

10 March 2001

## Give us a plan

We know we can beat climate change. Just one thing is missing

SHI PENGFEI is bemused. His country, China, leads the world in installing wind turbines—a technology UN scientists said this week is vital for fighting global warming. More than 100,000 farmers run their own wind generators in Inner Mongolia. And Shi, who works for China's State Power Corporation, wants to harness Mongolia's winds to power Beijing. There is World Bank cash, Inner Mongolia wants to sell, but Beijing, a city choking on coal fumes, won't buy.

Why has the wind gone out of the industry's sails? Local political wrangling has stopped China meeting its national targets for installing turbines. Shi's problem is mirrored in the latest report this week from the Intergovernmental Panel on Climate Change (see p 12).

The report looks at fixes for global warming and says that "known technological options" could help the world to prosper while preventing greenhouse gas concentrations rising higher than twice pre-industrial levels. The IPCC argues that progress in fuel cells and wind turbines has been far faster than anyone imagined. Great news, except that the panel also argues that politicians don't yet know how to implement the technologies.



Those Chinese wind turbines typify the problem. China is not the main generator of greenhouse gases. But any plan for saving the world's climate must let countries like China—which has the world's largest coal reserves—get rich on other energy sources. How do we make it happen?

Here is one blueprint. First world governments agree on a ceiling for greenhouse gas levels in the atmosphere—say, twice pre-industrial emissions. Then emissions entitlements are calculated for every country to ensure we keep below the ceiling.

Setting these targets will depend on governments "converging" on a formula based on national populations. To minimise disruption, overpolluters could buy spare permits from "underpolluters".

Such a system, called "contraction and convergence", would be fair and economically efficient, and create incentives for clean energy technologies. Its backers include France's Jacques Chirac and Britain's Royal Commission on Environmental Pollution. But not the IPCC's policy works. Their summary for policy makers ignores this eminently sensible blueprint. The authors, fighting shy of saying anything "political", do not even clearly back a ceiling on greenhouse gas concentrations.

This is madness. Clearly, the IPCC can't endorse one blueprint. But it should lay out the options. And contraction and convergence is only one. This report is the third in recent weeks from the IPCC's various working groups. The first two, on the science and impacts of climate change, courageously explain the risks the world runs. This third one fails to take up the challenge.

All is not lost. In September, the three IPCC groups will complete a "synthesis" report on their work. They must take this chance to put things right, and spell out clearly how the world should head off climate catastrophe. Once politicians can see the method and the benefits, Shi can get back to work.

# EDITORIAL

## Bad move, Mr Bush

7 April 2001

The alternatives to Kyoto may be even harder to swallow

GEORGE BUSH is right about one thing: the Kyoto Protocol is a flawed treaty. But for Europeans looking on in horror as he tries to destroy it, one thing really sticks in the craw. Most of the flaws were put there by US negotiators trying to make the treaty palatable to business. Now, having made this ruffled bed with its mass of complicated "flexibility mechanisms", they refuse to lie in it.

Bush insists that he is not against action on global warming—only the Kyoto formula. So, putting disbelief and frustration to one side, maybe we can help him. We wrote here a month ago

about a plan called "contraction and convergence". It works like this. Initially, the world sets a ceiling on the maximum acceptable concentration of a greenhouse gas. Then it sets out a realistic timetable for keeping global emissions below that ceiling. Finally, it apportions to nations the rights to make those emissions according to their populations. Over 50 years, we could cut the global entitlement to perhaps half a tonne of carbon per person per year—about half what it is today. If nations want to

emit more than this, they would have to buy permits from countries with emissions to spare.

Most greens have traditionally rejected this formula as too idealistic. They preferred the Kyoto process, in which industrialised countries picked a figure and then haggled. But things are different now. And, oddly enough, contraction and convergence meets the main criticisms that Bush and fellow critics make about Kyoto. First, it includes developing countries, which get emissions entitlements like everyone else. Second, it meets most criteria of economic efficiency. Countries shopping around for emission permits will make every dollar count. Third, unlike Kyoto, it is scientifically coherent, as it is aimed at stabilising greenhouse gas concentrations in the air.

