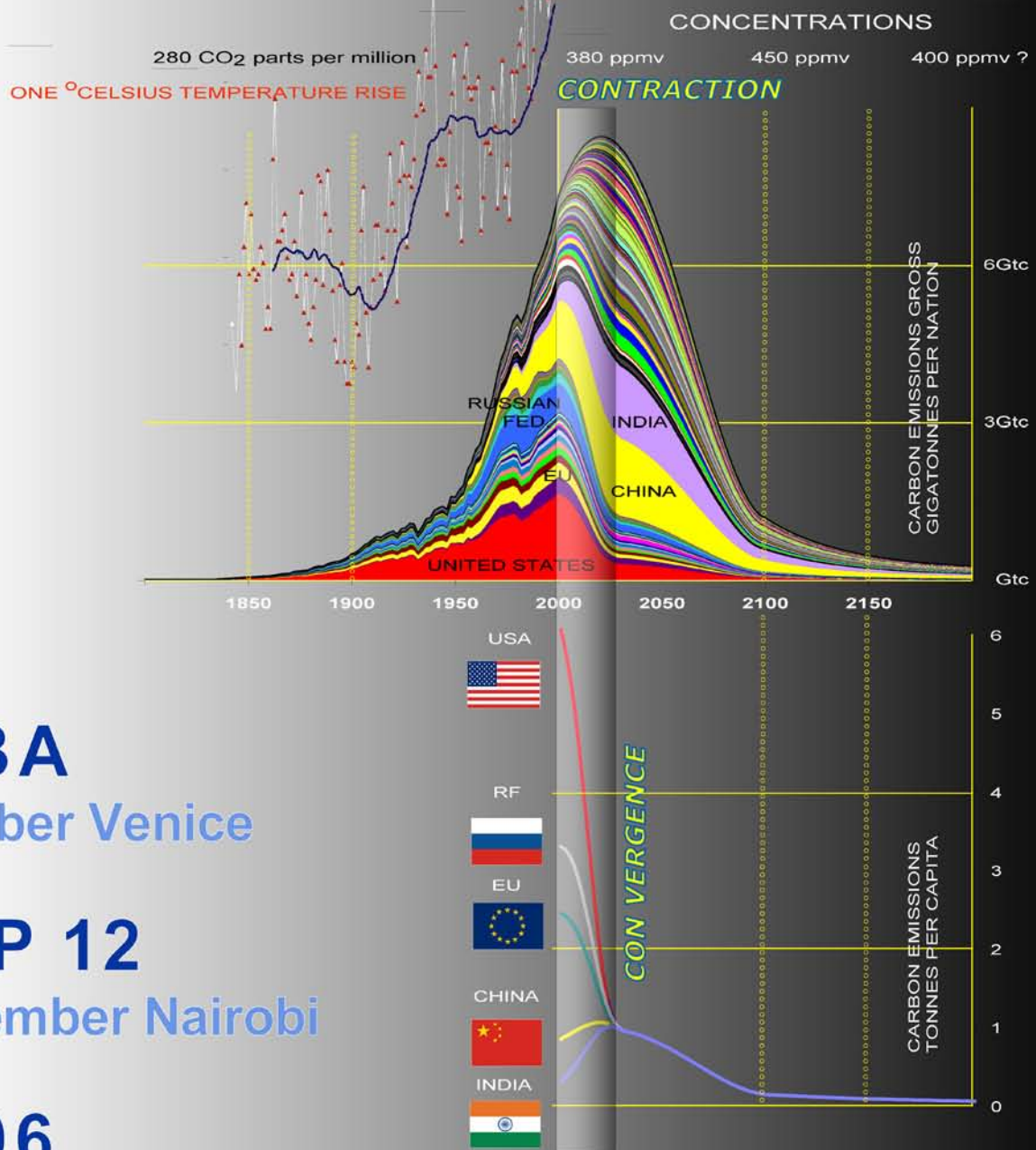


the United Nations agree . . .

The Future is C&C

"There is no other method of rationally and ethically guiding global reductions in greenhouse gas emissions." **RIBA 2006**

1°C GLOBAL TEMPERATURE RISE already. More than 1°C more is extremely 'dangerous'.



