within this overall total, each country's emissions target would converge to an equal amount per head of population. This concept was developed by the Global Commons Institute (their web site shows examples of how allocations might develop under different scenarios - www.gci.org.uk) Within this framework, emissions trading would be allowed. This would allow countries whose emissions per head are less than their "quota" to sell any surplus. As indicated above,

> -unlimited emissions trading within the present regime has not been favoured by environmentalists and the EU. However, in the framework of Contraction and Convergence, emissions trading seems more acceptable - the rights being sold would be based on a fairer allocation, rather than what industrialised countries negotiated for themselves -

at Kyoto. Also the Russian surplus would be rapidly eroded as their quota reduces. The Clean Development Mechanism might merge into the overall emissions trading scheme. The inclusion of developing countries could encourage US participation in the framework. Emissions Trading - how might it work? Currently, the UK and Western European countries per-capita greenhouse gas emissions are just over twice the world average, and the USA's are about five times the world average. Even neglecting population increase, if emissions quotas per capita converge and the global total has to reduce by 60%, this would imply the UK and Western Europe having emissions quotas less than one fifth of their present emissions and the USA about one tenth of their present level of emissions. The energy use in Sub-Saharan Africa and other very poor countries is small; their emissions quota would be greater than their current emissions The most significant greenhouse gas is Carbon Dioxide (CO2) from burning fossil fuels - coal, oil and gas. The quantities of other greenhouse gases can be converted to CO2 equivalents by using appropriate conversion factors taking into account their relative effect on climate change. Emissions trading in principle should reduce the cost of meeting a given global reduction,

by implementing emissions reduction actions in whichever country they are most cost-effective. A market in emissions quotas would set a price per tonne of CO2 equivalent. There are many ways of reducing greenhouse gas emissions, and different solutions will suit different countries. The long term effectiveness and environmental soundness of each method should be assessed before it can be used in emissions trading. In the early stages, when the reductions in emissions relative to "business as usual" are fairly modest, relatively low cost measures for improving energy efficiency and the lowest cost sources of renewable energy to substitute for fossil fuels would be used. As emissions quotas are reduced further, more expensive measures would need to be implemented, such as more costly energy efficiency measures or use of more expensive renewables. Who benefits? Emissions trading could be a major benefit to developing countries. Because they are not so totally dependent on private car use they have the opportunity to develop based on efficient public transport. Often they have large parts of the population in areas not served by an electricity grid, and small scale local electricity generation from renewables (eg solar photo-voltaics) is likely to be the most economic means of electricity supply in many cases. In hot countries, traditional ways of building and urban layout can provide a cool environment without the energy hungry air conditioning that most "modern" buildings use in the richer countries. In a country like China, with a high skills base and low labour costs, renewable energy might be significantly cheaper than in the "West". Studies have indicated that average life span (a good indicator of health and well being) approaches the value in rich countries when electricity consumption is about 1/15 of the richer countries. Thus, developing countries could achieve a good quality of life with low fossil fuel use and correspondingly low greenhouse gas emissions more easily than presently industrialised countries which are hooked on massive fossil fuel use. Developing countries are likely to have surplus emissions quotas to sell, gaining funds for development. Industrialised countries have enormous technical and economic resources to develop low carbon technologies. The country most reluctant to sign up to Kyoto, the USA, has a huge potential for renewable energy. Developments in energy storage and transmission can enhance the extent to which variable renewable energy sources can be used at the time and place of demand. Many of the fossil fuel exporting countries are in areas with high levels of sunshine and have plenty of space. They could become exporters of solar based energy.

Conclusion

While technology can be expected to enable major reductions in greenhouse gas emissions to be made, the very large cuts in greenhouse gas emissions needed are likely to require some changes in the rich countries to our profligate life style, particularly in use of cars and in flying. One would hope for

more emphasis on quality of life, rather than quantity of goods and services. Here, Friend's testimony to simplicity seems particularly relevant, showing that a simpler lifestyle can be a positive good for its own sake. The change to an economy based on more efficient use of energy and the development of renewable energy resources would provide creative employment, and could provide the sort of challenge which is lacking in many people lives. The principle of Contraction and Convergence appears to be a reasonably fair way of setting greenhouse gas emissions targets. It is unlikely that any framework agreed would bear exactly equally on every country (however, it can be noted that at present, there is very little correlation between the wealth of countries and the resources they are endowed with), but Contraction and Convergence has the advantage of being relatively simple and already having the backing of a number of countries. It may be that some fine tuning could be carried out once the basic principle is established.

If Friends wished to influence the discussions on climate change issues, "Contraction and Convergence" appears to fit well with Friends testimonies and concerns.

Martin Quick

DECEMBER 5

Mr. David Chaytor MP
Commons debate Report on DFID

Global Climate Change and Sustainable Development
"Given that the hon. Gentleman is talking about the long term, will he accept that, in the long term, the solution lies as much with the Department of Trade and Industry and energy policy as with the practical support that DFID can give to relieve famine?

Does he agree that it might have been useful had his report made a recommendation to the DTI, or a submission to the current energy review, stressing the absolute importance of reducing CO2 emissions, not only to our current commitment of 20 per cent., but to 60 per cent., as the royal commission on environmental pollution recommended?

Recommendations 9 and 30 in the report are about the link between climate change and equity, and suggest that the Government should pursue a policy of contraction and convergence in their approach to CO2 emissions."

http://www.publications.parliament.uk/pa/cm200203/cmhansrd/cm021205/halltext/21205h01.htm#21205h01_head0

Department for Environment, Food and Rural Affairs

FROM THE RT HON MICHAEL MEACHER MP
MINISTER FOR THE ENVIRONMENT AND AGRI-ENVIRONMENT

DEFRA
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Aubrey Meyer
Director
Global Commons Institute
37 Ravenswood Road
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E17 9LY

Your ref:
Our ref:

23 December 2002

Dear Aubrey

Thank you for your letter of 25 November about contraction and convergence, and for the additional information.

I am sorry if there have been inconsistent descriptions of contraction and convergence by Government Departments. We do our best to describe a complex idea for the layperson and at times, despite our best endeavours, in trying to make it accessible we may be a little inaccurate.

I understand that you have spoken to the officials on the team drafting the Energy White Paper and that they have assured you of their best efforts to correctly describe the contraction and convergence model in it if the model is referred to. I can confirm that all reasonable steps will be taken to ensure that this is so. However, I should point out that the White Paper is likely to focus on domestic energy policy to a much greater extent than on possible future international emissions reduction strategies.

Yours sincerely
Michael Meacher

MICHAEL MEACHER

INVESTOR IN PEOPLE

2002

Globalization, Growth and Poverty
World Bank Policy Research Report

"Global warming requires international collective action. There are many ways of achieving effective restraint. The Kyoto protocol approach is for rich countries to set themselves targets for emissions reductions, and the recent agreement between European nations and Japan to move ahead with the protocol is a positive step forward. Looking further down the road, it is critically important to get at least all of the G-7 involved.

The Global Commons Institute, an NGO, has come up with an innovative proposal for how to do this. The proposal entails agreeing on a target level of emissions by the year 2015 and then allocating these emissions to everyone in the world proportionally. Rich countries would get allocations well below their current level of emissions, while poor countries would get allocations well above. There would then be a market for emission permits. Poor countries could earn income selling some of their permits; rich and poor countries alike would have strong incentives to put energy-saving policies into place; and private industry would have strong incentives to invent new, cleaner technologies. One of the hopeful things about globalization is how an innovative idea like this can quickly gain currency and support."

2003

JANUARY 2003

ECOFYS GmbH
Evolution of commitments

"intriguing, due to the simplicity of the approach".

www.umweltdaten.de/klimaschutz/Climate_Change_01-03_UBA.pdf

JANUARY

Financial Times
Blair Energy Policy Renewed Attack

Tony Blair has come under renewed attack for failing to put long-term climate change objectives at the heart of the government's energy policy. The Institute of Public Policy Research will claim today that the government is "way off track" in meeting its goal of cutting carbon dioxide emissions by 20 per cent by 2010. Tackling climate change should be made the primary policy goal of next month's energy white paper, it says. Meanwhile, several climate experts have written to the prime minister expressing their fears that the white paper will neglect the international dimension of climate policy.

The signatories include Sir Tom Blundell, chairman of the Royal Commission on Environmental Pollution, and Sir John Houghton, the former chairman of the United Nations-appointed panel of climate change scientists.

The letter urges Mr Blair to use the white paper to show international leadership on climate change policy. A "rare window of opportunity" will be provided by the start of discussions about a post-Kyoto climate change agreement later this year, it says. The white paper should address a policy framework known as "contraction and convergence", it says, under which developed countries would cut their emissions to the level of less developed countries.

This approach was recommended by the 2000 Royal Commission's energy report, which called for a 60 per cent reduction in UK carbon dioxide emissions by 2050. The IPPR report says a target of cutting emissions by 60 per cent by 2050 could be achieved while ensuring security of supply and without

compromising affordability. But it says that achieving the goal of a secure and affordable transition to a low-carbon economy would require "a revolution in political commitment".

The report assesses the UK's expected need for extra generating capacity in 2020 following the closure of many ageing nuclear stations and the likely closure of coal-fired stations following the implementation of expensive environmental regulations. It argues against the construction of more nuclear stations and recommends that the white paper be used to announce a target of 25 per cent of electricity from renewable sources by 2020.

JANUARY

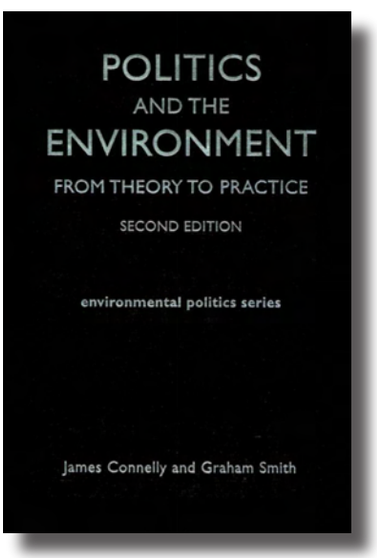
Charter 99
European Convention: proposal 17

"New Article - declaring climate change to be <a global security issue> and committing the EU to work for a stable climate as set out in the UNFCCC through an international agreement based contraction and convergence of global emissions to equal per capita rights by no later than 2045."

www.gci.org.uk/correspondence/EU_Convention_letter.pdf

JANUARY

Connelly, Smith
Politics and the Environment



Publisher: Routledge. ISBN: 0415251451

[Page 254]

From the position of the South climate change is typically considered to be a matter of economic justice. The industrialised countries have benefited from the unrestricted free access to the atmosphere and display a lack of commitment to reduce their impact.

At the same time, Northern states such as the USA argue that all states should be required to reduce their emissions. Given differentiated responsibilities for the current situation, it is no surprise that Southern Nations view this as double standards and demand their equal share of the global atmospheric commons. The claim is that the rich North owes an ecological debt to the poor South.

The Global Commons Institute (GCI) has attempted to develop a plan (C&C) "Contraction and Convergence"; contraction of overall emissions and convergence of

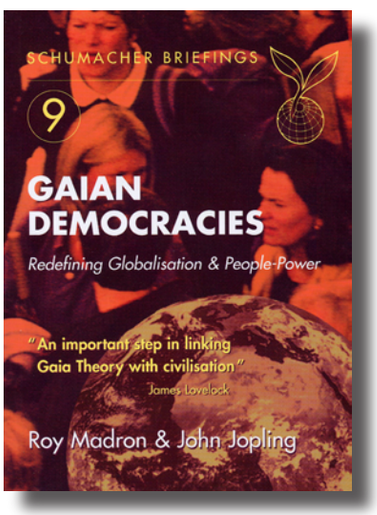
Northern and Southern emissions. The proposal (which is in many ways a return to, and a development of, the principles of the original UNFCCC) is built on the recognition of differential responsibility and embraces two principles; first that every person in the world should have (in the long run) an equal emissions quota; and second, that all emissions quotas would be marketable - but only within a stringent global emissions limit. In other words global tradable permits are proposed, but in a way, but not as a way of relieving individual countries of their responsibilities. Rich countries who wish to continue with more than their share will have to pay for the privilege, thereby generating resources for countries who need them (Meyer 2000).

The contraction and convergence approach counters the US approach which has rejected stringent limits and opposed the adoption of per capita emissions quotas.

Page 257 Details of contraction and convergence can be found at www.gci.org.uk

Bibliography Meyer, A. (2000) Contraction and Convergence – The Global Solution to Climate Change, Dartmouth: Green Books

2003



Roy Madron & John Jopling
Gaian Democracies

Publisher: Green Books / Schumacher

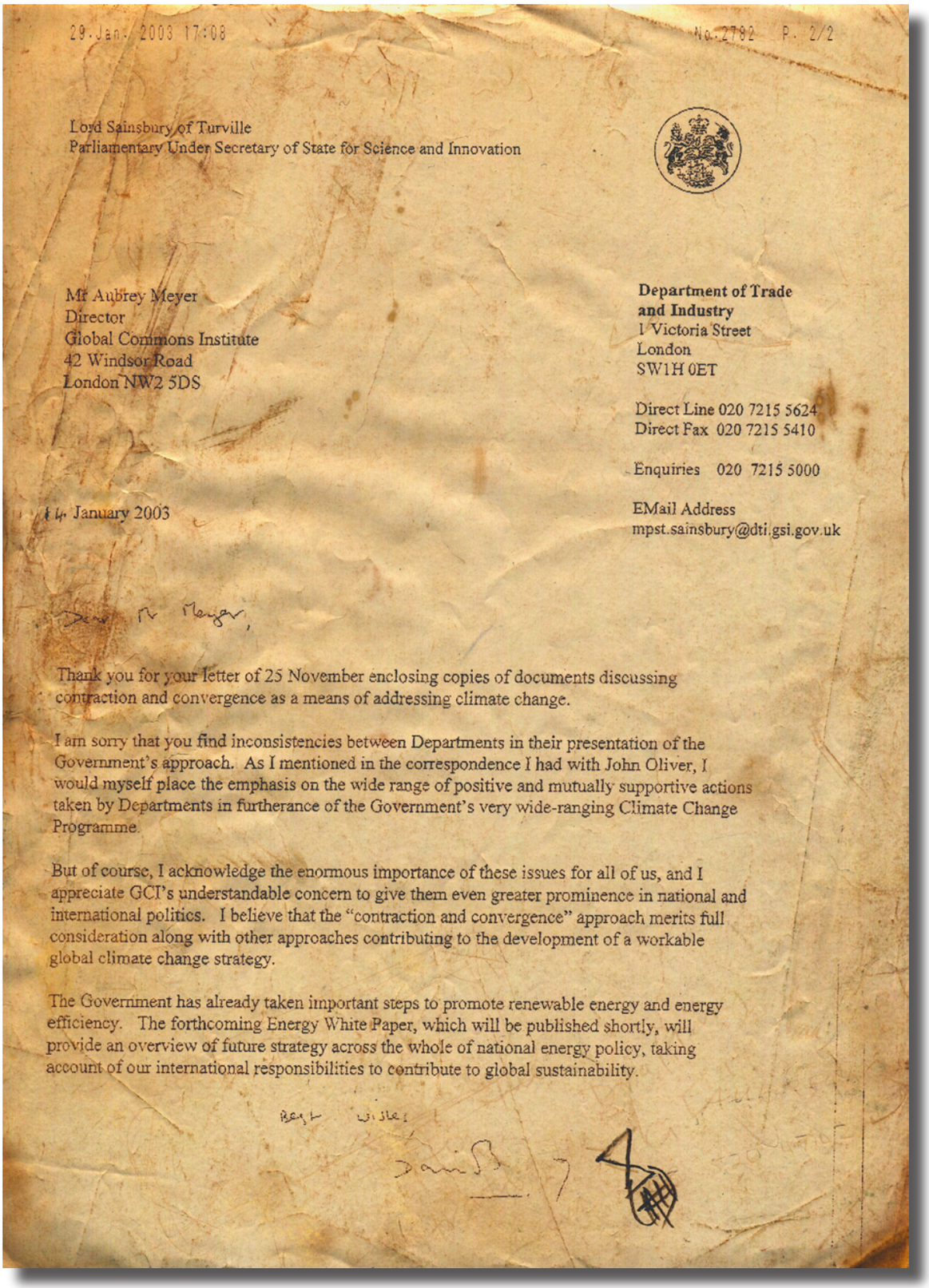
ISBN: 190399828X

There is no lack of ideas about the changes that could be made in the money, currency and tax systems in a world freed from the debilitating imperitives of the Global Monetocracy. Several ecologically and human-friendly systems have been described by James Robertson and Richard Douthwaite in earlier Schumacher Briefings [138]. For example, concurrent money systems, a citizen's income and an international trading currency linked to Gaia's capacity to absorb global warming gases.

[138] Aubrey Meyer, Contraction and Convergence, Schumacher Briefing No. 5.

JANUARY 14

Lord Sainsbury of Turville
Under Secretary of State for Science and Innovation



29.Jan. 2003 17:08 No.2782 P. 2/2

Lord Sainsbury of Turville
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14 January 2003

Dear Mr Meyer,

Thank you for your letter of 25 November enclosing copies of documents discussing contraction and convergence as a means of addressing climate change.

I am sorry that you find inconsistencies between Departments in their presentation of the Government's approach. As I mentioned in the correspondence I had with John Oliver, I would myself place the emphasis on the wide range of positive and mutually supportive actions taken by Departments in furtherance of the Government's very wide-ranging Climate Change Programme.

But of course, I acknowledge the enormous importance of these issues for all of us, and I appreciate GCI's understandable concern to give them even greater prominence in national and international politics. I believe that the "contraction and convergence" approach merits full consideration along with other approaches contributing to the development of a workable global climate change strategy.

The Government has already taken important steps to promote renewable energy and energy efficiency. The forthcoming Energy White Paper, which will be published shortly, will provide an overview of future strategy across the whole of national energy policy, taking account of our international responsibilities to contribute to global sustainability.

Regards

David

JANUARY 27

Guardian

America's crude tactics

Of all the rogue states in the world it is Iraq's oil that makes it a target

Larry Elliott

Let's get one thing straight. George Bush's determination to topple Saddam Hussein has nothing to do with oil. Iraq may account for 11% of the world's oil reserves, second only to Saudi Arabia, but the military build-up in the Gulf is about making the world a safer and more humane place, not about allowing America's motorists to guzzle gas to their heart's content. So, lest you should be in any doubt, let me spell it out one more time. This. Has. Nothing. To. Do. With. Oil. Got that?

Of course you haven't. Despite what Colin Powell might say, it takes a trusting, nay naive, soul to imagine that the White House would be making all this fuss were it not that Iraq has something the US needs. There are plenty of small, repressive states in the world - Zimbabwe for one - where the regimes are being allowed to quietly kill and torture their people. There are plenty of small, repressive states with weapons of mass destruction - North Korea, for example - which appear to pose a larger and more immediate threat to international security. But only with Iraq do you get a small, repressive country with weapons of mass destruction that also happens to be floating on oil.

Moreover, the realities of oil dependency are catching up with the world's biggest economy. The US has long ceased to be self-sufficient in oil and, as the recent shutdown of Venezuela's refineries has proved, is therefore vulnerable to its imported supplies being cut off. The growing imbalance between the

global demand for oil and discoveries of fresh supplies means that the outlook for the US is even more troubling than it appears. As the director of ExxonMobil, Harry Longwell, admitted in an article for World Energy last year, the discovery of oil peaked in the mid-1960s but demand is expected to continue growing by 2% a year - or the world is sucking oil out of the ground faster than corporations are finding it.

Three choices

Bush and his team know all this. They have worked for the oil industry, been bankrolled by the oil industry, and have spent the past couple of years listening hard to what the oil industry would like, then doing it. Faced with the prospect that on current trends the gap between demand and supply will widen inexorably, Bush has three choices. Firstly, he could listen to the lobbying of executives like Longwell, who are convinced that there is still plenty of oil out there provided the exploration teams are given the freedom to find. That is why Bush has been prepared to court the wrath of the environmental lobby in the US to sanction exploration and extraction in the wilds of Alaska.

The second option is to ensure that the US secures a bigger share of diminishing stocks, buying time in which consumption can continue at its present rate. The seizure intact of Iraqi oil fields is a prime war aim of the US in any conflict, and it is likely that once Saddam has been toppled and an army of occupation has control of the country, the big oil companies will be called in to modernise the country's decrepit oil infrastructure. There have been reports in the Wall Street Journal, denied by the administration, that Dick Cheney held discussions last October with ExxonMobil and other firms about the rehabilitation of Iraq's oil industry. It stretches credulity somewhat to imagine that the subject has never been broached.

In one sense, such an outcome would be no bad thing. A modernisation programme that increased the supply of oil through more efficient production would lead to lower global prices and stronger growth. It might also be environmentally less damaging. Nor, lest we are tempted to get too prissy about this, can it be denied that economic factors have played a big, even crucial role, in determining the diplomatic and military strategy of European countries down the centuries.

But while the Bush strategy has its rationale, it is fraught with risks. One is that the war will not lead to the collapse in oil prices that is predicted by the hawks in Washington. Should the conflict follow the example of 1991, crude could fall quickly to around $20 a barrel. Or prices could hit $50 a barrel if Saddam torches the Iraqi fields and manages to land a couple of Scuds on refineries in Saudi Arabia and Kuwait.

The possibility that an American occupation of the Middle East will destablise the whole region, putting pressure on the autocratic rulers of western client states is a second, perhaps greater threat. It would be a bitter irony if the US found itself in possession of 11% of the world's known reserves only to find that the 25% in Saudi had been seized by a regime with no love for America. Worryingly for Bush, there have already been signs that investors in the Gulf states have been withdrawing their assets from the US, helping to keep shares on Wall Street depressed and contributing in no small measure to the dollar's recent fall. This would turn into a rout should the oil-producing states decide that crude should be denominated in euros rather than greenbacks, a development that has already been canvassed publicly by Opec.

Common sense

The third choice for the US and the rest of the developed world is to tackle the imbalance between demand and supply from the other end - by limiting demand rather than by increasing supply. Most governments, including that in Washington, acknowledge the need to take steps to curb emissions of greenhouse gases, and a blueprint for this, known as contraction and convergence, is available. It would involve setting a safe global ceiling on carbon dioxide and the calculation of the emissions consistent with hitting it; providing equal shares of the global emissions budget for each country so that poor countries were not short-changed; and allowing emissions trading in which countries like the US could pay countries like Malawi to pay for the right to pollute by more than the share allocated to the developed world.

The first problem is political will. Britain's forthcoming energy bill should embrace contraction and convergence, but Whitehall conservatism means a golden opportunity will be lost without political backing from the very top. As Alex Evans of the left-leaning IPPR think tank said last week in a paper on the UK electricity industry, the government needs to focus less on setting targets and more on delivery. Evans says that there would be a dramatic fall in emissions and endless opportunities for business if the government took steps to increase energy efficiency by 20% and to commit itself to producing 25% of energy from renewable sources by 2020.

This will be costly, both in terms of money and effort. But wars, too, are costly. The real lesson of the struggle against Iraq is that the depletion of non-renewable energy resources is a problem that will be persist long after the butcher of Baghdad is dead and buried.

larry.elliott.guardian.co.uk

FEBRUARY

Mark Pelling
Natural Disaster & Development in a Globalizing World

Publisher: Routledge. ISBN: 0415279585

" . . . makes clear that there are links between global scale processes and local experiences of disaster, but underlies the difficulty of attributing blame for individual disasters on specific global pressures. It argues that action to reduce disaster needs to be coordinated at the local, national and global scales and that there is a need for greater integration across the physical and social sciences. In this context, the human rights agenda is seen as a way of moving disaster reduction efforts forward."

FEBRUARY

IPPR
The Generation Gap

http://www.ippr.org/research/files/team20/project111/2020fuelmix.pdf

"The Royal Commission made a clear and emphatic recommendation to the Government that in its view, the best prospects for success at international level were offered by the 'Contraction & Convergence' (C&C) policy framework for international climate change policy as the basis of future negotiations; . . .

the PIU, for its part, observed that C&C was consistent with the 'leading' approach to climate policy that the Government has expressed its intention to play. C&C is a simple global policy framework that would work as follows:

1. All countries would agree a safe global ceiling on concentrations of CO2 in the atmosphere (such as 450 parts per million), and then calculate a global emissions budget consistent with reaching it.

2. On the question of national emissions allocations, C&C recognises that developing countries will only accept emissions targets under an emission regime that is equitable. Accordingly, national emissions entitlements would converge from current emissions levels (which are proportional to national income) to an allocation based instead on population, by an agreed 'convergence date' (such as 2040).

3. Full international emissions trading would be allowed so that countries could meet their targets flexibly and at least cost. (The existence of a global price on carbon would also provide each country with a clear incentive to reduce dependency on

fossil fuels as quickly as possible, in order to reduce the number of emissions permits that have to be bought – or indeed increase the number of surplus permits to sell.)

Although it has been widely forgotten since the publication of the Royal Commission's report on energy, the widely discussed UK target of reducing CO2 emissions by 60 per cent by 2050 is in fact derived from a scenario applying C&C (in the Royal Commission's example, with a concentration target of 550 parts per million and a convergence date of 2050).

The most important distinction between C&C and the approach taken by Kyoto is that C&C starts with the question of what global level of emissions is safe, and only then turns to the secondary question of how much CO2 each country is permitted to emit.

Kyoto, by contrast, began by determining national entitlements; assessing the overall level of global emissions came at the end of the process rather than at the beginning.

Interestingly, C&C meets the stated position of the Bush Administration on climate change where Kyoto does not – even though it enjoys very much higher environmental integrity than Kyoto. President Bush has consistently stated that the US desires a global policy that both includes quantified targets for developing countries, which C&C includes but Kyoto does not. Bush has also been equally consistent in emphasising that international climate policy should be consistent with the goal of stabilising atmospheric concentrations of greenhouse gases in the atmosphere (to the extent of actually including this objective in the US National Security Strategy in 2002); again, C&C offers this through its formal atmospheric concentration target where Kyoto does not."

. . . this is formally known as Contraction and Convergence (C&C) and was created by GCI in 1991"

FEBRUARY 10

Michael Meacher
A Statement of Concern

A Speech at Newcastle University " . . . . the world's scientists believe a reduction in CO2 emissions of at least 60% will be needed by 2050.

Kyoto, even if its targets are met, is likely to produce a cut of only some 2% by 2010, and that is only in regard to the developed countries (excluding, at present, the US and Australia).

If the whole world is taken into account, which is of course

the relevant consideration, CO2 emissions are projected to rise substantially by 2020. So the shortfall between scientific theory and political action remains huge.

Furthermore, given that access for CO2 emissions to the global atmosphere needs to be rigorously checked in order to stay within 'safe' levels, no progress has yet been made in obtaining global consent to a politically equitable distribution of such rights.

A programme of Contraction & Convergence, moving towards an allocation of equal per capita emissions for all countries both developing and developed, has been proposed by the Global Commons Institute, but has not yet been widely taken up."

www.gci.org.uk/speeches/Meacher.pdf

www.guardian.co.uk/uk_news/story/0,3604,895067,00.html

FEBRUARY

New Statesman
How Britain can seize the moment

Ministers have to find an energy policy – otherwise they will fail to meet commitments on climate change and they will leave the UK too dependent on foreign supplies.

By ALEX EVANS

Just over ten years ago, John Major abolished the Department of Energy and consigned it to being no more than a directorate within the Department of Trade and Industry. At the time, this seemed only logical. After all, the bulk of the country's power generation capacity had been privatised (as National Power and Powergen), and the role of the state had apparently diminished to little more than appointing the regulator. The age of energy policy had, it seemed, come to an end.

When Labour came to power in 1997, little seemed to change. True, Labour took steps to protect the UK's ailing coal industry, mainly through using the planning regime to suspend the "dash for gas" – the 1990s rush to build cheap and highly profitable gas-fired power stations. But Labour's overriding aim in energy was to increase competition. Today, though, all eyes are once more on the government as its energy white paper approaches publication. The energy sector will be at the forefront of responding to the huge challenge of global climate change. Moreover, the UK's North Sea gas reserves have all but run out, raising the prospect of imminent dependency on gas imported through pipelines thousands of miles long, with inevitable concerns about security of supply. And over the next 20 years, the UK is projected to lose up to half of its existing power

stations – posing the question of how to replace them. Energy policy, it seems, is back. So what is the government trying to do with its energy policy? At present, it

has four objectives: environmental sustainability, competitive markets, security of supply and diversity of generation. These, however, tend to point in different directions. Suppose, for example, that the policy tried to leave as much as possible to "competitive markets". Such a policy would include a lot of gas-fired power stations, which are cheap and quick to build, as well as coal-fired stations, which are costly to build but cheap to operate. But the same policy, being based on fossil fuels, would have high greenhouse gas emissions, thus undermining the environmental sustainability objective. It would also leave the country highly dependent on gas imports, thus reducing security of supply. The challenge is therefore to make clear the order of priority of these objectives. What should happen when they trade off? One answer was provided by the Cabinet Office's Performance and Innovation Unit's Energy Review, published last year. The review suggested that where environmental and economic goals clash, environmental goals "will tend to take precedence".

Most scientists will confirm that climate change is the most serious environmental challenge that the world faces today. Depending on the scale of international commitments, the UK might have to make emissions reductions as steep as 60 per cent or more by 2050. Its present target under the Kyoto treaty – a 12.5 per cent emissions cut in greenhouse gases by 2012 – is no more than a first step. There is also a strong case for giving high priority to energy security: as the Californian energy crisis showed, the need to keep the lights on is something that politicians forget at their peril. We could therefore start by defining the goal of energy policy as "the secure transition to a low-carbon economy, at the lowest possible cost". What would such a goal imply in practice? It would require strong progress on energy efficiency, especially in the domestic sector, with the aim of achieving real reductions in electricity demand by 2020. Lower energy demand leads to lower costs, lower emissions and lower dependence on imported gas.

However, although many energy efficiency technologies can save more than they cost, there are formidable barriers to their implementation. There are as yet no "one-stop shops", for instance, which can advise on the whole range of technologies from efficient condensing boilers to loft insulation.

And for many consumers, energy costs form only a small proportion of monthly spending, making efficiency a low priority. So the government has to act as a catalyst for change. A move to a low-carbon economy will also require much higher levels of renewable energy. At present, only 2.5 per cent of the UK's electricity comes from renewable sources, and the government is unlikely to meet its 2010 target of 10 per cent.

By 2020, Britain will need about ten times as much renewable energy as it has now. That will require sustained political commitment. Leaving it "to the market" will not work when fossil fuels enjoy such strong advantages on cost.

What of nuclear power? Although there is a case for extending the lives of existing nuclear power stations in order to buy more time for the transition to a low-carbon economy, several factors mitigate against new nuclear build. One is that although nuclear is "CO2free", it cannot be called fully environmentally sustainable: the government has made no progress towards solving the problem of radioactive waste management since 1997, for example. Another is that, in the changed security environment since 11 September, there are strong reasons to doubt the wisdom of committing to another generation of such attractive targets for attack. The government must not be complacent about how hard it will be to deliver the low-carbon economy. Of the UK's current climate change policies, virtually all will deliver lower emissions reductions than originally anticipated – from the climate change levy and the fuel duty escalator (both of which have been frozen at current rates) to the UK emissions trading scheme, and the renewables obligation and energy efficiency commitment faced by electricity supply companies. The UK is also unlikely to hit its 2010 goal of reducing carbon dioxide emissions by 20 per cent. Something not far from a revolution is needed.

The international dimension will be crucial, not least because of the national competitiveness issues that arise with energy policy. The year 2003 is when the world's countries start to consider what should come after the Kyoto Protocol's tentative first step. Two challenges dominate. One is the need to make more demanding global emissions reductions, in order to meet the UN Climate Convention's objective of stabilising concentrations of greenhouse gases at a safe level. The other is to find a way of sharing out this "global emissions budget" between all countries.

> The leading (and possibly only) contender to solve this Gordian knot is a proposal called "Contraction and Convergence", devised by the Global Commons Institute, a British based think-tank. Unlike Kyoto, this would start with the question of what global level of emissions is safe. Only once this has been agreed would countries turn to who gets to emit what.

This "contraction" of emissions then leads to the "convergence" part: all countries' emissions entitlements would converge by an agreed date (such as 2040) until they were proportionate to population, so that every individual on the planet had (in theory) an equal right to emissions. Such a system would meet the long-stated US demand for developing countries to accept their own emissions targets, but would also allow them to sell surplus CO2 permits through emissions trading.

"Contraction and Convergence" was one of the central recommendations of the Royal Commission on Environmental Pollution's report on energy in 2001; it was the basis of the Royal Commission's target to reduce UK emissions by 60 per cent by 2050. The Royal Commission's chair, Sir Tom Blundell, and the former chair of the UN Intergovernmental Panel on Climate Change's science team, Sir John Houghton, have recently written to the Prime Minister, challenging the government to respond to this proposal.

With the right objective and the right policies to deliver it, the government's energy white paper could be a landmark. It could be the UK'S first clear statement that it intends to be a world leader in the new global low-carbon economy; it would be a practical example of what the Blair doctrine of global interdependence means in practice, and a clear demonstration of how global governance can link seamlessly to effective delivery at the national level. The UK has everything to play for.

Alex Evans is energy and environment research fellow at the Institute for Public Policy Research. His The Generation Gap: scenarios for UK electricity in 2020 can be downloaded from www.ippr.org

FEBRUARY

New Statesman

Action must start now

If Britain is to do its part in reducing global warming, ministers must not only tackle sources of energy supply, but also levels of energy demand. By TOM BLUNDELL

All forms of energy production have effects on the environment: damaging air pollutants come from fossil fuels; large windfarms intrude on upland scenery; radioactive emissions result from the reprocessing of spent nuclear fuel; and woodlands are destroyed to supply cooking and heating fuels. However, the most serious damage will be done by the carbon dioxide produced from the burning of fossil fuels, the largest single source – accounting for 75 per cent – of greenhouse gas emissions from human activity, and thus the largest cause of global warming. The concentration of carbon dioxide is already higher than at any time for millions of years, and we seem to be experiencing the first effects of global warming.

The Royal Commission on Environmental Pollution, of which I am chairman, supported the proposal that an atmospheric carbon dioxide concentration of 550 parts per million by volume (ppmv) – approximately double the pre-industrial level – should be regarded as an upper limit that should not be exceeded. The current concentration is around 370 ppmv. If all remaining reserves of fossil fuels were burnt during this century, the resulting build-up of carbon dioxide would go well above 550

ppmv, leading to dangerous and destructive climate change. Thus the issue is not whether there are enough fossil fuel reserves, but rather whether we can restrict the use of fossil fuels, starting now.

> A sustainable energy policy should protect the interests of generations to come, but it must also try to achieve social justice, a higher quality of life and industrial competitiveness today. Achieving the right balance is formidably difficult; current policies do not strike it. Developing nations produce much less carbon dioxide per head than developed countries such as the UK. Indeed, around 2.5 billion people currently have no access to modern energy services. Such people, and those who have limited access, will seek more. So we need a just basis for long-term international agreement on how to limit each country's emissions.

The most promising solution is to allocate emission rights to nations on a per capita basis – enshrining the idea that every human is entitled to release into the atmosphere the same quantity of greenhouse gases. But because of the wide differences between per capita emission levels around the world, and because current global emissions are already above safe levels, there will have to be an adjustment period covering several decades in which nations' quotas converge on the same per capita level.

> In other words, we shall need both contraction and convergence, as proposed by Aubrey Meyer,

-with developed countries reducing their emissions while many developing nations increase theirs. For the UK, an international agreement that prevented carbon dioxide concentrations in the atmosphere from exceeding 550 ppmv and achieved convergence by 2050 could imply a reduction of 60 per cent from current annual carbon dioxide emissions by 2050, and perhaps of 80 per cent by 2100. These are enormous changes. Though the UK points to its own substantial reductions in greenhouse gas emissions when exhorting other nations to act, the truth is that its energy use is still increasing. Moreover, the factors that led to its emission reductions over the past decade are largely coincidental. The major one is the substitution of gas for coal in power stations. This will contribute to further reductions in this decade, but making substantial additional cuts in carbon dioxide emissions will become much more difficult for the UK after 2010. The government's goal of a 20 per cent reduction in carbon dioxide emissions by 2010 (compared to the 1990 level) is far more ambitious than the Kyoto obligation of 12.5 per cent. However, its draft climate change programme will not actually achieve this 20 per cent goal. More radical changes will be needed. The government, for example, will need to give much higher priority to energy efficiency. On the supply side, there is only limited potential for further large-scale exploitation of hydropower in the UK, and environmental concerns may rule out major schemes. Unless new plants are

built, nuclear power will almost have ceased by 2020. But before such plants are built, the problem of managing nuclear waste must be solved to the satisfaction of both the scientific community and the general public. The options for renewables are many, but all have impacts on the environment, sometimes visual and sometimes affecting air quality. Some, such as tidal barriers, would be expensive to construct and do not have the advantage of negative discounting in their costing that is apparently enjoyed by radioactive waste disposal. The abundant wind energy distributed across much of Britain's land mass and the surrounding seas offers a vast resource, and there are very large quantities of energy in the form of waves and strong tidal currents. All should be harnessed for our needs. Despite frequently overcast skies, solar energy could also make a substantial contribution to UK energy needs – through electricity-generating photovoltaic panels, solar panels that heat water for use in buildings directly and building designs that enable sunshine to warm and light interiors. Alternatives to coal, oil and gas can also make a contribution. The growing of energy crops such as coppice willow, which are then burned or gasified and combusted to generate electricity and supply heat, could make a much larger contribution to the UK's climate change strategy. They might also contribute to increasing biodiversity and improving farmland landscapes. But this cannot be achieved without major changes to agricultural support systems. Energy crops should receive the same level of support as other crops, but with improved environmental safeguards.

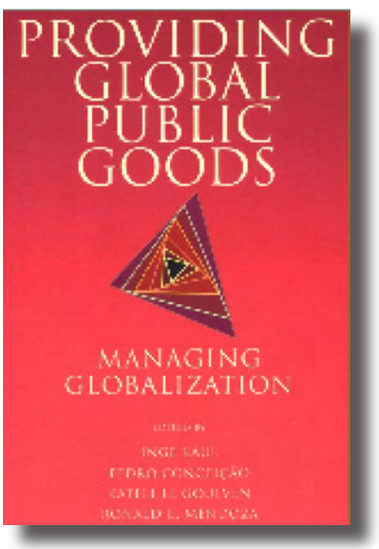
Considering the enormous potential of UK renewable energy resources, it has been slow to make progress. There was an arrogant dismissal of the opportunities by many in the fossil fuel and nuclear industries in the 1980s; the research was not funded and the investment not made in the UK. Furthermore, policies have favoured the generation of electricity in ways that waste vast quantities of heat that could be used to warm buildings. Regulatory and planning policies should encourage the widest possible adoption of combined heat and power technology in urban locations to supply heat. As the proportion of electricity supplied by wind, waves, tides and sunshine increases, the intermittency of these sources will whose growing problems in matching supply with demand. The UK will need to maintain reserve generating capacity (consisting of fossil fuel or renewable fuel plant), add further storage schemes to the grid or develop novel energy carriers, such as hydrogen produced using electricity and then consumed in power-generating fuel cells. The royal commission, however, came to a clear conclusion: energy demand must be curbed to a significant degree. Otherwise, substantial reductions in UK emissions would require an enormous and environmentally intrusive contribution from renewable sources, augmented either by nuclear power or by fossil fuel power stations and the large-scale capture and isolation of carbon dioxide. Such new energy policies will not emerge unless there is a great change

of approach and culture within government. Vision, leadership and action have to begin now. We should be encouraged that the Performance and Innovation Unit's Energy Review has taken up many of the royal commission's themes, as did the recent green paper. The enormous challenge posed by humanity's intervention in the earth's climate, which is threatening generations to come, demands action on a huge scale. If the UK does not show it is serious about doing its part, it cannot expect other nations – least of all those which are much poorer – to do theirs.

Sir Tom Blundell is chairman of the Royal Commission on Environmental Pollution

MARCH

Kaul and Mendoza [Eds] Providing Global Public Goods



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Aubrey Meyer
Director
Global Commons Institute
37 Ravenswood Road
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24 March 2003

Dear Mr Meyer

C&C – SEMINAR PROTECTING THE INTEGRITY OF THE ARGUMENT

Thank you for your letter of 10 March.

I am happy to meet to discuss the contraction and convergence model, and to invite colleagues who deal with different aspects of climate policy.

I ought, nevertheless, to say that I do not believe that there is any confusion about, at the very least, the broad principles of C&C approach. As I explained on the phone, the Energy White Paper's support for a 60% reduction in emissions comes from a significantly different set of arguments and calculations to those of the C&C model. This is quite deliberate; while there are some elements of the RCEP calculation which remained a little puzzling to us even after discussion with RCEP, the White Paper would not have been any different as a result of those puzzles having been resolved, since the White Paper argument deviates from the C&C one at an earlier stage in the logic.

My secretary will be in touch with proposals for a date.

yours sincerely

Henry Derwent

Henry Derwent
Director, Climate, Energy and Environmental Risk Directorate

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INVESTOR IN PEOPLE

MARCH

Environmental Data Service
Blair leadership claim on climate change

In his most powerful speech on the environment to date, Prime Minister Tony Blair has called for renewed international action to tackle global poverty and environmental degradation - particularly climate change. Mr Blair urged EU countries to join the UK in aiming for a 60% reduction in CO2 emissions by 2050.

The speech was arranged at short notice to slot into the hectic round of international diplomacy prompted by the Iraq crisis.

> Strikingly, Mr Blair drew an explicit link between the current agenda on terrorism and weapons of mass destruction and that concerning global poverty and environmental degradation - "most particularly climate change".
>
> These long-term issues are, "just as devastating in their potential impact, some more so," he warned. Ratcheting up pressure on the US, Mr Blair said that, "there will be no genuine security if the planet is ravaged by climate change."
>
> "There is little point in the UK acting alone," he added. "We need a concerted international effort."