Every American is responsible for about 5 tonnes of carbon emissions a year, so this formula will still cost the US dear. But if Bush is serious about global warming, he should be thinking along these lines.





Corbis

## Shattering the greenhouse

We have the technology to halt global climate change, so let's use it

POLITICIANS may have lost the plot on how to halt climate change. But technologists are forging ahead with a host of innovations that could halt the rise in greenhouse gas levels, says a UN panel of climate change experts in a report published this week.

The Intergovernmental Panel on Climate Change says that technical innovation has been faster than anticipated five years ago, when it made its last assessment. Wind turbines, hydrogen fuel cells, efficient car engines and the technology to bury carbon dioxide underground could become practical ways to cut greenhouse gas emissions.

But critics believe that the IPCC has failed to give governments firm advice on how to make the new technologies work. They fear that the report, called *Climate Change 2001: Mitigation* will contribute to the political inaction that has followed last November's failed Kyoto Protocol talks on curbing climate change.

This is the third major report from the IPCC in the past few weeks. Meeting in Accra, Ghana, the panel of experts from over 100 countries assessed technical and policy options for halting the droughts, floods and extreme weather predicted by the two previous reports.

In an upbeat assessment, they said that "known technological options" could, if widely adopted, stabilise CO<sub>2</sub> concentrations in the atmosphere in the range of 450 to 550 parts per million. This is between 60 and 100 per cent higher than pre-industrial levels. In the past, IPCC members have often suggested 750 ppm as a more achievable target.

"The potential for technology innovation leading to clean energy and other climate-change solutions is extraordinary," said Klaus Toepfer, director of the UN Environment Programme, a sponsor of the IPCC. "Governments need to unleash this potential."

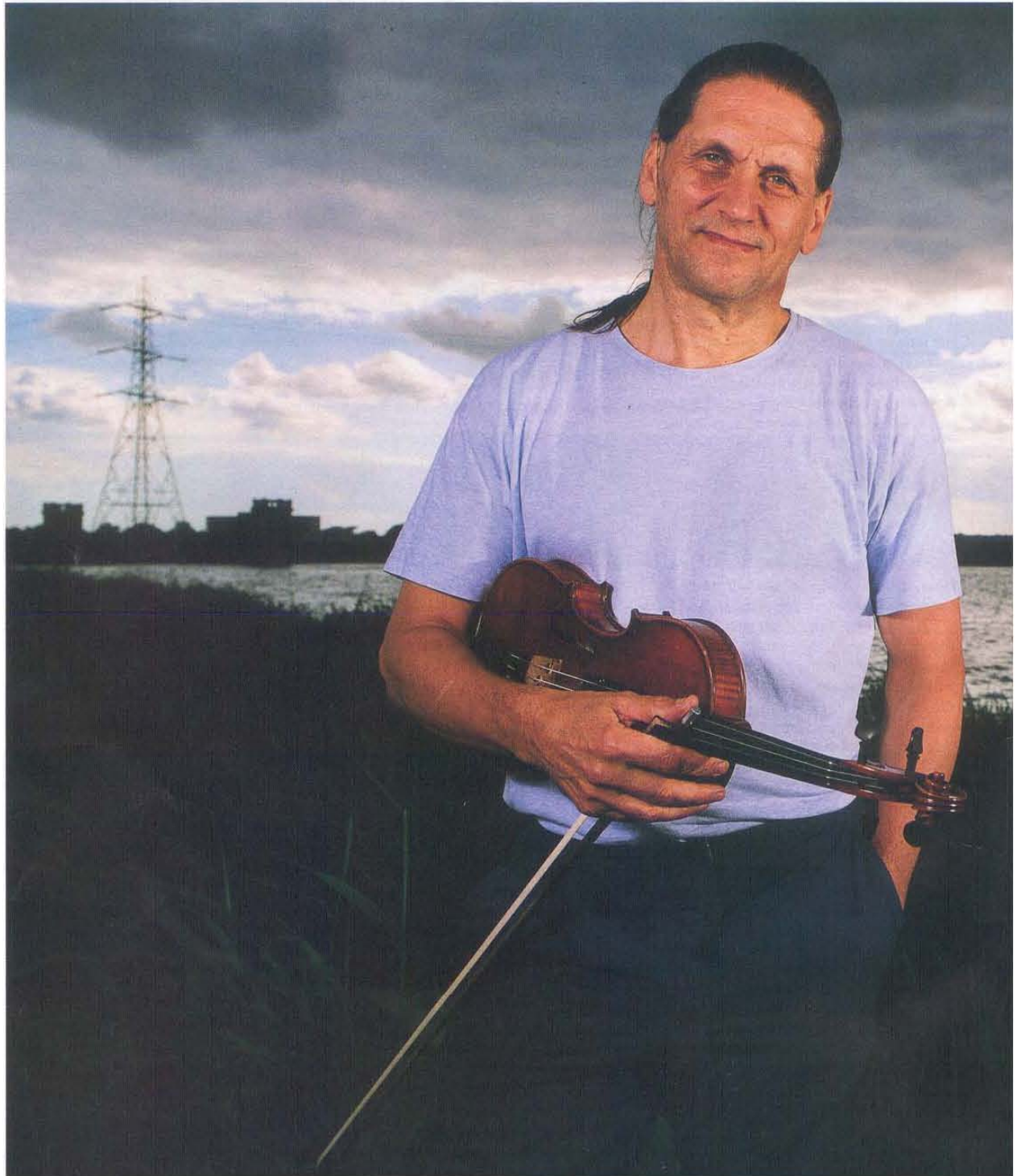
However, critics of the report, including senior scientists within the IPCC, say that its authors have been "vague and evasive" in their recommendations. They believe that the world should adopt a firm "ceiling" for CO<sub>2</sub> levels in the air—say, 450 or 550 ppm. This would allow governments to cut their emissions to stay below the ceiling.

"It is increasingly obvious that a stable atmospheric concentration target must be set. This needs to be conveyed urgently to policy makers," they said last week in a letter to Bert Metz, who co-chaired the report's working group. The letter's chief author, Aubrey Meyer of the London-based Global Commons Institute, said the report noted that the cost of meeting a target of 450 or 550 ppm would be substantially greater than for a 750 ppm target. But it failed to assess the likely benefits of a tougher target, such as fewer floods and droughts.

Meyer also attacked the report for suggesting that more scientific information was needed about "climate change processes and impacts" before governments set long-term targets. This cautious language contrasts with the much tougher tone of the panel's two other previous reports, which both stress growing certainty about the causes, pace and impacts of climate change. **Fred Pearce**

More at: <http://www.ipcc.ch/>

# OPINION INTERVIEW



With the Kyoto Protocol on the verge of collapse, the search is on for a formula to get us off the hook of global warming. One of the main contenders is a proposal by a professional violinist with no scientific training. **Aubrey Meyer** has entranced scientists and enraged economists and many environmentalists with his idea, but it is winning high-profile backers, such as China and the European Parliament. He says it embraces science, logic, fairness, even art. Could it yet save the world? **Fred Pearce** gets to the bottom of it

## Calling the tune

### How did a musician get into the high politics of global warming?

I had been a practising musician and composer for 20 years. In 1988, I wanted to write a musical about Chico Mendes, the assassinated Brazilian rainforest campaigner. I began to explore rainforest politics and was overwhelmed by a sense of tragedy. I could not understand why anyone would want to murder a butterfly collector. Soon afterwards I joined the Green Party, where four of us formed the Global Commons Institute in London to fight to protect the planet's shared resources—the forests, the atmosphere and so on. We scraped together money from supporters, and I've never stopped since.