Mr Blair said the challenge was, "to integrate the goal of environmental modernisation into our vision of Britain...bringing the environment, economic development and social justice together."

The Prime Minister described the Kyoto Protocol as, "not radical enough", since "at best" it will reduce global emissions by just 2%. He announced a Government target to reduce CO2 emissions by 60% by 2050, as proposed by the Royal Commission on Environmental Pollution in 2000 (ENDS Report 305, pp 19-22).

The basis for this target is controversial (see below).

Basis of the 60% CO2 target: The RCEP's call for the UK to cut CO2 emissions by 60% by 2050 was based on two key assumptions. Firstly, the world should aim to keep atmospheric CO2 concentrations below 550ppm, twice the pre-industrial level. Secondly, the RCEP said, future global climate agreements should be based on the so-called "contraction and convergence" approach, under which national emission allocations converge towards a uniform per capita figure.

The Government has accepted the RCEP's 60% figure - but not the underlying logic. Contraction and convergence is, "only one of a number of potential models", it says, and it would be "premature" to rule out other approaches. Environment Secretary Margaret Beckett claimed that the concept is, "very violently opposed by many of the developing countries."

[GCI comment - Mrs Beckett's remark is curiously misinformed. Reactions from colleagues in developing countries showed incredulity and contained comments such as, "the opposite is true. C&C is strongly supported by many Developing Countries as it is a strategy that embodies the principles of the UNFCCC, precaution and equity based on common but differentiated responsibilities."]

Alex Evans of the Institute for Public Policy Research commented: "The whole point of contraction and convergence is to offer a fair deal to developing countries in the form of a valid share of a safe emissions budget that can then be traded....Leaving them out until the last minute, when climate change will be far more serious and much of the emissions budget will have been used up, would offer developing countries all stick and no carrot."

2003

Professor Konrad Ott
University of Greifswaldwere

Members of the German Council of Environmental Advisers 2002.

We argue the "contraction-and-convergence" approach will be a decisive component of an overall strategy to implement strong sustainable development."

www.euroecolecon.org/frontiers/Contributions/F2papers/FD2.pdf

APRIL 25

Tessa Tennant
Association for Sustainable &
Responsible Investment in Asia

Association For Sustainable & Responsible Investment In Asia

25th April, 2003

To Whom It May Concern,

Aubrey Meyer is testimony to the fact that individual effort can make a difference. It is absolutely remarkable that the idea of Contraction and Convergence has taken such a firm hold worldwide in such a short space of time, especially when you see the tiny operation which has championed this essential idea. I remember at Kyoto in 1997 when policy-makers derided the proposition without a second thought. That type of response has all but disappeared, certainly within the more thoughtful arenas of climate policy.

Through sheer determination, focus and good manners Aubrey has broken through global ignorance and prejudice to make just, common sense prevail… and he has done so on climate change, the most chronic threat which the world currently faces.

We all have a great deal to thank Aubrey for, and I firmly believe that there is no-one better to receive the Sasakawa Award. Please give Aubrey Meyer your greatest consideration.

Yours faithfully,

Tessa Tennant
Executive Chair

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APRIL 26

Sir John Houghton
Chairman, The John Ray Initiative

THE·JOHN·RAY·INITIATIVE

promoting·environmental·sustainability

From the Chairman: Sir John Houghton CBE FRS
Brynhyfryd, Aberdyfi, Gwynedd, Wales LL35 0SN
Email: john.houghton@jri.org.uk

RE: NOMINATION OF AUBREY MEYER FOR THE SASAKAWA PRIZE 2003.

I have been closely connected with the national and international concern and debate regarding Climate Change for some 15 years, particularly through my involvement with the Intergovernmental Panel on Climate Change (as chair or co-chair of the Science Assessment Working Group 1988-2002), the UK Royal Commission on Environmental Pollution (as chairman 1992-1998) and the UK Government Panel on Sustainable Development (member from 1994-2000). The urgent need for international action to mitigate climate change has become increasingly apparent over this period. How the necessary reductions in global emissions of carbon dioxide over the next few decades can be achieved is a vexing question that is concerning all nations in the context of the Framework Convention on Climate Change (FCCC) which they all have signed.

The Principles that should govern international action are generally agreed namely the Precautionary Principle, the Principle of Sustainable Development, the Polluter-Pays Principle and the Principle of Equity (both intergenerational and international). The problem is to turn these into detailed practical long-term arrangements to which all nations can agree. Aubrey Meyer and the Global Commons Institute that he directs, 15 years ago, proposed an arrangement called 'Contraction and Convergence' that was formulated using the simplest possible logic and that well satisfies the four principles. The proposal is visionary in that it clearly addresses the long-term problem; it is also admirably practical. Further, because at its heart is equal per capita sharing of emissions allocations, it provides a unique solution to the equity principle that is the hardest one for the international community to address.

Since the formulation of 'Contraction and Convergence', Aubrey Meyer has tirelessly and selflessly argued for and promoted it with great energy and tenacity in scientific, economic and political fora. Admiration is frequently expressed regarding its elegance and simple logic and it has been widely accepted by policy makers and by NGOs as a basis that should underlie the next stage of policy formulation. For instance, the UK's Royal Commission on Environmental Pollution, in an influential study on Energy published in 2000 used it at the basis of its recommendations. In fact there is no other proposal in play that meets so many of the required principles and criteria or that has any real chance of succeeding. It is bound to be strongly influential in the crucial round of international negotiations in the FCCC that is about to begin.

The personal dedication of Aubrey Meyer, born of a deep concern for global humanity and its future, is what has brought the Contraction and Convergence proposal to the influential position it holds today. I am most pleased to strongly support his nomination for the Sasakawa Prize. I cannot think of a more appropriate recipient.

JOHN HOUGHTON
26 April 2003

APRIL 26

Christopher Layton
Hon. Director General EU Commission

09/05/2003

Christopher Layton
Hon Director General,
Commission of the European Union
44 Copperfields
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**SUPPORTING THE NOMINATION OF
AUBREY MEYER FOR THE SASKAWA PRIZE 2003**

Aged 42 and halfway through a notable career as a violinist and composer, Aubrey Meyer turned abruptly from music to environmental concerns in 1988 after hearing of the murder of Chico Mendez and the plight of Amazonia and its peoples.

In 1989 to address climate change, he founded the Global Commons Institute (GCI) on the principle Equity and Survival serving since then as Director. GCIs mission has been to arrest global warming addressing its unequal human causes and effects, using the ghg emissions management model developed at GCI called *Contraction-and-Convergence(C&C).*

Meyer contributed extensive analytical work to the Second and Third Assessments of the IPCC (1995 and 2000), memorably challenging the short-sighted economic discourse in the Second and establishing a beachhead for C&C in the Third.

C&C has gradually had significant impact and success. In 1997 Meyer was awarded the British Environment Media's Andrew Lees Memorial Award, with this citation: -

"Aubrey Meyer, almost single-handedly and with minimal resources, has made an extraordinary impact on the negotiations on the Climate Change Treaty, one of the most important of our time, through his campaign for a goal of equal per capita emissions entitlements, which is now the official negotiating position of many governments, and is gaining acceptance in developed and developing countries alike."

He received the Schumacher Prize in 2000 for continuing these efforts and writing them up in their briefing number 5,

"Contraction and Convergence - the Global Solution to Climate Change.

His unifying inter-disciplinary analysis, original visual imagery, tenacious and focused messaging, amplified now through the rapidly growing e-list the Global Commons Network (GCN), have now made C&C the most widely known and probably the most widely supported proposal for global solution to the global problem of climate change. C&C has generated tens of thousands of references and citations in the media and academia in at least eight languages and C&C is now a byword in the international debate supported by a growing number of eminent individuals and institutions in the sectors of commerce, politics, academia, civil service, civil society and the faith community.

The campaign is still run on a near voluntary basis with one full and one part time staff member on an annual average budget of £15,000. Against the enormity of the issue, this effort to address it has seen GCI recently described as, *the most efficient NGO in history.*

GCI's director is one of the under-sung heroes of our time.

APRIL 26

Roger Doudna
Findhorn Community

The Sassakawa Prize, 2003

Citation of: -

Aubrey Meyer,
Global Commons Institute,

By: -

Roger Doudna
Findhorn Community
Scotland
26/05/2003

We at Findhorn have been keenly aware of Aubrey Meyer's "Contraction and Convergence" (C&C) proposals. Noting the growing support for them for some years, last Easter we asked him to come here and speak at our 'Restore the Earth' conference.

Compelling integration is what his presentation revealed - how to unify and conceptualise an international programme for the avoidance of the greenhouse gas emissions that are causing global climate to change. With C&C he has done this. He has created a well focused, inclusive - and indeed beautiful - language of principles and practice, and demonstrates this language with images and messages that are clarifying, eclectic, universal and extraordinarily powerful. Perhaps because he is a violinist and composer, he also communicates this as an artist - with insight, integrity and compassion.

His proposal unites the diverse aspects of the climate change problem into the flexible but constitutional simplicity of the C&C solution. This is the great strength of C&C; - shaping adversarial detail into a precautionary, cooperative and enabling rights-based whole. It is wholly numerate and counted into an arrangement founded on precaution and equity. Consequently, hopefulness and empowerment replace the despair that is increasingly felt about the faltering present arrangements for avoiding climate change. As Aubrey says, *"this equity in diversity is not just for its own sake; it is also for survival."*

Aubrey has inspired us with this work. He is now the veteran author of, as well as pilgrim for, this approach. Over fifteen years - with conventionally scant resources and against the odds - he has persuaded more and more people of the merits of the C&C approach. As we are increasingly anxious about the enormity and global complexity of the climate change dilemma, we are grateful that he is being increasingly successful at getting the attention, acceptance and support for C&C from all over the world from ordinary and powerful people in a great diversity of institutions, disciplines and cultures.

We commend him and his work to you to be honoured with your award.

Richard Sandbrook
Former Director, IIED

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26 May 2003

To whom it may concern re:
Aubrey Meyer and the Global Commons Institute

I am a private consultant in the arena of Sustainable Development. I am one of UNEP's global 500 award winners and have been associated with the agency since its inception. I was a co-founder of Friends of the Earth and the Director of the International Institute for Environment and Development for 11 years (1988- 1999) I want to support the nomination of the above for the Sassakawa prize.

Contraction and Convergence is the idea of Aubrey Meyer. It is not a complex idea – not at all. But then that is it beauty. It has even been criticised on this basis as if complexity was needed in matters of fairness and global security. It simply has it that all mankind should move progressively toward a common and defined right to emit greenhouse gases. This is the only long-term way to look at the issue and the only long-term way to solve it without discord. To get there we need contraction by some in their emissions and we have to allow for increases by others if they are to develop. We should converge to one level for all.

We cannot achieve the millennium goals and the challenges of Kyoto without contraction and convergence – even if we call it by another name. Aubrey has over the last 15 years persisted in promoting the idea – sometimes to the point of exasperation toward him – sometimes to see the idea renamed and represented under another guise. He is one of those hidden heroes of the environmental movement – unsung and unrecognised - but right.

If this award is about people and institutions that make a real difference then he should be recognised by it. In 50 years time we will talk of Meyer's principle much as we talk about the Kyoto agreements now. I commend him and the Global Commons Institute to you.

Prof. David Crichton
Chartered Insurance Practitioner

PROFESSOR DAVID CRICHTON, MA, FCII,
Chartered Insurance Practitioner

28th April 2003

United Nations
Nairobi

Dear sir/madam,

The UNEP Sasakawa Award

I am a consultant specialising in advising insurance companies on climate change issues. I have advised insurers and governments in four continents on these issues in recent years, and I wish to support the nomination Aubrey Meyer of the Global Commons Institute for this award.

The campaign for "Contraction and Convergence" is fifteen years old this year. The fact that it is now seen by many individuals, governments, and organisations around the world as the only long term equitable and practical solution to global climate change is a tribute to Aubrey's commitment and personal hard work.

The global insurance industry is three times bigger than the fossil fuel industry and controls more than 30% of the world's stocks and shares. The more enlightened sections of the insurance industry, such as those which have signed up to the Statement of Environmental Commitment of the UNEP Insurance Industry Initiative, recognise that it is essential that efforts are made at every level to mitigate future climate change, and Contraction and Convergence is the only effective and fair way to achieve this.

The Global Commons Institute is a very small organisation and if Aubrey were to be awarded a prize, it would make an enormous impact in assisting him in spreading this important message.

Yours faithfully,

David Crichton

APRIL 26

Dr Julian E Salt
Climate Solutions Consultancy

I first met Aubrey Meyer early in 1992 just prior to INC/V being held in New York. He was trying to arrange a conference on climate and equity issues. Throughout our long telephone conversation I was struck by the beauty of the argument now called the "Contraction and Convergence" theory as well as its simplicity.

In addition, Aubrey himself seemed driven by an utter belief in the principle enshrined in the "C+C" approach. When he later sent me copies of the graphics that back up the "C+C" argument I was blown away by their incisiveness and attention to detail. I have been a believer in "C+C" ever since and maintain that it is the only credible answer to a very complex climate problem.

Aubrey has operated without any major funding ever since I have known him. He relies on other people's goodwill and donations. He has never compromised himself or his idea in order to obtain inappropriate funding. This has to be commended in an ever more commercial world. He tirelessly campaigns for the cause and will never give in despite the forces ranged against him.

Climate politics are entering a decisive phase as we approach the adoption of the Kyoto Protocol and it's strengthening by what ever means are deemed politically acceptable. Never before has GCI needed backing, recognition and funding as now.

To miss this opportunity would be a great shame for a beautifully simple idea that could literally change the future of the human race.

Dr Julian E Salt
Director
Climate Solutions Consultancy

APRIL 28

John Rich
Director, World Nuclear Association

World Nuclear Association
Energy For Sustainable Development

From the Director General

28 April 2003

To the Awarders of the Sassakawa Prize:

I am pleased to have the opportunity to express approval of the nomination made by Christopher Layton, Hon Director General of the Commission of the European Union.

I agree that Aubrey Meyer is the outstanding candidate for the Sassakawa Prize, for two reasons:

First is his simple but brilliant constitutional concept of Contraction and Convergence for avoiding catastrophic climate change.

Second is his relentless and increasingly successful international promotion of this concept over the last fifteen years.

At any rates specified, the C&C model plots two simple things:

- Future greenhouse gas emissions on a global path, via a contraction rate – or or contraction budget – that would stabilise the atmospheric concentration at a safe level; and

- The tradable international permits or shares in this budget that become equal per capita globally at a rate of convergence that is deliberately faster than the contraction rate, and so fair against the historic emissions of the industrial countries.

In the debate about climate change, an impression has been created that the problem is too daunting and complex to prevent. Contraction and Convergence provides a way forward that it is both fair and feasible.

It fulfils the stated goals of the UNFCCC. It satisfies the U.S. Senate's Byrd-Hagel Resolution. And it answers the developing countries' demand for equity.

As such, C&C would resolve the North-South stalemate and enable us to achieve our urgent global emissions-reduction imperative.

Aubrey has matched the craft of his C&C model with the skill and guts to fight for – and win – friends for it all over the world. For more than a decade, he has done this independently and with no institutional support.

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Incorporated in England No. 1215741 VAT Reg No GB 340 2373 93

His achievement is not just impressive but inspirational. C&C is now at the centre of the IPCC and UNFCC policy debate as the most widely referenced and cited approach. It has been profoundly influential in commercial, religious and academic circles, as well in the civil service, civil society and the media.

C&C is rapidly becoming the most widely recognised successor to the Kyoto Protocol.

Whatever technologies come into play in humanity's quest to make and share a sustainable future, C&C will inevitably be the framework we use.

By recognising Aubrey's achievement, the Sassakawa jury will help speed our quest for a solution to a global crisis without precedent.

I can think of no person and no idea more deserving of your reward.

Yours sincerely,

John Ritch

APRIL 28

Grace Akumu
Director, Climate Network Africa

climate network Africa

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P.O. Box 76479
Nairobi, Kenya.
Tel: 254-2-564040
Fax: 254-2-573737
E-mail: cna@lion.meteo.go.ke
Web: http://lion.meteo.go.ke/cna

28 April 2003

SASAKAWA PRIZE 2003 NOMINATION

RE: AUBREY MEYER

It is with great pleasure that I support the nomination of Aubrey Meyer of Global Commons Institute for the 2003 Sasakawa prize. It is rare to find people with both drive and determination, pushing for a global cause single handedly, the way Aubrey Meyer has done with the concept of Contraction and Convergence for approximately fifteen years.

Aubrey has demonstrated talent, courage and patience with the concept of Contraction and Convergence throughout the history of the United Nations Framework Convention on Climate Change (UN-FCCC) negotiations. They say patience pays. Yes, it does as today, many governments around the world have accepted the concept of Contraction and Convergence as the only equitable response mechanism to the threat of climate change. Without equity considerations, implementation of the Climate Change Convention and the Kyoto Protocol will continue to elude all countries with the tragic consequences of the devastating impacts of climate change.

Many African countries as well as NGOs are aware that the African continent will suffer the most from the impacts of climate change. It is with this in mind that in 1997, the African Group at the UN-FCCC publicly supported in the plenary, the concept of Contraction and Convergence.

I therefore fully support Aubrey Meyer's nomination for the 2003 Sasakawa Prize.

Grace Akumu,
Executive Director,
Climate Network Africa.

APRIL 29

Dr Clive Hamilton
Australia Institute

THE AUSTRALIA INSTITUTE LTD
FOR A JUST, SUSTAINABLE, PEACEFUL FUTURE

29 April 2003

To Whom it May Concern

The idea of contraction and convergence is destined to be one of the most important principles governing international relations in the twenty-first century. It is a powerful ethic that incorporates global justice and sustainability and thereby bridges the dominant concerns of the last century and this one. It is the only way to accommodate the interests, ethical and economic, of developing countries and rich countries in the struggle to find a solution to the most important environmental problem facing the world.

The widespread international recognition and endorsement of contraction and convergence is due largely to the efforts of Aubrey Meyer and the Global Commons Institute. Aubrey has been an indefatigable advocate of the principle as the only long-term solution to the enormous threat posed by climate change.

His commitment has come at considerable personal cost. If the world did not have a few score individuals such as Aubrey it would be a much poorer place, for all great ideas of history must have their passionate advocates. I believe that we are reaching the end of the first phase of the idea of contraction and convergence and it would be fitting to acknowledge Aubrey's extraordinary contribution thus far.

Yours sincerely

Clive Hamilton

Dr Clive Hamilton
Executive Director
The Australia Institute

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Alex Evans
Institute for Public Policy Research

Elisabeth Guilbaud-Cox
Sasawaka Prize
UN Environment Programme
Division of Communications and Public Information
PO Box 30552
Nairobi
Kenya

29 April 2003

Nomination for Sasakawa Prize 2003: Aubrey Meyer, Global Commons Institute

It is my great pleasure to write to nominate Mr Aubrey Meyer, director of the London-based Global Commons Institute, for the Sasakawa Prize 2003. This written nomination follows my nomination of Mr Meyer both on the UNEP website and via e-mail.

Since 1990, Aubrey Meyer has been the director of the Global Commons Institute, a small, underfunded and yet astonishingly effective think tank and advocacy organisation focussed on international climate change. From a background in classical music, Aubrey has emerged to be at the forefront of the global climate agenda.

He has run an extraordinary campaign on global climate policy – usually single-handed, and frequently in the face of extreme financial difficulties – which has seen him invited to present his ideas in countries all over the world, attracted the support of governments, heads of state and parliamentarians around the globe, and won the admiration of a bewildering array of leaders in environmental advocacy and campaigning.

At the heart of his efforts has been the 'Contraction and Convergence' (C&C) framework for international climate policy, which he devised. C&C is a simple and yet remorselessly logical framework that mandates:

- a contraction in global emissions, consistent with limiting emissions to a safe level of concentrations in the atmosphere (reflecting the objective of Article 2 of the UNFCCC), and
- a concurrent convergence of national entitlements under this 'global emissions budget' so that all countries arrive at equal per capita entitlements to the atmosphere by an agreed date.
- full international emissions trading in order to maximise flexibility as well as to give developing countries an incentive to take part in quantified entitlements.

Despite starting out on his campaign with no prior experience of political advocacy work, no funding, no staff and no idea that we would still be running the same campaign more than a decade later, Mr Meyer has clocked up a sequence of extraordinary achievements in his campaign for the logic of C&C to be recognised and adopted. Indeed, there is every possibility that his idea may come to be the basis of how international climate policy is structured in future commitment periods.

As well as promoting C&C within the UNFCCC and beyond, Mr Meyer has also been a tireless and passionate campaigner for the ability of developing countries to participate fully and meaningfully in international climate negotiations, despite their lower capacity compared to developed countries. He played a critical role in helping developing countries to ensure that their concerns over IPCC WG3's Second

Assessment Report contribution were listened to and acted on – indeed, it is probably no exaggeration to suggest that without Mr Meyer's help, the Second Assessment Report would have gone to press still containing calculations that valued an individual life unequally in developed and developing countries.

I believe that Mr Meyer exemplifies the qualities that the Sasakawa Environment Prize exists to honour. He has shown wisdom, compassion, an understanding of global interdependence that has been an example to me and to many others whom have worked with him, and above all extraordinary and continuing perseverance and tenacity in his campaign. I hope very much that you will consider this nomination positively.

Enclosed is a selection of GCI materials published over the last twelve years (as well as a CD containing the same material), which I hope will be useful to you as background. Please do not hesitate to contact me if I can be of any further assistance to the Selection Committee in its considerations.

Yours sincerely

Alex Evans
Energy and Environment Research Fellow

APRIL 30

Prof. James M Phelps
Chairman, Zululand Environmental Alliance

ZEAL Zululand Environmental Alliance

An alliance of associations and persons pro the environment

P. O. Box 12194 Empangeni South Africa 3880
Phone: 035-772-5967 (Chairman's home)
Email address: jmphelps@iafrica.com

30 April 2003

Per email to cna@lion.meteo.go.ke
This letter went to: -

The Director
Climate Network Africa (CNA)
Wood Avenue, Kilimani
P.O Box 76479
Nairobi 00508 - Kenya

Dear Grace

Re: Nomination of Aubrey Meyer for the 2003 SASAKAWA PRIZE

It is with great pleasure that I support the nomination of Aubrey Meyer of Global Commons Institute for the 2003 Sasakawa prize.

Aubrey has brought to bear exceptional determination in advancing the brilliant concept of Contraction and Convergence, over long hard years with the Global Commons Institute—fifteen in all so far. It has been a frequently solitary struggle, and pursued with very limited resources. But Aubrey has not been daunted. Instead he has persevered, driven by his clear-sighted vision of the workability of Contraction and Convergence. His work offers not only a hope that global warming and environmental catastrophe can be averted, but that human reason can be our guiding star. He is one of the rare and vital people in the world today. He has given his life for others, not for personal gain. In a world deluged by self-centred motivations, Aubrey's efforts stand out as a beckoning call in the right direction.

Aubrey has evidenced outstanding intelligence and patience in advancing the concept of Contraction and Convergence during the history of the United Nations Framework Convention on Climate Change (UN-FCCC) negotiations. His patient efforts have been rewarded because many governments in the world today have accepted the concept of Contraction and Convergence as the only equitable response mechanism to the threat of climate change. Without equity considerations as devised in Contraction and Convergence, the Climate Change Convention and the Kyoto Protocol will remain un-implementable and leave all people on earth facing the devastating effects of climate change.

We in South Africa are aware that although the major industrial nations are causing the greatest air pollution, our own country needs comprehensively and urgently to reform its power generation and energy use systems. Aubrey is a South African by origin, and we would hope that if he should be successful in achieving the 2003 Sasakawa Prize, this would help bring a new awareness to our country about contraction and Convergence, and to the world of the threat of global warming to Africa's lands and peoples.

We wholeheartedly support Aubrey Meyer's nomination for the 2003 Sasakawa Prize.

Yours faithfully

Prof. James M. Phelps
Chairman
Zululand Environmental Alliance (ZEAL)

MAY

Rt Hon Michael Meacher MP
UK Minister for the Environment

FROM THE RT HON MICHAEL MEACHER MP
MINISTER FOR THE ENVIRONMENT AND AGRI-ENVIRONMENT

DEFRA
Department for
Environment,
Food & **Rural Affairs**

Nobel House
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Aubrey Meyer's contribution to the policy debate on how to avoid dangerous climate change has been sustained and outstanding.

Since 1989 he and his tiny organisation - the Global Commons Institute (GCI) - have been successfully challenging officials around the world including politicians like myself to adopt "Contraction and Convergence", GCI's global framework for climate change policies based on precaution, logic and equity

With scant material support and an extraordinary dedication and persistence, he created and communicated this visionary concept for a long-term global framework for negotiating the international allocation of greenhouse gas emissions permits.

He has already convinced numerous leading figures in the international negotiating community, the insurance industry, the scientific community, the environmental media and politics of the absence of effective alternatives to "Contraction and Convergence". So much so that in June 2000, the UK's Royal Commission on Environmental Pollution made it a key recommendation to this government. The concept has been endorsed by the European Parliament and many members of the UK parliament as well, including the former Secretary of State for the Environment, John Gummer and Ministers from practically all European countries. Under GCI's advice the concept was led at the UN negotiations by the Indian Government in 1995 and again by the Africa Group of Nations in 1997. Again as a result of GCI publications, C&C has also been endorsed by numerous eminent individuals and institutions and is more and more widely quoted in prestigious academic publications.

Lest we make the planet uninhabitable, the international community must come soon to an agreement on how to organise the global effort to avoid this. Contraction and Convergence is a very powerful idea and I have no doubt that the concept will continue to be an influential force in discussions, as one model of how greenhouse gas emissions can be allocated in a fair and equitable manner.

If ever there was an initiative that deserved recognition and support, it is the brilliant and relentless campaign waged by this fiercely independent, creative and apparently quite tireless individual.

Dr. Andrew Dlugolecki
Carbon Disclosure Project

**Citation of Aubrey Meyer, Global Commons Institute,
for the Sasakawa Prize,2003**

by
Dr Andrew Dlugolecki
Advisory Board Director, Carbon Disclosure Project
Adviser on Climate Change to UNEP Finance Sector Initiative

Aubrey Meyer's insight into the problem of mitigation of climate change bears the true hallmark of genius: it is simple and robust. His "Contraction and Convergence" model provides a transparent framework that incorporates the clear objective of a safe global level of greenhouse gases, AND allocates the responsibility for achieving this internationally with the irresistible logic of equal shares. At the same time, the model recognises the practical need for an adjustment period to permit nations to conform to the new logic and prepare for a climate-friendly economy. It is no doctrinaire solution, but a brilliantly pragmatic and elegant solution.

Aubrey and his tiny organisation GCI, have laboured tirelessly to bring the concept to every conceivable stakeholder's attention, from governments to NGO's, to the business world, in which I operate. Too often, mitigation is portrayed as being detrimental to economic development. Aubrey has demonstrated through his brilliantly simple graphics, that in fact mitigation is the guarantor of wealth creation, not its nemesis, and that market forces can accelerate the transition to a safer climate. This is a key message in mustering the support of the business world, and already the UNEP Finance Sector Initiative has commended "C&C" to policymakers as a basis for negotiation.

In the forthcoming discussions on how to follow up "Kyoto" with more meaningful action, surely Contraction and Convergence will be the pivotal proposal that reconciles developing and developed nations' ambitions. It is only fitting that Aubrey Meyer should be recognised for creating such a seminal concept, and promoting it so effectively.

Sir Tom Blundel
Royal Commision on Environmental Pollution

ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION
Third Floor 5-8 The Sanctuary Westminster London SW1P 3JS

From The Chairman
Sir Tom Blundell FRS FMedSci

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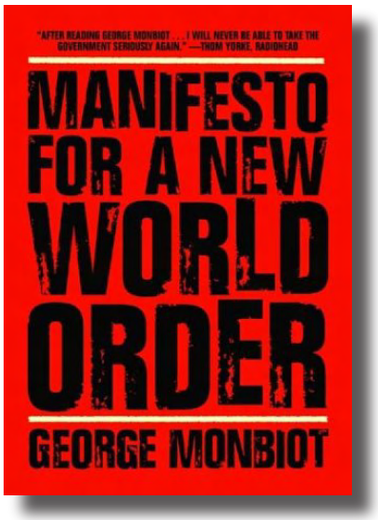
Citation of Aubrey Meyer, Global Commons Institute for the Sasakawa Prize.

I write to support the nomination of Aubrey Meyer for the Sasakawa Prize. Over the past fifteen years Aubrey Meyer has developed the idea of Contraction and Convergence as an international solution to the challenge of global warming and climate change. He has done this through the Global Commons Institute with very little funding and infrastructure. These ideas influenced the Royal Commission on Environmental Pollution in the development of its report "Energy: the Changing Climate" and Contraction and Convergence was the basis of the recommended 60% reduction in carbon emissions. This recommendation has been taken up by the government in its recent Energy White Paper and is now the generally accepted basis for policy by a range of government, industry and non-governmental organisations.

Aubrey Meyer is a visionary, but it has been hard to get the message through to governments. The award of the Sasakawa Prize would give much support to this very important work, and be a splendid recognition his important contributions.

Sir Tom Blundell,
Chairman,
Royal Commission on Environmental Pollution.

2003



George Monbiot
Manifesto for a New World Order

Publisher: New Press ISBN: 1565849086

Contraction & Convergence... "the only just and sustainable means of tackling climate change"

MAY

Robin Chapple [MLC]
Western Australian Legislative Council

In a letter to John Hyslop, Chairman of the Electricity Reform Task Force in Perth Western Australia.
Inter alia . . .

"All parties see Kyoto as merely the first step is achieving reductions of greenhouse gas emissions to ecologically sustainable levels within the next hundred years. Much work has been done in crafting a workable, equitable post-Kyoto process which will need to satisfy a number of agendas:

1. The objective must be to 'stabilise greenhouse gas concentrations in the atmosphere at a level which would prevent dangerous anthropogenic interference with the climate system' (UNFCCC 1992). Such a target will most likely be in the region of 350ppmv atmospheric CO2 by the year 2100, and there is general consensus that the limit can not be forced higher than 450ppmv without causing massive ecological and social dislocation.

2. A global carbon budget must be established, which quantifies the maximum amount of greenhouse gas which can be sustainably emitted globally per year. This defines the level of 'contraction' of emissions required (Meyer 2000).

3. This annual emissions budget is then assigned to each country proportional to population, establishing the principle of 'equity for survival' (Meyer 2000).

4. Over a specified time frame, all nations work toward bringing their emissions into line with their budget. This is known as

'convergence' (Meyer 2000).

and political action remains huge.

Furthermore, given that access for CO2 emissions to the global atmosphere needs to be rigorously checked in order to stay within 'safe' levels, no progress has yet been made in obtaining global consent to a politically equitable distribution of such rights.

A programme of Contraction & Convergence, moving towards an allocation of equal per capita emissions for all countries both developing and developed, has been proposed by the Global Commons Institute, but has not yet been widely taken up."

www.gci.org.uk/speeches/Meacher.pdf

www.guardian.co.uk/uk_news/story/0,3604,895067,00.html

FEBRUARY

New Statesman
How Britain can seize the moment

Ministers have to find an energy policy – otherwise they will fail to meet commitments on climate change and they will leave the UK too dependent on foreign supplies.

By ALEX EVANS

Just over ten years ago, John Major abolished the Department of Energy and consigned it to being no more than a directorate within the Department of Trade and Industry. At the time, this seemed only logical. After all, the bulk of the country's power generation capacity had been privatised (as National Power and Powergen), and the role of the state had apparently diminished to little more than appointing the regulator. The age of energy policy had, it seemed, come to an end.

When Labour came to power in 1997, little seemed to change. True, Labour took steps to protect the UK's ailing coal industry, mainly through using the planning regime to suspend the "dash for gas" – the 1990s rush to build cheap and highly profitable gas-fired power stations. But Labour's overriding aim in energy was to increase competition. Today, though, all eyes are once more on the government as its energy white paper approaches publication. The energy sector will be at the forefront of responding to the huge challenge of global climate change. Moreover, the UK's North Sea gas reserves have all but run out, raising the prospect of imminent dependency on gas imported through pipelines thousands of miles long, with inevitable concerns about security of supply. And over the next 20 years, the UK is projected to lose up to half of its existing power

stations – posing the question of how to replace them. Energy policy, it seems, is back. So what is the government trying to do with its energy policy? At present, it

The principle of contraction and convergence has been endorsed by the insurance sector – a sector whose core business of risk minimisation closely matches the objective of stabilising greenhouse emissions at safe levels and minimising the adverse environmental impacts and potentially huge economic costs of climate change.

While there are difficulties with each approach, it is clear that the international climate change framework of the future, whatever the detail of its related Protocols or other arrangements, will have very important implications for a carbon intensive economy such as NSW."

www.seda.nsw.gov.au/pdf/SEDA_Corp_Plan_2003-2005.pdf

2003

RCEP
Minutes from 3-4 April 2003:

Item 6: RCP(03)109

Analysis of the government's response to the 22nd Report

Energy The Changing Climate.

"18. The Chairman noted that during his talk he had mentioned particularly the difficulty in the government's position of accepting the 60% cut in carbon dioxide emissions advocated in the Report without accepting the principle of contraction and convergence on which it was based.

Professor Clift also asked how the government could justify accepting the recommendation for 60% cut in emissions without agreeing with the principle that had led to it. The Chairman said that the government had not fully rejected the model but said that they wanted to explore other options that might be more attractive to developing countries.

This seemed to misunderstand contraction and convergence."

http://www.rcep.org.uk/minutes/min03-04.pdf

JUNE

DEFRA Magazine

Trading up to Climate Security

Aubrey Meyer, the author of Contraction & Convergence – the global solution to climate change, believes the UK Government is edging towards a C&C framework to avert climate change disaster.

As a musician he was drawn to Brazil in the late 80s in search of a subject for a musical. The experience changed his life. He spent the next decade contributing to the policy working group of the Intergovernmental Panel on Climate Change (IPCC) and campaigning at United Nations negotiations. He is Director of the Global Commons Institute, has been honoured internationally for his work, and in May he addresses Government experts about climate security. By Aubrey Meyer Prime Minister Tony Blair has again called for a concerted international effort to tackle global poverty and environmental degradation – particularly climate change. This time, introducing the Government's White Paper on energy and prompted by the Iraq crisis, Mr Blair compared damage from weapons of mass destruction with global poverty and environmental degradation saying these long-term issues are "just as devastating in their potential impact, some more so. There will be no genuine security if the planet is ravaged by climate change." The urgency is palpable. The reality is also inescapable. The big re-insurance companies have noted that damages – or 'uninsured economic losses' – from (un)natural disasters such as climate change – have been rising at up to four times the rate of economic growth for the past 40 years . (See diagrams on facing page). At this rate it is only a matter of time before the losses reach catastrophic proportions for the industry. Mr Blair rightly described the Kyoto Protocol as, "not radical enough" and announced a Government target to reduce UK CO2 emissions by 60% by 2050. He linked this to the report in 2000 by the Royal Commission on Environmental Pollution who, in and since that report, advocate the global "Contraction and Convergence" (C&C) approach. The London-based Global Commons Institute (GCI) first proposed C&C in 1990. Since then GCI has refined the concept and with lobbying and imagery generated considerable international support for it (see www.gci.org.uk/consolidation).

The C&C methodology(1) puts the objective and principles of the United Nations Framework Convention on Climate Change (UNFCCC) into a constitutional global calculus that is described by the Intergovernmental Panel on Climate Change (IPCC) as, "taking the rights-based approach to its logical conclusion". To meet the objective of the UNFCCC in a precautionary way, C&C first proposes a reviewable global greenhouse gas (ghg) emissions 'contraction budget' targeted at a safe and stable future level for atmospheric ghg concentrations (for example

450 ppmv as in the example shown above) . This also applies the UNFCCC principle of precaution. To embed the principle of equity, C&C then proposes internationally tradable shares in this budget that are calculated on the basis of 'convergence' from the starting point, where shares are broadly proportional to global income distribution, to a target date within the budget timeline, after which they remain proportional to an agreed base year of global population (for example 2030 as in the example below). This reduces the randomness and North/South rancour that has almost fatally flawed negotiations since 1992 over future emissions commitments/entitlements.

C&C resolves constitutionally this conflict between the GDP - growth or 'efficiency'-led approaches favoured by the USA and those, such as the "Brazilian Proposal", that emphasise responsibility for the historic emissions that have caused the rise of atmospheric concentrations, temperature and damages.

(See the graphic, right). Under the influence of Environment Minister Michael Meacher, Defra – the Government's lead agency on climate change – has increasingly engaged with C&C over recent years. Saying that their own methodology is based on C&C, there is still resistance. However, Defra has now indicated its intention to encourage discussion of this at the UN negotiations and has invited GCI to lead a seminar on this for civil servants in May. Here is the essence of that presentation: Precaution recognises that the bigger the contraction budget the greater the risks. So, guided by scientific advice of the Intergovernmental Panel on Climate Change (IPCC), all governments or regional groupings of governments jointly and severally agree to observe such an atmospheric target. With such a target it is possible to calculate the total diminishing amount of greenhouse gases that the world can emit for each year in the coming century. Whatever the rate and subsequent revisions agreed, C&C view's this event as a whole as " Contraction"(2). The example shown limits the rise of atmospheric CO2 concentration to 450 parts per million by volume or no more than 70% above the maximum pre-industrial level. On the basis of equity, convergence means that each year's ration of this global emissions (contraction) budget for each country or group of countries progressively converges on the same allocation per person by an agreed date, as shown by 2030 in the previous graphic. This recognises the principle of globally equal rights per capita to the 'global commons' of the atmosphere, but achieved by smooth transition. Where country-groups do have a diversity of fossil fuel endowments and production/consumption patterns, C&C acknowledges this too by embracing the example of the European Union, which operates as a unit at the international level whilst creating its own internal convergence arrangements. The overall rate of convergence is negotiable independent of the rate on contraction; and can be 'accelerated' so as to provide a

global mechanism whereby developing countries can redress the structural imbalance represented by the historic inequalities of consumption and emissions.

Permits created this way are considered tradable equity and only emissions in excess of the total of permits created under C&C are not permitted – sometimes called 'hot-air'. Countries unable to manage within their agreed shares would, subject to verification and appropriate rules, be able to buy the unused parts of the allocations of other countries or regions. Sales of unused allocations would generate purchasing power in low per capita emitting countries to fund development in sustainable zero-emission ways. High per capita emitting countries would be paying over the odds as they adjusted but would gain a mechanism to mitigate the expensive premature retirement of their carbon capital stock. They would also benefit from the export markets for renewable technologies this restructuring would create. Most importantly, we all benefit from more rapidly avoided global damages as fossil fuel dependence is structurally inhibited and revenues from emission permit sales are recycled into the competitive diffusion of clean energy systems.

At present, as Tony Blair recognises, fossil fuel dependence and climate change increasingly augur chaotic political conditions and catastrophic economic losses. C&C pre-empts this by integrating the key features of global diplomacy, environment and economic development necessary for long-term prosperity and security. This integration can guide the global transition to a new growth and prosperity based on zero carbon techniques and technologies. Without such an agreement we are radar-less and rudderless.

I hope GCI can persuade our civil service experts to make and win this argument at the UN. Unequal commitments by some countries – as with Kyoto – are a half truth that aggravates climate change and conflict. Speaking to the whole truth of equal emissions entitlements under a global cap on emissions – Contraction and Convergence – creates the negotiating conditions that will win peace and prosperity with climate security. This is the basis for Mr Blair's "Climate Covenant".

(1) Aubrey Meyer's book Contraction & Convergence is available from www.greenbooks.co.uk, tel 01803 863260.

JUNE

UK Liberal Democrats
Proposals on Energy Policy

Policy Paper 58

2.4.6

Preparations also need to be made for the longer-term development of the Protocol, beyond the first commitment period of 2008–12.

Liberal Democrats argue for:

• Further and more ambitious emissions reductions targets should be agreed for the second and subsequent commitment periods, based on the principle of 'contraction and convergence' with the long-term goal of equalising per capita emissions across the world.

• Generous assistance with finance and technology transfer must be made available to developing countries to assist them in meeting their targets.

UK Liberal Democrat Working Group on Energy

Andrew Warren (Chair) , Terry Jones Andrew Stunell MP, Richard Balmer , Tamsin Lishman , Cllr Alan Thawley, Duncan Brack , Maria Menezes , Siobhan Vitelli, Cllr Paul Burall , Cllr Bill Powell, Vince Cable MP , Liz Pym Staff, James Cameron , David Simpson, Chris Davies MEP , Sir Robert Smith MP , Christian Moon, Mark Hinnells , Neil Stockley

Note: Membership of the Working Group should not be taken to indicate that every member necessarily agrees with every statement or every proposal in this paper.

www.libdems.org.uk/documents/policies/Policy_Papers/58ConservingtheFuture.pdf

JUNE

New Statesman
It's later than you think

MARK LYNAS has seen the results of man-made climate change across five continents. Only urgent action can now prevent a catastrophe, he argues.

Hardly anyone realises it yet, but the debate about climate change is over. Scientists around the world have now amassed a virtually unassailable body of evidence to support the conclusion that a rapid warming of our planet – caused principally by greenhouse gas emissions from fossil fuel burning – is under way.

The dwindling band of climate "sceptics", a rag-tag bunch of oil and coal industry frontmen, retired professors and semi-deranged obsessives, is now on the defensive. Although names like Fred Singer, Philip Stott and Bjorn Lomborg still appear from time to time in the popular press both here and in the United States, their views are notable by their absence from the expert literature.