### Did you have any background in science?

I didn't have any background in maths or science. My only real contact with numeracy until GCI got going was the kind of kinetic numeracy of music, its structure, and the discipline which goes with that.

### You developed the formula called contraction and convergence. What is that?

At the early conferences on fighting climate change I saw this hideous charade being played out in which the politics was divorced from the science. The UN's Intergovernmental Panel on Climate Change said we needed a 60 per cent cut in emissions of greenhouse gases to halt global warming. But the politicians had no plan even to stabilise emissions, let alone cut them. So I did some simple calculations. To do what the IPCC wanted meant reducing global emissions to an average 0.4 tonnes of carbon per person

per year. That was the contraction part. It seemed to me that the only politically possible way of achieving that was to work towards national entitlements based on size of population. Today, some nations are emitting 20 times more per head than others. The US, for example, emits 5.2 tonnes per head, Britain 2.6 tonnes, India 0.2 tonnes. This means that India could double its emissions while the US would have to come down by more than 90 per cent. That is the convergence part. Clearly no country is going to be able to make those changes immediately, but the beauty of the system is that it allows them to trade in emissions permits.

### Other people, like Anil Agarwal, the Indian environmentalist, had similar ideas at that time. Why did yours stick?

Yes, Anil had got very angry when some leading American environmentalists tried to suggest that India, which has one of the world's lowest per capita emissions, was one of the leading causes of global warming because of its large population. But the case against such crazy views wasn't getting anywhere—we needed a new language. I had become fascinated with the graphics capabilities of computers as I saw them as the visual equivalent of musical communication, a universal language. So at GCI we produced large colour graphics showing how countries could converge towards equal per capita emissions while bringing overall emissions down by 60 per cent. You could argue about the rate of the contraction and convergence, of course—whether it should take 20 or 50 years—but basically we had synthesised the

whole problem and the whole solution onto a single graphic ([www.gci.org.uk](http://www.gci.org.uk)). For musicians, mathematicians, scientists, it was, frankly, beautiful. I took 300 of these graphs to a climate meeting and put them outside the conference door. They went in 30 seconds. I think contraction and convergence cuts to the chase. It flushes all the politicians out of their hidey-holes.

### Why did it take a musician rather than scientists to come up with it?

Many scientists have taken to it, but perhaps it needed a musician to produce it. Maybe the idea is not intellectual in the usual scientific sense. It has rules but it is also active, and it embraces creativity. It has harmony, rhythm and form. And it embeds an ethic—of equity and survival. We musicians spend a lot of time on repetition and variation. I kept taking variants of these graphics to UN climate meetings.

### But it sounds rather idealistic. It may be a fair carve-up of the atmosphere, but the world doesn't really work fairly, does it?

Initially, fairness was just what we were pushing for. I remember quizzing a woman economist at the World Bank on her cost-benefit analysis of cutting greenhouse gas emissions. I pointed out that small island states like the Maldives would almost certainly disappear under her plan. She said: "What's all the fuss about small island states? They will just be compensated; and we can send lifeboats." She had no sense of the depth of disregard for real people contained in that. But the truth is that the rich are as vulnerable as the poor to climate change. So while the fairness of contraction and convergence is a powerful argument, I personally don't think it is the key. The stronger argument is the purely logical one. It doesn't solve all our problems at a stroke, but it creates the framework in which we can solve them. If people disagree, then the challenge for them is to think of something better.

### Presumably, the big environmental groups embraced the idea.

Far from it. Many have refused to talk to us or even acknowledge our existence.

### How come?

I think they took a judgement at the start of the climate debate that the enormity of what we faced was so devastating that you couldn't spring it on ordinary people all at once. And they didn't want to frighten the



politicians with grand strategies. They thought contraction and convergence would do that. Instead, they called for sharp cuts in the emissions of developed countries only. It may have been politically correct, but the approach was random and timid.

**Greenpeace, timid?**

Yes. They were part of this timid approach. They avoided facing the global dimension of the problem. It was tokenism.

**But broadly that was the route taken by the Kyoto Protocol. So the timid approach worked, didn't it?**

Well, I'd say that the timid approach is why we are in the mess we are in today. The US has ripped it up.

**You have annoyed the economists, too.**

They annoyed me. The analysis produced by the mainstream economists suggested that this problem was insoluble; that it was too expensive to save the planet. This is because their work conceals daft and immoral assumptions not only about the expendability of natural resources but also of human beings. Climate change is not an economic problem. It is an organisational problem to do with protecting the real atmosphere, the only one we have. It is not good enough for them to just nod at the scientists and say: "Thank you, now we'll tell you how the world works."

**What response do you get from scientists?**

They really do make an effort to remain calm and neutral in their judgement. Many see that contraction and convergence tries to mirror that objectivity by attempting to respond directly to what scientists say is the situation. But many identify with us in a moral as well as a logical sense. They are also human beings. They have children and think about the future.

**Politically, your ideas have not got far yet. By criticising the Kyoto Protocol, have you played into the hands of its opponents, like President George W. Bush?**

Bush acknowledges the problem is real and serious and like everyone else he has to face this. Kyoto is probably better than the chaos that is now on the cards, but the odds for getting this deal are dwindling. Anyway, as I see it, the protocol is Plan A. At best, it will moderate increases in emissions a bit—until 2012. So, regardless of what happens to it, there has to be a Plan B. The real question is whether contraction and convergence follows on from the protocol or picks up the pieces when it falls apart.

**Who backs it today?**

The European Parliament, China, the non-aligned movement, many African nations, the Red Cross, Britain's Royal Commission on Environmental Pollution and Jacques Chirac have all said they support the idea in princi-

ple. Many economists say they have no real quarrel with it, provided it allows countries to trade their emissions entitlements. If the revenues from trade are spent on renewable energy, it will bring the efficiency gains that the economists are so keen on. And it will allow the poorest countries with the low emissions to sell their spare entitlements for profit.

**What about the US government?**

Some senators already support it. It is the only practical proposal that does what they've asked for, namely simultaneous emissions controls on all countries. It promotes economic efficiency through emissions trading and enables progressive American firms to get involved and make money. That's certainly what I would tell George W. Bush.

**That makes you sound like an arch-capitalist, rather than the communist you have sometimes been labelled. How come the Chinese like it?**

False dichotomy. The Chinese came on board, at least tentatively, when they realised I was talking about distributing emissions rights. They liked the idea of equal rights rather than equal restrictions. But this is high politics. The US Energy Department got very interested when I said I was going to Beijing. They said: "You'd better watch your back because you're gonna be watched." I got quite nervous. I'm not a diplomat, I'm just a musician. But the idea is not leftist, or even rightist. The morality you can take or leave, but the logic is inescapable.

**But don't developing countries have the right to tell the rich countries that they created the problem and should solve it?**

So far, most developing countries have indeed united around that message. That may be morally valid, but it is a disastrous strategy for them as well as for the rich world. The carrot for them in adopting contraction and convergence, apart from saving the climate, is that in return for controlling emissions they could get paid to convert their economies to run without fossil fuels.

**So your formula meets the needs of both the US and the developing world?**

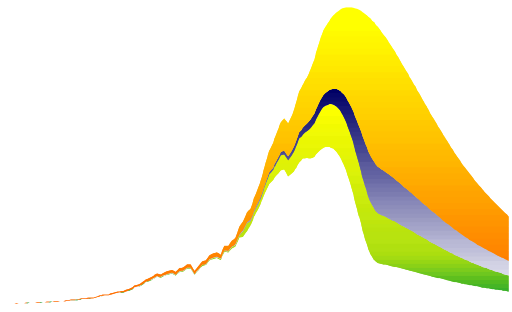
Yes. It's a framework for the retreat from our dependency on fossil fuels. The way I see it, the world starts a race to get out of carbon rather than a race to get into it.