Meanwhile the world as we once knew it is beginning to unravel. The signs are everywhere, even in Britain. Horse chestnut, oak and ash trees are coming into leaf more than a week earlier than two decades ago. The growing season now lasts almost all year round: in 2000 there were just 39 official days of winter.

Destructive winter floods are part of this warming trend, whilst in lowland England snow has become a thing of the past. Where I live in Oxford six out of the past ten winters have been completely snowless – something that only happened twice during the whole 30-year period between 1960 and 1990. The rate of warming has now become so rapid that it's equivalent to your garden moving south by 20 metres every single day.

> In other parts of the world the global warming signs are more dramatic. Over the last three years, researching a book on the subject, I have witnessed major climate-driven changes across five continents, changes that are already leaving millions homeless, destitute and in danger.

In Alaska I spent a week in the Eskimo village of Shishmaref, on the state's remote western coast, just 70 miles from the eastern coast of Russia. Whilst the midnight sun shone outside, I listened as the village elder Clifford Weyiouanna told me how the sea, which used to freeze up in October, was now ice-free until Christmas. And even when the sea ice does eventually form, he explained, it is so thin that it is dangerous to walk and hunt on.

The changing seasons are also affecting the animals: seals and the walruses – still crucial elements of the Eskimo diet – are migrating earlier and are almost impossible to catch. The whole village caught only one walrus last year, even after covering thousands of miles by boat.

Shishmaref lives in perpetual fear. The cliffs on which the 600-strong community sits are thawing, and during the last big storm fifty feet of ground was lost overnight. People battled 90-mph winds to save their houses from the crashing waves.

I stood on the shoreline a year ago with Robert Iyatunguk, Shishmaref's Erosion Coordinator, looking up at a house left hanging over the clifftop. "The wind is getting stronger, the water is getting higher, and it's noticeable to everybody in town," he told me. "It just kind of scares you inside your body and makes you wonder exactly when the big one is

going to hit." In July 2002 the residents voted to abandon the site altogether – a narrow barrier island which has been continuously occupied by Eskimos for centuries – and move elsewhere.

In Fairbanks, Alaska's main town in the interior, everyone talks about warming. The manager of the hostel where I stayed, a keen hunter, told me how ducks had been swimming on the local river in December (it's supposed to freeze over in autumn), how bears had become so confused that they didn't know whether to hibernate or stay awake, and that winter temperatures, which in the past used to plummet to 40 degrees below zero now barely touched 25 below.

All around the town roads are buckling and houses sagging as the permafrost underneath them thaws. In one house I visited, the occupants, a cleaning lady and her daughter, showed me how just walking across the kitchen meant going uphill (the whole house was tilting sideways) and how their shelves had to be rebalanced with bits of wood to stop everything falling off. Other dwellings have been abandoned. New ones are built on adjustable stilts.

Scientists have long predicted that global warming will lead to more intense flooding and drought. When I visited China in April last year, the country's northen provinces were in the grip of the worst drought in over a century. Entire lakes had dried up, and in many places sand dunes advancing were advancing across farmers' fields.

One lakeside village in Gansu Province, just off the old Silk Road, was abandoned after the waters dried up – apart from one woman, who lives amid the ruins with only a few chickens and a cow for company. "Of course I'm lonely!" she cried, in answer to my rather insensitive question. "Can you imagine how boring this life is? I can't move, I can do nothing. I have no relatives, no friends and no money." She was tormented by memories of how it had once been, when neighbours had chatted and swapped stories late into the evenings, before the whole place became a ghost town.

Minutes after I had left, a duststorm blew in. These storms are getting more frequent, and even Beijing is now hit repeatedly every spring. During an earlier visit to a remote village in eastern Inner Mongolia, not far from the ruins of Kubla Khan's fabled Xanadu, I experienced an even stronger storm. Day was turned into night as a blizzard of sand and dust scoured the mud-brick buildings. I cowered inside one of them with a Mongolian peasant family, sharing rice wine and listening to tales of how the grass had once grown waist-high on the surrounding plains. Now the surrounding land is little more than arid desert, thanks both to persistent droughts and overgrazing.

The storm raged for hours. When it eased in the late afternoon and the sun appeared again, a loud crowing erupted – the village cockerels thought that morning had come early.

The drought in northwest China is partly caused by shrinking runoff from nearby mountains, which because of the rising temperatures are now capped with less snow and ice than before. Glacier shrinkage is a phenomenon repeated right across the world's mountain ranges, and I also saw it at first hand in Peru, standing dizzy with altitude sickness in the high Andes 5,200 metres above the capital, Lima, where one of the main water-supplying glaciers has shrunk by more than a kilometre during the past century.

A senior manager of Lima's water authority told me later how melting ice is now a critical threat to future freshwater supplies: this city of seven million is the world's second largest desert metropolis after Cairo, and the mountains supply all of its water through coastal rivers that pour down from the icefields far above. It is the snows that keep the rivers running all year round – once the glaciers are gone the rivers will flow only in the wet season. The same problem afflicts the Indian subcontinent, too: overwhelmingly dependent for water on the mighty Ganges, Indus and Brahmaputra rivers that flow down from the Himalayas, hundreds of millions of people will suffer water shortages as their source glaciers decline over the coming century.

Unless alternative water supplies can be secured, Lima will eventually be left depopulated, its people scattered as environmental refugees. This is a category already familiar to the residents of Tuvalu, a group of nine coral atolls in the middle of the Pacific. Tuvalu, together with Kiribati, the Maldives and many other island nations, has made its plight well known to the world community, and an evacuation plan – shifting 75 people a year to New Zealand – is already under way.

I saw at first hand how the islands are already being affected by sea level rise, paddling in knee-deep floodwaters during last year's February spring tides, which submerged much of the capital Funafuti and almost surrounded its airstrip. Later the same evening the country's first post-independence prime minister, Toaripi Lauti, told me of his shock at finding his own crop of pulaka (a root vegetable like taro, grown in sunken pits) dying from saltwater intrusion. He recalled how everyone had woken up one morning a few years previously to find that one of the islets on the atoll's rim had disappeared from the horizon, washed over by the waves, its coconut trees smashed and destroyed by the rising sea.

The worrying truth is that however severe these unfolding climate change impacts seem, they are – like the canary in the coal mine – just the first whispers of the holocaust that lies ahead if nothing is done to reduce greenhouse gas emissions.

Scientists meeting under the banner of the UN-sponsored Intergovernmental Panel on Climate Change (IPCC) have predicted a warming during this century alone of up to six degrees Celsius, which would take the earth into dangerous uncharted waters. A few weeks ago scientists at the UK's Hadley Centre reported that the warming might be even greater because of the complexities of the carbon cycle.

The IPCC's worst-case forecast of six degrees could prove almost unimaginably catastrophic. It only took six degrees of warming to spark the end-Permian mass extinction 251 million years ago, the worst crisis ever to hit life on Earth (expertly chronicled by Michael Benton in 'When Life Nearly Died') which led to the deaths of 95% of all the species alive at the time.

If humanity is to be sure about avoiding a similar fate, global greenhouse gas emissions need to be brought down to 60-80% below current levels – precisely the reverse of emissions forecasts recently produced by the International Energy Agency.

A good start would be the ratification and speedy implementation of the Kyoto Protocol, which should be superseded after the next decade by the 'contraction and convergence' model proposed by the Global Commons Institute in London (http://www.gci.org.uk), allocating equal per-person emissions rights among all the world's nations.

In the meantime, a network of campaigning groups is currently mobilising under the banner of 'No New Oil', demanding an end to the exploration and development of new fossil fuel reserves on the basis that current reserves alone include enough oil, coal and gas to utterly destabilise the world's climate. Searching for more is just as illogical as it is wasteful.

Avoiding dangerous climate change and other large-scale environmental crises will need to become the key organising principle around which societies evolve. All the signs today are that few in power realise this – least of all the current US administration, which has committed itself to a policy of wanton destructiveness, with control and exploitation of oil supplies a central theme.

We must abandon the old mindset that demands an oil-based economy, not just because it sparks wars and terrorism, but because the future of life on Earth depends on leaving it behind.

Mark Lynas's book 'High Tide: News from a Warming World' will be published by Flamingo in March 2004. marklynas@zetnet.co.uk

JUNE

Climate Policy Journal

> ". . . a convergence regime offers the best opportunities for exploring cost-reduction options of the [Kyoto Mechanisms] as all parties can participate in global emissions trading. There may be excess emission allowances (hot air), but this will not affect the effectiveness nor the efficiency of the regime, only the distribution of costs."

Berk and den Elzen indeed said this. They went on to conclude -

"We discussed the two different climate regime options against the requirement of early participation of developing countries in global greenhouse emission control to meet stringent climate targets. Where climate change limits are stringent, a C&C regime seems to provide more incentives for a timely participation of developing countries, and better opportunities for an effective and efficient regime for controlling global GHG emission control than increasing participation."

JULY

House of Commons
Environmental Audit to Government

The 60% target for 2050

11. The Government's commitment to a new direction in energy policy is specifically reflected by its adoption of a long-term carbon reduction target in direct response to the RCEP recommendation.[14] By including in the White Paper a specific commitment to a 60% reduction in carbon emissions by 2050, the UK Government has set a clear goal for domestic policy. It has also led the way internationally by emphasising to other nations the need to address the challenge of global warming. The Government deserves praise for doing so. 12. The impact of this internationally was reflected in comments made by the Chairman and members of the Environment Committee of the Canadian Federal Parliament, when they came to give evidence to us on another inquiry. In referring to the Government's 60% target for 2050, the Chairman stated:

"We would like, as parliamentarians, to congratulate you for your initiative, which we find far reaching and very enlightened and it sends out a signal also to us in Canada, which we will take seriously.

We would like also to congratulate not only you in this room but outside this room those in the Energy Department of the UK who produced the White Paper in which the target of 2050 is elaborated for a reduction of greenhouse gases by 60 per cent. Although the choice of 2050 is a very bold initiative it forces us to think into the future more than we usually do and that 60 per cent reduction is a stunning item".[15] 13. However, the RCEP pointed out that the 60% target was in the context of an international agreement to a "contraction and convergence" (C&C) framework, and it recommended the adoption of such an approach, combined with international trading in emission permits, as offering the best long-term prospect of securing equity, economy and international consensus. The Energy White Paper says nothing about the latter, and the Government response to the RCEP recommendation is non-committal, citing C&C as only one of a number of possible approaches which could be adopted.[16] While we understand the need for some flexibility in international negotiations, we are aware of the difficulties of achieving a consensus. We believe that, just as the UK is setting a precedent in terms of adopting a long-term target, it could also exert greater influence over other nations by setting out and promoting more clearly what approach it favours in terms of an international framework for reducing carbon emissions."

www.publications.parliament.uk/pa/cm200203/cmselect/cmenvaud/618/61804.htm#a3

JULY

Argus Energy Monthly
Big idea

When the Kyoto protocol ends, governments will need a new climate change strategy. Here's one.

One vital question remains unanswered in the world of climate change what will happen when the Kyoto protocol ends?

The protocol only applies to a first commitment period. of 2008-2012. After that, at present, there is only the loosest of political understandings to agree by 2005 a new direction on curbing greenhouse gas (GHG) emissions (see pp14-15).

Given the Bush administration's stubborn abhorrence of Kyoto, the idea of a harmonious future with the world united under one binding agreement looks increasingly unlikely. But times change, political views soften, and the march of big ideas can catch the imagination of the electorate and overwhelm politicians when they least expect it.

Simple

Here is one: contraction and convergence (C&C), devised and championed by South African environmentalist Aubrey Meyer . one of the founders of UK advocacy Global Commons Institute

(GCI) and author of the book Contraction and Convergence. The concept is relatively simple to grasp. Contraction refers to the setting up of a global emissions budget that stabilises the rising GHG concentrations in the atmosphere. All countries agree this is a safer approach than the random national agreements of Kyoto which only apply to developed Annex-1 countries. Convergence refers to the fair allocation of entitlements to this budget so that all nations can help meet the annual contraction target. The heart of the concept is that allocation would be based on emissions per head of the population, to which each country would "converge" by an agreed date. So a populous developing country such as Indonesia with low GHG emissions per person would end up well within its budgeted emissions entitlement, and therefore have credits to sell. Done like this,

C&C would ensure that the growth of global emissions trading was directly linked to climate control.

GCI points out that sales of unused allocations would create purchasing power in the developing nations to fund zero-emissions technologies. This in turn would benefit industries from developed countries which could sell the technology. Yet the later the convergence date relative to the contraction, the less it favours developing nations. And the later the contraction date, the more climate change and damage will be caused.

The idea, though, seems fair and GCI has gathered some impressive support. It claims C&C has wider support than any other proposal. It has been widely discussed in closed sessions at various climate change meetings, and various governments are now trying to brief themselves on its virtues. But the idea runs counter to the thrust of the US position on emissions, which aims to link emissions to dollars, the so-called "emissions intensity" approach. The Bush administration considers that the more dollars generated per ton of emissions burnt, the greater the degree of economic efficiency. It wants this approach to be adopted globally. Whether C&C forms the basis of the post-Kyoto world or is just one of a number of good ideas is not yet clear. But the approach certainly deserves serious consideration.

JULY

Guardian

Global warming is now a WMD

It kills more people than terrorism, yet Blair and Bush do nothing

John Houghton

If political leaders have one duty above all others, it is to protect the security of their people. Thus it was, according to the prime minister, to protect Britain's security against Saddam Hussein's weapons of mass destruction that this country went to war in Iraq. And yet our long-term security is threatened by a problem at least as dangerous as chemical, nuclear or biological weapons, or indeed international terrorism: human-induced climate change.

As a climate scientist who has worked on this issue for several decades, first as head of the Met Office, and then as co-chair of scientific assessment for the UN intergovernmental panel on climate change, . . .

the impacts of global warming are such that I have no hesitation in describing it as a "weapon of mass destruction".

Like terrorism, this weapon knows no boundaries. It can strike anywhere, in any form - a heatwave in one place, a drought or a flood or a storm surge in another. Nor is this just a problem for the future. The 1990s were probably the warmest decade in the last 1,000 years, and 1998 the warmest year. Global warming is already upon us.

The World Meteorological Organisation warned this month that extreme weather events already seem to be becoming more frequent as a result. The US mainland was struck by 562 tornados in May (which incidentally saw the highest land temperatures globally since records began in 1880), killing 41 people. The developing world is the hardest hit: extremes of climate tend to be more intense at low latitudes and poorer countries are less able to cope with disasters. Pre-monsoon temperatures this year in India reached a blistering 49C (120F), 5C (9F) above normal.

Once this killer heatwave began to abate, 1,500 people lay dead - half the number killed outright in the September 11 attacks on the World Trade Centre. While no one can ascribe a single weather event to climate change with any degree of scientific certainty, higher maximum temperatures are one of the most predictable impacts of accelerated global warming, and the parallels - between global climate change and global terrorism - are becoming increasingly obvious.

To his credit, Tony Blair has - rhetorically, at least - begun to face up to this. In a recent speech he stated clearly that "there can be no genuine security if the planet is ravaged by climate

change". But words are not enough. They have to be matched with adequate action. The recent announcement of a large-scale offshore wind generating programme was welcome, but the UK still lags far behind other European countries in developing renewables capacity.

The latest report on energy and climate change by the royal commission on environmental pollution addressed the much more demanding global reductions in greenhouse gas emissions that will be required over the next 50 years (in addition to the Kyoto agreement) and how these could be achieved. Given that the UK needs to take its share of the global burden the commission recommended that we should aim for a cut in these emissions of 60% by 2050.

It also pointed out the urgent need for an adequate mechanism for negotiating each country's emission target and advocated a globally implemented plan known as "contraction and convergence". The energy white paper published earlier this year accepted the royal commission's 60% reduction target, but it is disturbing that it provided no clarity on UK policy regarding the framework for international negotiation.

Any successful international negotiation for reducing emissions must be based on four principles: the precautionary principle, the principle of sustainable development, the polluter-pays principle and the principle of equity. The strength of "contraction and convergence" is that it satisfies all these principles. But it also means facing up to some difficult questions.

First, world leaders have to agree on a target for the stabilisation of greenhouse gases in the atmosphere at a sufficiently low level to stave off dangerous climate change. Second, this target, and the global greenhouse gas budget it implies, has to form the framework for an equitable global distribution of emissions permits, assigned to different countries on a per-capita basis. Countries with the largest populations will therefore get the most permits, but for the sake of efficiency and to achieve economic convergence these permits will need to be internationally tradable.

This is the only solution likely to be acceptable to most of the developing world, which unlike us has not had the benefit of over a century of fossil fuel-driven economic prosperity. And it also meets one of the key demands of the United States, that developing countries should not be excluded from emissions targets, as they currently are under the Kyoto protocol.

Nowadays everyone knows that the US is the world's biggest polluter, and that with only one 20th of the world's population it produces a quarter of its greenhouse gas emissions. But the US government, in an abdication of leadership of epic proportions, is refusing to take the problem seriously - and Britain, presumably because Blair wishes not to offend George Bush - is

beginning to fall behind too. Emissions from the US are up 14% on those in 1990 and are projected to rise by a further 12% over the next decade.

It is vital that Russia now ratifies the Kyoto protocol so that it can at last come into force. But while the US refuses to cooperate, it is difficult to see how the rest of the world can make much progress on the much tougher longer-term agreements that will be necessary after Kyoto's mandate runs out in 2012.

Nor does the latest science provide any comfort. The intergovernmental panel on climate change has warned of 1.4C to 5.8C (2.5F to 10.4F) temperature rises by 2100. This already implies massive changes in climate, and yet the current worst-case scenarios emerging from the Met Office's Hadley centre envisage even greater rises than this - a degree and speed of global warming the consequences of which are hard to quantify or even imagine.

So Blair has a challenge. The world needs leadership, and the British prime minister is well placed to stand at the head of a new "coalition of the willing" to tackle this urgent problem. He is also uniquely placed to persuade Bush to join in this effort, given their joint commitment to making the world safe from "weapons of mass destruction".

But even if he fails to persuade him, there are other allies who would still respond to his leadership - even if this means opposing the US until such time as it no longer has an oilman for president. If Blair were to assume this mantle, history might not only forgive him, but will also endorse Britain's contribution to long-term global security.

· Sir John Houghton was formerly chief executive of the Meteorological Office and co-chair of the scientific assessment working group of the intergovernmental panel on climate change. He is the author of Global Warming: the Complete Briefing.

AUGUST

Argus Energy Monthly
A view from the global commons

Aubrey Meyer is the originator of contraction and convergence (C&C), a global solution to climate change, radically different from the Kyoto Protocol, and heads up the Global Commons Institute (GCI).

Something of a legend in climate change circles, Meyer is a tireless advocate for C&C and a fearless critic of governments and corporations when they appear to ignore the scientific evidence of global warming. C&C advocates a global atmospheric emissions limit with a matching global emissions

"contraction budget" and convergence to equal shares per person by agreed dates. Argus interviewed Meyer at GCI's modest headquarters in London. Edited highlights follow.

Can you describe and define what "global commons" means?

It is something common to all. The atmosphere is global and something we all depend on. It has no vertical boundaries and is a perfect mixer of greenhouse gases (GHGs). GCI has proposed its protection by "shared ownership" of the GHG emissions limits necessary to avoid the concentrations and warming being raised too far.

Is climate change real?

Yes. As we release more GHGs into the atmosphere, the laws of physics being immutable, more heat is trapped by definition. This is changing the climate.

The rate of emissions release is like an uncontrolled explosion in slow motion.

The science arguments are only about the rate and manner at which the heating effect of this is "masked" by various factors.

So who caused this explosion?

The industrial countries did, since around 1800. The unequal GHG emissions and consumption patterns since industrialisation are now key amongst the factors changing the climate.

How dangerous do you think the climate change situation actually is?

I think it is very dangerous, and increasingly so because our response is inadequate and random. If emissions continue to accumulate in the atmosphere at the present rate, consequential damage could break the economy within decades. If we warm the atmosphere too far, the whole climate system will react with potentially runaway greenhouse conditions. We need a roadmap to avoid this.

How did this idea of contraction and convergence (C&C) come to you, you were, after all, a musician?

In 1989, I read about the death of Brazilian social activist Chico Mendez and thought this would be a good subject for a musical. Ranchers clearing the forests murdered him. He was an enigma, but the broader issues were clear and so writing a musical seemed like fiddling while things burned.

About a year later the World Resources Institute (WRI) published a league of polluters. The top five countries were USA, USSR, China, India and Brazil. I was incredulous that the WRI could group those countries together ahead of everyone else. In 1990, the accumulated emissions of the industrial country group alone was around 85pc of the global total. I also compared emissions per capita internationally for that year. My campaigning was focused from then on.

In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was agreed. Its objective is the restraint of GHG emissions following the principles of precaution and equity. GCI had integrated this formally into C&C by 1996. We added past emissions and a function to project all contraction and convergent emissions futures that stabilise atmospheric GHG concentration at a pre-defined level. This is not predictive or prescriptive. It simply integrates and projects the treaty's objective and principles in a non-random manner.

What's different between a prediction and a projection?

Prediction and prescription are noisy. Prediction says, "This might happen but then again something else might happen". Prescription says, "Do this because I'm telling you to". A projection just signals. On these principles, with this end point, the non-random route between here and there projected forward looks like this. This is what C&C does. The principles are constant, no matter what the rates.

What about critics who say this is just a crazy concept? What makes it a mainstream idea?

Those who say climate change is not an issue, or one you can't do anything about, are the crazy ones. The mainstream has to deal with the imperative of emissions contraction to meet the objective of the UN climate treaty. GCI points out that, by definition, convergence is integral to the contraction. The issue is, do we get C&C going at rates that are effective by chance or by choice, by accident or design?

How does this differ from the Kyoto Protocol?

C&C makes possible a global rate of convergence that can be accelerated relative to contraction, and this can be used to resolve the row about the historic accumulation of GHGs in the atmosphere from the industrial countries. More rapid convergence shifts future equity share to the developing countries to settle this "debt". This makes agreement to work together possible. Kyoto avoids this. It delays global contraction and makes convergence random. But people say that Kyoto, though flawed, is the best that can be expected. Kyoto attempted to bring out leadership from "guilty" countries in the UN treaty. Kyoto-only experts assert that they've created a basis on which we go through to 2100 when GHG concentration will be stabilised. Their claim is to be able to resolve 186 countries' special arguments about why each is the exception during every five-year negotiating period for the next 100 years, while temperature, damage, tempers and panic rise. C&C is the logical continuation of Kyoto or its replacement if it fails. Those proponents of Kyoto who repudiate the C&C framework in favour of perennial Kyotostyle guesswork look silly.

What about the US? Would it support C&C?

They do, but may not have spotted it. The Bush administration made stabilising atmospheric GHG concentration a global security issue last year. Together with the Byrd-Hagel resolution, this is C&C by definition. Technology is crucial, but the C&C roadmap to deliver this stabilisation is indispensable for global success.

What are your relations with the EU?

Good. The EU makes an effort to reduce emissions and create institutional arrangements supporting this. They are seen doing this in front of the rest of the world and they see the logic of C&C.

What are your views on the UK government's energy white paper policy document?

When prime minister Tony Blair introduced the white paper, he said the need to avoid mass destruction from climate change required what he called a "climate covenant" between all nations. He correctly sourced his commitment to a 60pc cut in carbon dioxide emissions by 2050 to the Royal Commission on Environmental Pollution. But the commission's report to government made C&C the key recommendation. Blair didn't acknowledge that the 60pc was a function of C&C. This created the impression that Blair's 60pc was plucked from thin air. He followed bad advice on this point.

What about the EU emissions trading scheme (ETS)?

If it leads to trade under conditions of C&C, it has promise. The danger is emissions trading becoming a law unto itself, progressively delinked from the problem we are trying to solve. Already there are more people waiting to sell emissions credits than willing buyers. This is trouble.

And the UK ETS?

These are just early days, but we must keep focused on why the trading of emissions permits exists. It is to avoid dangerous rates of climate change, not to avoid responsibility for causing climate change. The smart traders are those who realise the biggest money is going to be made when you don't just demonstrate avoided emissions, you demonstrate that emissions never happened because permits are redeemed against emissions free technology.

What about Clean Development Mechanisms (CDMs)?

Like Kyoto, the CDM is more symbolic than structural. It plucks numbers from thin air, which is what some nongovernmental organisations call "hot air".

Can you talk about your interface with big capital, and the multinational companies?

Businesses, especially in energy, want to proceed in a responsible way, but they are in difficulty for lack of a road map. Long-term investments have to be secure, and in the absence of a road map there is uncertainty. People are nervous

of doing what they know is necessary. Banks and insurance companies know we need a habitable planet to have an economy. At present rates of damage increase from climate change, huge swathes of equity will become uninsurable as the risks become too big to carry. Some have already called for C&C as it creates a roadmap for security and prosperity.

They have to underwrite the present system but also have the clout to force C&C. It is only a matter of time.

What is contraction and convergence (C&C)

Contraction: all governments agree to be collectively bound by an upper limit to greenhouse gas (GHG) concentration in the atmosphere. This, subject to a periodic review, makes it possible to calculate the diminishing amount of GHGs that the world can release for each year.

Convergence means that each year's ration of this global emissions budget is shared out so that every country converges on the same allocation per inhabitant by an agreed date, for example by 2020. It recognises the need for access rights to the "global commons" of the atmosphere with the fundamental principle of globally equal rights per person. C&C's smooth transition makes stable climate possible by choice, rather than just by chance.

C&C supporters in Developing nations have warmed to C&C, because under such a system they would have emissions credits to trade. They include a group of African nations, the Non-Aligned Group of Nations, and the governments of India and China. C&C has won support from the European Parliament and UN environmental experts like Klaus Topfer, Jan Pronk and Raul Estrada Oyuela, former chair of the Kyoto negotiations. France's President Jacques Chirac has praised the idea, as do many academic and media experts, and environmental groups like Friends of the Earth. A number of Church groups are pushing for C&C to be the cornerstone of a new campaign.

http://www.gci.org.uk/Insurers/Chap10_CII_(C&C).pdf

AUGUST

Greener Management International
Climate Change the Insurance Sector

"One policy issue that insurers are beginning to examine is the need for agreement on a long-term framework for emissions control...there is a real possibility that climate change will run away, resulting in major disruptions from abnormal weather and sharp, unplanned and inefficient changes in energy policy."

In its position paper for COP7 UNEPFI commends "Contraction and Convergence" to policymakers as a method that tackle these problems."

AUGUST

Christopher Layton
Hon Director Director-General, Commission of the European Union

"Aubrey Meyer is one of those rare individuals whose commitment and practical vision are leaving a decisive positive mark on the future.

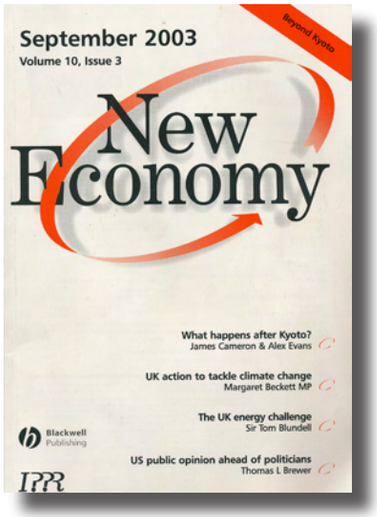
Over the last ten years, while global negotiations on climate change have proved a bitter disappointment, the idea of Contraction and Convergence, which Aubrey and the Global Commons Institute have pioneered, has become accepted, throughout the world, as the key practical long-term solution which could mobilise all nations in an equitable response to the climate challenge.

Aubrey and his tiny Global Commons Institute have achieved this by tenacious personal effort. With no prestigious organisation or status behind him he has lobbied, persuaded, and dialogued with international climate negotiators at every level and in every part of the world, honing the C and C concept in the light of criticism, presenting it with intellectual force and clarity and persuading a growing global body of opinion formers, governments and interest groups that it offers the way forward.

As debate and decision-making on this momentous issue enter a decisive phase, Aubrey surely deserves support for his vital work.

He is one of the unsung heroes of our time."

SEPTEMBER



New Economy
Beyond Kyoto

By pulling out of the Kyoto Protocol in 2001, President George W Bush probably did more to put the issue of global climate change on the map than environmental NGOs had managed to achieve over the previous twenty years. The degree of opprobrium focused on the United States led many to assume that Kyoto was 'the solution to climate change'. In reality, though, Kyoto is little more than a very small first step towards addressing climate change. Taking into account the emissions of developing countries, as well as the withdrawal of both the United States and Australia, the International Energy Agency estimated that total global emissions will rise by around 70 per cent over Kyoto's lifetime.

The crucial question is therefore what happens beyond the expiry of Kyoto's 'first commitment period' in 2012. Under Kyoto, the world must review the adequacy of existing commitments by the end of 2005 at the latest. In practice, the process of defining 'future commitments' will begin in earnest sooner than then, and in particular at the UN climate summit this December in Milan. This special edition of New Economy offers nine articles on climate policy that seek to throw light on the question of what happens beyond Kyoto.

We begin with a correspondence debate on what should follow Kyoto between James Cameron, an international barrister and one of the architects of the Kyoto Protocol, and Alex Evans, energy research fellow at IPPR. Cameron argues for an evolution of the Kyoto approach that emphasises political realism and maintaining gradual momentum in the process. Evans criticises Kyoto as fundamentally unable to deliver the required scale of emissions reductions, and proposes instead the alternative 'Contraction and Convergence' approach, which would first decide on a safe global 'emissions budget' consistent with stabilising greenhouse gas concentrations safely and then allocate this between nations by negotiating a date at which national entitlements converge at equal per capita levels.

Another proponent of Contraction and Convergence is Sir Tom Blundell, the Chair of the Royal Commission on Environmental Pollution. Whilst Blundell welcomes the Government's acceptance in the Energy White Paper of the Royal Commission's proposal of reducing emissions by 60 per cent by 2050, he notes that the White Paper did not explain where the figure came from – leading some commentators to think that it was an 'arbitrary figure'. Nothing could be further from the truth, he continues: the figure was in fact based on an assessment of what the UK's commitment would be under a hypothetical Contraction and Convergence scenario.

Geoff Jenkins, head of climate prediction at the UK Met Office's Hadley Centre for Climate Research, offers a valuable perspective on the latest scientific findings. Alarmingly, Jenkins notes that a 'buffering effect', through which soils and vegetation absorb carbon dioxide and so help to soften the impact of climate change, 'will not last forever' as the biosphere's absorptive capacity becomes saturated. As a result, if for example the world decided to stabilise CO2 concentrations at 550 parts per million, the loss of the buffering effect means that 'we will only be allowed to emit half as much as we thought'.

Meanwhile, Tom Brewer assesses the status of climate change in US political discourse, and argues that public opinion is some way ahead of the Bush Administration: only one fifth of the US public 'do not consider global warming much of a problem'; two fifths consider the problem 'very serious'. Whilst the federal government will not move forward before the next election, Brewer argues that concern and activity on Capitol Hill and in local and state governments, industry and the public will keep the issue salient.

Margaret Beckett, the UK Secretary of State for Environment, Food and Rural Affairs, emphasises that a global problem requires a global solution. Whilst acknowledging that developed countries bear most historical responsibility for climate change and that the developing world has a right to develop and to increase their emissions from current levels, she also underlines that all countries will have to take action at some point. Anju Sharma of the Centre for Science and Environment in New Delhi agrees, and emphasises the need for a rigorous assessment of how future proposals for reducing emissions will affect different regions and countries. Many of our contributors to this issue agree that the role of technology will be crucial in addressing climate change, and David Hone, head of climate change at Shell, offers a critical perspective on this facet of the debate. He suggests that a rapid revolution towards renewable energy is unlikely: 'no new energy source – coal, oil, gas – has ever won ten per cent global market share in less than 30 years from the moment it became competitive'. Hydrogen may have more potential, he suggests – but only with a supportive political framework.

My own article on the growth in aviation emissions argues that the scale of this challenge has been underestimated and that air transport cannot be treated as a special case. Emissions from international flights must be included in the next climate change agreement. Emissions trading, which applies the polluter pays principle and the principle of environmental limits, looks the most promising policy for controlling aviation's carbon dioxide emissions, while regulations and charges are likely to be more appropriate for the other climate change impacts of aviation.

Closer to home, the European Commission has become increasingly concerned that almost all of its member states (with the exceptions of the UK, Germany and Luxembourg) are off course for meeting their Kyoto targets. As a result, it will in 2005 introduce a new EU-wide emissions trading scheme. Bryony Worthington of Friends of the Earth offers an assessment of the scheme in the UK context. Whilst she welcomes the design of the EU scheme, she notes that it has significant incompatibilities with much current UK climate policy, in particular the voluntary agreements associated with the Climate Change Levy.

Climate change is not the only global challenge that respects no national borders in its impacts. Our final article in this edition, by Graham Bird and Alex Mandilaras, examines financial contagion in the context of Latin America's economic crisis. They suggest that whilst contagion has been a factor for some countries, crises are 'rarely uni-causal'. At least as important are more fundamental structural issues, such as a worsening global economic outlook and loss of access to private capital markets.

International climate policy will be a central issue for this Government: not just because of the scale of the environmental challenge, but also because of the fundamental equity implications that the issue presents. A concern for equity has always been the defining feature of politics on the left. To date, the equity debate has always taken place in the context of a consensus between left and right on the desirability and sustainability of economic growth. Today, however, we are hitting a range of environmental limits to consumption growth.

This puts equity in a radically different context. John Rawls' Theory of Justice, for example, suggested that higher levels of inequality could be justified if the poorest in society were distribution. But formulations such as Rawls's only work in a context of economic growth. As soon as we accept the existence of environmental limits to consumption growth – most immediately in the case of climate change – the question of per capita equality in consumption levels arises inevitably. Put simply, once the world agrees a safe global emissions budget, more for the United States will mean less for India and vice versa.

As the scale of the challenge sinks in, many voices will argue that the challenges are too difficult; that we should muddle through rather than tackle the issue head-on; that the equity dilemma should be fudged and swept under the carpet. If the Government truly wishes to show leadership on international climate policy, it must ignore these calls and instead accept the need for a managed process of convergence in North-South emissions entitlements.

Global climate policy offers a concrete opportunity to start defining what global social democracy looks like in practice – not least since the UK Government will hold the rotating EU Presidency in the second half of 2005, the deadline for deciding what happens after Kyoto expires.

> The Prime Minister has already expressed his desire to create a global deal or 'climate covenant' between North and South on the issue of climate change. IPPR's belief is that the Contraction and Convergence framework for global climate policy is the practical application of this aspiration. The Government should rise to the challenge.

Tony Grayling

Associate Director and Head of Sustainability, IPPR

SEPTEMBER

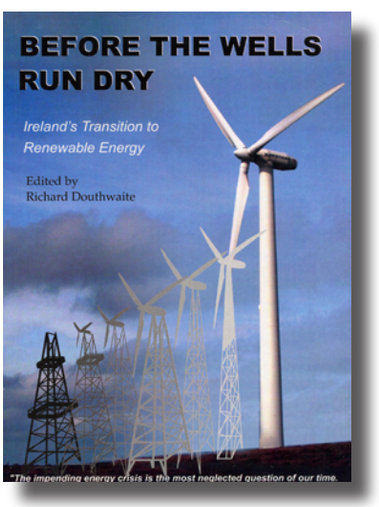
David Warrilow
UK Environment Ministry

Moscow Environment Conference

> "UK Government (climate) policy is consistent with C&C."

SEPTEMBER

FEASTA
Before the Wells Run Dry



Publisher: FEASTA, ISBN: 1843510375

FEASTA Conference essays, edited by Richard Douthwaite. Extract from the editor's conclusions, integrating Oil and Gas Depletion, C&C and International Currency Reform.

CONTRACTION AND CONVERGENCE
"If a country is to enjoy the maximum sustainable level of economy activity, it needs to decide which scarce resource places the tightest constraint on its economy's development and expansion. It should then adjust its systems and technologies so that they automatically observe the limits imposed by that constraint. In terms of our discussion so far it might seem that oil and gas were the scarcest factors of production at present but I don't think that's true. Labour and capital are not the critical factors either. There is unemployment in most countries and, in comparison with a century ago, the physical capital stock is huge and under-utilised. On the other hand, the natural environment is grossly overused especially as a sink for human-made pollutants with the result that a runaway global warming is a real possibility. In other words, the Earth's capacity to remove greenhouse gases from the atmosphere is the scarcest resource and the economic system should be

adapted accordingly.

Contraction and Convergence (C&C) is a way of doing so. It is a plan for reducing greenhouse gas emissions developed by the Global Commons Institute in London that involves the international community agreeing how much the level of the main greenhouse gas, carbon dioxide (CO2), in the atmosphere can be allowed to rise.

http://www.feasta.org/documents/wells/index.htm

SEPTEMBER

New Economy
An energetic welcome

Tom Blundell, Chair of the Royal Commission on Environmental Pollution

The UK energy challenge

Although we give little thought to consumption of energy in the UK and other wealthy countries, access to abundant and instantly available energy underlies our entire way of life. It is central to the affordable motorcar, cheap flights, warm housing, modern manufacturing, intensive agriculture, and so on. It is not surprising that world energy consumption has increased significantly since 1992 and is expected to grow at the rate of two per cent a year in the future.

All forms of energy production have substantial effects on the environment: damaging air pollutants from fossil fuels, large, intrusive wind farms in upland scenery, radioactive emissions from the reprocessing of spent nuclear fuel, and destruction of woodlands to supply cooking and heating fuels. However, the most serious damage will be done by carbon dioxide from the burning of fossil fuels, the largest single source (75 per cent) of greenhouse gas emissions from human activities, and thus the largest cause of global warming. The concentration of carbon dioxide is already higher than at any time for millions of years and we seem to be experiencing the first effects of global warming.

The Royal Commission on Environmental Pollution was one of many to make this point in its report Energy – the changing climate, published in June 2000. We had to wait for two and a half years for the response to our report, but to have a reply along with a White Paper, which follows many of our recommendations, is nevertheless gratifying. In particular we were delighted that our recommendation to reduce carbon dioxide emissions by 60 per cent by 2050 has been taken up by the government.

Why 60 per cent?

Although the White Paper does accept the need to reduce carbon dioxide emissions by 60 per cent by 2050, it does not explain where the figure came from. Many commentators seem to believe it is an arbitrary figure, but nothing could be further from the truth. It was derived from an analysis of the trends in energy consumption, and a very particular view about equity and energy consumption. In Energy – the changing climate we supported the internationally-agreed proposal that an atmospheric carbon dioxide concentration of 550 parts per million by volume (ppmv) – approximately double the preindustrial level – should be regarded as an upper limit that should not be exceeded. The current concentration is some 370 ppmv. Fossil fuels are finite, so people will eventually have to stop consuming them – but, if they are all burnt during the course of this century, the resulting build up of carbon dioxide will go well above 550 ppmv, leading to dangerous and destructive climate change. Even if the global uses of coal, oil and gas are held at current levels the climate will change markedly.

Thus, the issue is not whether there are enough fossil fuel reserves, but rather whether we can restrict the use of fossil fuels, starting now. A sustainable energy policy should protect the interests of generations to come, but it must also seek to achieve social justice, a higher quality of life and industrial competitiveness today. Achieving the right balance is formidably difficult; current policies do not strike it.

Contraction and convergence

> The most promising, and just, basis for securing long-term agreement is to allocate emission rights to nations on a per capita basis – enshrining the idea that every human is entitled to release into the atmosphere the same quantity of greenhouse gases.

But because of the very wide differences between per capita emission levels around the world, and because current global emissions are already above safe levels, there will have to be an adjustment period covering several decades in which nations' quotas converge on the same per capita level. This is the principle of contraction and convergence, first proposed by Aubrey Meyer.

For developing countries it means that many can expand a little before contraction, a point that does not always seem to be recognised. But for the UK, an international agreement along these lines that prevented carbon dioxide concentrations in the atmosphere from exceeding 550 ppmv and achieved convergence by 2050 could imply a reduction of 60 per cent from current annual carbon dioxide emissions by 2050 and perhaps of 80 per cent by 2100. These are massive changes, and it is very good news that the Government accepts the challenge.

The challenge is urgent

But this is not just a challenge for the future, much needs to be done now. The White Paper recognises that there are many opportunities for further, large efficiency improvements in the use of energy by manufacturing industry, commercial and public services, households and transport. Indeed much that has to be done to bring this about will require government to give much higher priority to energy efficiency.

On the energy supply side, there is only a limited potential for further large-scale exploitation of hydropower in the UK and environmental concerns may rule out further major schemes. Further growth in the number of small-scale hydro schemes is possible, but not to the extent that it could make a substantial contribution to UK energy needs.

The options for renewables are many, each with their problems often due to their distributed and intermittent nature, all with impacts on the environment, sometimes visual and sometimes affecting air quality. The growing of energy crops such as coppice willow, which are then burned or gasified and combusted to generate electricity and supply heat, could make a much larger contribution to the UK's long-term climate change strategy. They might also contribute to increasing biodiversity and improving farmland landscapes. But this cannot be achieved without major changes to agricultural support systems. Energy crops should receive the same level of support as other crops, but with improved environmental safeguards. This remains a huge challenge, with much need for Government investment and encouragement.

As the proportion of electricity supplied by wind, waves, tides and sunshine increases, the intermittency of these sources will pose growing problems in matching supply with demand. The UK will need either massive but little used reserve generating capacity (consisting of fossil fuel or renewable fuel plant), or large new energy stores or novel energy carriers. It is good that Government is to stimulate research into hydrogen production, but it must be remembered that if it is produced from fossil fuels it does not solve the problem of carbon emissions although it may make energy use more efficient. Hydrogen is really an energy storage device and carrier, but in this sense it can contribute to solving the problems that large-scale intermittency and embedded generation would pose to the electricity supply.

A further area where major action from Government is required is research. Government funding on research and development decreased by 81 per cent between 1987 and 1998. This must be rectified. In parallel with the decrease in government funding, privatisation and reorganisation of the industry has led to significant decrease in the research investment there also. So, we are starting from a very weak point in terms of implementing new technologies and encouraging innovation.