*Contraction & Convergence* by Aubrey Meyer is published by Green Books

# GCI - "equity and survival . . . . ."

15/12/02

Bert Metz  
Co-Chair IPCC WG3  
RIVM - PO Box 1, 3720 BA Bilthoven  
The Netherlands



Dear Bert

## Summary for Policy Makers (SPM) IPCC WG3 Third Assessment

Well done on coming near to the completion of the drafting process of climate mitigation policy. I can confirm how difficult this has been for all involved. I am sure you must be relieved to be nearing the end of this ambitious but arduous undertaking.

The upwardly revised projections of temperature increases from Working Group One and the recently sharpened warnings of increasing damages coming from Working Group Two, confirm the trends of climate change as "devastating" and do indicate that, "we are in a critical situation and must act soon." <http://www.gci.org.uk/Refs/C&CUNEP11b.pdf> [WEF 2000 CEOs & Ewins/Baker 1999].

It is now therefore the grave responsibility of Working Group Three, the Policy Working Group, to provide from the available literature, all substantive guidance to policy makers that holds the potential to be globally effective against the yet further and potentially uncontrollable acceleration of human-triggered global climate change.

In the light of this, it is therefore encouraging to find that "Contraction and Convergence" is presented in the Third Assessment as, "taking the rights based approach to its logical conclusion." Since quite obviously all approaches to global climate policy are inherently 'rights-based', this means that C&C effectively represents the logical conclusion of them all. It is after all - and as we have argued throughout the decade gone by - the meta-logical precautionary framework for action under the UN Treaty if the climate problem is to be solved.

And it is within this that the otherwise uncertain and unguided sequence of decision-taking on mitigation policies and measures needs to occur. Efficiency and prosperity will be the result of setting a global ghg concentration target [and hence contraction budget] based on precaution with subdivision based on the equity and logic of a global timetable of convergence within this. The reverse proposition is simply more randomness and drift, dangerous and quite obviously absurd.

There is now long-term frustration that there appears still to be resistance to this point amongst some authors, as it is increasingly obvious to most people that a stable atmospheric concentration target must be set - indeed the report affirms this - and that this is not going to be set or met by accident.

This logical point is fundamental. It is clearly in the literature you cite and it - if briefly - is reflected in its citation in the report. This needs now to be conveyed - urgently - to policy makers in the report's summaries.

And on behalf of all the advocates of C&C cited in the Reference document I am asking you to take the steps necessary to bring this out. Failing this, a residual character of randomness and drift in the summary will continue to dissipate the process that the IPCC exists to inform. None of us would want the IPCC reports or their summaries to be ridiculed for being vague or evasive on this point in this increasingly critical climate. Such an outcome is irresponsible, unnecessary and dangerous.

For your further information on the extent of support that is consistently growing for the 'logical conclusion', I include here (in the post) a further compilation of published technical, institutional - now commercial (the insurance sector) as well as political - support and advocacy for the C&C proposition. I am sure you will agree, this support is compelling for being so considerable.

With warm regards  
Yours sincerely

Aubrey Meyer  
Director  
GCI

Global Commons Institute (GCI), c/o 32 Carisbrooke Road, London E17 7EF  
mobile phone 0771 282 6406 e-mail [aubreygci@aol.com](mailto:aubreygci@aol.com) - website <http://www.gci.org.uk>  
Global Commons Network (GCN) - website <http://www.igc.topica.com/lists/GCN/prefs/info.html>

Julian Salt  
Loss Prevention Council  
Buildings Research Establishment UK

Roger Higman  
Friends of the Earth International  
Senior Campaigner (Climate and Transport)  
Friends of the Earth (E,W+NI),  
26-28 Underwood Street,  
London, N1 7JQ

Fanuel Tolo  
Climate Network Africa.