Scenarios for 2050

The Royal Commission drew up four scenarios for energy supply and demand in the UK, on the assumption that carbon dioxide emissions from fossil fuel combustion must be reduced by 60 per cent from their 1998 level in 2050. We developed these scenarios in numerical terms, because figures impose some discipline even though they are only as good as the assumptions on which they are based. The scenarios assume various degrees of reduction in energy demand, all of them substantial, and various mixes and levels of renewable energy resources. Two of the scenarios assume a large contribution from nuclear power or an equivalent electrical output from large, fossil fuel-burning power stations with carbon dioxide capture and isolation in geological strata. The other two have neither nuclear power nor carbon dioxide capture nor isolation.

In drawing up our scenarios we looked at two different ways of getting a secure base of electricity generation, which was carbon-free. One way is to use nuclear power, and this has received enthusiastic support from the Royal Society and the Royal Academy. The Royal Commission does not consider that nuclear power is absolutely necessary. It is one option, but if we do not plan for nuclear, we do need to look seriously at other options. One on which we focused was carbon dioxide sequestration – carbon dioxide capture and disposal – probably in rock strata under the sea. Thus we need to solve the problems of either nuclear waste or carbon dioxide storage. Both will require more research, and a lot of discussion and thought. It is good that the White Paper does not say that nuclear power is indispensable, and recognises the need for further research both into the disposal of nuclear waste and carbon dioxide. Neither will be easy. All our scenarios assume expansion of combined heat and power (CHP), both small domestic units and larger industrial ones; this will ensure that we use low-grade heat properly and do not throw it to the sky, as we do now in many electricity-generating plants. Policies of the past have favoured the generation of electricity in ways that waste vast quantities of heat - heat that could be used to warm buildings. The Government could have said a little more about regulatory and planning policies to encourage the widest possible adoption of CHP technology in urban locations to supply heat.

Another challenge is that new developments can also increase global warming. One of them is civil aircraft in flight. Even since the publication of our report, we have seen a massive increase of civil aviation, and it is having huge impacts on the environment. If aircraft fly in the tropopause, which is where most planes fly – above the troposphere and lower than the stratosphere – then nitrogen oxides, water vapour and particles all contribute to radiative forcing – increasing the greenhouse effect. The impact is actually a factor of nearly three (2.7) over the carbon levels alone. So, an economic instrument for

aviation should involve more than a carbon tax; it has to be a three times carbon tax in this case. When we pointed this out in our recent report The Environmental Effects of Civil Aviation In Flight the Secretary of State was sceptical and was reported by the Times to have described our report as 'a gallop around the field'. But a Consultation document from the Treasury published in March has now agreed our factor of 2.7 for the radiative forcing of carbon alone and given figures for the increase of civil aviation over the next 20 years which are much greater than we had assumed.

Conclusions

In summary, there remain huge challenges, both in decreasing demand, and in increasing efficiency. We are delighted to see the measures that the minister has proposed in the White Paper. We need much more sophisticated management of energy used for heating and cooling – increased use of CHP and a large deployment of alternative energy sources. Finally, we do need to solve the problem of nuclear waste or carbon sequestration, if we are going to move in either of the two routes for the baseload electricity production

I am grateful to members of the Royal Commission and its secretariat for their contributions in producing the report Energy – the changing environment from which I have drawn extensively in this article.

ROYAL COMMISSION ON ENVIRONMENTAL POLLUTION (2000)

Energy – the changing climate

SEPTEMBER 18

United Nations Environmental Programme

United Nations Environment Programme

برنامج الأمم المتحدة للبيئة · 联合国环境规划署

PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT · PROGRAMA DE LAS NACIONES UNIDAS PARA EL MEDIO AMBIENTE

ПРОГРАММА ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ОКРУЖАЮЩЕЙ СРЕДЕ

UNEP

18 September, 2003

Dear Mr. Meyer,

I am writing to you as Director of the Global Commons Institute (GCI) to request that the UNEP Finance Initiatives climate change working group (UNEP FI CCwg) may be given permission to use the GCI copyrighted term "Contraction & Convergence" in a forthcoming study exploring issues pertaining to the finance sector and climate change.

If you are in position to grant such approval, we would appreciate GCI's specific direction on how contraction and convergence should be referred to and attributed to GCI in our study text.

If you are in a position to approve UNEP FI CCwg's use of the term, with appropriate attribution, please sign all three good copies of this letter, return two copies to myself at the address given below and retain one copy for your own records. Please forward the signed copies to:

Mr. Paul Clements-Hunt, Head of Unit, UNEP Finance Initiatives, 15 Chemin des Anemones, CH- 1219 Chatelaine , Geneva, Switzerland

Please do not hesitate to contact me directly if you have any questions. I look forward to your comments and we appreciate fully your assistance on this matter.

Yours sincerely,

Paul Clements-Hunt
Head of Unit
UNEP Finance Initiatives

I hereby give approval for UNEP FI CCwg to use the term "Contraction and Convergence", as copyrighted to the Global Commons Institute (GCI), with appropriate attribution, in the forthcoming UNEP FI CCwg study on the role of the financial services sector in climate change.

Signed: Aubrey Meyer

Aubrey Meyer, Director GCI

Dated: 20 Sept 2003

Aubrey Meyer
Director
Global Commons Institute (GCI)
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OCTOBER

WCC Climate Change programme

"The Kyoto Protocol must be indeed ratified, but at the same time we urge governments to proceed without delay with a new round of negotiations whose targets must be determined in the light of the long-term perspective. Two basic requirements must be met: -

1. Stabilisation of greenhouse gases in the atmosphere at a level in accordance with the overall objective of the Climate Change Convention.

2. A fair distribution of rights and obligations, by establishing the concept of per capita emission rights for all countries, as proposed in the 'Contraction and Convergence' scheme."

www.wcc-coe.org/wcc/what/jpc/moscow2003.html

2003

Dollar & Collier
Report for the World Bank

"Global warming requires international collective action. There are many ways of achieving effective restraint. The Kyoto protocol approach is for rich countries to set themselves targets for emissions reductions, and the recent agreement between European nations and Japan to move ahead with the protocol is a positive step forward. Looking further down the road, it is critically important to get at least all of the E-7 involved.

The Global Commons Institute, an NGO, has come up with an innovative proposal for how to do this. The proposal entails agreeing on a target level of emissions by the year 2015 and then allocating these emissions to everyone in the world proportionally. Rich countries would get allocations well below their current level of emissions, while poor countries would get allocations well above. There would then be a market for emission permits. Poor countries could earn income selling some of their permits; rich and poor countries alike would have strong incentives to put energy-saving policies into place; and private industry would have strong incentives to invent new, cleaner technologies.

One of the hopeful things about globalization is how an innovative idea like this can quickly gain currency and support."

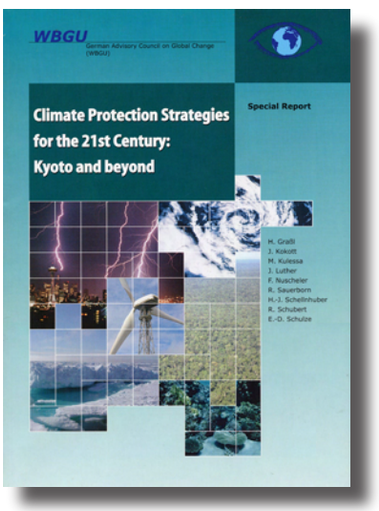
OCTOBER 9

Lewis Cleverdon
Sovereignty & Climate Destabilisation

The viable policy framework for international action to put an end to fossil fuel dependence is already well recognized and respected in capitals around the world, and has the support even of a few US senators. It is known as "Contraction & Convergence, " and in essence requires participant nations to commit themselves to contracting their greenhouse gas emissions while converging to international per-capita parity of those emissions at an agreed level by an agreed date. It is thus based on the principle of equity ~ of all peoples' equal right to make sustainable use of the Atmospheric Commons ~ which is the sole basis on which so contentious an international issue has a fair chance of being resolved.

NOVEMBER 24

German Advisory Council
21st Century Climate Protection



2.3.7 - Conclusions

"Particularly with regard to targetedness in terms of CO2 emissions, in consideration of the fundamentally equal right of all individuals to emissions, and further considering the principle of constancy,

-the WBGU has decided to base its in-depth analysis of the implications of emissions allocation on the contraction and convergence model."

http://www.wbgu.de/wbgu_sn2003_engl.pdf

NOVEMBER

Lord Bishop of Hereford
Final speech to the House of Lords

"The noble Lord, Lord Patten, is in his place. He invited me to respond to some of his remarks in his excellent speech. I thought that he had gone off to make a confession to someone better qualified to hear it than me. Let me assure him that I thoroughly disapprove of theft and boardroom malpractice, but that, as far as capitalism is concerned, my opinion is that, if properly regulated, like hunting, it is morally all right.

I greatly appreciated the speeches of the noble Lord, Lord Tomlinson and the noble Baroness, Lady O'Cathain. Although I had rather hoped to hear more from some of our great captains of industry, it was good to be led into the area of social enterprise by the noble Baroness, Lady Thornton, and to be reminded of the possibilities of breweries and oysters.

My main point is relevant to the topic of today's debate, though some may doubt it. I shall digress just for a moment to express a warm welcome to the announcement in the gracious Speech of the pension protection fund and to the promise of legislation for civil partnerships, particularly in its helpfulness in terms of inheritance and pension issues.

I turn to my main point. Some of your Lordships may recall a short story by H G Wells, which gripped my imagination at the age of 12 or so. I should like, if I may, to read a short quotation from it. It will at least make a change from OECD statistics and the growth and stability pact. It is as follows:

"The master mathematician sat in his private room and pushed the papers from him, exhausted after four days and nights of feverish calculation. "But he appeared calm and unruffled before his students at their morning lecture . . . 'Circumstances have arisen—circumstances beyond my control', he said, 'which will debar me from completing the course I had designed. It would seem, gentlemen'"— forgive the non-inclusive language of 100 years ago —

"'if I may put the thing clearly and briefly, that—Man has lived in vain'".

The "circumstances" referred to are that his calculations have revealed that a star is on course to approach very close to the Earth, or possibly even collide with it—a huge cataclysmic astronomical event. In the end there is no collision—it is only a short story, after all. The star passes the Earth and goes on its way into space. But its near passage has catastrophic consequences for the planet. There are immense floods, great surges of the sea, huge earthquakes, violent and continuing storms, vast mudslides, uncontrollable fires and a colossal rise in temperature to unbearable levels. Most of the human race perishes. A few survivors find that the former polar regions have become fertile while the rest of the Earth is uninhabitable because of the great heat. The event, my Lords, is not good for the economy or for industry and certainly not for pensions.

That is fiction, but the catastrophic effects described so vividly by H G Wells are not wholly unlike what is actually likely to happen as a result of climate change and will certainly grow rapidly worse if we continue with business as usual. The master mathematicians of the Intergovernmental Panel on Climate Change have made their calculations, and they are very scary indeed. The evidence is already all round us:

unprecedentedly high temperatures, drought, rising sea levels, melting glaciers and ice caps, more frequent hurricanes and extreme weather events. Heroic efforts to reduce hunger in the world are frustrated by worsening climatic conditions. The United Nations report published two days ago indicated that 842 million people are going hungry, and that number is now increasing by about 5 million a year in contrast to the improving statistics of the 1990s. The few developing nations which have bucked this melancholy trend have not been the authors of their own good fortunes; they have simply been lucky—lucky to escape the high levels of drought and the natural disasters which have increasingly afflicted the third world in the past decade.

For us the dire effects of climate change may still seem in the future. But as the science fiction writer William Gibson put it:

"The future is already here: it's just that it's unevenly distributed".

And it is nearer than we care to acknowledge: thousands of deaths from extreme heat in France this past summer; and seriously reduced crop yields in central and even northern Europe because of this year's exceptional drought. But was it exceptional?

It is not surprising or novel. We have seen it coming for a good many years, and wise scientists have pointed the way to a solution—a solution which would enable our economy to survive, our industry to flourish in a truly sustainable way, and even our pension schemes to be put on a secure footing. As it is, all three are in very grave danger.

Three years ago, in the executive summary to its magisterial report, the Royal Commission on Environmental Pollution said: -

"The most promising, and just, basis for securing long-term agreement is to allocate emission rights on a per capita basis—enshrining the idea that every human being is entitled to release into the atmosphere the same quantity of greenhouse gases. Because of the very wide differences between per capita emission levels round the world, and because current global emissions are already above safe levels, there will have to be an adjustment period covering several decades in which nations' quotas converge towards the same per capita level. This is the principle of contraction and convergence, which we support".

The commission might have added that contraction and convergence is comprehensive, scientifically based and equitable, unlike the Kyoto Protocol, and that contraction and convergence meets every single objection raised by the United States to Kyoto.

That was three years ago. Two years ago, the Amsterdam Declaration, the report of the Global Change Open Science Conference, said:

"In terms of some key environmental parameters the Earth System has moved well outside the range of natural variability exhibited over the past half million years at least. The nature of changes now occurring simultaneously in the Earth System, their magnitudes and their rates of change are unprecedented. The Earth is currently operating in a non-analogue state".

Just one year ago, I was engaged with the Minister who opened this debate, the noble Lord, Lord Sainsbury of Turville, in correspondence following a Starred Question. The Minister wrote to me:

"The Government is aware of the policy of Contraction and Convergence" -

be thankful for small mercies. He continued:

"As you will be aware, the policy requires industrialised countries to make enormous reductions in carbon emissions (up to 80 per cent). Contraction and Convergence have some appealing qualities, but discussions on future commitments to this policy are at an early stage, and there are likely to be other models which will need consideration. Contraction and Convergence was not in fact raised at the World Summit on Sustainable Development in Johannesburg".

Indeed not, and shame on our Government for not raising it. Leaving aside the confusion in the Minister's letter over whether contraction and convergence should be regarded as singular or plural—although the muddle within one paragraph does not inspire confidence in the grammatical competence of the department's staff—this seemed to me a mealy-mouthed and very inadequate response to the most serious problem threatening the human race and the survival of the planet.

There was yet hope that the energy White Paper earlier this year might grasp the nettle and set out a ringing endorsement of contraction and convergence, or at the very least announce an urgent debate on the matter. Alas, those words did not appear, despite the fact that the Prime Minister's foreword to the White Paper acknowledged:

"Climate change threatens major consequences in the United Kingdom and worldwide, most seriously for the poorest countries who are least able to cope".

Amen to that, and the hunger statistics bear out the truth of that melancholy message.

Interestingly, and very much apropos of the theme of this debate, the Prime Minister went on to say:

"As we move to a low carbon economy, there are major opportunities for our businesses to become world leaders in the technologies we will need for the future".

How very true, and how sad that the United Kingdom has at the moment 4 per cent of the market in environmental technology compared with Germany's 15 per cent.

Prophetic witness and vigorous political action are needed to change the culture of government and of industry, but—rightly used—technology can serve the purposes of environmental concerns and begin to clear up the polluted legacy of two centuries of unbridled and environmentally irresponsible industrialism. The potential for selling green technology to the developing world in terms of clean energy generation, integrated crop management in agriculture, husbanding finite water resources, desalination, not to mention the obvious areas of pharmaceutical and medical resources to cope with the colossal AIDS epidemic all offer the prospect of a very creative partnership between the technologically advanced countries and the poorer nations of the world in a way which positively benefits the environment rather than adding to its degradation.

> If we were to embrace contraction and convergence, with the enormous and comprehensive emissions trading system which is envisaged, the poorer nations would have the means, which at present they do not have, to buy the green technology from us. That would be very greatly to our economic and industrial advantage.

However, that requires the change of culture of which I spoke. At present, the position is getting rapidly worse. There is enormous and accelerating economic growth in India, China and South East Asia. China's oil consumption this year will be 10 per cent higher than it was last year. The Kyoto Protocol—if and when it is implemented—will reduce CO 2 emissions from the annex 1 countries by 2 per cent, but global emissions are projected to rise by 30 per cent by 2012. It has been calculated that if storm damage continues to rise by the present 12 per cent a year—it will probably be worse than that—by 2065, annual damage caused by climatic destruction could equal the entire GNP of the world. That is a very black hole into which every known or imaginable pension plan would certainly fall.

Unless we find a way now to deal with the greenhouse gas problem internationally, growth will slow or stop anyway at very great human cost. By the middle of the century, there will be hundreds of millions of ecological refugees, starving and desperate, who will make our present asylum-seeker problem look very insignificant.

My normal mode of address to your Lordships' House is, I hope, cool and rational. The mantle of the prophet is not one that sits very readily on my shoulders. I recall that the fate of most Old Testament prophets was to be mocked, ignored and driven out of town. I am quite prepared for that but, like Luther, I can say only, "Here I stand, I can do no other", because I know that the threat to our economy and industry and to civilised life is very great indeed.

"Climate change" were the last words in the substantive part of the gracious Speech. I am glad that they were there but I wish they had been at the beginning—in the preamble to the list of legislative proposals—indicating that the Government recognise the urgency and seriousness of the issue and see all other proposals in the context of tackling climate change with an energy and a single-mindedness which have yet to be seen.

The need is for leadership in breaking the straitjacket of short-term electoral cycle and in striving for all-party agreement so that there is no competition or disagreement about the urgency of this matter. There is also a need for leadership in setting up a community for global climate protection, which any and all who will participate are welcome to join. If some dirty dinosaurs such as the United States will not come in now, that is too bad. Someone must give a lead and we cannot afford to wait. There may just be time to act before a terrifying chain reaction of unstoppable, runaway climate change begins.

Klaus Toepfer, the highly respected head of the United Nations Environment Programme, said:

"The scientific consensus presented in the comprehensive [Intergovernmental Panel on Climate Change] report . . . should sound alarm bells in every national capital and every local community".

My fear is that, by the time our Government hear those bells and act on them, it may be too late.

www.publications.parliament.uk/pa/ld199697/ldhansrd/pdvn/lds03/text/31127-05.htm

NOVEMBER 1

Operation Noah
Christian Ecology Link

Christians have launched an ambitious campaign to resolve global warming. 'Operation Noah' will put public pressure on the British Government to broker a global deal to safeguard the interests of poorer countries and future generations.

At the Annual Conference of Christian Ecology Link (CEL) on 1st November 2003, Campaign Co-ordinator Paul Bodenham said,

'The effects of climate change will be catastrophic, particularly for the poor, unless our leaders find the courage to restrain our use of fossil fuels. A few more years of the current apathy, and our grandchildren will not forgive us'.

Operation Noah reaches people through churches and community groups, inviting them to sign the 'Climate Covenant'. This highlights the task of restoring the original Rainbow Covenant which God made after the Flood. The Climate

Covenant calls on the UK to use its unique global position to drive forward negotiations to protect the climate. In return signatories agree personally to take action to reduce their own share of greenhouse gas emissions.

Rt Rev John Oliver, Bishop of Hereford, speaking in the House of Lords, has frequently urged the Government to act on climate change. He described this campaign as 'a breath of fresh air'.

'Operation Noah gets to the root of the crisis. Climate change might seem to be a technical problem, but the solution will need to be much more than a technical fix - it is ultimately moral, even spiritual.'

Paul Bodenham said

'Future generations have no vote', 'We must tell the Government what sort of world we want to leave our children, and our children's children. The challenges are massive - in technology, economics, international relations, lifestyles and expectations. For everyone in the industrialised world today it is going to be a lifelong pilgrimage, but it starts with a simple, positive choice for the future. Operation Noah offers people that choice. Christian Ecology Link urges people to find out about the issues and sign the Climate Covenant.'

Notes to Editors

Climate change - the issues: According to the Royal Commission on Environmental Pollution, the UK must reduce its greenhouse gas emissions by 60% by 2050, and ultimately by 80%. The Kyoto Protocol requires nations to make cuts averaging only 5%. Despite ten years of wrangling it has not yet even taken effect. The aim of Operation Noah is to ensure that by the time it expires, between 2008 and 2012, a new treaty has been agreed which gives all nations equal rights to emit greenhouse gases within safe limits.

> Such a framework is known as 'Contraction and Convergence', and is the only solution endorsed by the World Council of Churches, the Royal Commission and many development agencies.

Campaigners see the UK as having a pivotal role between the US, which has repudiated the Kyoto Protocol, the EU which strongly backs it, and the developing world, where rising demand for energy is fuelling economic growth.

Christian Ecology Link, founded in 1982, is the largest membership organisation in the UK linking faith and environmental concerns. A registered charity, it has approximately 500 members nationwide, including many churches and Christian agencies. Its registered address and Information Officer is at 3 Bond Street, Lancaster LA1 3ER.

DECEMBER

World Nuclear Association
Directors Speech

" . . . . "contraction and convergence" approach as a collective global means to meet the clean-energy challenge. I not only support the C&C concept. I find it inconceivable that we will avert climate catastrophe without a regime built on some variation of this approach."

"Our need is for the kind of comprehensive treaty regime that Aubrey Meyer advocates, a regime in which all the nations of the world developed and developing undertake a binding commitment to use emissions trading as the driving economic incentive for a long-term evolution to a global clean energy economy."

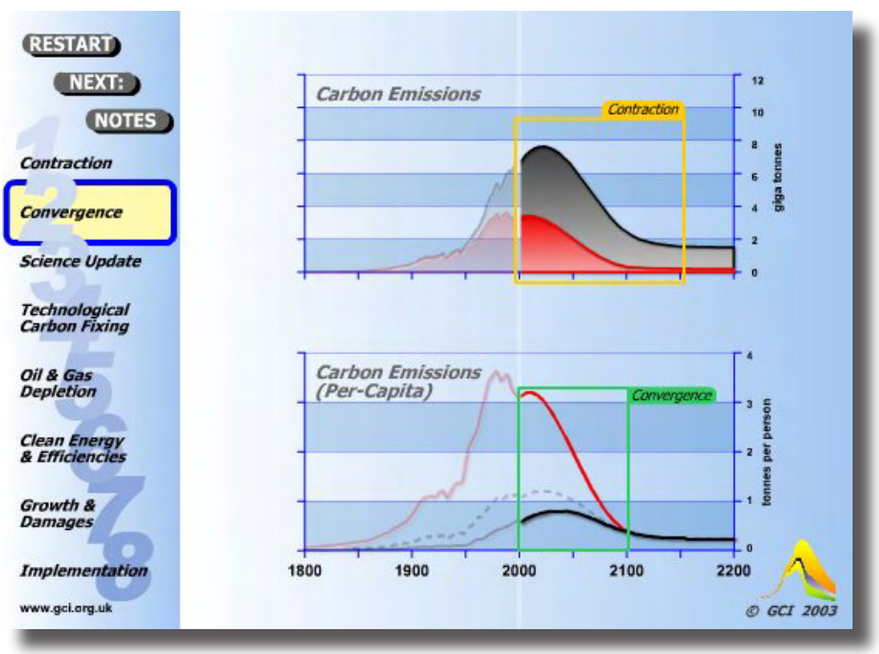
http://world-nuclear.org/dgspeeches/wiltonpark2003.htm

www.gci.org.uk/correspondence/EnvAgency.pdf

DECEMBER 2003

GCI
Animated Presentation

Delivered at GCIs COP-9 side event



Environment Agency
Sir John Harman, Chairman

ENVIRONMENT AGENCY

Our ref: SJH/KK/Meyer4879/1203.04

Date: 9 December 2003

Aubrey Meyer
Director
Global Commons Institute
37 Ravenswood Road
London
E17 9LY

Dear Mr Meyer

CONTRACTION AND CONVERGENCE

Thank you for your letter of 5 November enclosing documents on Contraction and Convergence. I would like to apologise for the late acknowledgement of these – I have been very busy recently.

You are correct in thinking that I support the concept of Contraction and Convergence as does the Environment Agency. I have taken liberty of giving your contact details to Merylyn Hedger (Climate Change Policy Manager) who you may already know.

Thank you once again for sending me this material.

Yours sincerely

SIR JOHN HARMAN
CHAIRMAN

Chairman's Office
Environment Agency
Millbank Tower, 25th Floor, 21-24 Millbank, London, SW1P 4XL
Tel: 0207 863 8720 Fax: 0207 863 8722

DECEMBER

The Guardian
Hot Topic

Mark Lynas, preparing for another meeting on the Kyoto agreement, examines whether there is an alternative that could reduce global warming

Several hundred optimists are this week having their annual reunion in Milan. They do not belong to some weird humanist sect but to the dwindling band of people who still believe that the Kyoto Protocol, the global treaty committing countries to take measures against global warming, will one day be ratified and go on to make a positive contribution towards tackling climate change.

I am one of them. Having been to three of the eight UN meetings so far (officially called conferences of the parties to the UN framework convention on climate change), I have watched the birthing pains of the international agreement in The Hague, Bonn and Marrakech. But this year even my faith will be sorely tested.

Although 118 countries have signed up, Russia has still not ratified Kyoto, and without its assent the protocol will continue to languish in political limbo. But how much longer can the world wait?

Why the Russian president, Vladimir Putin, is stalling is a mystery. Margaret Beckett, Britain's environment secretary, maintains that he will sign, as does the European environment commissioner, Margot Wallstrom. But repeated promises of imminent ratification have come to nothing, and the latest leaks suggest that the decision will be put off until after the Russian presidential elections next March.

There are rumblings that Russia is now not so keen on the agreement. At a climate change conference two months ago in Moscow, Putin mused that perhaps global warming "would be good" for such a cold country as his. There are also murmurs from the oil sector. Russia is the world's second largest producer, after Saudi Arabia, and industry moguls fear that international action on climate change could depress world oil prices.

In the past, Russia's motivation for staying on board Kyoto has always been financial. Following its post-communist economic collapse, greenhouse gas emissions - mainly from burning fossil fuels such as oil and coal - plunged, leaving it with spare "hot air" to sell to other Kyoto parties likely to have trouble meeting their targets. The US was supposed to be the biggest buyer, but with George Bush's refusal to sign up to Kyoto, the potential market for emissions quotas has crashed. Moreover, Putin's plans to double Russia's GDP by 2010 would bust the emissions budget and leave it with no unused quota to sell.

If Russia makes a negative decision and Kyoto dies, more than a decade of international progress will have been lost and the world will find itself back with the failed voluntary commitments first advanced at the 1992 Earth summit. Everyone, bar a few climate sceptics and the US rightwing, agrees this would be a disaster for the planet - not because Kyoto in itself did much to address the problem of global warming, but because it provided a vital first step on which future efforts could be built.

It also provided the beginnings of a policy framework, which would show industry that countries were serious about addressing climate change, greatly altering the investment climate. Who would build a coal-fired power station with a projected lifetime of 30 years if it was seen as likely that, within 20 years, carbon dioxide emissions would become so expensive as to make the whole thing uneconomic? But without this certainty, there is nothing to stop business as usual, and carbon emissions are projected to soar over the coming decades.

None of this would be a problem if the US had ratified Kyoto. But Bush's abrogation of the treaty was expressly intended to kill off international climate negotiations, and the chance of a change in policy under the current administration is zero.

There is a chance that Bush, who has had his poll ratings shot to pieces by the Iraqi resistance, will be defeated in the presidential elections in November 2004, but a dose of realism is useful: none of the Democratic contenders for the presidency have pledged to ratify Kyoto either. "It doesn't ask enough of developing countries," complains John Kerry, widely supposed to be the greenest of the candidates.

This is a frequent US refrain, first advanced by the Senate in 1997, that forbade American negotiators (then at Kyoto negotiating the protocol) from signing up to a treaty that did not include greenhouse gas commitments for developing countries.

At the time, this was seen as a deliberate attempt to torpedo Kyoto - but the sponsors of the bill, Senator Robert Byrd in particular, have since made statements showing concern about global warming and arguing that the time has come for action.

> "We will all suffer from the consequences of global warming in the long run because we are all in the same global boat,"
>
> [U.S. Senator Byrd]

-Byrd declared during the recent debate on the McCain-Lieberman bill, which would have brought US emissions down to 2000 levels by 2010. The bill failed, but only by 12 votes - a victory of sorts for global warming advocates.

Given that the US accounts for a full quarter of global emissions, it is clear that no long-term solution can be reached if the world's only superpower continues to act as a free

rider. Hence the growing interest around one proposal that would address American concerns over developing country participation at the same time as establishing a strong global framework for dealing with global warming once and for all: contraction and convergence (C&C).

C&C is a global solution: once an upper-level limit is set for atmospheric concentrations of carbon dioxide, the global budget this implies would be divided among the world's countries on the basis of their populations. This would happen over a convergence period, throughout which emissions permits would be tradeable. Countries that underconsume (a Bangladeshi, on average, emits only one-fiftieth as much carbon as a Briton) would be able to increase emissions up to a fair level, but not indefinitely.

Given that all countries would have commitments, the concerns of America would be addressed, and at the same time dangerous global warming would be avoided.

This plan has gathered support from within Britain and the developing world. The former environment minister, Michael Meacher, is a supporter, as are Sir John Houghton (Britain's most eminent climate scientist), the Royal Commission on Environmental Pollution - and many African governments. But

C&C is hampered by a fear that it represents an alternative, and therefore a threat, to Kyoto.

There is no reason why this should be the case: advocates of C&C, originally of the Global Commons Institute in London, emphasise that the plan is waiting in the wings as a next step after Kyoto is implemented, or as an alternative if it fails.

This should comfort my fellow optimists meeting in Milan between December 1 and 12. We can continue to press for Kyoto's ratification by Russia, in the knowledge that all is not lost without it. The task of saving the world's climate is too important for us to admit failure at such an early stage.

· Mark Lynas is the author of High Tide, News From a Warming World, to be published by Flamingo in March 2004.

DECEMBER

The Independent on Sunday
Kyoto: There is no alternative

"The future of the planet now rests in the hands of three people: President George Bush, President Vladimir Putin - and the unlikely figure of one Aubrey Meyer, a former concert violinist from east London.

President Bush has set out to kill the Kyoto Protocol. Despite growing support in the US for addressing climate change, he has spared no effort in stopping it coming into effect. He is putting the screws on President Putin. Under the protocol's rules, it now only needs Russia's ratification to come into force. The signals from Moscow are mixed, but Putin is thought to be waiting to see whether the US or the European governments, who support Kyoto, will come up with the best price.

And Mr Meyer? He is the still relatively unknown originator of a body that is fast becoming the leading contender in the fight against global warming, after Kyoto. To that end, he has set up the Global Commons Institute. Michael Meacher, the former Environment minister, endorses the plan - dubbed "contraction and convergence" - on page 22. The Royal Commission on Environmental Pollution, the World Council of Churches, and African governments have all adopted it. Under the plan, every person on the planet would have the right to emit the same amount of carbon dioxide, which is the main cause of global warming. Each nation would be set quotas, adding up to a figure the world's climate could tolerate. They would be expected to meet them, say by 2050, and could buy and sell parts of them.

Kyoto must first be brought into force: there is no alternative. Then nations should start negotiating bigger cuts in pollution on this equitable basis - worked out in an unprepossessing London flat."

DECEMBER

Independent
Meacher:Russia's Kyoto roulette

At times last week it looked as if the Russians were playing roulette with the world's climate. On the first spin of the wheel the future looked bleak: a senior official said that his country would not ratify the Kyoto Protocol to combat global warming. But the next day, it spun again: the deputy economics minister said that Russia was "moving towards ratification" after all.

What are the world's environment ministers, meeting this week in Milan to discuss the protocol, to think? The disagreement in the Russian government is worrying. For under its own rules,

the treaty cannot come into force until Russia joins. Up to now Russia has had an incentive to ratify: it would stand to make huge gains of some $10bn (£6bn) from the sale of "hot air". It would sell part of its allowance for emissions of carbon dioxide (the main cause of global warming) to countries that exceed their levels.

President Putin, however, is coy, either because he is waiting to get the best deal or becausegrowth of 7-10 per cent a year since 1999 has increased Russian CO2 emissions, rapidly draining the reservoir of "hot air". One estimate is that by 2008 Russian emissions could be 6 per cent higher than in 1990, so it might instead face restrictions. The US and Australia, accounting for nearly one-third of industrialised countries' greenhouse gas emissions, seem likely to remain outside the protocol as long as the Bush Administration lasts.

As a result, US emissions - instead of being reduced by 7 per cent as agreed at Kyoto - are likely to grow 30 per cent by 2010. Developing nations have made it clear they will not take on the targets until the industrialised countries, who initially caused the problem, take effective action. That is serious because developing countries' emissions are growing four times as fast as those of the OECD, and will overtake them within 5-7 years. If nothing is done, world CO2 emissions, instead of being cut by 60 per cent by 2050 - as the scientists say is necessary - will instead increase by 75 per cent by 2020.

How can this logjam be broken? One idea is for the EU, hopefully led by the UK, to partner developing countries to take significant measures without the targets. To a degree this is already happening. China, which accounts for 14 per cent of world CO2 emissions, recently tripled them, mainly through a huge growth in coal-fired power. It then heavily cut coal and petroleum subsidies, reducing them by 70 per cent of what it would have been.

By the mid-1990s, 12 per cent of China's electricity generation capacity was provided by energy-saving combined heat and power, compared to less than 1 per cent in the UK. Similarly, India has more windpower (6,000 megawatts) than the US. A second proposal has been mooted by the Red Cross - that poor countries might seek legal redress from countries causing global warming.

Recent Australian-Canadian research has identified the cause of the Sahel and Ethiopian droughts of the mid-1970s and the mid-1980s - when a million people died - as pollution and power generation in industrialised countries, disrupting weather patterns across Africa.

However desirable these proposals, they do not offer a watertight framework to deliver what the scientists demand. Can Kyoto deliver them? Unlikely, when the US and Australia

remain outside and when developing countries show few signs of signing up to targets which could limit their economic prospects.

> How then can we secure a global cap on emissions while allowing reasonable growth in developing countries?
>
> The best proposal so far is the "Contraction and Convergence" from the Global Commons Institute and Globe Parliamentarians.

This notes, for example, that Chinese emissions per head are still only one-eighth - and Indian about one-twenty-fifth - of the average American. China and India will only commit when they have a fair share of a limited global facility - generating greenhouse gases without putting the world's climate at risk. Nor is this merely the dream of radical idealists. Adair Turner, a former President of the CBI, said in 2001 that "the only equitable and politically feasible long-term vision would give each country a roughly equal right to emissions per capita". There is consensus that the amount of carbon dioxide emitted should not exceed 450-500 parts per million (compared to 375 now). That would require steadily reducing annual CO2 emissions to about 2.3bn tons of carbon by 2100, compared to 7.5bn tons now. Convergence to equal entitlements should be completed within a given timescale, perhaps 2030.

Once in place, trading of the entitlements could safely occur as the most efficient means to achieve it. Will it happen? Not if the US can stop it, but if the EU and developing nations forged a voluntary partnership - a "coalition of the virtuous" - they could create a viable strategy to confront global warming. As someone once said, there is really no alternative.

Michael Meacher was Minister for the Environment 1997-2003

DECEMBER

Christian Ecology Link
Global Warming

Roger Shorter of Christian Ecology Link attended the Meeting on Global Warming held on 19th November 2003 at St James's Church Piccadilly during the period of the visit to London by George W Bush, and writes:

A discussion entitled 'Much more than a Hot Air Debate' was held at St James's Church, Piccadilly, during the visit to London by US President, George W. Bush. The publicity leaflet for the meeting asked the challenging question: 'How might Countries and individuals respond effectively?' – It went on to report that: 'The world is divided on the issue of how carbon emissions may be cut', and pointed out that the Kyoto Agreement had not been ratified by the USA.

Before the meeting, Ruth Jarman, from CEL's Steering Committee, distributed leaflets about Operation Noah to the 100 or so people present, sitting in this church built by Christopher Wren in 1684.

Aubrey Meyer, Director of the Global Commons Institute, a musician by training, with a beautifully modulated speaking voice, and a clear and calm speaker, opened proceedings by explaining that the term 'Contraction and Convergence' being promoted by his organisation, was rather like singing the word "Amen". It was, he said, a bit like harmonising emissions so that matters could be brought to an harmonious conclusion by stabilising the situation so that we are not faced with disastrous climate change. His Power Point presentation, full of graphs, and very clearly illustrated - at least for those with good eyesight, or in the front pews - the complexity of the problem, and showed that the most polluting state of the most polluting nation in the world is - by extraordinary coincidence, given this week's famous visitor to England - Texas.

The Rt Hon. Michael Meacher, former Minister for the Environment, said that in his view, the problem of climate change is the most - serious one facing the world. The US, he said, with only 5% OF the world's population, is producing 25% of the world's emissions, but had opted out of the Kyoto Protocol. Russia he added, was another major player, and was likely to be also part of the problem now because of the rapid economic growth that they had experienced over the last 4 years. He said that a major opportunity for progress may be available via the Insurance Industry, since they were likely to be losers, economically, as the result of extremes of weather, and the claims that inevitably then were made. He advocated a global pact: on emissions, with emphasis on local partnerships between countries.

He said that the concept of 'Contraction and Convergence' was, in his view, the one that showed the best way forward.

[Rt Hon. Michael Meacher]

Professor Michael Grubb, of Imperial College, London, had been asked to pose 'difficult questions' concerning the whole subject and process. He said that the whole subject: was a moral issue, but found it difficult to offer much hope, given the fact that the American electoral climate was, in his view, unsympathetic to this issue, because the average American voter knew little about the rest of the world and was unlikely to be prepared to make economic sacrifices for their benefit. This, he said, goes some way to explaining the potential difficulties facing those who wish to encourage George W. to take the political action that people in other parts of the world would wish to see

The Rt Revd John Oliver, Bishop of Hereford (for the next 10 days) eloquently argued that self-interest was not to be underestimated as a means by which others could be

persuaded of the importance of the subject. He said that he expected his last speech in the House of Lords next week, to be on this topic. Unlike Aubrey Meyer's "calm" (as AM described it) but incisive approach to the matter, rather than one that made people fearful of the implications of climate change, the Bishop said that he felt that people were actually more likely to take action concerning the subject if they were, indeed fearful.

DECEMBER 5

Ann Pettifor
Real World Economic Outlook 2003

Publisher: Palgrave Macmillan. ISBN: 1403917957

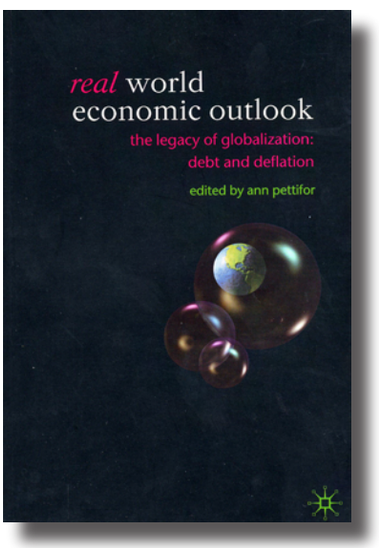
The Legacy of Globalization: Debt and Deflation

66 GLOBAL TRANSFORMATION AND GLOBAL OUTLOOK

> It is never likely that everyone in the world will use identical amounts of fossil fuels. However, any future settlement will have to be based on the principle that, in a carbon-constrained world, everyone should have equal entitlements to their share of the atmosphere's ability to safely absorb pollution.

Under that agreement, those people and nations that take the economic benefits by polluting more than their fair share will have to somehow pay compensation to the 'under-polluters' by purchasing their spare entitlements. Otherwise they run up a huge ecological debt. The process will have to involve capping total emissions, progressively reducing them, and sharing entitlements using a formula that will, over an agreed time frame, mean they converge to be equal per person.

> If chaos is to be avoided, this process—given the name 'Contraction and Convergence' by the London-based Global Commons Institute—is unavoidable. In essence, the world has a limited carbon cake and the only way to begin negotiations on how to cut the cake is to start with the principle of equal access rights.



What we do with them is another matter. This has enormous, and from a development perspective, very positive consequences. Based on IPCC assumptions in 1995, to stabilize atmospheric greenhouse gas concentrations at 1990 levels implied a global, equal, per-capita entitlement of about 0.43 tons of carbon. Action to combat global warming cannot be delayed because, over time, emissions grow, populations rise, and the sustainable size of a carbon cake slice will get smaller and smaller. There has to be a rapid, managed retreat from fossil fuel addiction because there is no other way to escape impending climate chaos.

DECEMBER 12

Myron Ebell
CEI reports on COP-9

" . . . . the third approach is to decide that every person on the Earth has a right to emit the same amount of greenhouse gases. So the way to do it is to assign everyone an equal emissions quota. If people in America or France want to use more energy, then they will have to buy quotas from people who wish to live a more authentic way of life-that is, from poor people in poor countries.

The kicker to this truly zany idea is that the emissions quota to which each person has a right will keep going down until it's at the level of a poor person in a poor country. Then those who wish to use more energy will be out of luck. No more quotas to buy! Everyone will then be blessed with an authentic lifestyle and get to go to sleep when the sun goes down.

This so-called "Contraction and Convergence" approach appeals to both unreconstructed communists and to human rights absolutists. It has a certain moral force for those lost souls who have completely lost their bearings in the world. So it ought to be the winner in these darkening times."

http://www.globalwarming.org/cop9/cop9e.htm

DECEMBER

New Scientist
GHG 'plan B' gaining support

The Kyoto protocol is dying a death of a thousand cuts. Last week, the US reiterated that it wants nothing to do with the sole international agreement designed to save the world from runaway global warming.

The European Union, Kyoto's main promoter, revealed that most of its members will not meet their treaty's obligations. And Russia once again seemed to be on the point of wrecking the protocol completely.

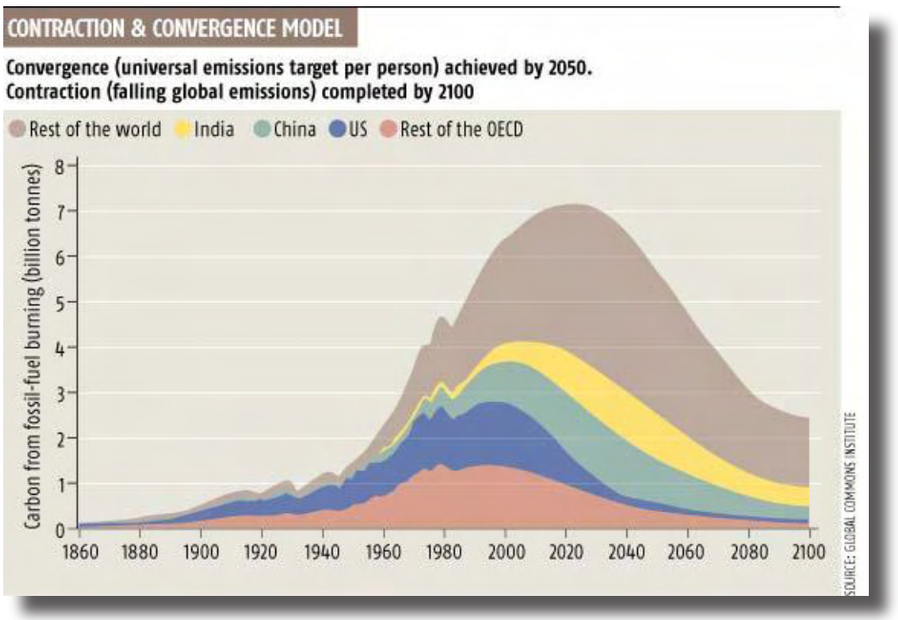
These blows follow a history of bureaucratic squabbling and political posturing by the protocol's signatories, and many observers now fear that it has been damaged beyond repair. So does the world have a plan B for bringing the emissions of greenhouse gases under control?

Contraction & Convergence model

The answer is yes, and it goes by the name "contraction and convergence", or C&C. The idea has been around for a decade, but lately it has been gaining ever more influential converts, such as the UK's Royal Commission on Environmental Pollution,

the UN Environment Programme, the European Parliament and the German Advisory Council on Global Change, which last week released a report supporting the idea.

A source within the German delegation in Milan said this week that his government was taking the idea "very seriously indeed". Even observers outside the environmental establishment, such as the World Council of Churches, back the proposal.



Simple and fair

> For the past two weeks, representatives from around the world have been in Milan, Italy, for COP9, the ninth annual meeting of signatories to the 1992 Framework Convention on Climate Change. Many of them now privately admit that C&C is what we have been waiting for.

While Kyoto has become a convoluted, arbitrary and short-term measure to mitigate climate change, C&C could provide a simple, fair, long-term solution. And above all, it is based on science rather than politics.

The "contraction" in C&C is shorthand for reducing the total global output of greenhouse gases. At the Earth Summit in Rio in 1992, the world's governments agreed to act to prevent dangerous climatic change. The Kyoto treaty was their first fumbling attempt to meet that pledge, and if implemented would set emissions targets for industrialised nations for the period 2008 to 2012.

But increasing numbers of delegates are viewing Kyoto as part of the problem, not part of the solution. Its labyrinthine rules allow nations to offset emissions with devices such as carbon-sink projects, and are so complex they are virtually

unenforceable. Even if Kyoto becomes international law, it cannot be the blueprint for future deals beyond 2012. A new start is needed.

These delegates argue that it is time to get back to first principles to find a formula to fight the "dangerous" climate change mentioned in the Rio treaty. And there is an emerging consensus that "dangerous" means any warming in excess of 2 °C above pre-industrial levels; so far temperatures have risen by 0.6 °C.

Drastic cuts

To keep below the 2 °C ceiling will mean keeping global atmospheric concentrations of carbon dioxide, the most important greenhouse gas, below about 450 parts per million. But because CO2 and other greenhouse gases linger in the atmosphere for a century or more, staying below that ceiling will mean drastic cuts in emissions over the next 50 years.

The Royal Commission on Environmental Pollution has decided that a 60 per cent cut in global emissions by 2050 is needed, which the British government has adopted as its national target. But if the world is to manage such a transformation, then hard choices will have to be made.

And that is where the "convergence" part of C&C comes in. Industrialised nations have so far done most of the polluting. The US emits 25 times as much CO2 per head as India, for example, but if pollution is to be rationed, that cannot carry on.

So under the C&C proposals, national emissions will converge year by year towards some agreed target based upon each country's population (see graph). In effect, by a target date that the Royal Commission and Germany's advisory council agree should be 2050, every citizen of the world should have an equal right to pollute.

Emerging technologies

The average global citizen is responsible for pumping just over a tonne of carbon into the air each year. To prevent dangerous climate change, while allowing for some population increase, the world has to reduce that figure to around 0.3 tonnes per head.

That target is not quite as daunting as it sounds. Emerging technologies for generating energy without burning fossil fuel and for increased energy efficiency suggest it is achievable within a few decades without serious damage to the world's economic health.

But because some nations will find it harder than others to meet their targets, especially early on, the C&C formula also embraces the idea of countries trading emissions permits. This

is already part of the Kyoto formula, but with every nation in the world involved, and with far more stringent targets, it would be a much bigger business.

Many of the politicians and diplomats most intimately involved in negotiating the Kyoto Protocol targets six years ago have emerged as supporters of C&C in Milan.

> "We should not be fixated on Kyoto but on the climate change problem itself and what comes after Kyoto,"

said Raul Estrada, the Argentinian diplomat who chaired the crucial Kyoto negotiations. And that, he says, is likely to mean C&C.

> The chief climate negotiator for the US under President Clinton, Eileen Claussen, says that "almost any long-term solution will embody a high degree of contraction and convergence." She predicts it will become "an importance force in the negotiation".

Pollution for sale

On the face of it, C&C seems anathema to countries like the US, which would have to buy large numbers of pollution credits in the early years. But it does meet most of the criticisms made by the Bush administration of the Kyoto protocol.

In particular, Bush called it unfair that Asian trading competitors, as developing nations, had no targets. Under C&C every nation would ultimately have the same target. Some, such as China, already have per-capita emissions in excess of targets they might have to meet by mid-century.

But perhaps the greatest attraction of C&C is the complete break it would make from the horse-trading, short-term fixing and endless complications that have plagued efforts to bring the Kyoto protocol into effect. In 2002, the US shocked the world by refusing to ratify the treaty, and just last week the EU, its biggest cheerleader, admitted that only two member states, Sweden and the UK, were on course to meet the targets laid down in 1997.

As business grinds on in Milan, the bureaucratic tangles of the Kyoto protocol are becoming ever more convoluted as nations discuss matters such as whether rubber plantations might, like forests, count as a "carbon sink" for which they can claim credit.

Six years after the heady Kyoto night when 171 nations thought they had signed up to save the world, the disconnect between the science and the politics remains huge.

Fred Pearce

DECEMBER

Reason Online
After Kyoto; personal carbon permits?

Ronald Bailey

Milan —Yesterday, activists from the World Wildlife Fund held a short demonstration in the main hallway of the UN climate change conference (COP9) here urging Russia to hurry up and ratify the Kyoto Protocol so that it will come into force. But even if the Russians do eventually sign onto Kyoto that will not be the end of climate change negotiations and programs.

As the Climate Change Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) acknowledges, "The Kyoto Protocol was never expected to solve the problem of climate change in the first commitment period, the 5 years between 2008-2012. It is just the first step. Negotiations as to what should be done next will have to start soon."

So whether Kyoto is dead or alive, climate change negotiations are here to stay.

Under the Kyoto Protocol, rich industrialized nations were supposed to reduce their emissions of greenhouse gases like carbon dioxide by an average of 5 percent below their 1990 levels by 2012. Even if such a reduction could be achieved, it would spare the planet an inconsequential 0.07 degrees centigrade of warming by 2050. So, whether or not Kyoto comes into force, the UNFCCC will launch new negotiations seeking new commitments from signatories like the United States to further reduce their emissions of greenhouse gases. However, the model for those negotiations is unlikely to be the Kyoto Protocol. The Kyoto Protocol has produced a rat's nest of complicated mechanisms and proposals that are constantly being interpreted and reinterpreted. My personal favorite for irrelevancy at the COP9 is a discussion in the UNFCCC's Subsidiary Body for Scientific and Technological Advice on whether or not genetically modified trees should be allowed as a way to absorb and sequester carbon.

Wandering the hallways of the Milan Convention Center, one encounters stacks of publications devoted to explaining elaborate and convoluted schemes to trade carbon or offset carbon emissions through development projects in poor countries.

To cut through these multiplying complications of the Protocol, a simple idea is taking hold among activists and some climate negotiators—contraction and convergence (C&C).

The core of the idea is to set an appropriate level to which greenhouse gas concentrations in the atmosphere will be allowed to rise and then allocate globally the right to emit carbon on a per capita basis. The UNFCCC commits signatories,

including the United States, to the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." "Dangerous" has never been defined, but the proponents of contraction and convergence suggest that levels of greenhouse gases be stabilized at 450 parts per million (ppm) to 550 ppm. In order stop at those levels it is estimated that global carbon emissions will have to be cut by between 40 and 60 percent—the contraction part of the scheme. Under a C&C regime, each country would initially be allocated a portion of an overall declining carbon budget based on its share of the global distribution of income. Over time, to achieve convergence, each year's ration of the global carbon emissions budget for each country progressively converges to the same allocation per person until they become equal by an agreed upon date. This will allow poor countries relatively greater freedom to use carbon energy sources to fuel their further economic development.

The C&C concept has been endorsed by a variety of environmental groups. For example, Legambiente and Forum Ambientalista in Italy want to establish in principle an emissions limit of the equivalent of one ton of oil per person by 2005. They note that the average European currently emits 3 tons annually and each American emits 8 tons annually. The Global Commons Institute in London, longtime proponents of the contraction and convergence approach, suggest that eventually each person on earth would be allowed to emit 0.3 tons of carbon annually. Presumably, under a C&C regime, the carbon dioxide produced while breathing would not be counted against one's overall carbon allocation. The idea is that contracting carbon allocations will encourage the development of non-carbon based energy sources.

Under a C&C regime, high per capita emitting countries could purchase unused allocations from low per capita emitting countries. Proponents point out that buying such allocations from poor low emission countries could fund their economic development. One cautionary note: the Hamburg Institute of International Economics in Germany observes that the immediate introduction of such a C&C scheme "would lead to very high North-South transfers that would be politically difficult to achieve."

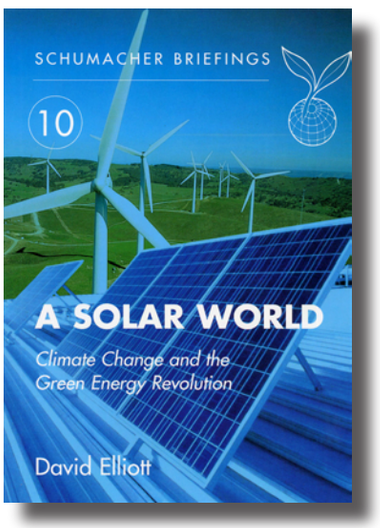
Still, with few new ideas on the table,

> it's good bet that the environmental movement and the international climate change bureaucracies will be pushing contraction and convergence proposals in post-Kyoto negotiations.

Let's hope that it doesn't come down to needing to buy a carbon permit each time you want to barbecue a steak.

Ronald Bailey, Reason's science correspondent, is the editor of Global Warming and Other Eco Myths (Prima Publishing) and Earth Report 2000: Revisiting the True State of the Planet(McGraw-Hill).

2003



David Elliott
A Solar World

Publisher: Green Books / Schumacher

ISBN: 190399831X

If the whole world is to 'Contract and Converge' to a sustainable level of consumption, albeit in a phased and equitable way, as Aubrey Meyer argues in his Schumacher Briefing (No. 5), then we have all got to learn to live differently.

DECEMBER

Pew Centre
Equity and Climate

Beyond Kyoto: Advancing the International Effort Against Climate Change

"The "Contraction and Convergence" proposal, developed by Aubrey Meyer . . . almost any conceivable long-term solution to the climate problem will embody, at least in crude form, a high degree of contraction and convergence.

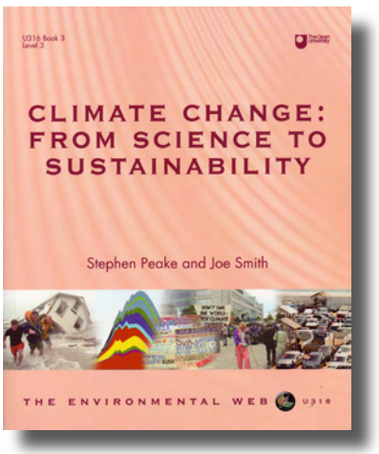
Atmospheric concentrations of GHGs cannot stabilize unless total emissions contract; and emissions cannot contract unless per capita emissions converge.

The contraction and convergence proposal plays an important role in the climate process. It focuses attention on the ethical questions at the heart of the climate problem, which no long-term solution can afford to ignore.

If supported by a critical mass of countries, it would become an important force in the negotiation."

2003

Peake & Smith
From Science to Sustainability



Publisher: The Open University ISBN: 07492 5680X

Contraction and convergence approach to climate equity

One way of ensuring climate equity or justice assumes equal rights to the global commons—that is, the oceans, Antarctica, space and the atmosphere. One influential example of this way of thinking is the contraction and convergence approach. In this case, the goal is to see net aggregate emissions decline over time below some maximum threshold level that stabilizes greenhouse gas concentrations, with per capita emissions of Annex I and non-Annex I countries arriving at equality. A key assumption within this approach is that international climate-change agreements should be based on equitable distribution of rights to emit greenhouse gases.

In other words, everybody carries around an imaginary budget of carbon emissions. There is something about this per capita approach that has immediately struck the right note with many people engaged with this problem. It is interesting to note then, that the idea did not come from a well-resourced international NGO, or one of the international agencies, but was forced on climate-change negotiations by the determination of a small number of campaigners. One of the most audible was Aubrey Meyer, a former classical musician. Determined individuals make a difference: Meyer and his colleagues could be seen as the Robin Hoods of climate negotiations.

2004

JANUARY 7

Anderson & Starkey
Tyndall Report

"The DTQs scheme is premised on the assumption that stabilising greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system will require very large reductions in global greenhouse gas emissions.

[2]

Furthermore it is assumed that these reductions will be achieved through some form of international agreement establishing binding national emissions reduction targets. The Domestic Tradable Quotas (DTQs) Scheme is a new instrument designed to enable nations to meet the component of their emissions reduction targets that is related to energy use . . . .

Whilst there is considerable support for allocating emissions rights between nations on an equal per capita basis, [14] there has been little or no discussion as to whether this allocation should be applied within nations. Consequently no attempt has been made to ground such an allocation within the academic literature on distributive justice."

[2] For example, in its 22nd report, the Royal Commission on Environmental Pollution (RCEP) recommends that atmospheric concentration of carbon dioxide be stabilised at 550ppmv. Under the Contraction and Convergence approach advocated by the RCEP this would require cuts of 77% in UK emissions by 2100 (RCEP, 2000, p53, 56-7).

14 The equal per capita allocation forms the basis of the "Contraction and Convergence" proposal (Meyer, 2000). The RCEP endorses this proposal on the basis that "every human is entitled to release into the atmosphere the same quantity of greenhouse gases" (RCEP, 2000, p2). For an extensive list of those who support the Contraction and Convergence proposal see Meyer (2000).

http://www.tyndall.ac.uk/whatsnew/dtqs.pdf

JANUARY

Illinois Energy Forum
Russia's Ratification Of Kyoto Uncertain

WHILE negotiators at a United Nations-sponsored climate conference in Milan, Italy continued to work on new rules to control greenhouse gas emissions, Russia gave mixed signals regarding whether the country would ratify the Kyoto Protocol on climate change.

Because the United States has indicated it will not consider ratifying the treaty, Russian support is necessary for its emission control terms to go into effect.

Within days of each other, one Russian minister said his country would definitely not ratify the protocol while another minister said it might ratify an amended version.

Meanwhile, the U.S. Department of Energy pressed its policy of voluntary greenhouse gas reductions by launching a new web site that will serve as a resource for the public and industry associations participating in the agency's Climate VISION program Voluntary Innovative Sector Initiatives: Opportunities Now.

The web site will allow participants to track progress in meeting their voluntary commitments under the program.

Because of uncertainty of Kyoto ratification, there was talk at the Milan meeting of using a "contraction and convergence" model as an alternative. Chief U.S. climate negotiator Eileen Claussen urged consideration of this option.

"Contraction" under this model means reducing the total global emission of greenhouse gases, while "convergence" would have national emissions converging year by year toward agreed targets based on each country's population.

The Contraction and Convergence model also includes an emissions trading program involving all nations.

www.gci.org.uk/articles/January2004Newsletter.pdf

JANUARY 29

The Lord Bishop of Manchester
House of Lords

My Lords, are the Government adopting contraction and convergence as the just and intelligent way forward on global emissions?

JANUARY

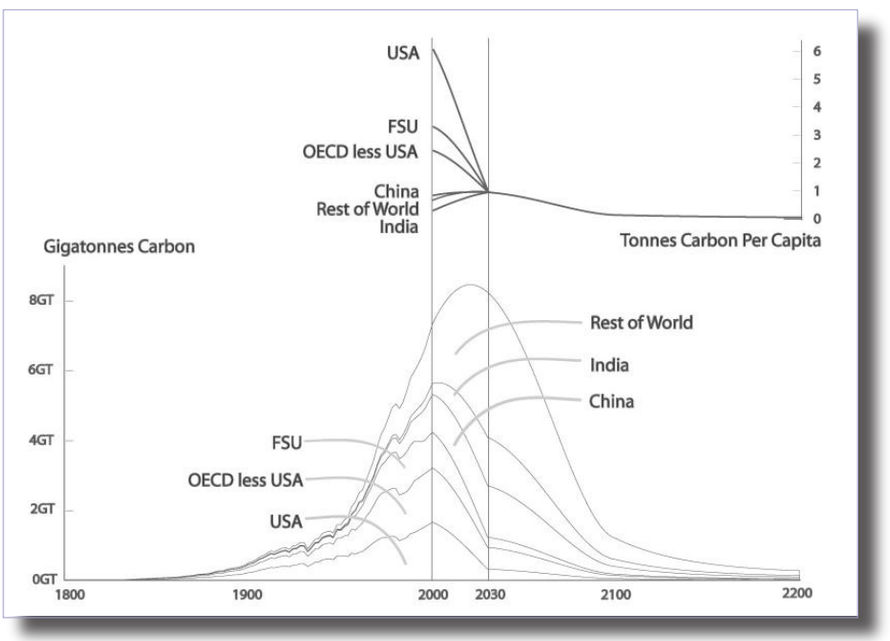
HERO
Shrinking the Carbon Economy

Global purpose: carbon reductions under C&C

"The United Nations Framework Convention on Climate Change (UNFCCC) was agreed in June 1992.

Its objective is to stabilise the rising concentration of greenhouse gas (GHG) in the atmosphere before this becomes 'dangerous'. Unlike the Kyoto agreement, which is partial, Contraction and Convergence (C&C) addresses this in its entirety.

GHG concentrations have been rising for the last two hundred years in response to emissions from industry and land use change and are influencing global temperature upwards. At present these trends are towards dangerous rates of global climate change.



The rising concentrations are the result of emissions accumulating in the atmosphere. Consequently the contraction of future emissions globally is by definition required to stabilise concentrations. Climate scientists have been calling for an emissions level that is at least 60 percent less than the level in 1990. This means that at rates to be agreed, an international convergence of the future shares to this contraction – both gross and per capita – arises by definition. With C&C, GCI has formalised the options, and an example of this can be see in the diagram.

Since such a process is required by definition to achieve the goal of the UNFCCC and the risks from failure to do this are great, why is there delay? Damage from already altered climate is increasingly apparent and we are caught in long-term trends that augur worse is to come.

The first reason is that the economic wealth and growth we have come to take for granted has been dependent on burning increasing amounts of coal, oil and gas. The GHG emissions from this – weighed as carbon – amount at present to over 6 billion tonnes a year. This trend continues to rise at 2 percent a year, when a fall at around 2 percent a year is required to lessen danger.

To deal with this, there is no choice but to substantially decrease dependence on these fuels by pursuing clean sources of energy such as solar and wind power.

The second reason is that within this expansion there has been a marked global economic divergence. Two thirds of current global population have only six percent of purchasing power in the newly global market place. Most of these people are in the poorer countries. Their GHG emissions still barely register in the global accounts, and they are the most vulnerable to the damage – such as droughts and floods – that global climate change brings.

As the trends worsen the growth becomes increasingly uneconomic. To deal with this the UNFCCC gave rise to a subsidiary agreement – the Kyoto Protocol – in which the wealthy countries are required to lead the technological changes by example, not require emissions control of developing countries, and assist poorer countries in coping with the opportunity costs that climate change is already causing.

However, the United States, the world's largest emitter of GHGs – 35 percent of accumulated – has refused to support this agreement. The rules are such that now unless the Russian Federation does support it, the Protocol will not be ratified.

Under President Clinton the US said that unless the agreement was global it wouldn't work. The US Senate unanimously passed the 'Byrd Hagel Resolution' in June 1997 to make this point. Since then President Bush has also accepted arguments saying that controlling emissions must be subordinate to the growth of the economy. So in the US and globally, GHG emissions, concentrations and consequential damages will rise as well. This is locking us deeper into the trends towards dangerous rates of climate change, not to mention the trends of increasingly uneconomic growth.

As early as 1990, GCI proposed the C&C basis to prevent this deadlock. We presented the first detailed proposals in 1996 and have sustained our effort to increase awareness of C&C. Its main virtues are that it is simple and easy to understand

and not random. Governed by the goal of stabilising GHG concentrations in the atmosphere, the model will calculate any rate of contraction. Applying the simple moral within this logic, the model will also calculate any rate of convergence to equal per capita shares globally.

Unless we prefer disaster by international bluff and blackmail, this is by definition what the situation requires. And it is encouraging to see how the uptake of C&C has grown steadily and the proposal has an increasing number of high-level backers and new advocates."

Aubrey Meyer

JANUARY

Rising Tide On-line
What planet are we on?

Imagine a planet that once held great oceans. Which had the warmth and water needed to support life. Now a freezing wind howls across rock strewn deserts whipping its red earth around high peaks and deep into valleys. With January's latest expeditions to Mars this, the Red Planet, is once again under scrutiny. For the first time, the robotic envoys of the human race will be searching for a history of water, a prerequisite for life on Mars. And although the planet's atmosphere is currently too heavy with carbon dioxide to sustain human life and the plants that would meet many needs, the question again rears its head - what would it take for human beings to live on Mars?

To start with, it would take at least couple of thousand years of dwelling in biodomes while the right conditions to live in the open air were created. For Mars lacks Earth's 'greenhouse effect', a layer of 'greenhouse gases' that trap solar energy, creating an atmosphere in which humans can live. Without this Earth would be as cold and barren as Mars. However, the greenhouse effect needs to be carefully balanced to support human life. Too high a concentration of greenhouse gases and the planet would overheat, leading to unpredictable weather behaviour, loss of plant and animal species, and serious disruptions to the chain of life on Earth. This is human beings' most urgent habitat problem today - the concentration of greenhouse gases in Earth's atmosphere, particularly carbon dioxide, is currently on the rise, pushing the temperature up with it. In the last two decades in particular the Earth warmed at a rate faster than at any point in at least the last 1000 years. And, while scientists have tested alternatives to the idea that human beings are affecting global climate, none of the factors such as the climate's natural variability or changes in solar radiation fit the 20th century's observed warming so well as increases in greenhouse gases generated by human activity. The question of what it would take to support human life is

more pressing for planet Earth than for Mars - as a species we are having difficulties taking steps to ensure that we can carry on living in our present home.

International political response to the deterioration of support systems for human life on Earth comes in the form of the UN's Kyoto Protocol, a set of negotiations that calls for token cuts in greenhouse gas emissions. Ratification of the Protocol is stalled by Russia's vacillating over whether to sign the agreement. Meanwhile the US has simply refused to play, an unsurprising stance given that the main cause of climate change is too much carbon dioxide in the atmosphere. This carbon dioxide comes from the burning of fossil fuels, most notably oil, and the US is at least as addicted to oil as is the rest of the global North.

How disturbing: the resource that fuels contemporary society and defines international relations is the same resource that most severely impacts on the ability of our species to survive.

Carbon dioxide is emitted in the manufacture of almost every product that we buy and in every journey we make by motorised vehicle. For the past four decades, the output of carbon emissions and Gross Domestic Product from globalised industry have increased almost exactly in proportion to each other - a dramatic cut in emissions would mean a correspondingly dramatic shift in our understanding of 'business as usual'. The scale of changes that are implied, even if motivated by an interest in future human generations being able to live on this planet, seem difficult to accept. Such measures are hardly vote-winners. This is why a meaningful attempt to tackle climate change is not at the top of most politicians' agendas.

This is also what makes questions over a radical transformation of society immediate and practical, rather than abstract. It is less a case of whether transformation should happen, and more of a case of what sort of changes are required. Thus, to avoid panicked measures and an increasingly authoritarian state, human beings need to find a way of practising politics that allows for participation in this significant political transformation. What mechanisms need to be developed to allow people to decide on the limits to carbons emissions? How will those limits be applied in a truly free and fair manner?

Fortunately, there is no need to start from scratch on this last question. The UK-based Global Commons Institute has put forward an initiative, Contraction and Convergence, which would provide a way for the global community to move towards the 80% emission cuts necessary to prevent carbon dioxide levels from exceeding twice what they were before the industrial revolution.

And Contraction and Convergence is based in the principle of equity, recognising that such vast change needs a political framework.

The Kyoto Protocol is often criticised for being 'too little, too late' but it is predictably so, given that it challenges none of the economic or political assumptions of a capitalist system. It relies on the extension of the market to the Earth's carbon dioxide recycling facility - the atmosphere - to get us out of this mess. It allows those who usually use more than their fair share of the world's resources to continue doing so.

As a step beyond Kyoto, Contraction and Convergence recognises that safeguarding life support systems for future generations has to involve a different way of working from the current, clearly defunct, system.

Contraction and Convergence proposes that international 'shares' of greenhouse gas emissions be allocated on the principle of equity, whereby a human being in an over-consuming country has no more nor less right to Earth's atmosphere than a human being in an under-consuming country. From this understanding the initiative proposes that countries in the United Nations Framework Convention on Climate Change agree a global greenhouse gas emissions 'contraction budget', aiming to limit atmospheric concentrations of these gases. Shares of greenhouse gas emissions would be proportional to an agreed base year of global population. In practice this may mean that over-consumers of greenhouse gases would have to contract sharply, while under-consumers could continue to rise for a while until their overall consumption 'converged' at the pre-agreed level.

Contraction and Convergence has solid scientific grounding with the aim of fair distribution, and with the atmosphere afforded the status of a common resource for all life on Earth.

In a January 2000 report, Greenhouse Gangsters vs. Climate Justice, the US-based group CorpWatch [2] summed up the changes needed as being about more than weather stabilisation. They called for 'climate justice', including the recognition that communities hit hardest by the extraction, refining and distribution of fossil fuels are not only some of the most severely impacted by climate change catastrophes but are also some of the least capable of responding to them. As part of a movement for climate justice CorpWatch's stance included opposition to "military action, occupation, repression and exploitation of lands, water, oceans, peoples and cultures, and other life forms, especially as it relates to the fossil fuel industry's role." They accused multilateral development banks, transnational corporations and governments in the global North of compromising the democratic nature of the United Nations as it attempts to address the problem. The obstacles to achieving weather stabilisation as part of a larger goal of climate justice are, after all, both institutional and political. Despite a potentially bleak prognosis for the survival of human beings

on Earth, hope lies in understanding that climate change is the result of a tangible set of events and political decisions. And, as such, it does not have to be inevitable.

Melanie Jarman

[1] Global Commons Institute, www.gci.org.uk

[2] corpwatch, www.corpwatch.org

FEBRUARY

Mayor of London
Green Light to Clean Power

policy 2:

The Mayor supports the principle of contraction and convergence as a long-term international policy objective.

[page 74]

Box 3: Contraction and convergence [page 49]

Contraction and convergence is a simple approach to distributing the total greenhouse gas emission reductions required internationally, between various countries or groups of countries. The approach is based on two principles: -

i) that there is an upper limit to acceptable global atmospheric greenhouse gas concentration, beyond which the damage from climate change would not be acceptable

ii) that the atmosphere is a global commons, so that as individuals we all have equal rights to emit greenhouse gases.

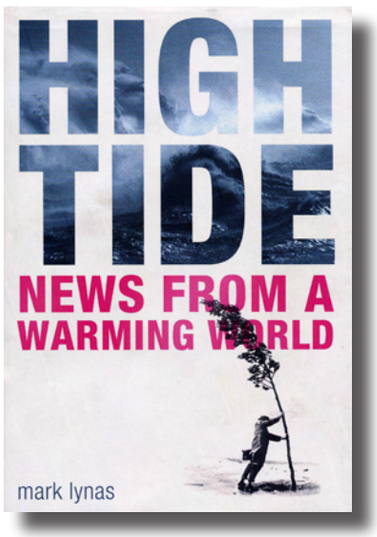
These principles are applied to the problem of distributing internationally the right to emit greenhouse gases, as follows. First, the target atmospheric concentration is agreed, and a date is set at which point the atmospheric concentration will be stabilised at the agreed level. From these factors, the global annually allowable greenhouse gas emissions can be calculated for each year of the stabilisation period. This will be a decreasing number over time, as global emissions contract to the sustainable level defined by the target concentration.

An individual person's emissions entitlement for a given year is the global allowance for that year divided by the global population. From this, national entitlements are calculated on the basis of national population. Therefore, a population cut-off point is required, after which additional population growth does not generate emission entitlements. To achieve these emission reductions via gradual transition, there would be a period during which emission entitlements for all nations converge to an equal per capita share globally. This period is independent

from the stabilisation date for atmospheric greenhouse gas concentration: rates of both contraction and convergence would both be agreed through negotiation.

Emission entitlements created through contraction and convergence could be internationally tradable, so that the resulting system would be compatible with global carbon trading.

2004



Mark Lynas
High Tide

Publisher: Flamingo ISBN: 000713939X

. . . . In the meantime, to begin the halting first steps towards protecting the Earth's climate, the Kyoto Protocol must be brought into force - and soon. We must urge the Russian government to ratify Kyoto, and other governments to implement it seriously once it comes into effect.

2. Sign up to 'contraction and convergence'

Only industrialised countries are active participants in Kyoto: developing countries have refused to take on their own cuts on the reasonable grounds that it could freeze their development and worsen global inequalities. But Third World countries account for an increasing share of global emissions: China is the second largest polluter after the US, and India is also in the top ten. Clearly greenhouse gas emissions from the developing world will also need to be reduced soon if dangerous global warming is to be avoided. However, discussions on this have not even started, and attempts to begin negotiations at the Delhi Climate Conference in 2002 were rejected. One crucial reason for this rejection is equity. Why should India and China - whose citizens on average emit respectively only a tenth and a quarter as much as the average British citizen - agree to limit their consumption now, when the industrialised world has got rich on the back of a century or more of carbon-based development? The issue is likely to cause deadlock for years into the future, unless someone can find a clever way around it. Luckily, a workable solution is currently on the table, one which recognises that equal rights to the atmosphere are integral to efforts to protect the climate from major destabilisation. First developed by Aubrey Meyer of the Global Commons Institute in London, it has begun to receive tacit support from within the British government, adding to support from the European Parliament, the Africa Group of Nations and the governments of India and China. This solution has an elegant logic which cuts right through all the UN jargon and complexity which has blighted international climate policy so far. It's called 'contraction and convergence'.'22 The way it works is simple. First, the world agrees an atmospheric greenhouse gas

concentration target which will keep global warming within safe boundaries. This target then translates into a global emissions budget, which is parcelled out on an equal per capita basis across the world. Every Chinese, American, Bangladeshi and Greek would get the same entitlement, phased in over an agreed convergence period. These entitlements should, Meyer insists, be tradable - both to ease the transition and to generate much-needed revenue flows from rich to poor countries. (This will differ from current emissions trading, which takes place without there being a clear budget to ensure that overall emissions decline, and which also fudges the crucial issue of who owns the atmosphere.) With carbon permits - which will increase in value as they gradually decline in numbers to meet the global contraction budget - becoming prized property, there will be strong incentives for efficiency and the rapid uptake of clean energy technologies. So whilst tackling global warming, 'contraction and convergence' would also go a long way towards reducing the appalling inequalities of today's world. Nor need it usurp the Kyoto Protocol: it could instead become a logical extension to the climate negotiations once the Kyoto 'first commitment period' mandate runs out in 2012.

I am convinced that 'contraction and convergence' provides the only solution to the problem of global warming which is both workable and logical, and which establishes a clear framework for deciding where we want to be in the future rather than simply relying on the guesswork of countless piecemeal measures. But in order for it to be accepted, governments first have to be persuaded to sign up to its provisions, something which can only be achieved with widespread popular support.

JANUARY - MARCH

Crucible
Equity in Adversity

The CRUCIBLE editorial observes; -

"The poor, less industrial countries are largely those that will suffer the consequences of global warming: 'worsening and greater frequency of storms, floods, desertification, crop failures, famines, eco-system collapse, species migrations and extinctions, disease vectors, refugees, social tensions, economic failures and large-scale political conflicts . . . [with] the rising of sea levels through warming of the waters . . . [to] cap all of these tragedies'. [Aubrey Meyer's article "Equity in Adversity"] compares the global apartheid, with the few offering a legacy of poverty - in the widest sense - to the many, with the political apartheid with which he grew up in South Africa. In the end, the only solution that ensured a future of any description was one that involved every citizen of the country.

The visionary genius and transcendental forgiveness of Nelson Mandela made that possible. Similarly, the solution to global warming has to be planet-wide, or it will not work. Contraction and Convergence answers this call to unity."

Main Article by Aubrey Meyer

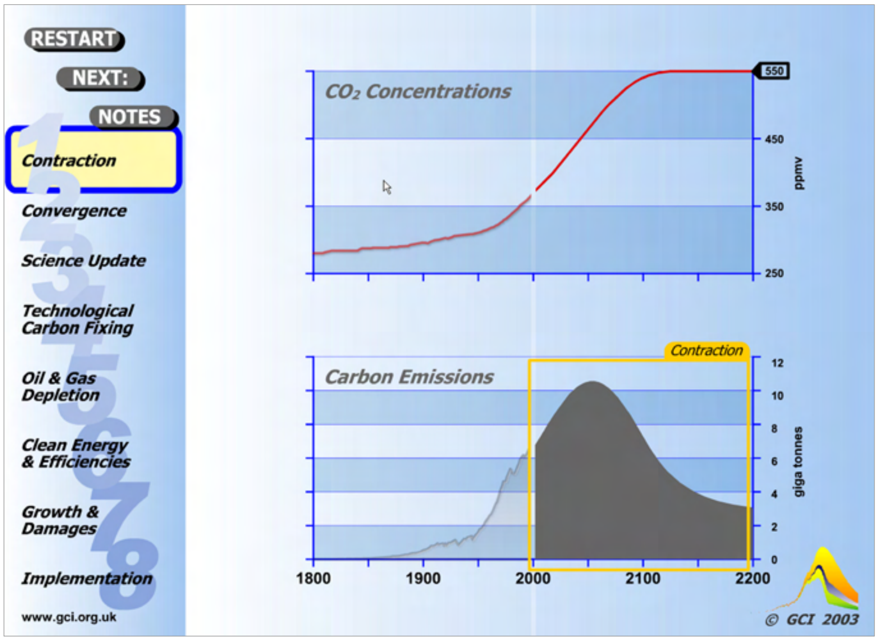
From 1952, aged five, I grew up in South Africa during the 'apartheid' years. Apartheid means 'separateness'. As public policy, apartheid meant 'separate development' for white people and 'nonwhite' people. To a child, this construct was definitely 'adult' and strange, as South Africa's national motto was, 'eendrag maak mag' or 'unity is strength'. When you put the two ideas together you got 'separateness is weakness'. This flawed logic was pervasive.

During those post-war years economies worldwide grew steadily. We were, so the story goes, becoming wealthier and wealthier. While South Africa was no exception to this, its society was polarised, racially and economically, more than anywhere else in the world. Land and wealth were concentrated in the hands of the few. Poverty was their gift to the many, and most of the poor were indeed separated, for not being white skinned.

We had centres of wealth and 'Bantustans' of poverty; in practice this separation was into a vast periphery of moneyless people and a core of people-less money. With unintended irony and percipience, the South African Tourist Board attracted visitors to our 'beloved country' with the slogan that, 'South Africa is a World in One Country'. The economics, if not the politics, was just like the larger world.

The tension in this contradiction, more than anything else, drove the ultimate defeat of white South Africa nationalism and the election victory of the ANC after Nelson Mandela was released from prison. Rejecting segregation took years, but the nation did finally come together, believing that integration and inter-dependence were the better and safer option. There is an object lesson here for the UN climate negotiations.

By 1989 I had been living in London for ten years working as a musician. Looking for the subject of a musical, I became aware of the issue of global climate change. It suddenly seemed possible that the Greens were right. They argued that with our greenhouse gas (GHG) emissions, human beings have been causing changes in the atmosphere that - if continued - are capable of bringing civilization to its knees. The enormity of this insight was paralysing and it as good as overwhelmed me. The music in me was silenced.


RESTART
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Contraction
Convergence
Science Update
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Oil & Gas Depletion
Clean Energy & Efficiencies
Growth & Damages
Implementation
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CO₂ Concentrations
550
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350
250
ppmv
Carbon Emissions
Contraction
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giga tonnes
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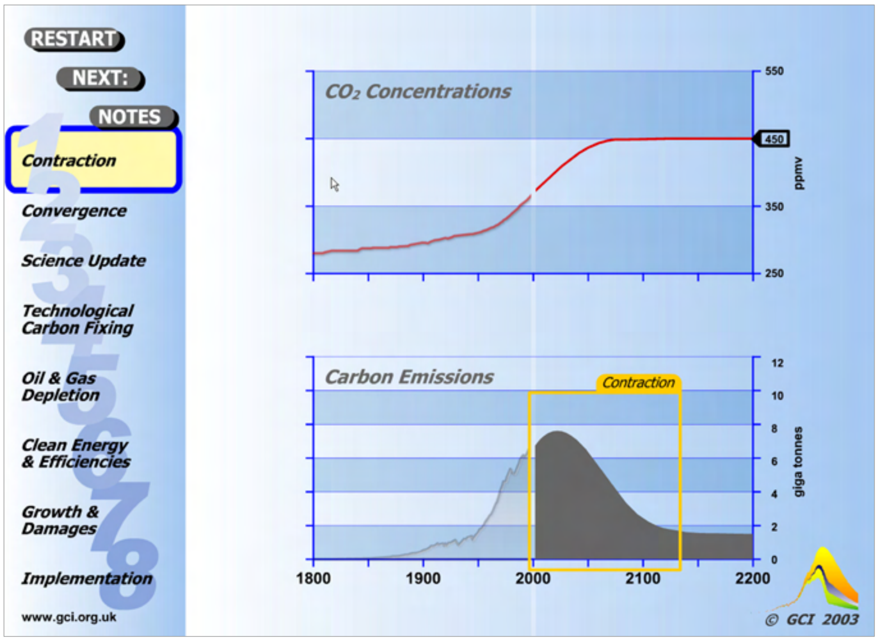
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CO₂ Concentrations
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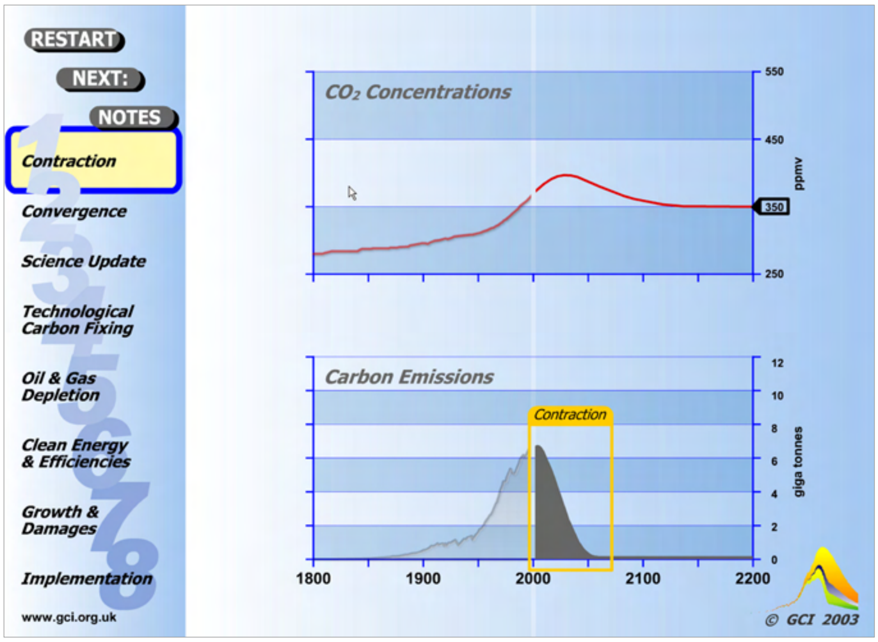
RESTART
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NOTES
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Science Update
Technological Carbon Fixing
Oil & Gas Depletion
Clean Energy & Efficiencies
Growth & Damages
Implementation
www.gci.org.uk
CO₂ Concentrations
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Carbon Emissions
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giga tonnes
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A little investigation revealed that the human story behind this was all too familiar. Here again were moneyless people and people-less money, but at a planet threatening level. It was clear that getting beyond this delusory separateness globally was imperative. It seemed obvious that integration and interdependence would be central to any story of success that humanity as a whole would be writing, if we learned how to stop causing these climate changes. Apartheid doesn't work.