Matthew Coyne  
Policy Adviser  
Department for Environment  
Transport & Regions UK

James Bruges  
UK

Tammo Oegema  
Senior Economist at IMSA  
Amsterdam, The Netherlands  
GCN member

Richard Starkey  
Senior Research Fellow  
Centre for Corporate Environmental Management  
(CCEM)  
University of Huddersfield, UK

Andrew Simms  
Global Economy Programme  
New Economics Foundation  
Cinnamon House, 6-8 Cole Street  
London SE1 4YH  
England, UK

Marc van der Valk  
Barataria

Nur Masripatin  
Ministry of Forestry  
Jakarta  
Indonesia

Mayer Hillman  
Policy Studies Institute  
UK

Dr David Cromwell  
Southampton Oceanography Centre, UK

Mike Read & Associates  
P O Box 901  
Castlemaine  
Victoria 3450  
Australia

Tom Athanasiou,  
EcoEquity, USA

Joy Pagano  
UK  
Professor Daniel M. Kammen  
Director, Renewable and Appropriate Energy  
Laboratory  
Energy and Resources Group  
University of California, Berkeley  
USA

William C.G. Burns, Senior Associate  
Pacific Institute for Studies in Development,  
Environment, and Security  
654 13th St., Preservation Park  
Oakland, CA 94612 USA

Reggie Norton  
Justice and Peace Group UK

John Gordon  
Former Director  
Global Environment Research Council UK

Paul McConnell  
Coordinator  
Climate Action Network UK

Sergio C Trindade  
SE2T International, Ltd.  
1A Dickel Road  
Scarsdale, NY 10583-2117 USA

Victoria E. Long  
Graduate Student,  
University of British Columbia,  
Canada

Andrew McLaughlin. Ph. D.  
Professor of Philosophy  
Lehman College  
City University of New York USA

Stuart Liederman

Geri DeStefano, PhD  
Vancouver, BC

Alfred Lambremont Webre, JD, MEd  
Vancouver, BC

Caspar Henderson  
Senior Policy Officer  
Consumers' Association, UK  
Senior Correspondent  
Green Futures magazine, UK



Robert Randall  
The RainForest ReGeneration Institute  
1727 Massachusetts Avenue NW  
Washington, D.C. 20036 U.S.A.

Prof. Eduardo Viola  
Department of International Relations  
University of Brasilia  
C.P. 04359  
Brasilia, DF 70919-970  
Brazil

Hans Taselaar,  
Director INZET, Amsterdam, NL  
Association for North-South Campaigns

J N von Glahn  
Chairman Designate  
Solar Hydrogen Energy Group

Rosli Omar, Phd  
Save Our Sungai (SOS)  
Selangor, Malaysia

Elizabeth Cullen (Dr.)  
Co-chair Irish Doctor's Environmental Association

Derk Segaar  
Project Manager Climate Change  
INZET, Amsterdam, NL  
Association for North-South Campaigns

Matthew Paterson  
Keele University

Neil E. Harrison, Ph.D.  
Executive Director  
The Sustainable Development Institute

Helen N. Mendoza, Ph.D.  
Philippine Network on Climate Change

Gordon Gissing  
Retired research engineer  
Hill View  
Clunbury  
Craven Arms SY7 0HE  
Shropshire UK

Carol Brouillet  
The Who's Counting? Project  
California, USA

John Vandenberg  
Town Planner  
Tasmania

John Dougill.