With three friends from the UK Green Party, I co-founded the Global Commons Institute (GCI) in London. Our mission was 'equity and survival'. In June 1990 we published a statement based on this. It was the first of hundreds of widely supported GCI statements in the UK press and elsewhere over the following years.

As the story unfolded, we found we were engaging in the climate change debate in numerous fora including climate negotiations, meetings with experts, off the- record meetings, and meetings in Switzerland, New York, Delhi, Washington, Beijing, Bonn, Nairobi and even beloved Cape Town.

With the help of Tony Cooper, I produced a response to the global challenge of climate change and the inequity of which it was a symptom. 'Contraction and Convergence' (C&C) is a proposal that overall global emissions must contract, while overall the amount of emissions per capita must converge across the world. Primarily about GHG emissions, C&C is actually like a musical score. It is a global framework arising from basic principles.

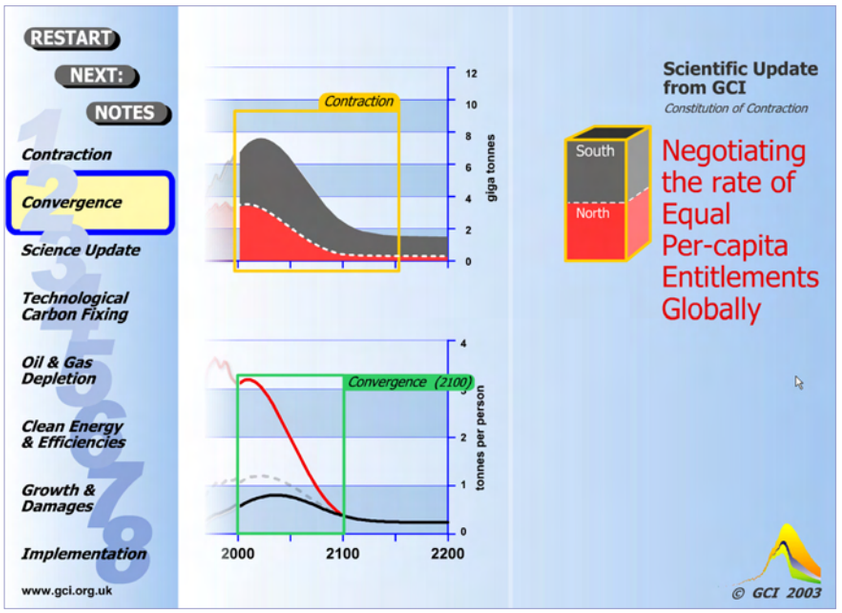
It is mathematically a resolution, like an 'Amen' cadence. In the language of the mediaeval churches, C&C is e pluribus unum, unity-in-diversity. I have called it equity-in-adversity, a just response to the global crisis.

C&C makes possible projections of how to cope with the changes ahead by keeping in tune and in time with each other and the natural world. It shows how we might integrate through equity-in-adversity across the years so that we, and children yet to come, may survive and prosper in our increasingly fraught but interdependent future.

Human enhanced global warming Since around 1800, the industrial economies of the Western world have been growing by burning fossil fuels, first coal, then oil, and more recently gas.

When these are burned to generate electricity, for example, greenhouse gases such as carbon dioxide, nitrous oxide, sulphur dioxide and methane are emitted to the global atmosphere, where they stay.

CO2 is the most abundant of these and it remains in the atmosphere for decades, even hundreds of years. This means that:-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giga tonnes
Convergence (2100)
tonnes per person
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Scientific Update from GCI
Constitution of Contraction
South
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Negotiating the rate of Equal Per-capita Entitlements Globally
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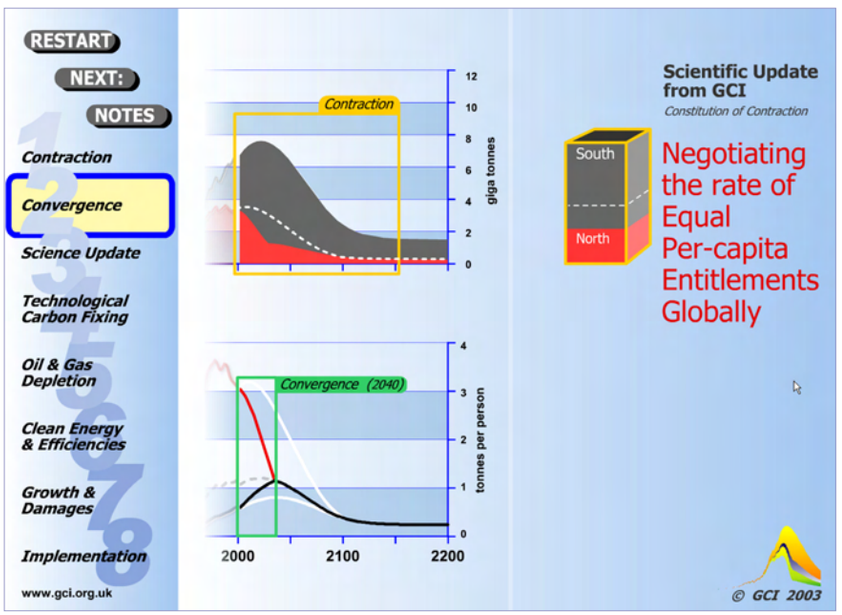
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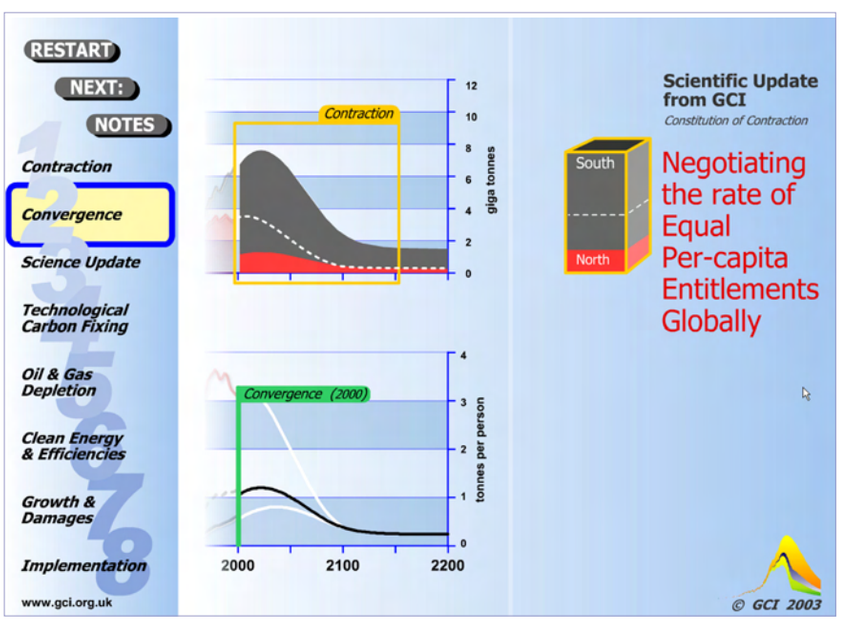
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19th Century emissions have lingered into the 20th Century atmosphere, while 20th Century emissions have simply added to the total.

We know this because measurements of the atmospheric concentration of, for example, CO2, have shown a steady increase since we started burning fossil fuels. The increasing CO2 emissions shown in the image below are measured in 'Giga' (billions) of Tonnes of Carbon (GTC) only. The concentrations shown are measured in atmospheric parts per million by volume (ppmv). The concentration in 1800 was 280 ppmv. Today it is rising through 373, a rise of over 35% in the last 200 years. Natural cycles notwithstanding, this contemporary rise is higher and faster than anything in the geological record of the last 500,000 years.

Sunlight to planet earth includes a radiation frequency that is faster than the visible rainbow spectrum. It is called ultraviolet (UV) light. When the UV light rebounds off the surface of the earth, it re-radiates at a wavelength slower than the visible spectrum called infra-red. CO2 is called a greenhouse gas (GHG) because, like all gas molecules comprised of three atoms, it is excited by this infra-red radiation. This means in other words that the gas traps heat. The outcome therefore is straightforward: the more greenhouse gas that accumulates in the atmosphere, the more the temperature on average will be influenced upwards. This is the basis of what is called 'human-enhanced global warming'. On the balance of available evidence, this GHG accumulation is substantially responsible for the almost one degree Celsius increase of global temperature that has been observed over the last 200 years. It is what Mrs Thatcher correctly referred to in 1989 as "the vast uncontrolled experiment we have begun with the global atmosphere". It is common knowledge that applying more heat to anything makes it increasingly turbulent and unstable. Think of how agitated water becomes as you increase heat to it in a pan on the stove.

Since at least 1989, climate scientists have been telling us that these trends of increased emissions, concentrations and temperature are moving towards 'dangerous' rates of climate changes. The use of the word dangerous is deliberate. It points to a worsening and a greater frequency of storms, floods, desertification, crop failures, famines, eco-system collapse, species migrations and extinctions, disease vectors, refugees, social tensions, economic failures and large-scale political conflicts over the years ahead. The rising of the sea levels through warming of the waters will cap all of these tragedies. The event as a whole will be 'stochastic', that is, very hard to predict in local detail but easy to explain and predict in general global terms. I shall call it here simply 'damages'.

Because of all this, the scientists' message to us has consistently been: unless we act collectively and decisively to reduce greenhouse gas emissions to the atmosphere by 60% to 80% of current levels as soon as we can, the upward rise of GHG concentration in the atmosphere will continue.

The United Nations Framework Convention of Climate Change
Recognising this awesome potential, the nations of the world came together between 1991 and 1992 to create the 'United Nations Framework Convention of Climate Change' (UNFCCC). It was signed at the Earth Summit in Rio de Janeiro in June 1992 (Rio 1992). Its objective "is to achieve . . . stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

This is Article 2. It recognises that greenhouse emissions have to contract globally.

The Principles of Precaution and Equity Part of our present and terrible dilemma is that we can't prove that dangerous climate change is going to occur, any more than it is not. The future is about probabilities especially including human behaviour. We can't sensibly adopt a strategy of simply observing passively whatever happens as it happens. Neither can we adopt a de facto policy of 'global apartheid' where peoples, their economies and nations simply have to make their various ways forward separately, hoping to adapt as best they can to whatever happens separately.

> The reasoning for this is simple. If various local and even regional efforts to adapt to climate change are to be meaningful, there have to be global measures to avoid the worst outcomes, since, in the light of the above, mere adaptation will be a hiding to nowhere.

At the same time, if various local and even regional efforts to limit and reduce emissions are to be meaningful, some collective account of global action to control greenhouse gas emissions as a total contraction event is required. If it happens it will by definition be in a precautionary equitable framework of inter-dependence. It won't happen in conditions of increasingly random guesswork.

> If there was to be market activity in this regime, it would be a framework-based-market, not a marketbased- framework. When this overall goal is clear, principle has to inform practice.

Those who negotiated the UNFCCC engaged with these difficulties. The treaty document states the global principles of precaution and equity as follows: -

The Parties, "should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures . . ." (Article

3.3) . . . The Parties, "should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity". (Article 3.1).

They note that, "the largest share of historical and current global emissions of greenhouse gases has originated in developed countries and that per capita emissions in developing countries are still relatively low" (Preamble). They therefore conclude that, "in accordance with their common but differentiated responsibilities and respective capabilities the developed country Parties must take the lead in combating climate change and the adverse effects thereof" (Article 3.1), while "the share of global emissions originating in developing countries will grow to meet their social and development needs" (Article 3.3). This recognises convergence. The document goes on to say that, "policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at lowest possible cost" (Article 3.3). This points to 'market-mechanisms', such as the global trading of emissions rights. Overall, however, a framework based on precaution and equity was being established, with efficiency introduced in a subsidiary role purely to assist achievement of its objective. There was political tension, the essence of which was this: was the objective of the treaty merely an aim, or something to which we were collectively committed?

Just before Rio 1992, Michael Howard, then the UK Environment Minister, inserted the word "aim" in the clause on commitments. The tension between guesswork and framework continues to dog the debate.

Challenging 'Expansion and Divergence' and the 'Economics of Genocide' Without formalising contraction and convergence, the UNFCCC had in a loose form laid out the preconditions for it. The globally safe and fair future allocation of emissions or emissions permits was coming to the fore. While this was not fully seen at the time, awareness of this and its political dynamics had increased. With our early graphic imagery, GCI had maintained a lobbying presence throughout the negotiations publishing these points for 'equity and survival' as best we could. Still short of a real deal, we felt that progress had been made.

Between 1993-95 we became involved in a stark effort to challenge the counterthesis to 'equity and survival' launched by economists. They suddenly descended on the UN, very well-resourced and in great numbers, with the slogan 'efficiency with no regrets'.

Climate change was correctly seen by them and their sponsors as a threat to continued economic growth. Instead of denying the reality of climate change and its origins in fossil fuel dependent economic growth, they suggested that generating more units of economic growth per unit of fossil

fuel consumption was 'efficient' as it meant paying less for the energy content of 'growth'. They argued about what carbon tax levels should be introduced and devised a global costbenefit analysis of climate change to help determine this figure. The figure was identified as the 'social cost' of carbon, and their cost-benefit-analysis claimed to determine how much tax people were willing to pay to avoid a unit of damage caused by climate change. However, this seemingly innocent approach ended in farce and diplomatic scandal. These economic experts brought humiliation on themselves with two fundamental errors.

The first was their valuation of the planet's resources as a whole as threatened with increasing and potentially catastrophic damages. Insurance company data show these damages have been growing steadily at 12% a year for the last 40 years. But the economists, blind to this and any projections of such trends, spot priced their entirely petty damage estimates well below the value of the economy as a whole.

They reasserted that its incontestable purpose was to grow at three or more percent per annum ad infinitum. The climate spin was that damages would be negligible, and there would be no regrets if we could find a way of burning less carbon in the process; apart from the benefit the planet might experience from less pollution, we would be saving on fuel bills as well. In short, they advocated selling the planet to the economy.

The second error was their failure to recognise the enormity of global economic apartheid. Their handling of mortality due to climate change was bathetic and shameless. They valued these statistical deaths as functions of the disparate incomes of the people involved. Crudely, poor and rich globally were valued fifteen to one; on average fifteen dead Indians had the same value as one dead Englishman. Normal to the economists perhaps, but it caused outrage.

> The Intergovernmental Panel on Climate Change (IPCC) asked GCI to undertake a study of the unequal use of the global commons. This study demonstrated that the economies of the world have been jointly and severally growing in a persistent pattern of expansion and divergence since the war. By 1990 this pattern showed the distribution of global purchasing power between people-less money and moneyless people as follows; (1) the one third of global population who had consistently on average emitted more than 0.4 of a tonne per capita of carbon from fossil fuel burning had 94% of hard currency equivalent purchasing power and (2) the two thirds of global population who had consistently on average emitted less than 0.4 of a tonne per capita of carbon from fossil fuel burning had the remaining 6%. This is what I mean by global apartheid.

The link between fossil fuel burning and income was nearly 100% in 1990. The two thirds of the global population in our study were people in the poor countries of the South who rightly said they had not triggered this global crisis. They

denounced cost-benefit, global economic apartheid and the absence of policy to prevent climate damages and deaths that suggested the poor were "too poor to worry and too poor to worry about".

GCI ran a successful campaign to discredit this economics of genocide. We then formalised and established 'Contraction and Convergence'. The economists were furious and called it the stupidest campaign in history.

Establishing 'Contraction and Convergence' and 'the Economics of Survival'

We returned to the UN climate negotiations in 1996 with the first version of this image. It shows all countries past CO2 emissions in a pattern of 'Expansion and Divergence' and the 'Contraction and Convergence' of these in a future where rising atmospheric CO2 concentrations are held to no more than 450 ppmv (parts per million per volume). Convergence to equal per capita shares globally is complete by 2030 under an overall regime that brings emissions down to 40% of 1990 values by 2100. It is GCI's resolution or, if you will, our 'Amen' in the face of climate change.

We enlarged this beautiful image to billboard size and put it on the wall in the restaurant area. The effect on the negotiators was salutary; everybody could see themselves full-term in relation to everyone else. Moreover, the very basis of the negotiation could actually be seen!

Questions were asked by delegations. Helpful organisational suggestions were made. The following year we received invitations from many parties, including the US and Chinese governments, asking us to visit their capitals and brief their officials. We accepted them all. The Africa Group of Nations collectively passed a resolution in favour of Contraction and Convergence.

The Indian government repeated statements that they would accept no other basis for a solution. The Chinese government issued a similar statement.

The US Senate unanimously passed the famous Byrd Hagel Resolution effectively endorsing Contraction and Convergence. Then, just before the Kyoto meeting in December 1997, members of the US Senate Armed Services Committee arrived. "We won the cold war; C&C is Communism!" they said. "Maybe so," we countered, "but at least you get a Capitalist management system."

A globally inclusive and full-term climateframework- based-market is what everyone knew was needed. 'Contraction and Convergence' is the only idea that has ever been presented for the interdependent future that makes development sustainable. We so nearly got agreement for it in principle at the climax of Kyoto. Instead we got the Kyoto Protocol with all

permit allocation postponed. It has since been so enfeebled by disputes that it may not now hold up. Beyond that, a new plague of internet-based 'carbon-carpetbagging' (carbitrage) has infected it with such fraudulent economics, that many are now more nervous of having it than not.

Contraction

GCI calls a global reduction of emissions, in its entirety, a global contraction 'event'. This is strictly with regard to the sum of GHG emissions per se. It is not necessarily to do with analysis of technologies and techniques, or cultural, economic and political affairs. It is concerned purely with the overall reduction of carbon emissions necessary to avoid dangerous climate change as assessed by Working Group One (WGI, the 'science group') of the Intergovernmental Panel on Climate Change (IPCC).

Following IPCC 1994, here are three examples of different rates of CO2 emissions contraction, leading to three different levels at which atmospheric CO2 concentration could be expected to stabilise: 550 ppmv, 450 ppmv, and 350 ppmv. The comparison shows that the slower we complete the contraction event required to stabilise the concentrations, the higher their ultimate level will be. The concentrations' influence on temperature upwards will therefore be greater the lower the target rate we set, as will the resultant stream of damages.

What is certain is (1) to stabilise concentrations, a full contraction event is required by definition (2) the volume of damages will, more or less sharply, rise throughout the contraction event, whatever its rate.

This makes much less certain what rate of contraction-delay we can get away with, taking account of modernity's near total dependence on fossil fuels, aggravated in turn by the absence of clean alternatives commensurate in scale.

If full contraction is not fast enough, runaway climate changes can come upon us and future generations with unavoidable and drastic consequences for all living species.

> As Professor Michael Benton of Bristol University has observed, during the Permian Extinction 251 million years ago, 95% of living species were obliterated in what is estimated to have become a runaway greenhouse event when vast and sudden natural methane release augmented a warming triggered by volcanic activity in Siberia.

Convergence Within such a global contraction event, a convergence process will happen by definition. Even UK climate bureaucrats from DEFRA are beginning to be heard saying that Contraction and Convergence is a mathematical inevitability if dangerous climate change is to be avoided.

Here are three examples of different rates of emissions convergence: by 2100, 2050 or 2000. Because no other indicator is globally or morally viable, the convergence is measured to equal per capita sharing of this global resource. It shows that

-the faster we agree the convergence within the contraction event, the larger is the future share to the countries whose historic share was smallest but whose exposure to future damages is greatest.

The C&C model will calculate any rate of convergence at any rate of contraction.

There is an additional function that enables users to run or to freeze, at any date, future population projections for the first fifty years. Just as we have reserved our views about the rates of C&C that are needed, we have reserved our views about population projections. The latter function is included simply to assist technical analysis of our collective options.

Again, convergence is strictly about any non-random international sub-division of the GHG emissions or emissions entitlements defined in the contraction event per se. For simplicity, the world is subdivided into the industrialised country group (in red) and the rest (in black). Red and Black shares start where they were in 2000 i.e. proportional to income, and converge by an agreed date to being proportional to population or base year thereof.

Here, unlike the micro-deliberations of Working Group Three (WG3, the 'policy group') of the Intergovernmental Panel on Climate Change (IPCC), 'convergence' is concerned with the constitutional properties or rights of sharing carbon permits in a future contraction event in a non-random manner. WG3 IPCC has in fact recorded in their 3rd Assessment Report that, 'Contraction and Convergence' takes the rights-based approach to its logical conclusion.

Armed with this simple moral logic, GCI has won many skirmishes since 1989 when the campaign for equity and survival began. However, we recognise that the larger global battle with climate change has hardly begun.

At the same time the way ahead is clear at least to some, as indicated in the words of Clive Hamilton, Director of the Australia Institute, when he nominated GCI for the Sasakawa Award this year: -

"The idea of Contraction & Convergence is destined to be one of the most important principles governing international relations in the twenty-first century. It is a powerful ethic that incorporates global justice and sustainability and thereby bridges the dominant concerns of the last century and this one. It is the only way to accommodate the interests, ethical and economic, of developing countries and rich countries in the struggle to find a solution to the most important environmental problem facing the world."

In the words of former UK Environment Secretary Michael Meacher, advance in the direction of C&C is "remorseless".

Meanwhile, global climate is changing and at present reinforcing the trend into global apartheid. For countering these trends, the 'unity in diversity' of C&C is a great strength. The campaign for it is increasingly active.

Aubrey Meyer is Founder and Director of the Global Commons Institute. For more of the detail of C&C in graphics and animations and detailed evidence of the considerable and growing support it enjoys, please visit the GCI website www.gci.org.uk

FEBRUARY

Wilton Park Climate Conference
Chairs' summary

"Advocates of Contraction and Convergence argue that the approach provides an overall framework which provides a basis for negotiation towards solution of the climate crisis. Advocates argue that the only alternatives to a framework are guesswork and, at best, partial solutions. Contraction and Convergence seem to be consistent with the United Nations Framework Convention on Climate Change (UNFCCC).

www.gci.org.uk/consolidation/WiltonPark11_03.pdf

FEBRUARY 9

The Lord Bishop of Leicester
Maiden Speech in UK House of Lords

"My Lords, may I take this opportunity to express my gratitude to the Members of this House and to its officers and staff for the way in which I have been welcomed and guided both at my introduction and subsequently? It was particularly gratifying tonight to follow the noble Baroness, Lady Byford. I thank her for her kind and welcoming remarks.

As the noble Baroness, Lady Miller, pointed out, the Chief Scientific Adviser has drawn our attention to the overwhelming significance of the issues before us today. As he put it, they are,

"more serious even than the threat of terrorism".

It is therefore difficult to imagine a more significant moral as well as scientific and political issue facing the human race. In the United Kingdom, we have not yet really felt the pain of global warming, so our response to the challenge can at times seem worryingly lackadaisical. The danger is that, when we do feel the full impact, it may be much too late.

The European heatwave of 2003, record temperature rises since 1991 and a 40 per cent thinning of the Arctic ice cap leading to rising sea levels, are evidence of this phenomenon. Our natural environment is being asked to cope with humanity's pollutants to an extent that simply cannot be sustained. We may say things and repeat them often, but the words become so familiar that they stop having an impact. Today's debate with its call for action rather than words is entirely apposite.

It is good to report, therefore, that the Churches and other faith communities are waking up to the need to respond to this global challenge. We have two great advantages in coming to address the issue.

First, we deal in matters of the spirit, of the heart and the emotions. Global climate change is of course a scientific matter, but it is also something that needs to touch us deeply and personally. To respond, we have to feel part of a global community not just of humans, but of all God's creatures and the planet itself. We have to feel responsible for all that is, and respond even though the real pain of global warming may not be experienced in our own backyards. The faiths are used to this kind of language, and we can and will use it to protect God's creation.

Secondly, our organisations are both global and local. Perhaps in recognition of these qualities, Defra has funded the Conservation Foundation to run workshops throughout the country for concerned Church people and others to learn what their faith teaches—spiritually and practically—about reducing humanity's ecological footprint. In my own diocese of Leicester, we will be organising such a workshop as an inter-faith event, because the issue brings the religions together like nothing else. Churches are taking up the Eco-congregation challenge. Dioceses are undertaking environmental audits and adopting environmental policies.

The former Bishop of Hereford, who recently retired and is much-missed already, has championed contraction and convergence at every opportunity. He has persuaded the Anglican Communion and, most recently, called on the leaders of Churches Together in Britain and Ireland to support the campaign.

Those are some examples of attempts that the Churches and other religions are making to encourage action to reduce greenhouse gas emissions. There are many other examples of action by local agencies to address climate change, including in my county of Leicestershire and in the East Midlands. As an environment city, and in partnership with the organisation Environ, Leicester has initiated the "Keep Leicester Cool" campaign, promoting 10 steps that local people can take to protect the environment as well as providing advice to the business and education sectors. The East Midlands Community Renewables Initiative is also working with local communities

such as former mining areas and local housing estates to integrate environmental technologies, using energy from biomass sources.

> As the Chief Scientific Adviser pointed out, the Kyoto Protocol, although important, is not enough. We are now obliged to think carefully and urgently about what our post-Kyoto strategy will be. Sir David King has invited alternative ideas for future agreements about emissions control. Contraction and convergence is one such idea—a simple yet far-reaching proposal to deal with greenhouse gas emissions effectively and justly.

Your Lordships will be aware of the solution to global warming devised by Aubrey Meyer of the Global Commons Institute. Contraction refers to the movement towards a formal stabilisation target of emissions that is sustainable: a 60 per cent reduction by 2050 is the often-repeated suggestion. Convergence is the sharing out of permission to pollute among all the people of the Earth. On a per capita basis, countries would be allocated their share of permits to pollute. As we well know, post-industrialised countries emit far more greenhouse gases then those in the developing world, yet have smaller populations. The richer countries can buy permits to pollute from the poorer countries and offer much needed development aid thereby.

> Contraction and convergence, therefore, is a simple yet radical solution, and one that I suggest we should be brave enough to support.

Next year, the UK enjoys simultaneously the presidency of the EU and G8. An opportunity that will not be repeated for decades is before us.

> The Prime Minister has said that he wishes to do something about climate change and about Africa, which is off-track for every one of the millennium development goals. Contraction and convergence is a solution that offers hope to both desperate situations.

Climate change and sustainable energy use cannot be more pressing for the UK and the planet. It is in everybody's interest that these issues are debated and action initiated at all levels for the sake of our common future."

http://www.publications.parliament.uk/pa/ld199900/ldhansrd/pdvn/lds04/text/40209-10.htm#40209-10_head0

2004

Woodin & Lucas
Green Alternatives to Globalisation

Publisher: Pluto Press, ISBN: 0745319327

[Page 87]

"Finally, a robust emissions-trading scheme should be introduced as part of a new international treaty to cut greenhouse gas emissions, based on the Contraction and Convergence (C&C) model. Under the C&C model each country would be allocated the same per capita allowance for greenhouse gas emissions. The per capita allowance would be reduced over time so that total global emissions would contract to an environmentally sustainable level. Initially, industrialised countries would vastly exceed their total budget. For example, the US hosts approximately 4 per cent of the world's population, yet produces a quarter of global greenhouse gas emissions. The C&C model sets a time limit for countries to converge on the per capita allowance and permits them, within limits, to complete the element of convergence that they cannot achieve through technological innovation and energy conservation by purchasing surplus emissions budget from other countries. Thus, given the 1990s estimate of the value of the industrialised countries' annual output that was dependent on emissions in excess of their budget ($13-15 trillion), very substantial sums of money would flow to the least developed countries with the greatest emissions budget surpluses."

[Page 198]

"One radical idea for a new neutral global currency is the Emissions-backed Currency Unit (Ebcu), proposed by Richard Douthwaite as a development of the Contraction and Convergence (C&C) method of cutting greenhouse gas emissions. 46

Under C&C, each country would receive an annual allocation of emissions permits on a per capita basis. Over an agreed period of time, the total annual allocation would be reduced until it no longer exceeds the planet's ability safely to absorb the emissions it permits. Countries would be able to trade in emissions permits using Ebcus, which would also be allocated on a per capita basis. Until they became more energy efficient, rich countries that emit more than their fair share of greenhouse gas emissions would need to buy emission permits from poorer countries. Poor countries would have an incentive to invest the Ebcus they receive in the development of energy-efficient economies so that they retained a surplus of tradable permits. Ebcus could also be used as a global reserve currency, as the dollar is now. Thus, the Ebcu would operate within an environmentally sustainable economic framework as a neutral

and redistributive means of international exchange, deriving its value from a universally useful commodity, the right to emit greenhouse gases.

The Ebcu proposal is still at an early stage of development and, in common with any other proposals to replace the dollar, US opposition would hamper its implementation. Nevertheless, the economic implications of that opposition would become less powerful as self-reliance increased under economic localisation."

FEBUARY 11

House of Commons
Evidence to Audit Committee

MR JEFFREY GAZZARD

DR ANDREW SENTANCE

Evidence heard in Public Questions 171 - 272

submitted by Aviation Environment FederationExamination of Witnesses

Witness: Mr Jeffrey Gazzard, Project Manager, Aviation Environment Federation, examined.

Q212 Mr Chaytor: Could I just ask one final thing of a more general nature. Looking beyond 2012, the next period for considering global CO2 reductions, what is your view about the concept of contraction and convergence as an international solution to the emission reduction challenges beyond 2012?

Mr Gazzard: It is a lovely theory! We have discussed this with Aubrey Meyer, whose personal concept it is, and it was mentioned in the RCP report, their energy policy report. If I could just make a quick aside on that, one of the big criticisms we have of the Government is that we have energy policy reviewed by the RCEP, audited by the Number 10 PIU and set in stone by the DTI and that is an area that anybody would say is a really good process, whether it is aspirational or not. Then we have the same body, the RCEP, sending out its views on air transport which are absolutely disparaged by the DfT, which I do find amazing and I would like the Committee to comment on that, if it can. The point about contraction and convergence is that in an ideal world it would be lovely. We could sit round a camp fire and, you know, balance lentors(?) until the cows come home! But it is a bit like what I said about emissions trading. You can have contraction and convergence only when you have set a platform of the highest possible technological and environmental protection standards, a kind of benign capitalism, as it were. That is not a political statement, that is the best phrase I can come up with. It is a journey and it is

such a leap in terms of imagination, let alone the practicalities of how you go from where we are today to contraction and convergence. It is a very nice idea.

Q213 Mr Chaytor: Beyond 2012 what else is there, expansion and divergence?

Mr Gazzard: Well, a good question.. That seems to be what we have got in the current Kyoto process. What Tim and myself have tried to do in all of this is to try to find some kind of profit and loss system that industry, policy makers and society as it stands at the moment can understand. That is why we were very keen to put before the Committee this issue of reinsurance companies and UNET's financial programme because I think that is an area where you can see that balance being struck in a better analytical framework than I could provide. What we tend to do is to work at the coalface of sort of everyday environmental impacts. So the answer is, the RCEP said that it was a great idea but some way off, so I think I am going to back out of that one by saying I support what the RCEP have to say about it.

Chairman: Good. Well, thank you very much indeed. We are grateful to you for your time and thoughts. It has been very helpful indeed.

Memorandum submitted by British Airways plc

Examination of Witness

http://www.parliament.the-stationery-office.co.uk/pa/cm200304/cmselect/cmenvaud/uc233-iii/uc23302.htm

FEBRUARY 23

New Statesman

Earth entering uncharted waters

The century's big issue is not equality in the conventional sense. It is whether we can share with other species and with future human generations. Neither left nor right understands. By Mark Lynas

I write this as a former left-winger. No, I haven't made the long, lifetime trek from Trot to Tory, like so many highly placed newspaper columnists (more of them later). My contention is, I hope, a little more rational: that the "left-wing" label no longer implies an acceptable position on the most crucial issue facing the world today. A new challenge has arisen which - by transcending the older and less significant divides - will eventually define the course of 21st-century politics. In comparison, today's "big" issues, on top-up fees, foundation hospitals and the Blair-Brown relationship, recede like bar-room chatter into the background hubbub.

This new challenge does not have an easily recognisable name. E O Wilson, one of the greatest contemporary biologists, calls it "the bottleneck". Most of its sub-issues are familiar, but the bigger picture is not. Piece together the disparate elements and the product is terrifying. The shadow thrown by this looming crisis is everywhere, its darkness growing slowly, almost imperceptibly, as it creeps over our planet.

The crisis is this: within the earth's biosphere, a single species has come to dominate virtually all living systems. For the past two centuries this species has been reproducing at bacterial levels, almost as an infectious plague envelops its host. Three hundred thousand new individuals are added to its numbers every single day. Its population of bodies now exceeds by a hundred times the biomass of any large animal species that has ever existed on land since the beginning of geological time.

The species is us. Now numbering more than six billion souls, the human population has doubled since 1950. Nothing like this has happened before in the earth's entire history. Even the dinosaurs, which dominated for tens of millions of years, were thinly spread compared to the hairless primate Homo sapiens.

Inevitably, our productive and consumptive activities displace other living species from the planetary food web. The result is mass extinction, which has historically accompanied human expansion everywhere, from North America to Easter Island. Wherever humans dwell, other species die out - displaced from land cleared for agriculture, killed for their flesh, or simply allowed to disappear as an unnoticed by-product of the thriving primate economy.

We are now in the early-to-middle stages of the sixth mass extinction to hit the planet since complex life began 2.1 billion years ago. Species are disappearing at between 1,000 and 10,000 times the natural background rate. A fifth of birds are threatened with extinction, as are 40 per cent of mammals and fish, a third of amphibians and up to half of all plant species. Humans now appropriate 40 per cent of the planet's organic matter produced by photosynthesis. The number of humans born in a single day almost equals the total global population of great apes.

Again, this situation is un- precedented: never before has an agent of mass extinction emerged from within the living systems of the planetary biosphere. Previous mass extinctions have been caused by external factors, such as the aster-oid that likely wiped out the dinosaurs 65 million years ago or the volcanism that seems to have caused the Permian mass extinction (when up to 95 per cent of species died out) 251 million years ago. In the lottery of evolution, as Wilson writes, Darwin's dice have rolled badly for Planet Earth. We are entering a new geological era: the Anthropocene.

All this would be bad enough. But there is more. Since the early 1800s, humans have been using buried carbon - first in coal, later in oil and gas - as a form of energy. When combusted in our oxygen-rich atmosphere, this carbon becomes the potent greenhouse gas carbon dioxide - the same gas that keeps Venus's surface temperature at a searing 460oC. Levels of carbon dioxide in the earth's atmosphere have risen by a third since the start of the industrial revolution, and global temperatures are rising in tandem. We are now on track to change the globe's average surface temperature by anything up to six degrees Celsius within a century, taking us into a climate regime last experienced between one million and 40 million years ago, well beyond the evolutionary experience of many creatures alive today - including humanity.

Add these trends together and Wilson's "bottleneck" sounds like an understatement. It is inconceivable that humanity and natural species can pass together through this bottleneck unscathed. And here lies the challenge. Will we emerge at the end of the century with a depleted, devastated planet, inhabited only by remnant super-adaptable species and artificial ecosystems created to support the remaining human population centres? Or will humanity take sufficient remedial measures to ensure that a reasonable proportion of the living biosphere survives?

This is the shadow under which the battle lines are forming in modern-day politics. On one side stands a loose and ragged coalition of those who want to see the survival of nature, not just for the sake of human survival, but because they believe in its intrinsic worth. On the other side stand those who don't know or don't care, or who actively oppose efforts to get us through the bottleneck unscathed. Let's meet these people.

First under the spotlight is the United States. Its current government is dedicated to environmental destruction on a scale hitherto unimaginable. President Bush and his vice-president, Dick Cheney, both deny the reality of global warming. They have approved legislation to speed up the logging of forests, and they are trying to gut the Endangered Species Act, among numerous other blindly destructive measures. Several of the most powerful US senators - including James Inhofe (Republican, Oklahoma, and chair of the Senate committee on environment and public works), Larry Craig (Republican, Idaho) and Craig Thomas (Republican, Wyoming) are dedicated anti-environmentalists. Inhofe calls global warming a "hoax", and alleges that the Kyoto treaty "is an economic weapon designed to undermine the global competitiveness and economic superiority of the United States". In evidence to support this contention, he cites numerous pseudo-scientific studies, many of them supported by fossil fuel interests and by far-right think-tanks such as the Competitive Enterprise Institute and the George C Marshall Institute.

Britain, too, has a powerful establishment of anti-environmentalists. The Adam Smith Institute is one of the most prominent, with strong connections to new Labour, despite its Thatcherite political creed. Of similar bent is the Institute of Economic Affairs, which has published several pamphlets denouncing "climate alarmism", opposing the Convention on International Trade in Endangered Species and accusing those who try to protect tropical forests of "eco-imperialism".

These viewpoints are popularised by media pundits, primarily but not exclusively attached to the right-wing press. Their empress dowager is the Daily Mail's Melanie Phillips, who claimed recently that "there's no correlation between rises in climate temperature and sea levels". This is untrue, even at the level of basic physics - heat makes water expand, raising sea levels at the same time that water from melting ice on land adds more mass to the global ocean. But the mistakes - and Phillips's article is full of them - are not the point: this is a statement of ideology, based not on scientific rationality or empirical evidence, but on a particular world-view. It is vital to understand this, because it reminds us that those with truth on their side will not necessarily emerge triumphant as this conflict deepens.

Joining Phillips on the far right is the self-parodying twitterer Peter Hitchens. He writes: "The Kyoto treaty is a silly waste of time. The greenhouse effect probably doesn't exist. There is as yet no evidence for it." Given that the greenhouse effect is basic atmospheric physics (and that, without it, the average global temperature would be well below freezing), this is a very stupid statement indeed. Again, truth is secondary.

But it is no use looking to the left for a more rational approach. Communists have always regarded nature as little more than raw material to be scraped up and melted down into pig-iron by an emancipated proletariat, marching in step to a glorious techno-industrial future. Variants of this view persist among the Socialist Workers Party and its various front groups in the Socialist Alliance and anti-war movements. Indeed, anti-environmentalism is such an article of faith among the extreme left that the cultish cabal which used to publish Living Marxism magazine, and which has now moved into the electronic media, called its Channel 4 series Against Nature.

More moderate leftists neglect ecological concerns in favour of their enduring obsession: human equality. Worthwhile as this objective may be, any consideration of how resources are to be shared with other species or with future human generations is excluded as irrelevant. Moreover, both left and right agree that economic growth can and should go on for ever.

For anyone with a basic understanding of mathematics, the impossibility of everlasting growth based on a finite resource base should be obvious. And this is the core of my argument: that it is time to de-prioritise the struggle over fair shares to the global economic pie, because the very existence of this pie is increasingly at stake. If global warming accelerates enough to turn the world's breadbaskets into dust bowls (as is already happening in northern China), then our squabbles over how to divide the spoils from the rape of Planet Earth will look very short-sighted.

Like cockroaches, human beings can scrape a living almost anywhere. The total extinction of our species is unlikely. But human society is complex and fragile, especially in an age where few people in rich countries have any experience of fending for themselves. Indeed, those who are most dismissive of environmental concerns are precisely those whose meal tables are likely to include green beans from Kenya, prawns from Bangladesh and beef from Argentina. The system of long-distance food transportation is far more vulnerable to ecological collapse than they realise.

Moreover, we are all deeply dependent on the "ecosystem services" provided free by the natural world. These include the purification and retention of fresh water (and flood control); the formation and enrichment of soil; the detoxification and recirculation of waste; the pollination of crops; the production of lumber, fodder and biomass fuel; and the regulation of the atmosphere and climate. The monetary value of these ecosystem services has been costed at $33 trillion a year, roughly the same as combined world GDP. If natural systems are mostly wiped out, we will need to replace these services artificially, which is a physical and economic impossibility.

So who is to blame for this blindness? It is tempting to follow the anti-globalisation movement in castigating multinational corporations, the World Trade Organisation and rampaging capital markets. I believe that something much baser is happening. The NS essayist John Gray gets it about right: "The destruction of the natural world is not the result of global capitalism, industrialisation, 'western civilisation' or any flaw in human institutions. It is a consequence of the evolutionary success of an exceptionally rapacious primate."

That is why we need to abandon the left-right battle lines. They offer us no guidance on how to survive the century ahead. Neither does Gray, for that matter. For him, all grand plans are by definition doomed to fail. Looking at history, one can see his point. But we have got to survive the bottleneck, and just muddling through won't do.

Thinking up solutions is not the problem. The "contraction and convergence" proposal for tackling climate change (global emissions contract to a sustainable level; per capita

emissions converge between countries) knits both human equality and ecological survival into an elegant equation. Similarly, we can protect biodiversity by stopping habitat destruction and countering the spread of invasive alien species around the world, especially in highly biodiverse "hot-spot" areas. And increasing women's control over their fertility is a straightforward way to reduce population growth.

Yet these proposals are so vast and all-consuming as to require a strong and durable consensus before they can be agreed or implemented. Biodiversity protection cannot be bolted on to existing growth-oriented economics. Contraction and convergence would require enormous resource transfers from rich to poor countries, as the developed world pays the developing nations not to follow in its own dirty footsteps.

Hence the failure of the various UN environmental summits: they take place in a political vacuum, with little public knowledge or interest to support or enforce their decisions. It is the formation of any durable political consensus towards ecological survival that the anti-green movement is determined to prevent.

In the meantime, the rest of us get side-tracked. I still believe that Tony Blair, for all his faults, remains unusually committed - compared to other government leaders - to tackling global warming. But by joining Bush's war on Iraq, Blair helped deliver the world's second-largest reserves of oil into the hands of the only major country fully under the control of climate change deniers. Rather than chasing all over the desert in search of a few mouldering old canisters of mustard gas, those seeking weapons of mass destruction need only have drilled down a few hundred metres until they hit oil, the most potent and destructive WMD of all.

The government's chief scientist, Dr David King, recently found himself at the centre of controversy when he said global warming is a more serious threat than terrorism. Of course it is: just add up the numbers. Global warming: 150,000 deaths annually from the increased disease caused by higher temperatures, according to the World Health Organisation. Terrorism: 1,000 a year (at a guess). So why is terrorism the apocalyptic threat we all have to mobilise against? You're more likely, in a poor country at least, to die of flood-related diarrhoea. And the rich won't be safe for long. The much-vaunted "clash of civilisations" is at best a distraction, at worst a racist fiction. Preventing the clash between human civilisation and nature is the battle we ought to be fighting.

APRIL 5

New Statesman

Time to forgive Tony Blair?

It pains me to write this. I marched with the best of them last year on the Stop the War rally through the cold streets of London, and at that time my hatred of the Bush'n'Blair "axis of evil" knew no bounds. I still feel the same about Bush. But I now see new dangers, and as a result, new opportunities in politics this side of the Atlantic. It may be time, I suggest reluctantly, to move on, and to offer Tony Blair one last chance to earn our support.

The importance of Iraq can be overstated. Compared to other wars, relatively few people have been killed. In the Democratic Republic of Congo, there were no "embedded" journalists to watch while rebel armies committed cannibalism, raped thousands, and recruited children as young as seven for military service. An estimated four million people lost their lives, against 10,000 or so civilian casualties in the invasion of Iraq. Moreover, some good has come out of the Iraq campaign: most Iraqis, despite mixed feelings about the humiliation of military occupation, remain grateful - according to a recent BBC poll - for the removal of Saddam Hussein's tyranny.

Continual attacks on Blair from the left can lead only to more bitterness and cynicism. Instead, we should invite Blair to rise to a new challenge. This one, if he meets it, would give him the place in history that he craves so much.

In 2005, Britain will assume the presidencies of both the G8 and the EU. No 10 has already indicated that it wants to make climate change and Africa - including the UN Millennium Development Goal of halving world poverty by 2015 - the two big themes of the presidency. The growing impacts of global warming, from drowning Pacific islands to disappearing Alpine glaciers, create added urgency on the first issue, as does the recent report that a quarter of the earth's species might become extinct by 2050 because of climate change. Yet the Kyoto Protocol is increasingly imperilled by lack of Russian ratification.

On the second issue, only slow progress has been made towards meeting the UN targets for 2015, which include achieving universal primary education; reducing child mortality by two-thirds; reducing maternal mortality by three-quarters; and stopping the spread of Aids and malaria. At the current pace, according to the UN, sub-Saharan Africa will not meet the goals for poverty until 2147, nor those for child mortality until 2165.

Ministers and their advisers are always casting around for a "big idea" that might stand out against the usual stream of targets that are forgotten almost as soon as they are announced. Yet

a single big idea - one that could solve the twin crises of global poverty and global warming - is already in circulation, and rapidly gaining steam in policy-making circles. First proposed by the London-based Global Commons Institute more than a decade ago, "contraction and convergence" (C&C) is now being taken seriously: Geoff Mulgan and David Miliband, the current and former heads of the No 10 policy unit, have both highlighted the idea publicly. More explicit support has come from Sir John Harman, chairman of the Environment Agency, Sir John Houghton, the UK's most eminent climatologist, and the MPs' environmental audit and international development committee. C&C aims to move gradually to a position where global greenhouse-gas emissions are reduced to sustainable levels but where every human being has an equal right to consume fossil fuels. So rich countries would "contract" their emissions, while the poorest could increase theirs, so that both sides ultimately "converge" on per capita equality.

C&C's biggest selling point is that it offers a science-based framework with reliable outcomes at the end of a process that must stretch for decades into the future. Although Kyoto is a good first step, there is no long-term planning: nothing else on the table can tell us with certainty where we will end up in 2050 or 2100.

C&C gets back to first principles. First, it asks how much climate change we are prepared to tolerate, and pins this to a specific, scientifically valid commitment, mandating an upper limit to the concentration of greenhouse gases in the atmosphere. (The current level is the highest on earth in more than 420,000 years.)

Once this "cap" has been agreed, it implies a budget for the remaining emissions of greenhouse gases as fossil fuels are phased out. No longer will the atmosphere be a free-for-all dumping ground. This budget must be divided up fairly among the world's population - nothing less will be acceptable to the countries of the south, which will rightly be suspicious of any treaty that might freeze their development. It is like food rationing during the Second World War - with a limited amount of atmosphere to go round, sacrifices will be accepted only if they are fairly shared.

A frequent objection to C&C is that America will never sign up to a global agreement based on equity. But opposing fairness will be a difficult negotiating position to sustain, and the US objection to Kyoto - that developing countries are not given targets - is tackled head on by a C&C regime where everyone has a converging target. Indeed, the US spoke in favour of C&C at the original Kyoto negotiations, saying it could be the basis of the next agreement.

Moreover, if the US or any other western country wants to go on consuming more than its fair share, that's fine - but it will have to pay for the privilege. C&C distributes atmospheric ownership rights fairly, and you can't use what you don't own. This is a quantum shift. Suddenly we are away from aid - where the rich condescendingly give a few pennies to the poor - and into trade, with hard-nosed commercial bargaining for mutual benefit. The rich will have to buy "emissions rights" from the poor - recognising the "ecological debt" we already owe for a century of fossil fuel-based growth, and generating potentially billions a year in revenue flows to the south.

So carbon trading could eventually bridge the yawning income gap that has opened up with globalisation, bringing the Millennium Development Goals out of the conference circuit for the first time and into the realms of practical possibility. There is no reason why income generated from carbon trading should not be earmarked specifically for providing access to safe water to the 1.1 billion people who currently lack it, for getting the 115 million young children who are currently excluded from school into lessons and for helping developing countries pay for clean generation of power.

But C&C needs a champion. Someone who can sell it to the EU. Someone who can go on to build an alliance between the EU and the south. Someone who can recruit the recalcitrant Americans, with a new president at the helm, one hopes. What better role for Blair?

Britain already has one of the most far-sighted climate change policies in the world. The UK's Kyoto commitment of 12.5 per cent reductions in carbon emissions by 2012 is one of the toughest in the EU, and the government's long-term target of 60 per cent reductions by 2050 is exactly what climate scientists and environmentalists alike have long been calling for. Meanwhile, the renewables sector is booming, again partly due to sustained government support. Although the wind-power industry is still behind that of Germany and Spain, capacity is expected to triple over the next two years, with much of the growth coming from huge offshore developments.

I have heard from several different sources that Blair is strongly committed to tackling climate change, and believes it poses the greatest long-term threat to humankind. At a speech to mark the launch of last year's white paper on energy, Blair said global poverty and climate change were "just as devastating in their potential impact" as weapons of mass destruction and terrorism. "There can be no genuine security," Blair rightly asserted, "if the planet is ravaged by climate change."

The man often pilloried as George Bush's poodle has never wavered in his opposition to American intransigence on global warming, even telling Congress last June (during his "history

will forgive us for the Iraq war" speech): "Climate change, deforestation and the voracious drain on natural resources cannot be ignored. So America must listen as well as lead."

It now seems that Blair hopes some of the political capital he gained with his support of US policy on Iraq might be spent on shifting its policy on climate. Indeed, the energy white paper sets "as a key objective of . . . foreign policy" a 60 per cent cut in emissions throughout the developed world by 2050.

Blair's presidency of the G8 in 2005 could provide a forum for serious discussions on climate and poverty, assuming the PM can use his political capital to avoid a US veto. As I write, the forces of civil society are gathering for street demonstrations around the summit that could generate the same momentum as the Jubilee campaign in 2000. I would guess that almost all these people were alienated by the Iraq war, and many have turned away from what they see as repeated betrayals by new Labour. Yet they could - and should - be Labour's core support base. All it needs is for Blair to show commitment and vision. Then, having turned from a warmonger into a champion of the poor and the planet, he may find even the war's strongest opponents ready to forgive him for Iraq.

APRIL 24

Guardian

Apocalypse soon

Michael Meacher appreciates Mark Lynas' timely warning against ignoring the consequences of climate change, High Tide

High Tide: News from a Warming World

by Mark Lynas

If you are among those who think climate change is an uncertain, remote issue over which scientists are unsure, politicians talk endlessly to little effect, and mere individuals have no power at all, this book may be for you.

Mark Lynas has abandoned the scientific disputes and the political wrangling, and spent three years travelling to find out from ordinary people how massive changes to the climate are devastating their lives, not in the future, but now. He recounts in meticulous detail the realities of life for indigenous Alaskans as the ice melts and their food supply disappears, Tuvaluan fishermen as their islands slip beneath the waves, Mongolian herders faced with blinding sandstorms, Peruvian cities facing the decimation of their water supply as a result of fast-retreating glaciers, Caribbean victims of hurricanes of unprecedented violence, and British families flooded out by the worst river eruptions in a century.

There are myriad other examples. But, as he says, all the impacts he describes are just the first whispers of the hurricane of future climate change bearing down on us. Like the canary in the coal-mine, those living closest to the land - the Eskimos in Alaska and the Pacific islanders - have been the first to notice. But they won't be alone for long.

Even the Pentagon has noticed, and if there are two groups the Bush administration listens to, they are the oil lobby and the Pentagon. Climate change "should be elevated beyond a scientific debate to a US national security concern", it says, predicting that climate change could bring the planet to the edge of anarchy as countries develop nuclear arsenals to defend and secure dwindling food, water and energy supplies. It recognises that this threat to global stability vastly eclipses that of terrorism.

This is no rhetorical exaggeration. About 2,900 died in the Twin Towers on September 11 2001, and just over 200 died in Madrid. But the London School of Hygiene and Tropical Medicine has estimated that 160,000 people are dying each year from the consequences of climate change - malaria, dysentery and malnutrition. And even that excludes some of the most extreme storm disasters plausibly linked to climate change, notably the tropical cyclone in Bangladesh in 1991, which killed 138,000, as well as Hurricanes Mitch and Andrew in the Caribbean, both hyper-intense category-five typhoons.

What is really chilling about the catastrophes occurring with increasing frequency across the globe is that they have happened, as the overwhelming majority of the world's scientists confidently believe, after a warming of only 0.6C over the past century. Imagine the consequences if, as predicted by the inter-governmental panel of the top 3,000 scientists on climate change, global temperatures rise by 1.4C-5.8C over this century.

Even that is not the end of the story. A conference of top climate scientists concluded last year that previous models had underestimated the cooling effect of smoke and other particles in the atmosphere, so that if it hadn't been for the smoky haze from forest fires and coal-burning power stations, the world would have warmed up three times more than the 0.6C rise actually experienced. Now that smoke pollution is in decline, mainly due to efforts to tackle acid rain, the scientists calculate that global warming could rise by 7C-10C this century.

That would be without precedent in recorded geological history. Yet it could still be intensified by two more factors. One is the die-back of the drought-stricken Amazon forests in the second half of this century, as predicted by the UK Hadley Centre, which would release all their locked-up carbon into the atmosphere, thus raising global warming by another 1.5C. But the most frightening scenario is a feedback effect whereby fast-rising temperatures unlock other global warming sources -

notably vast quantities of methane in the oceans, equal to more than double the world's fossil-fuel reserves - which could trigger a heating-up that would be unstoppable.

To put all this in perspective, Lynas ends his book with an epilogue recalling the mass extinctions at the end of the Permian era 251 million years ago. It was the worst crisis to strike life on Earth, killing 95% of the world's species. It was caused not by an asteroid strike like that which wiped out the dinosaurs, but by global warming. Siberian volcanoes discharged enormous clouds of carbon dioxide in colossal eruptions, thus warming the climate enough to trigger vast methane "burps" out of the oceans and releasing a runaway greenhouse effect. What increase in temperature produced this catastrophic, near-total extinction of life? The oxygen isotopes in the end-Permian rocks indicate it was 6C. Draw your own conclusions.

So is apocalypse inevitable? It isn't, but this is certainly the greatest threat mankind has ever faced, and the signs that we are facing up to it are not good. Lynas sets out five demanding proposals.

The first, obviously, is to ratify and implement the Kyoto protocol, which is only awaiting Russia. But that is complicated by the diminishing gains Russia would earn from the sale of "hot air".

The second is to sign up to "contraction and convergence". As Adair Turner, former president of the CBI, put it: "The only equitable and politically feasible long-term vision would give each country a roughly equal right to emissions per capita." Any such idea is bawled out of court by some countries, especially the US, but in the end is probably inevitable. But will it be adopted soon enough to save the world?

Lynas's third proposal is to stop all further fossil fuel exploration and development. Just how hard it will be to secure this is shown by the fact that the US was prepared to fight a war to take over the Iraqi oilfields, the second-largest reserves in the world, rather than raise the absurdly low price of petrol for the American motorist and make a decisive switch to renewables.

With his fourth idea, Lynas brings the whole issue to the individual. UK per capita emissions of CO2 are running at 9.6 tonnes a year, whereas a "sustainable" quota is estimated at 2.45 tonnes. So each of us needs to reduce our emissions by no less than three-quarters on average. That will affect every aspect of our lives - energy use, heating, transport (especially air travel) and home design. Are we prepared to make these changes, and what taxes/benefits are necessary to motivate us?

Last, Lynas tells us to keep repeating the climate change message. Read his book, and that is exactly what you will do.

Michael Meacher is former environment secretary and MP for Oldham.

APRIL 23

Climate Network Africa [CNA] Dialogue on Climate Change and Sustainable Development issues with the East African Legislators

3. Kenya should ratify the Kyoto Protocol in three months, effective from 1st May, 2004;

4. As a possible basis of the international climate change negotiations at the UNFCCC, Contraction & Convergence, the 1997 African Group proposal on equity be analysed and evaluated by the SBSTA of the UNFCCC;

APRIL 23

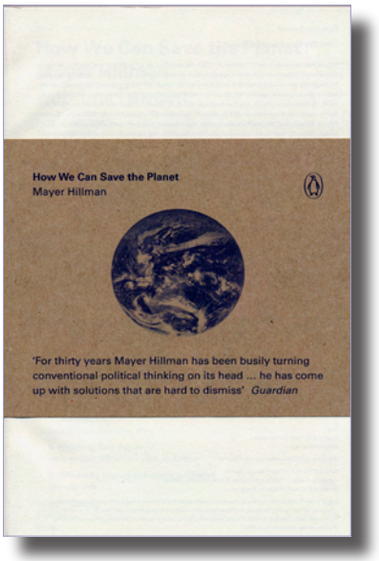
HON. ANYANG' NYONG'O, Kenyan Minister for Planning and National Development

It is now apparent that the world has to urgently agree to a more equitable method of reducing greenhouse gas emissions based on per capita emission rights allocations. This brings me to the concept of Contraction and Convergence. This concept embodies the principles of precaution (contraction of greenhouse emissions) and of equity (convergence at to equal share per head through a globally agreed date) in the reduction of greenhouse gas emissions between industrialized countries and developing countries.

The world must go an extra mile to avoid climate change, as it is cheaper than adapting to the damages. This in no way under estimates what the Kyoto Protocol aims to achieve from the flexible mechanisms. Kyoto should continue but due to the increasing and unbearable negative impacts of climate change on developing country economies, in particular Africa, the world must begin to evaluate other globally equitable approaches. The concept of Contraction and Convergence therefore needs to be assessed and evaluated by the United Nations Framework Convention on Climate Change particularly, its Subsidiary Body for Scientific and Technical Advise or the Intergovernmental Panel on Climate Change. I am certain that our Ministers for Environment here present will see the need to bring this agenda very urgently to the attention of the Climate Change Secretariat.

2004

Mayer Hillman
How We Can Save the Planet



Publisher: Penguin, ISBN: 0141016922

Description of the global solution: Contraction & Convergence

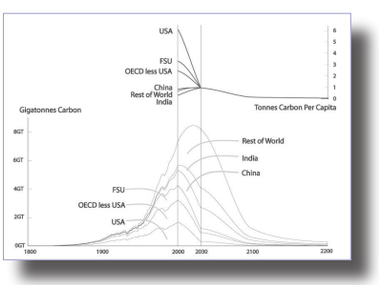
A brilliant, imaginative and simple means of reaching a just global agreement on emission reductions is called Contraction and Convergence (C&C). It was first proposed by the Global Commons Institute (GCI) in 1990. Recognition of its unique qualities as a framework for combating climate change has grown at an astonishing rate since that date. C&C is founded on two fundamental principles: first, that the global emission of greenhouse gases must be progressively reduced and second, that global governance must be based on justice and fairness.

However, this latter requirement has not been included for moral reasons alone; GCI also claims that it would be key to getting agreement from developing countries to take part in global emissions reduction. In its phrase "equity is survival", there can be no global security unless climate change is restricted to a manageable level, and this cannot be achieved without all countries of the world sharing this common objective.

C&C consists of:

Contraction: an international agreement is reached on how much further the level of carbon dioxide can be allowed to rise before the changes in the climate it produces become totally unacceptable. Once this limit has been agreed, it is possible to work out how quickly current global emissions must be cut back to reach this target.

Convergence: global convergence to equal per capita shares of this contraction is phased towards the contraction target by an agreed year.



C&C is a set of principles for reaching agreement. In fact, it simplifies climate negotiations in a remarkable way to just two questions. First, what is the maximum level of greenhouse gases that can be permitted in the atmosphere? Second, by what date should global per capita shares converge to that level? Using C&C does not entail a particular concentration of greenhouse gases as being the safe limit, nor a time scale for reductions. Based on the science and projections we already know about, GCI suggests that it would be irresponsible to adopt any concentration higher than 450ppmv. However, it acknowledges that the 450ppmv target might well have to be revised downwards in the light of new evidence.

GCI argues that C&C offers a 'framework' to replace the 'guesswork' involved in the Kyoto agreement. The targets in the Kyoto agreement are not based on any reliable understanding of the safe, or at least not-too-dangerous, limits of greenhouses gases in the atmosphere. Rather, the reductions agreed were determined by what was considered to be politically possible at the time of the negotiations between the 37 countries involved. By contrast, C&C would use the best current scientific knowledge to set maximum levels of greenhouse gas emissions in the atmosphere, and hence maximum cumulative emissions. While the date of convergence would be subject to agreement, the principle of equal rights for all would remove the potentially endless negotiations that would otherwise occur, with each country making out a case that its contribution to global reductions should be modified in light of its special circumstances.

Another important element of the C&C proposal is the ability of countries to trade carbon emissions rights. Countries unable to manage within their agreed shares would, subject to verification and appropriate rules, be able to buy the unused parts of the allocations of other countries or regions. The lifetime of permits would be restricted (to, say, five years) to discourage futures speculation and hoarding. Sales of unused allocations would generate purchasing power in vendor countries to fund their development in sustainable zero-emission ways. Developed countries, with high carbon emissions, would gain a mechanism to mitigate the expensive premature retirement of their carbon capital stock. They would also benefit from the export markets for renewable technologies that this restructuring would create. At the same time, the application of the C&C proposal would not only have the virtue of making a major contribution to shrinking the gap between rich and poor, both within and between countries, but also encourage the adoption of low carbon energy paths.

APRIL 26

Anyang' Nyong'o
Minister for Planning and National Development - Kenya

Bringing to a close the intensive two-day climate meeting for Ministers and Legislators in Nairobi over the weekend, Mr Nyong'o said: -

"It is now apparent that the world has to urgently agree to a more equitable method of reducing greenhouse gas emissions based on per capita emission rights allocations. This brings me to the concept of Contraction and Convergence. This concept embodies the principles of precaution (contraction of greenhouse emissions) and of equity (convergence at to equal share per head through a globally agreed date) in the reduction of greenhouse gas emissions between industrialized countries and developing countries.

The world must go an extra mile to avoid climate change, as it is cheaper than adapting to the damages. This in no way under estimates what the Kyoto Protocol aims to achieve from the flexible mechanisms.

Kyoto should continue but due to the increasing and unbearable negative impacts of climate change on developing country economies, in particular Africa, the world must begin to evaluate other globally equitable approaches.

The concept of Contraction and Convergence therefore needs to be assessed and evaluated by the United Nations Framework Convention on Climate Change particularly, its Subsidiary Body for Scientific and Technical Advise or the Intergovernmental Panel on Climate Change.

I am certain that our Ministers for Environment here present will see the need to bring this agenda very urgently to the attention of the Climate Change Secretariat."

APRIL 29

Guardian

That'll be £17 and 10 carbon points

Tradable quotas are the best way to tackle domestic CO2 emissions, write Richard Starkey and Kevin Anderson

It's 2025 and you've just filled the car with unleaded petrol and handed over your credit card. Nothing unusual so far. Now imagine you also hand over a second piece of plastic - let's call it a "carbon card" - for the attendant to swipe. It's not cash being debited this time, but "carbon units" from your personal allowance. Welcome to life under carbon rationing.

We believe that carbon rations - or to use our preferred term, domestic tradable quotas - are the fairest and most practical way to cut emissions of the greenhouse gas carbon dioxide. The government has pledged that the UK will cut CO2 emissions by 60% by 2050. That's a hugely ambitious target achievable only if each of us limits the CO2 emitted in our name.

Climate change is "more serious even than the threat of terrorism", according to David King, the government's chief scientific adviser. The Royal Commission on Environmental Pollution says curbing the threat requires a reduction in global greenhouse gas emissions of about 70% by the 22nd century.

There is substantial disagreement about how this should be done. The commission took the view that "every human is entitled to release into the atmosphere the same quantity of greenhouse gases" and endorsed a policy of "contraction and convergence" under which nations gradually move towards sharing emissions. The commission says this would require a cut in our CO2 emissions of 60% by 2050 - government policy since the 2003 energy white paper.

Much thought has been given to applying the per capita principle to the allocation of emissions between nations, but almost none to applying it within nations.

Here's how our scheme works. First, the government sets an annual carbon budget - the maximum quantity of emissions permitted from energy use - which reduces year on year until the 2050 target is reached.

Each year's budget is broken down into carbon units (say 1 unit = 1 kg of CO2). Households are responsible for about 40% of energy emissions, so this proportion of units is allocated equally and without charge to every citizen over 18. The remaining units are auctioned to organisations.

Then, when citizens or organisations purchase fuel or electricity they surrender corresponding units from their carbon card.

Now comes the clever bit. Each card links to a national database allowing individuals to trade their carbon units. Say, for example, you need to drive to work, but have no carbon units left. No problem, the garage simply goes into the national market and buys the number of units needed. The cost is added to your bill.

Or perhaps you don't own a car? Then you can sell your surplus units into the market for hard cash. And because the size of the cake is fixed, these trades will not affect the overall emissions produced.

How does carbon rationing measure up as a mechanism for emissions reduction? The standard test for a proposed environmental policy measure is to assess it against the three Es: equity (is it fair?), effectiveness (will it achieve its target?) and efficiency (will it be cost-effective?).

If the atmosphere is viewed as a common resource then it seems fair that people have equal shares. Allocating emissions on this basis is surely fairer than by ability to pay, as, for example, under a carbon tax. According to government figures, there are about three million households in fuel poverty, that is without sufficient income to heat their homes adequately. Fuel-poor households generally use less energy and so, as below-average emitters, most would be better off because they could sell their surplus units.

To be effective, the scheme would need to be technically and administratively feasible and acceptable to the public. Clearly it requires a central database to hold the carbon accounts and record transactions. Computer experts say such a database is not a problem using current technology, and neither is linking our 11,000 garages to it in real-time.

There is one obvious sticking point: the government would need a list of individuals entitled to carbon units. In other words, it would need a population register: but one would be created for the proposed ID card scheme. In fact, the ID card could act as the carbon card.

Finally, the scheme scores well for efficiency. According to economists, its market approach is the most cost-effective route to reduce emissions.

· Richard Starkey and Kevin Anderson are scientists at the Tyndall Centre for Climate Change Research, UMIST

APRIL 30

Aubrey Meyer
EPA - Bridging the Gap Conference: Plenary Key note Speaker

Contraction and Convergence - A Constitutional Framework for Avoiding Dangerous Climate Change

Having recently become a father some fifteen years ago, I came to a painful realization and made a life-changing decision.

I realised that we were failing to prevent the degradation of the world's environment. This was particularly true of changing the global climate with the growth of industrial emissions. It was clear to me that the present generation was creating the future conditions for which our children would come to curse us.

I made a decision to put aside my musical career and began a campaign at the United Nations aimed at averting these conditions.

There, two things soon became apparent to me: -

[1] The problem was politically aggravated by the worsening asymmetric conditions between the rich and the poor. North and South. This seemed just like a larger version of the flawed and conflict-based conditions of the 'apartheid' South Africa in which I grew up.

[2] The global political solution needed for this would reconcile us with each other, future generations and the fundamental laws of providence and commons sense. This seemed to be just like the conditions of music-making I had just put aside.

In a nutshell, it is all for one and one for all. If the chaotically widening gap of 'expansion and divergence' of emissions and economy is the problem, the solution is 'Contraction and Convergence' [C&C].

C&C is not chaotic, it is based on resource conservation, sustainable systems and global rights. It is equity in adversity. Like music and Mandela's New South Africa, it is 'constitutional'. It bridges gaps between civil society, the civil service and governments. It addresses the dichotomies between rich and the poor in this and future generations. It is deliberately and systematically aimed at avoiding future conditions in which our children might come to curse us. It responds to their call as in the poetry of Louis MacNeice, "I am not yet born. Oh Hear Me."

As the eminent Australian economist Dr. Clive Hamilton, Director of the Australia Institute observed last year: - "The idea of 'Contraction and Convergence' is destined to be one of the most important principles governing international relations in the 21st century. It is a powerful ethic that incorporates global justice and sustainability and thereby bridges the dominant concerns of the last century and this one. It is the only way

to accommodate the interests, ethical and economic, of developing countries and rich countries in the struggle to find a solution to the most important environmental problem facing the world."

Just as all life aspires to the condition of music, C&C is the basis of all solutions to the problems we now face.

Extensive evidence of growing international support for this will be provided at "Bridging the Gap".

APRIL 30

Raphael Hanmbock
Président, Association des Clubs des Amis de la Nature du Cameroun

EPA - Bridging the Gap Conference - Dublin

1. The African Continent is already suffering and will suffer more because of the impact of climate change.

2. To prevent this worsening out of control, we must urgently enact the principles of Precaution and Equity as already agreed in the "United Nations Framework Convention of Climate Change" (UNFCCC) signed in Rio in 1992.

3. Only the approach of "Contraction and Convergence" (C&C), as developed by the GCI and adopted by African Civil Society and Governments meets these principles.

4. Since 1997, the Africa Group position at the UNFCCC has been presented in these terms.

5. The position was accepted in Kyoto.

6. Europe's contribution to NEPAD's Climate Change programme for the new millennium will only be sustainable if it based on these principles, as they embody, good governance, global justice and the eradication of poverty.

7. At the regional summit in Kenya on the 23rd and 24th of April, the government of Kenya restated the Africa Group position.

8. The Director General of the ruling National Rainbow Coalition in Kenya encouraged this be conveyed to the civil service and society events in Dublin.

9. The North South Gap can only be bridged when it is put on the foundation of Contraction and Convergence.

MAY 4

Dr Andrew Dlugolecki

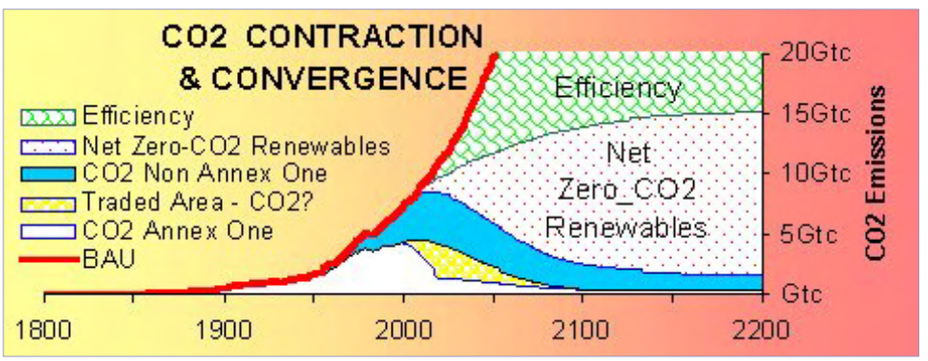
Climate Change and Mounting Financial Risks

Background Paper for "The Hague Conference on Environment, Security and Sustainable Development" 9-12 May 2004

The unifying policy : "Contraction and Convergence"

The most important step in reducing the risk of climate change, is to create a common understanding and will to solve the problem. This can only be done with a policy that is simple, fair and effective. The one which offers the best hope of doing this is "Contraction and Convergence", devised by the Global Commons Institute. It is based on the idea of agreeing a "safe" level of atmospheric greenhouse gas concentrations, and allocating the right to emit ghg's equally percapita to all nations. Since we are not at the equal stage currently, with rich countries above the safe level and poor countries below, a future

convergence date has to be agreed also (see Figure 8). The merit of this simple approach is that it is clearly "fair" (equal percapita shares) , pragmatic (allows time to adapt), it avoids "blame" (no retrospective differentiation), but at the same time it creates the possibility to redistribute wealth and transfer technology (emissions rights could be traded between over- and under-compliers), and it provides the incentive to develop RE and more efficient energy applications (by setting a clear direction).



Without an overarching framework like Contraction and Convergence to operate within, the financial sector will always be rather hesitant to commit its resources to a seemingly distant problem like climate change, when there are so many other urgent issues clamouring for attention.

MAY 5

Michael MacCarthy

Dear Mr. Meyer

I heard you speak at the "Bridging the Gap" Conference in Dublin on Friday last, where I found your talk to be the highlight of the conference.

For my own part, I was greatly disappointed with the manner in which your presentation was so crudely terminated by the facilitator. I wish to let you know that I was not alone in feeling that the conference would have benefited from hearing your Cameroon colleague complete his speech.

Please be good enough to convey this sense of disappointment. Although I was not involved in organising the event, I couldn't feel other than embarrassment as an Irishman and as a member of the host country of the EU Presidency, for the manner in which he was treated.

Perhaps you would make a copy of his speech available on your website.

Regards

Michael Mac Carthy

Waterford, Republic of Ireland

MAY 11

Aubrey Meyer
HECA Conference - Cardiff

Contraction and convergence (C&C) is a scheme to provide a framework for a smooth transition to a low level of CO2 emissions from human activity. It can either follow or replace the Kyoto protocol. The first step in C&C, contraction, is based on agreeing a safe target concentration level and the determination of global annual emission levels which should take the global atmosphere to that target. The second step, convergence, defines allocations to each country, assuming annual emission allowances that vary per-capita of population. This seminar will look at the links between global, international and national policy and how these can be strengthened.

MAY 28

Guardian

An idea whose time has come

By tackling global warming, Blair can show he is not a US poodle

Larry Elliott

A month ago, Tony Blair made a big speech about global warming. The prime minister's message could not have been clearer. The Kyoto treaty, for all the haggling, fell far short of what was needed to crack the problem, and time was running out. "The issue of climate change is now very, very critical indeed," he said.

Clearly Blair has been listening to Sir David King, the government's chief scientist, who says that within a century the last humans will be sharing Antarctica with the penguins. Others, however, appear deaf to the warnings.

The Department of Transport has been lobbying furiously to stop the Office for National Statistics publishing data showing an 85% increase in pollutants from the airline industry and a 59% rise from freight transport since 1990. Joined up government or what?

It's easy to see why the mandarins would find the ONS report a tad embarrassing. This, after all, is the department that has sanctioned a fifth terminal at Heathrow and a third London airport to cope with the seemingly insatiable demand for air travel. It would not - as they say in Whitehall - be "helpful" to have this information in the public domain.

Actually, it's helpful to find out which bits of Whitehall are subject to capture by pressure group, and it's helpful to understand the conceptual problem to be overcome if action is to follow rhetoric. In essence, this boils down to whether modern industrial capitalism is compatible with a healthy planet. Does it make sense, for example, for the G8 to pressurise Opec into pumping more crude in order to bring down the cost of a scarce resource? Is it right that airlines pay no tax on aviation fuel, thus aiding their attempts to boost demand by keeping prices low?

Make no mistake, the forces of conservatism arguing for business as usual are powerful. The good news is that they are opposed by an even stronger lobby - the insurance sector - that sees climate change as a real and immediate threat. These guys have seen weather-related claims rise over the past decade; they believe the planet is warming up and they fear the risk of ruinous losses in the not-too-distant future. The latest evidence shows an accelerated rise in CO2 emissions over the

past three years, seen by scientists as a sign that the carbon sinks that soak up a proportion of the gas have started to shut down.

Insurance companies, quite rightly, feel that Kyoto is not the solution - even if the Russians now ratify the treaty, as they almost certainly will. They are among the critics who say that the 1997 deal is timid and based on questionable science, and fails to bind every country in the world into solving a global problem. Kyoto is plan A, but the need - as the prime minister correctly argues - is to use it as a springboard to plan B.

The good news is that plan B already exists, and stands to be the long-term solution that Blair is looking for, provided he has the political courage to back it fully. Contraction and convergence (C&C) provides a three-stage blueprint for coping with climate change. Initially, there would be an international agreement on how much further the level of CO2 in the atmosphere could be allowed to rise before the changes in climate became unacceptable. Once that had been worked out, estimates of how much of the gas was retained in the atmosphere would be used to work out how quickly global emissions needed to be cut in order to meet the target. This is the contraction part of the process.

Finally, once a target was established for cuts in greenhouse gases - one figure is 60% - it would be possible to allocate the fossil fuel consumption that those emissions represented. Although people in rich countries pollute far more per head than people in poor countries, supporters of C&C say that everybody should have a basic human right to emit the same amount of greenhouse gases, and that a date - say, 2050 - should be fixed for arriving at this point. This is the convergence part of the equation. Rich states would be given time to adjust, and in the meantime could buy the right to pollute from poor countries, providing resources for development.

C&C is an idea whose time has come. The Americans have backed the idea, and if Blair has built up political capital in Washington as a result of Iraq, he should think about cashing it in next year when Britain holds the G8 presidency.

Britain’s recent experience, the prime minister should point out, shows that countries can cut emissions and enjoy growth. An even better example is China, the fastest growing economy in the world. China is not just switching from coal to gas, but has been investing heavily in alternative energy sources while the UK has been in thrall to the transport lobby: a lesson Blair would do well to heed.

• Larry Elliott is the Guardian’s economics editor

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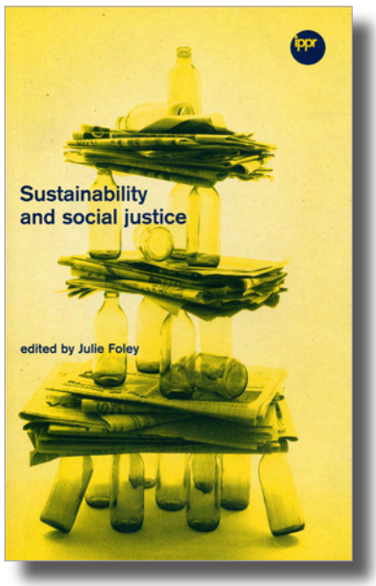
http://politics.guardian.co.uk/columnist/story/0,9321,1226568,00.html

MAY



Tony Juniper
Sustainability and Social Justice

Publisher: IPPR **ISBN:** 1860302327

Strengthening the Link between Climate Change,

International Development and Social Justice "A fair approach to allocating emission entitlements If the world is to stabilise concentrations of greenhouse gases at a safe level, a 'global emissions budget' consistent with the target concentration will need to be implemented.

At some point therefore a 'global deal' on sharing our atmospheric property rights will also have to be agreed. This in turn raises questions about how to allocate this global emissions budget in a manner that is fair and reflects developing country concerns that they have adequate room for their economies to grow."

"Agreeing emission limits on a 'per capita basis' would, as a guiding principle, ensure that every person is entitled to release into the atmosphere the same quantity of greenhouse gas emissions.

Without a long term guarantee of equitable emission entitlements, developing countries are likely to continue to refuse to participate in international action on climate change which would provide an excuse for further procrastination by the US.

Perhaps the best chance of getting developing countries on board would be to allocate emission entitlements on a per capita basis rather than in proportion to national wealth or even existing emissions. This approach has already received some support from developing countries including India and the African Group of the Non-Aligned Movement.

An immediate per capita allocation of emissions would probably not stand much chance of being implemented as it would mean that industrialised countries would have to cut their emissions by far more, while many developing countries could increase theirs.

Because of the very wide differences between per capita emissions levels around the world, there will have to an adjustment period covering several decades in which nations' quotas converge on the same per capita level (Blundell 2002).

This transitional framework is known as 'Contraction and Convergence' and was first proposed by the London based Global Commons Institute."

MAY 27

Independent

A modest proposal to save the planet

Our leaders are finally waking up to the fact that climate change, far from being a 'green' fantasy, is a real, imminent and potentially catastrophic threat to humanity. Yet preventative action seems to be as remote as ever. Isn't there something we could be doing? In an extract from his acclaimed new book, Mayer Hillman advocates radical changes to the way we conduct our daily lives that would ensure a future for our children

Climate change is the most serious environmental threat the human race has ever faced; perhaps the most serious threat of any kind. The dangers can hardly be exaggerated. Within 100 years, temperatures could rise by 6C worldwide. Much of the earth's surface could become uninhabitable, and most

species could be wiped out. In the UK, over the next 50 years, we will experience hotter, drier summers, warmer, wetter winters and rising sea-levels. In most of our lifetimes, millions of British people will be at high risk from flooding; there will be thousands of deaths from excessive summer temperatures; diseases from warmer regions will become established; and patterns of agriculture and business will have to change for ever.

This is not the view of alarmists, but the considered opinion of the overwhelming majority of international climate scientists. It is acknowledged by most governments and their advisers. Last mo nth, government-funded scientists at the University of Washington in Seattle made the key admission that the troposphere is indeed warming at 0.2C per decade - precisely as predicted by the main global-warming models. The UK Government's chief scientist warned the same month that if global warming continues unchecked, by the end of this century Antarctica is likely to be the only habitable continent.

The World Health Organisation blames climate change for at least 160,000 Third World deaths last year. Tony Blair admitted that climate change was "probably the most important issue that we face as a global community". The message is clear. Doubting the imminence of significant global warming may once have been an intellectually defensible position. It isn't now.

Decisions must be taken as a matter of urgency. We cannot rely on optimism. We need to think beyond energy efficiency and renewable energy, towards ideas of social and institutional reform and personal changes that require much lower energy use. Yet government action is only scratching the surface, and current policies on transport and growth can only make things worse. We are on the road to ecological Armageddon, with little apparent thought for the effects on the current population, let alone those who follow.

It doesn't have to be like this. Nor does anyone want it to be. The UK government said in 1990 that it was "mankind's duty to act prudently and conscientiously so that the planet is handed over to future generations in good order". This is crucial. As well as posing the most demanding challenges to the character and quality of our way of life, the issue has to be seen and acted on from a moral perspective.

Taking this as a starting point - that it is a matter both of necessity and of responsibility to try to save the planet - only one solution has a realistic prospect of success. This article is an attempt - made more fully in the book I have written with Tina Fawcett, How We Can Save the Planet - to bring that solution to the centre of public debate.

The direction is simple and generally agreed: cuts must be made to greenhouse-gas emissions. The difficult part, where moral as well as scientific questions arise, is deciding by

how much, by when and by whom. Should the most "energy profligate" nations and individuals be obliged to bear the greater burden of emissions reductions?

The solution set out here - first at a global level and then at a local, individual level - is radical. But it can achieve a sufficient decrease in emissions, by a set date, transparently and fairly, so that it can command wide public and political support. For the UK to adopt this strategy will mean that it can meet its own commitments to greenhouse-gas reductions and show global leadership.

The most plausible way to reach a just - and thus realistic - global agreement on emissions reduction is the system known as Contraction and Convergence (C&C). This brilliant and simple method was first proposed by the Global Commons Institute (GCI) in 1990, and its unique qualities have been widely recognised. A large number of national and international bodies have endorsed it, including - in the UK - the Royal Commission on Environmental Pollution, the Cabinet Office" Performance and Innovation Unit, and the Greater London Authority.

C&C is founded on two principles: first, that global emissions of carbon dioxide must be progressively reduced; and second, that the reductions must be based on justice and fairness, which means that the average emissions of people in different parts of the world must ultimately converge to the same level. This latter requirement has not been included for moral reasons alone; climate change cannot be restricted to a manageable level without all countries sharing this common objective.

C&C simplifies climate negotiations to just two questions. First, what is the maximum level of carbon dioxide that can be permitted in the atmosphere without serious climate destabilisation? Second, by what date should global per capita shares converge to that level?

The targets in the Kyoto protocol are not based on a reliable understanding of the safe limits of greenhouse gases: rather, the reductions were determined by what was considered to be politically possible in developed countries. By contrast, C&C would use the best scientific knowledge to set maximum safe levels of carbon dioxide emissions in the atmosphere (now estimated at 450 parts per million), and hence the maximum cumulative emissions.

While the date of convergence would be subject to agreement, the principle of equal rights for all would remove the potentially endless negotiations that would otherwise occur, with each country making a case that its contribution to global reductions should be modified in light of its special circumstances.

Another important element of the C&C proposal is the ability of countries to trade carbon-emissions rights. Countries unable to manage within their agreed shares would, subject

to verification and rules, be able to buy allocations of other countries or regions. Sales of these unused allocations, almost invariably by vendor countries in the Third World, would fund their development in sustainable, zero-emission ways. Developed countries, with high carbon-dioxide emissions, gain a mechanism to mitigate the expensive early retirement of their carbon capital stock, and benefit from the export markets for renewable technologies this restructuring would create.

The next step is for our government to adopt the principle of C&C, and to lead diplomatic efforts to establish it as the basis of future international agreement. The UK cannot act unilaterally. But this does not mean it cannot be in the vanguard. What would happen if it did? Or, put another way: how can a reducing emissions quota be shared out?