András LUKÁCS  
President  
Clean Air Action Group  
Budapest  
Hungary

Lera Miles, PhD student  
Centre for Biodiversity and Conservation  
School of Geography, University of Leeds  
Leeds LS2 9JT, U.K

Jeremy Faull  
Ecological Foundation UK

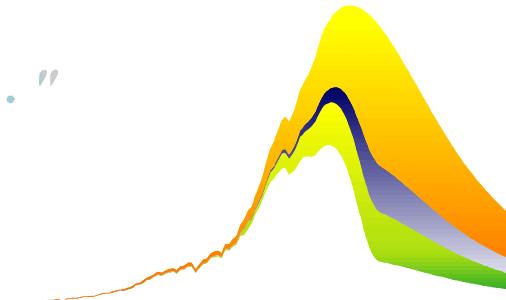
Prof Colin Price  
University of Wales  
Bangor  
Gwynedd

Prof PJM Phelps  
Chairman of ZEAL.  
South Africa

# GCI - "equity and survival . . . . ."

23/05/2001 17:27

Robert T Watson  
Chairman IPCC  
The World Bank Environment Department  
Room MC 5-119  
1818 High Street NW  
Washington DC 20433  
USA



Dear Bob

## RESOLVING FALSE DICHOTOMY IN PREFACE TO IPCC TAR SYNTHESIS

Thank you for your letter of the 30th of April. I note your advice that I address my concern to the relevant Technical Support Unit (TSU) with a copy to you. GCI's concern relates to text in the preface to the Synthesis Report. Since TSU personnel tell me that you are the author of that preface, I am addressing this letter to you with copies to them.

I affirm our appreciation of IPCC and its Third Assessment Report (TAR). TAR is an important advance in the understanding of the causes and effects of climate change. Much credit is due.

However, we remain concerned with the need to protect the credibility of IPCC as a whole and that, guided by this, the primary objective of the UNFCCC is to avoid dangerous global climate change as a whole. This means coordination. Attempting to secure this objective in a disaggregated way is self-defeating if attempts are not guided by and index-linked to the global precautionary decision already taken to establish the UNFCCC and frame - not guess - the route to its global objective.

Consequently, the wording in the opening paragraph of the preface to the Synthesis of the TAR is misleading. If, as you say, the TAR "*recognizes that there is no single global decision-maker and socio-political future, but rather that there are multiple decision-makers and multiple possible future worlds, each with their own plausible and consistent paths,*" the central challenge to decision-makers - to consciously reconcile their efforts in an effective common account - is lost.

As is, the remark seems to project a perpetual future dichotomy between the singular global atmosphere and the disaggregated plurality of global decision takers tasked from now on with its protection. I don't believe this meaning is intended; yet your statement conveys it and appears even to rebut the role and effort towards global governance already established in the UNFCCC.

Would it not be better for the TAR synthesis to reveal at the outset that this dichotomy must be resolved? It is surely false if the rising atmospheric concentration of greenhouse gas equivalent is to be stabilized at some point in future time at a pre-determined level that prevents dangerous global climate change, by global organizational intent and design, rather than by accident.

If you don't reveal this, an implication persists that the default is back to accident, and potentially even to feeding the worsening odds we are already faced with. Multiple scenarios will merge in the growing singularity of no choice and no rights in the global wrong of unstoppable climate change.

IPCC WG3 says contraction and convergence takes the rights-based approach to its logical conclusion recognizing that to trade global emissions rights, they must first be established. Analysts and policy makers are increasingly guided by this logic for fear of the accident that awaits us without it. This framework/guesswork choice faces us now. IPCC's synthesis should reveal not conceal this.

Yours sincerely

Aubrey Meyer

Global Commons Institute (GCI), 37 Ravenswood Road, London E17 9LY  
Landline 0208 520 4742, mobile phone 0771 282 6406 e-mail [aubrey@gci.org.uk](mailto:aubrey@gci.org.uk) - website <http://www.gci.org.uk>  
Global Commons Network (GCN) - website <http://www.topica.com/lists/GCN@igc.topica.com/read>