Based on the equity principle in C&C, the obvious answer is for a system of personal "carbon" rationing for the 50 per cent of energy that is used directly by individuals. Indeed, as part of a global agreement, per capita rationing would be the obvious mechanism for all countries.

The main features of this would be:

* Equal rations for all adults (and an appropriate fraction for children);

* Year-on-year reduction of the annual ration, signalled well in advance;

* Personal travel (including travel by air and public transport) and household energy use to be included;

* Tradeable rations between individuals; and

* A mandatory, not voluntary, arrangement, instituted by government.

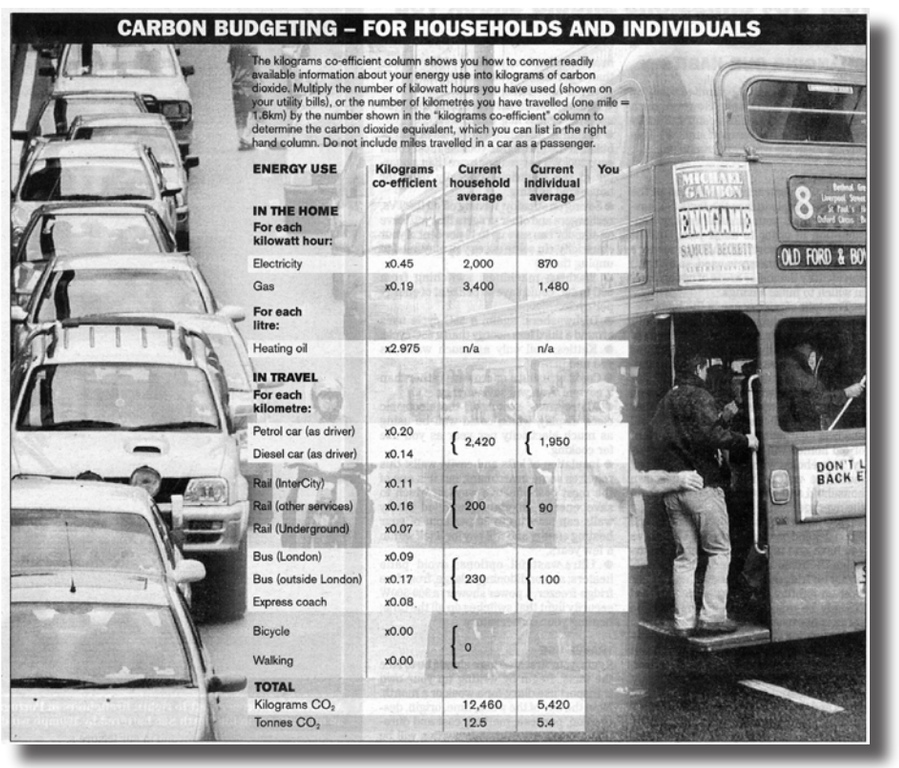
Clearly, giving people equal carbon rations - an equal "right to pollute", or an equal right to use the atmosphere - is equitable in theory and reflects the international equity principle in the C&C proposal. There may have to be some exceptions to this rule. However, in general, it will be better for society to invest in provision for the energy efficiency of "exceptional" cases so that they can live more easily within their ration, rather than to keep tinkering with the ration. The more exceptions granted, the lower will have to be the ration for the rest of the population.

The rations will have to decrease over time, in response to the need both to reduce emissions and to allow for a rise in population. Giving due warning of future ration reductions would allow people to adapt homes, transport and lifestyles at the least cost and in the least disruptive way to them individually. Experience has shown that industry has been able to produce more effici- ent equipment (fridges, washing

machines) at no extra cost if given time to adapt the design and manufacturing processes. The same is likely to be true of people adapting to low-energy, low-carbon lifestyles.

With personal travel and household energy use included, half of the energy-related emissions of carbon dioxide (CO2) in our economy is covered. The other half comes from the business, industry, commerce and public sectors, which produce the goods and services we all use.

In theory, it might be possible to manage this half by calculating the "embodied" emissions in each product or activity (such as all the emissions from the processes entailed in the production, transport and disposal of, say, stereo equipment, or cars) and give consumers a further allowance for buying products. But this would be very complex and data-intensive, as well as being very difficult to apply to some goods and services - how could you "carbon rate" a haircut, or a hospital stay? It would be much simpler to make the non-domestic sector directly responsible for reducing its share of CO2 emissions (for which a separate rationing scheme, on similar lines but not described in detail here, would be needed).



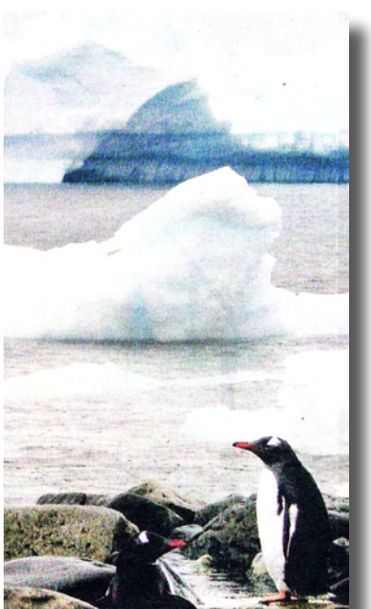
Not everyone will need to use their full carbon ration. Those who lead lives with lower energy requirements, and who invest in efficiency products and energy renewables, will have a surplus, which they can sell. Those who travel a lot, or live in very large or inefficient homes, will need to buy this surplus to permit them to continue with something like their usual lifestyle. Thus people will want to trade carbon rations.

Economic theory says that by allowing trading, any costs of adapting to a low-carbon economy will be minimised. Price would be determined by availability of the surplus set against the demand for it. For this purpose, a "white" market would be created, possibly via a government clearing "bank", or a version of the online auction system eBay (cBay?). There would be little chance for a "black" market to develop.

History suggests that appeals to reason and conscience have not been sufficiently effective in achieving major changes in our irresponsible patterns of behaviour and consumption. To be effective, therefore, carbon rationing would have to be mandatory. A voluntary approach would not succeed: the "free-rider" would have far too much to gain.

But managing carbon rationing should be simple. Each person would receive an electronic card containing that year's carbon credits. The card would have to be presented on purchase of energy or travel services, and the correct amount of credits would be deducted. The technologies and systems already in place for direct-debit systems and credit cards could be used.

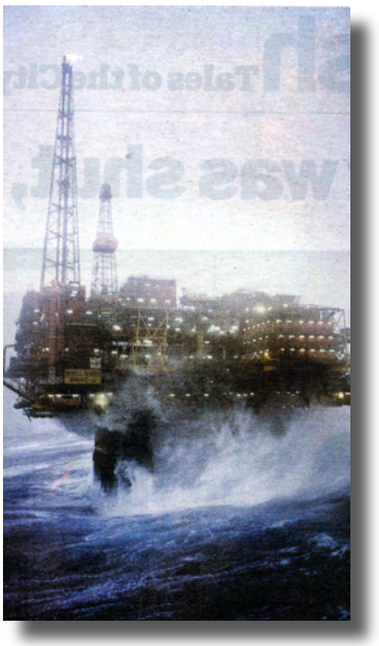
A number of social, technical and policy innovations would be needed to make it possible for people to live within their carbon allowances. On the technical side, these could include "smart meters" that inform people how much of their annual ration is left; which appliances are using most energy; and how much carbon could be saved by, for example, reducing the time spent in the shower, or by heating bedrooms only in the late evening. Alternatively, energy companies could install sophisticated carbon-management systems in houses, which take these decisions automatically and guarantee carbon savings. In terms of policy, equipment that uses less energy could be favoured through devices such as VAT, labelling, minimum standards and subsidy.



At present, the purchase of the most efficient types of equipment is encouraged, whether it be cars, refrigerators or washing machines. In future, the emphasis will be on items using the lowest amount of energy or with the lowest emissions, with much better information available at the point of purchase of everything that uses energy, from new and existing homes to televisions and mobile phones. It will thus be in the economic interest of manufacturers to supply goods that make the lowest use of carbon. Socially, one would envisage that attitudes would change so that thrift rather than profligacy in energy use and carbon emissions was increasingly preferred

There has been no recent experience of long-term rationing (other than by price) in the UK. The nearest comparison is the food rationing introduced in the Second World War, when the availability of food, clothing and other goods had to be reduced drastically. Despite difficulties, contemporary opinion polls showed that rationing and food control were, on the whole,

popular. Equity - the principle of a flat-rate ration for all - was a key feature of its introduction and maintenance and was widely accepted as the only fair approach, to which no one could reasonably object.



In the case of climate change, the principles of carbon rationing are far more straightforward than the quite complicated wartime system. But the benefits would be less immediately obvious. It is therefore particularly important that a cross-party consensus be achieved on the benefits of C&C and the adoption of carbon rationing. The future of the planet is too important an issue to be treated as a political football. It would be devastating if there were no common purpose, and instead political groupings vied with each other to obtain electoral support by making less demanding commitments on climate change in manifestos.

However, the likelihood of achieving such co-operation is by no means remote - it is just that a consensus has not yet been sought. None of the main UK parties has expressed reservations about either the significance of climate change or the need for serious, concerted action to limit its impacts. The challenge now is to convince politicians - and the electorate they represent - that the time for concerted action has arrived.

Carbon rationing is not a perfect solution. It will have its losers as well as its winners. Energy-intensive industries, such as motor manufacturing and international tourism (dependent as it increasingly is on flying, which is the most damaging of all human activities from a climate-change perspective), will no doubt object strongly to the concept of C&C. Its adoption will lead to a steady reduction in demand for their products and services, with consequent job losses. The future of international events attracting participants from across the world - whether for sporting, cultural, academic or business purposes - is, clearly, threatened. But such consequences cannot be considered a sufficient justification to reject what is so obviously the only assured solution to a planet-threatening problem.

The rationing system will bring rising environmental benefits in its wake, particularly in terms of the imperative of limiting damage from climate change, while spheres of the economy that are not energy-intensive - such as education, non-motorised travel, local shopping and leisure activities and domestic tourism - are likely to prosper. The important thing to remember is that this proposal is for a phased reduction, over a sufficiently long period to ease the transition towards ecologically sustainable patterns of activity.

And if a world with personal carbon rationing seems unacceptable, just imagine how much less acceptable would be a world in which effective action had not been taken to tackle

climate change. The point of departure must be that, if we do not make substantial alterations to our lifestyles, the problem of climate change will intensify.

Education will be vital to break the cycle of denial. The media, too, will have a role to play - although given the proportion of their income derived from advertising "high carbon" products and activities, they are unlikely to lead the way. Meanwhile, anyone who cares about our future wellbeing and that of the planet should not turn a blind eye to the likelihood that the consequences of inaction will be awesome.

For most readers, the notion of calculating one's own carbon-dioxide emissions will be an unfamiliar one. The tables are intended to aid the development of what might be called "carbon literacy" - a vital first step towards adopting energy-thrifty lifestyles. The concept is not very different from the familiar idea of a household budget in which we manage our expenditure so that we do not run into debt. We must now learn to apply the same kind of simple management skills to energy-dependent aspects of our lives - at home, at work, in our travel and in our leisure activities.

There are three stages to the process: first, to calculate the carbon emissions from the energy we currently use; second, to calculate how much we can actually be allowed; and third, to work out how best to make the necessary transition from our current emissions to sustainable emissions.

CURRENT HABITS

DIRECT HOUSEHOLD ENERGY USE

Most of the energy used in households is gas and electricity. In each case, your usage will be indicated on your bill, in kWh (kilowatt hours). To calculate your carbon dioxide emissions, multiply your annual consumption of electricity in kWh by 0.45; and multiply your annual consumption of gas in kWh by 0.19. This will establish your emissions from these sources in kilograms of CO2. (For heating oil, the multiplier is 2.975.) Finally, you should divide each total by the number of people in your household to give you your individual emissions.

TRAVEL USE

First, estimate the annual distance you travel, in kilometres, for each method of transport: car, rail, bus, bicycle, air, etc. The table shows all the options. For car travel, discount journeys in which you were not the driver (to convert miles into kilometres, multiply the miles by 1.6). Next, multiply each annual total by the "kilograms co-efficient" shown in the table. You can make this calculation both for yourself as an individual and, if you like, for your household.

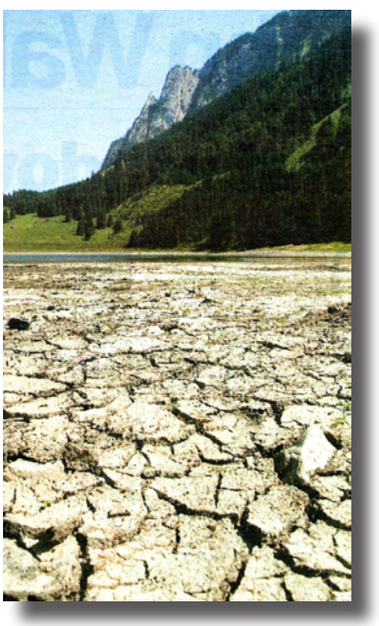
When you have added up all your major sources of personal CO2 emissions shown in the table, you will know your approximate annual emissions from direct energy use. Compare

this with the current British individual average of 5.4 tonnes CO2 to see how you are doing. However, remember that about half the energy in the UK economy is used by the industrial, commercial, agricultural and public sectors to provide our goods and services. So, your total should actually be doubled to cover your share of these non-domestic sectors of fuel consumption. For the projections in the rest of this article, however, we will focus simply on your domestic consumption.

SUSTAINABLE USE

* The UK government's 60 per cent reduction target for 2050 would stabilise carbon concentrations at 550 parts per million (ppm). A more realistic view, in the light of current scientific knowledge, is that the maximum concentration in the atmosphere that should be considered safe is 450ppm. The table shows the degree of reduction required for both targets. Either will require substantial changes in our lifestyles.

Compared with expected average emissions figures for 2005, the 550ppm scenario requires a personal reduction of 63 per cent by 2050, and the 450ppm scenario requires an 80 per cent reduction by 2050. In both these scenarios, the ration shown would be equal for everyone in the world by 2050. For the 450ppm scenario, which requires a faster rate of change, the ration would be equal by 2030.



The figures in our tables, including the total you have calculated of your own emissions - should shock you. Under the 450ppm scenario, a single return flight from London to Athens would exceed your entire personal carbon ration for the year in 2030. Even on the less rigorous 550ppm scenario, your annual ration in 2030 would not be enough to cover a return flight from London to New York.

Yet there is no need to despair. Energy-use patterns have changed considerably in recent decades. Energy used for personal travel has almost doubled since 1970. Under the 450ppm scenario, CO2 emissions from personal travel would have to halve over the next 20 years. If a significant reduction in motorised travel is made in parallel with energy efficiency and low-carbon technologies, this will not represent a much greater rate of change in mobility than the UK has already experienced in recent memory - it will just be moving in a different direction. The change isn't going to be easy, but it is not unrealistic.

CHANGING OUR HABITS

Climate change cannot be limited solely by the actions of individuals. However, each individual needs to make a contribution by reducing his or her "carbon impact". This advice suggests ways you can do so.

HOME USE

As with any destructive habit, part of the answer is simply to face the facts. So, having looked at your annual energy consumption in order to audit your current emissions, it is worth considering in more detail how that energy is used, so that you can identify the major areas of opportunity in which to make savings.

The split of energy use in the home between heating and hot water depends very much on your house and style of life. For gas central-heating, the average split has been estimated as: 70 per cent space heating; 28 per cent water heating; and 2 per cent for cooking with gas. This split between heating and hot water also applies to other fuels. A more efficient or newer house will use less heating energy; large, inefficient or old homes will use more heating energy; households with more people will use more hot water. Think about your own household and how you might differ from the average.

How electricity is used in your home will again depend on what lights and appliances you have and how you use them. The average UK home uses 24 per cent of its electricity on fridges and freezers, and 24 per cent on lighting. Lighting can easily and cheaply be made more efficient, but the same is not true of fridges and freezers.

But heating is where we are most wasteful. Many people can make very significant savings simply by learning to use their heating and hot-water systems more efficiently. Are you making the best possible use of times and thermostats? Are there minor adjustments you could make to be less profligate with heat? Simply switching off your heating half an hour earlier could save more than 5 per cent of your energy bill.

Areas to consider include:

* Bathing and showering options: could you use less, or less hot, water?)
* Lighting: installing energy-saving light bulbs in the four lights you use most could save 200kWh per year, or more than a quarter of the electricity typically used for household lighting.
* Saving on standby: turning off all the TVs, rechargers and other gadgets that you leave on standby can save up to 10 per cent of your electricity. (In some cases you may need to unplug them.)
* Washing machines: switching from 60C to 40C could save 40 per cent of energy per cycle.
* Dishwashers: again, a 55C cycle uses around a third less energy than a 65C cycle.
* Kettles: boil only as much water as you need.
* Cooking: using a microwave rather than a normal oven will save energy.

* Microwaves: switch off the electronic clock display, which could well be using as much electricity per year as you use for cooking.

* Insulation of lofts and cavity walls: this requires some investment, but it is one of the most cost-effective ways in which to save energy. Insulating unfilled cavity walls can save up to 30 per cent of your heating energy and will pay for itself within a few years.

* Ultra-wasteful options: avoid patio heaters; air conditioning; a large, frost-free fridge-freezer; a power shower; a 300-500W security light that switches on all the time; heating your conservatory.

TRAVEL USE

Again, your first step here should be to face the facts. Begin by writing up your own transport use diary, for a week or a month. Note the day of the week, time, origin, destination, purpose, method, cost and duration of each trip. This information will be critical in helping you to prioritise changes in your patterns of travel.

Having understood your patterns, you may find it easier to see ways of making them less carbon-expensive. Flying needs to be drastically reduced: it is not only the most damaging means of travel per mile but is also associated with the longest journeys, and thus adds both considerably and disproportionately to climate change

Other changes might include walking and cycling for local trips; using more buses; combining several purposes in one journey; or simply cutting out less essential long-distance car and rail journeys.

It is also possible to reduce your own carbon emissions when you do travel by car. Government advice includes:

* Plan ahead: choose uncongested routes, combine trips, share cars.

* Cold starts: drive off as soon as possible after starting.

* Drive smoothly and efficiently: avoid harsh acceleration and heavy braking.

* Travel at slower speeds: driving at 70mph uses 30 per cent more fuel than driving at 50mph.

* Use higher gears.

* Switch off the engine when stationary.

* Don’t carry unnecessary weight.

* Use air conditioning sparingly.

GENERAL USE

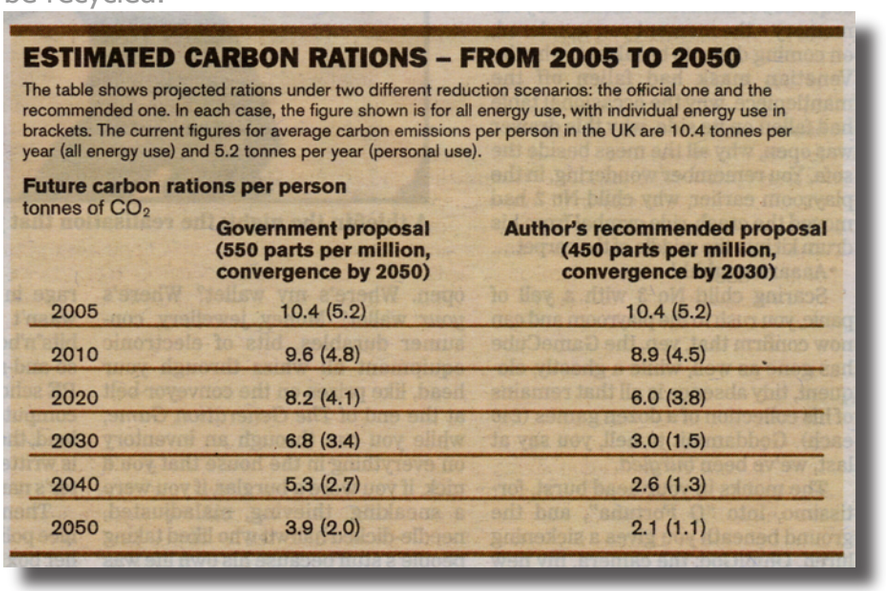
Individuals are also responsible for, and can control, their indirect energy use as consumers. Modifications to consider include:

* Buy food and drink that has not been transported over long distances. Where possible, buy local, or at least British, produce.

* Choose more seasonal food, which is less likely to have been grown abroad or in heated greenhouses in the UK.

* Buy recycled products, or those with a high recycled content.

* Buy products that are recyclable, and whose packaging can be recycled.



ESTIMATED CARBON RATIONS – FROM 2005 TO 2050

The table shows projected rations under two different reduction scenarios: the official one and the recommended one. In each case, the figure shown is for all energy use, with individual energy use in brackets. The current figures for average carbon emissions per person in the UK are 10.4 tonnes per year (all energy use) and 5.2 tonnes per year (personal use).

Future carbon rations per person
tonnes of CO_2

	Government proposal (550 parts per million, convergence by 2050)	Author's recommended proposal (450 parts per million, convergence by 2030)
2005	10.4 (5.2)	10.4 (5.2)
2010	9.6 (4.8)	8.9 (4.5)
2020	8.2 (4.1)	6.0 (3.8)
2030	6.8 (3.4)	3.0 (1.5)
2040	5.3 (2.7)	2.6 (1.3)
2050	3.9 (2.0)	2.1 (1.1)

But they run counter to current trends in society, and require thought and commitment. The challenge facing us is to invest that thought and commitment today, while there is still time. It is all too clear that we cannot go on as we are now, paying little more than lip service to this most critical of issues.

If we in the developed world do not agree to substantially restrict our own carbon dioxide emissions, there are only two possible outcomes. Either we will witness and bear the costs of an inevitable and devastating intensification for future generations of the problems caused by climate change - as well as the burden on our consciences. Or poorer people, mainly in developing countries, will have to be prevented from having their fair share of the fossil fuels required to maintain even a basic standard of living. Burying our heads in the sand on this topic to avoid facing reality cannot continue.

Responsibility lies with government to take the lead in international negotiations for the urgent adoption of the contraction and convergence framework, and for the early introduction of an equal per capita annual carbon ration.

We have to choose a better future.

Dr Mayer Hillman is Senior Fellow Emeritus at the Policy Studies Institute. This article is an edited extract from 'How We Can Save the Planet', by Mayer Hillman, with Tina Fawcett (Penguin, £7.99)

JUNE

Charles Kennedy, Tony Blair
Priminister's Question Time

Kennedy:

"On Monday you acknowledged that you have got little expectation that this US Government is going to sign-up to the Kyoto treaty in terms of climate change. This further emphasises the need for Europe to be seen to be taking a lead,"

"Will you commit the Government to join with France, Sweden, Holland and Denmark, in pressing the principle of contraction and convergence as the fairest way forward in controlling greenhouse gas emissions?"

Blair:

"We're already working very strongly with the EU in order to make the case for a reduction in greenhouse gas emissions. Indeed, this Government has been leading the way. In fact, the Kyoto treaty in many ways would not have been negotiated but for the negotiating skill of the Deputy Prime Minister (John Prescott).

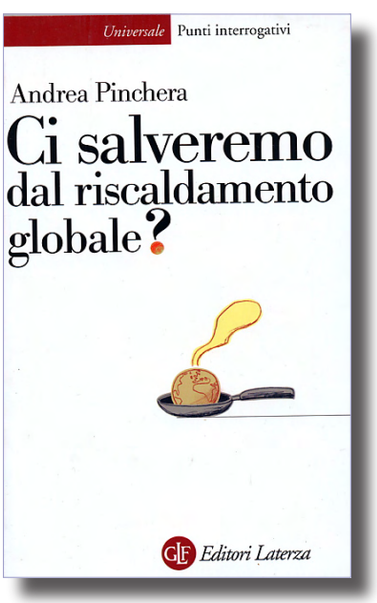
"In the end what is important, as well as those measures you mentioned, is the investment in science and technology and energy efficiency which give us the best chance in the long term of combining economic growth and a reduction in greenhouse gas emissions."

JULY

Andrea Pinchera
Ci salveremo dal riscaldamento globale?

Publisher; Gius. Laterza & Figli

ISBN: 8842072869



JULY 5

Dr Rowan Williams, The Archbishop of Canterbury,

"The prime minister has already declared

that his international priorities for 2005 will include climate change and the future of Africa; contraction and convergence addresses both of these. It seems the moment to look for a new level of public seriousness about environmental issues."

"This kind of thinking appears utopian only if we refuse to contemplate the alternatives honestly."

http://www.gci.org.uk/speeches/Williams.pdf

http://www.guardian.co.uk/uk_news/story/0,3604,1254684,00.html

http://news.bbc.co.uk/1/hi/sci/tech/3866543.stm

JULY 25

Benfield Hazard Research Centre
Climate Change - Evidence - Reality/ Recovery?

from the Executive Summary

Looking ahead, however, any serious attempt to tackle the climate change issue is likely to involve the contraction and convergence model.

http://www.gci.org.uk/articles/Benfield_Hazard_CandC.pdf

JULY 7

DTQs

Colin Challen Introduced his Domestic Tradable Quota Bill in the UK House of Commons on the 7th of July 2004.

"Emissions trading schemes generally work partly on the principle of what is known as contraction and convergence—we set a target to reduce or contract our emissions each year, and eventually our emissions are no greater than anybody else's. The concept of convergence means that we have a right to use only our fair share of carbon-emitting resources."

http://www.publications.parliament.uk/pa/cm200304/cmhansrd/cm040707/debtext/40707-04.htm

JULY 15

Early Day Motion [EDM] 1529
The Archbishop of Canterbury's Views on Contraction & Convergence

Chaytor/David

"That this House welcomes the Archbishop of Canterbury's call for the Government to take the lead internationally in pressing for contraction and convergence of greenhouse gas emissions as the underlying principle of its policy on the Kyoto Protocol during the Prime Minister's chairmanship of the G8 and presidency of the European Union in 2005."

So far signed by . . . .

Labour Party

Barnes/Harry	Best/Harold	Burden/Richard
Caton/Martin	Chaytor/David	Colman/Tony
Corbyn/Jeremy	Dean/Janet	Dobbin/Jim
Drew/David	Edwards/Huw	Flynn/Paul
Gibson/Ian	Griffiths/Win	Jenkins/Brian
Jones/Lynne	Lewis/Terry	Marris/Rob
McNamara/Kevin	Morgan/Julie	Prentice/Gordon
Simpson/Alan	Turner/Dennis	Vis/Rudi
Williams/Betty		

Conservative Party

Bottomley/Peter

Liberal Democrats

Breed/Colin	George/Andrew	Hancock/Mike
Jones/Nigel	Stunell/Andrew	Tyler/Paul

Plaid Cymru

Thomas/Simon

Ulster Unionist Party

Smyth/Martin

http://edm.ais.co.uk/weblink/html/motion.html/ref=1529

JULY 28

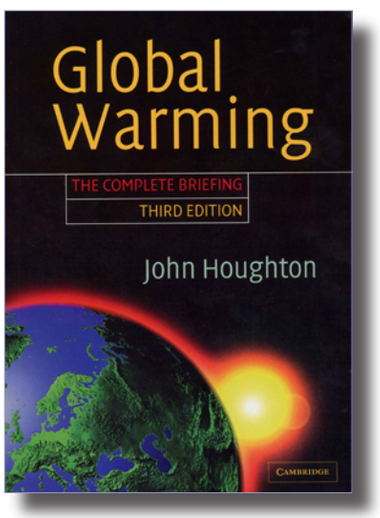
BBC News Online
ARE THERE ALTERNATIVES?

One approach gaining increasing support is based on the principle that an equal quota of greenhouse gas emissions should be allocated for every person on the planet.

The proposal, dubbed "contraction and convergence", states that rich countries should "contract" their emissions with the aim that global emissions "converge" at equal levels based on the amount of pollution scientists think the planet can take.

Although many commentators say it is not realistic, its supporters include the United Nations Environment Programme and the European Parliament.

http://news.bbc.co.uk/1/hi/sci/tech/3927813.stm



AUGUST

Sir John Houghton
Global Warming
The Complete Briefing - 3rd Edition

Publisher; Cambridge University Press, ISBN: 0521817625

The 'Contraction and Convergence' proposal addresses all of the four principles mentioned above. In particular, through its equal per capita sharing arrangements it addresses head-on the question of international equity - and the proposed trading arrangements ensure that the greatest 'polluters' pay. Its simple and appealing logic means that it is a strong candidate for providing a long-term solution.

http://www.gci.org.uk/books/Houghton_Book_C&C.pdf

AUGUST

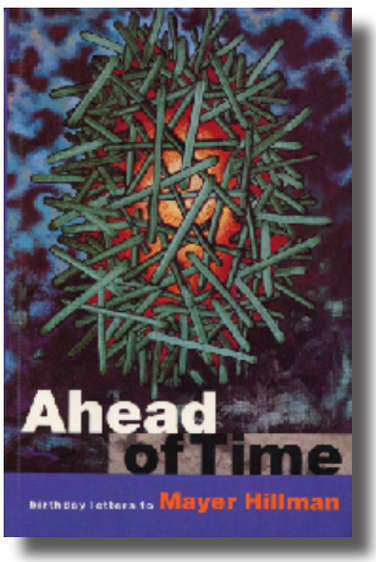
TIEMPO Magazine
Aubrey Meyer & Raphael Hanmbock

"The UNFCCC set out to defend the planet against the devastating uneconomic growth of the rich. The Kyoto Protocol reversed this trend in favour of those whose interests are vested in this growth at the expense of the poor and the planet." "Former consultants to the Small Island States now broker emission permits under the Protocol, while the homes of their former island clients are made uninhabitable by the rising seas." "Former climate action radicals, who denounced the original Kyoto Protocol at its birth in 1997 as a 'tragedy and farce', now defend its horse-trading and weakened revisions as a basis on which to continue to the Kyoto Protocol's second commitment period."

http://www.gci.org.uk/articles/TIEMPOlayout.pdf

2021

30 OCTOBER 2021



Ahead of Time
From Ian Christie

Publisher: Policy Studies Institute ISBN: 0853747873

Few prophetic voices with uncomfortable things to say are given a welcome by the public and the policy-makers. So it proved for Hillman in the 1990s, confronted by governments unsympathetic to his arguments. At the time, he was especially preoccupied by the dangers of climate change from global warming, arguing strongly for far more radical measures to curb greenhouse gas emissions than policy makers were prepared to contemplate.

Hillman made two particularly unwelcome proposals. First, that we should begin to establish carbon allowances on a per capita basis, to promote more sustainable consumption of fossil fuels in an equitable fashion nationally and worldwide. Second, that airlines should be taxed for the first time to reflect the environmental damage done by airliners' emissions, and especially to take account of their contribution to greenhouse gases and global warming. Typical reactions to these proposals were that Hillman and others like him were 'Jeremiahs', systematically exaggerating the risks and obsessed with a hairshirt approach to life, yearning for the chance to issue everyone with ration books for their carbon allowances. He was also written off by many as someone peddling naive ideas that could never be politically feasible.

In this, of course, Hillman's critics were mistaken, as we know now. It is one of the great satisfactions of reading his book that one notes the many reforms that have been adopted over the last 20 years which have their roots in ideas which Mayer developed and promoted. Of course, many others have taken them up and refined them, and perhaps few policy makers know how much they owe to thinkers and researchers such as Hillman, but it is nonetheless a pleasure to consider how influential he has ultimately proved to be. And one suspects that on his 70th birth- day 20 years ago, Hillman himself would have had few expectations that the world would have changed so much in the directions he had advocated for so long.

The most obvious change has been the worldwide response to the evidence of climate disruption caused by greenhouse gas emissions. Young readers, used to the system of carbon allowances and global emissions trading, find it hard to imagine

a world in which these did not exist and were the subject of furious debate. But of course it took an emergency to bring these systems into being, and to bring people such as Mayer Hillman and Aubrey Meyer, the founder of the Contraction and Convergence Plan now in use around the world, to the attention of policy makers.

The warning signs of climate change were apparent in the 1990s, but were largely ignored, especially in the USA. The great storms and floods of 2000-2001 in Britain played a significant role in raising public awareness of the risks of climate disruption, but even then Hillman and Meyer's pamphlet of 2003 on carbon allowances, emissions trading and airline taxes was disregarded by politicians fearful of the electoral consequences of radical policies to manage demand for fossil fuel use, especially in transport. Memories of the fuel crises of autumn 2000 and the 'motorists' revolt' in 2002 were too strong.

It was not until the Great Storm of 2005 in north-west Europe, and the near-simultaneous catastrophic floods along the eastern seaboard of the USA, that public opinion and political attitudes began to change rapidly. The Emergency Earth Summit of 2006 put in place the Contraction and Convergence Plan, which was ratified across the planet by 2010.

Of course, the action came too late to prevent major climate disruption, and we are living with the consequences now - the spread of tropical diseases in the North, the prospect of huge migrations from flooded coastal cities in the South, and the likelihood of extinction for so many species unable to adapt to warming and loss of habitats. But the signs are that we did act in time to avert truly calamitous climate change by mid-century.

30 OCTOBER 2021

Ahead of Time
From Aubrey Meyer

Dear Mayer,

We met all those years ago in the early 1990s. You were already a veteran of thinking and campaigning about what was then known as 'sustainable development'. I was just a middle-aged musician in the first throes of the deep anxiety that a new awareness of these issues had unleashed in me.

With three friends from the UK Green Party I had just formed the Global Commons Institute, or GCI. With a focus of human-induced global warming and climate change, our global mission was summed up simply as 'equity and survival'. International agreement to reduce the emissions of the greenhouse gases causing climate change was obviously needed. GCI took the simple position that the international sharing of this task would have to be based on recognising the principles of precaution and equity, or fair sharing under limits. This is

what we subsequently came to develop as a call to the UN for international emissions 'Contraction and Convergence', effectively a deliberate convergence on equality per head of the emissions shares of the rich and the poor.

Demonstrating your own effort to avoiding emissions from motorised transport, you had cycled across north London to my small flat so we could talk about these concerns. The journey from your home in Hampstead to Willesden was mostly downhill. You obviously knew this and therefore that the journey home was going to be uphill. You didn't appear to mind this in the least.

Perhaps it was allegorical. After a moment's downhill, it was refreshingly easy for us to find common cause in our concerns. And afterwards - in fact ever since - it has been difficult really for all of us to go home. This is because we knew that it would be an uphill struggle to persuade people that this sharing under limits, or global equity, had to be locally, but also widely, accepted as normal and necessary for global survival.

In those days 'efficiency' was the dominant culture at court. Mammon - in a large car - was effecting a hostile takeover in a universe of infinite economic expansion. The gods of Casino- Capitalism had become Cosmos, and Communism was disgraced in the ashes of 'evil empires' and other such dragons that had been slain at 'the end of history'. The beasts of growth and greed had slaughtered the God of fair play. Equity was dead and efficiency triumphant. Do you remember all that?

What was and has remained vivid for me all the years since then was that the ethic of equity and survival was obviously already quite 'normal' for you. And while I was only to discover later that you had been frequently punished for thinking this way and would be more, at that moment in my life it was comforting to me that someone had arrived from the blue yonder of Hampstead on a bicycle with a commitment to this simple, decent, yet logical attitude.

It is now 30 years since that link and our friendship through it was made. What was true then has remained true to this day. I suspect it has been true through the ages. The way to salvation is hard to find and like a razor's edge. It takes self-understanding to find it and persistent courage to focus this effort on a constructive gentleness with other beings, as distractions and provocations to do otherwise are frequent and pervasive.

However, you had spotted that global climate change was uniquely forcing a dilemma on humanity that made the thesis of 'equity and survival' the logical imperative within which context the purely moral impulse resides. Unabated, climate change says that any ideological resistance to the moral impulse is subsumed by the negative expression of the thesis, in other words 'no equity, no survival'. Opponents of the thesis face the problem of being not so much 'not good' as 'not smart', as not to survive is to lose.

Those who demurred were often nothing more than sceptics who had presumed that any power for change is in the institutions of realpolitik, and that they - indeed we all - are condemned to behave as just spectators or fatalists, sometimes acting as well-paid experts and as consultants, groomed in a none-too-subtle form of obedience.

You were never one of these. 'Equity and survival' says that now, if there is any power for change, it is first and foremost in the institution of the argument itself and its proper understanding and advocacy. I have felt for all the time that I have known you that this point was what we fundamentally shared and that with you it was more strongly shared than with any of my other nearest long-time campaigning colleagues. The power of this insight is fundamental yet also dangerous. Power is always awesome because of the challenge it issues and the responsibility that it invites.

The simple logic of equity and survival has remained at the heart of what I long ago came to see as a basis for realising a politics beyond ideology. And armed with this argument, and the confidence derived from this recognition of its power, I believe that you and I, and all of us who argued this way, helped to shape the struggle for the necessary institutional changes more decisively than those with purely moral and/or merely technological preoccupations. This insight has helped to keep the iteration and development of the argument persistent, effective and responsive.

It has been the new neutrality. And now, after these 30 years, we can all see that the argument has decisively taken root in institutions of governance and social policy, that back in the 1990s were still captive to the ideological obedience of 'efficiency' and the loaded neutrality of laissez-faire. Sustainable development is now pursued in a way that is quite uncontroversially guided by a constitutional foundation of equity for survival. About this we can feel some sense of achievement.

Yet what Tony Blair, then prime minister, said back in the year 2000, sadly remains true to this day. All these changes recognised, humanity continues to create its problems faster than it solves them. In real terms our progress remains too slow and it is difficult to escape from a persistent feeling of failure. Our future is now really being determined by the ever more emergent and frightening reality of global climate changes, and effectively a global security crisis now exists because of this. The rise in atmospheric greenhouse gas concentrations and global temperature is still out of control because of uncontrolled pollution.

It is true that we have also known from the outset that no matter how rapidly we all made progress in the effort to institute the culture of equity and survival, and then the consequences of implementing 'Contraction and Convergence', changes for the better would never outpace the rate at which climate change- related damages unfolded during the final

decades of our lives. What we didn't know then was just how badly the odds were stacked against us in the battle to make the rates of change for the better overtake the rates of change for the worse. This was the precautionary point we had been urging all along. In the face of uncertainties about how fast humanity is approaching the zone where sudden and traumatic outcomes become possible, prevalent and even completely unavoidable, playing safe and not unnecessarily running risks should always have been the priority. And equity and survival said this. It showed from the outset that structuring for change among ourselves in concert - in a constitutional and comprehensive way - had to be preferable to having it forced upon us by indecision, adversity and adversarial chaos.

As you know, formal 'Contraction and Convergence' procedures on global emissions were finally instituted by the UN eight years ago. Subsequently, a context has evolved that has protected and reinforced the value of the numerous local initiatives emerging around the world on transport and other planning issues (the sorts of things you have also so persistently articulated and championed all your life). In the light of this I know it is a source of great satisfaction to you that not only has the global effort for resource conservation and sharing matured so visibly, but it has done so in such a way that the economic value of this conservation and sharing is recognised and rewarded as much as over-consumption is now discouraged and indeed penalised. For example, the agreement across Europe at the beginning of the last parliament to replace the tax and benefit system with citizen's income is probably the most radical transformation of social policy in the history of the European adventure. This is all quite amazing. One only has to remember how much of a status symbol large cars still were only ten years ago and to see how much of a stigma they are now, to recognise this. It seems that the work ethic is being superseded by the walk ethic and that perhaps we have not completely grown old in vain.

Yet in the last 20 years, because of the only partially retarded pollution of the atmosphere, humanity as a whole has added another 0.5°C temperature rise to the global average, 'Contraction and Convergence' notwithstanding. This is as much as humanity triggered in the previous 100 years. Conservation, sharing, global institutions of governance, enlightened social policy, high technology and the growing emergence of renewable and non- polluting sources of energy - welcome as all of these are - have not been able to prevent this rise in temperature. Extreme weather events and the damage resulting from these are still increasingly frequent and traumatic around the world.

This is a terrible legacy to leave to the children and grandchildren of today. Climate change will continue to worsen throughout their lives unless they are consistently more successful than we have been at slowing the rates of destruction and entropy in favour of overall ecological recovery

and renewal. This dilemma remains at the heart of the human destiny. Our descendants will need the honesty to recognise this and persistent skill, courage and invention to deal with it effectively. But most of all they will need an understanding that without real and sustained compassion, all our efforts and theirs will be dissipated as they become locked into irreversible decline. I'm not sure at all that, if they find this too, they will be able to claim that they learned it from us or from history. But then perhaps that really is the power of equity and survival. It is quite new.

All these years I have loved and admired you for having had the skill, the courage and the compassion to speak and act in its name.

Aubrey

30 OCTOBER 2021

Ahead of Time
From John Pinder

The colder light, of day I woke from that dream this morning, on your 90th birthday, in a Britain that has indeed been much influenced by your virtue. But the world has not been sufficiently influenced by mine: not only, perhaps, owing to unfavourable fortuna, in other words a tougher nut to crack, but also to my less incandescent virtue.

You expressed warm sympathy for the idea when I first consulted you about it and you put me in touch with the remark- able Aubrey Meyer and his Global Commons Institute, who introduced me to the concept of Contraction and Convergence: the steady reduction of emissions, over a period of perhaps a third of a century, at the end of which a sustainable level of global emissions would be shared among the world's states on the basis of an equal quantity per head of population. When I showed you a draft of my paper on a global community for sustainable development before its publication in 1999, however, your reaction was that the tone was not urgent enough, the cuts not deep enough, the pace proposed not fast enough: fire against the drip of water on the rock. But there has been progress. The global community is a major achievement of the EU's common external policy. The partnership with India is beneficient and strong. The US, China and other sceptical nations seem to be coming round. And your ideas have become part of the global intellectual concerns. PSI, replete with brilliant young researchers, now dwarfs the Brookings Institution in size and has a powerful influence on policy throughout the European Union and around the world.

There is light at the end of the tunnel; and you may see the world emerge from it before you celebrate your 100th birthday.

Yours, it really does begin to feel like ever

John Pinder