RIBA

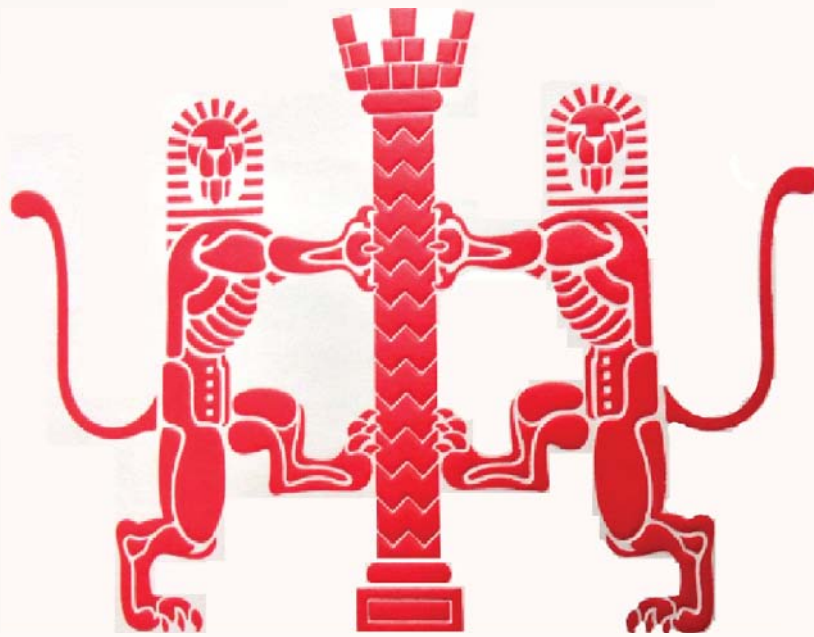
October Venice

COP 12

November Nairobi

2006

[... and counting ...]



This is to certify that

Aubrey Meyer

was elected on the 9th October 2007 into Honorary Fellowship of the Royal Institute of British Architects.

Founded in the year of Our Lord one thousand eight hundred and thirty four, and afterwards constituted under Royal Charters granted by King William the Fourth, Queen Victoria, King Edward the Seventh, King George the Fifth and Queen Elizabeth the Second, a body politic and corporate for the general advancement of Architecture, and for promoting and facilitating the acquirement of the knowledge of various Arts and Sciences connected therewith.

In witness whereof the Common Seal has been hereunto affixed by the authority of the Council on the 9th of October.

President
Sunand Prasad

Chief Executive
Richard Mastilov

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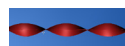
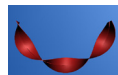
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Contraction and Concentrations

on-line at: - [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)

Whatever future level of stable atmospheric CO₂ concentrations is deemed 'safe'

. . . . a future full-term global emissions contraction budget is required by definition to achieve it.

This is true because atmospheric concentrations are a response to emissions cumulatively.

Three contraction:concentration scenarios are shown here

. . . for 350, 450 and 550 parts per million by volume [ppmv] of atmosphere.

The carbon from one part per million CO₂ has a weight of ~ 2.13 billion tonnes of carbon [2.13 GtC].

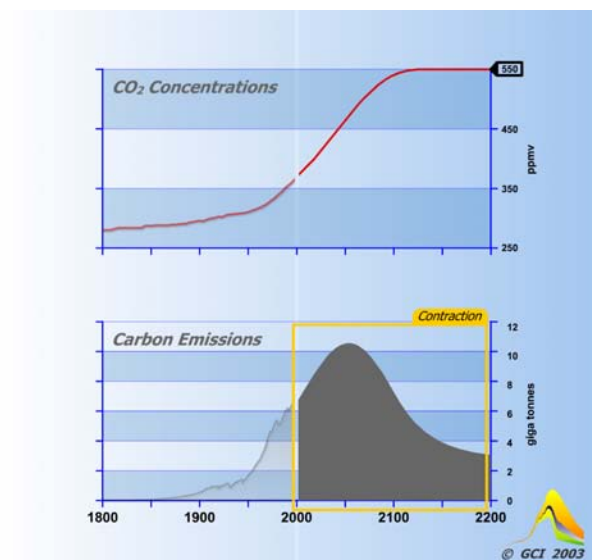
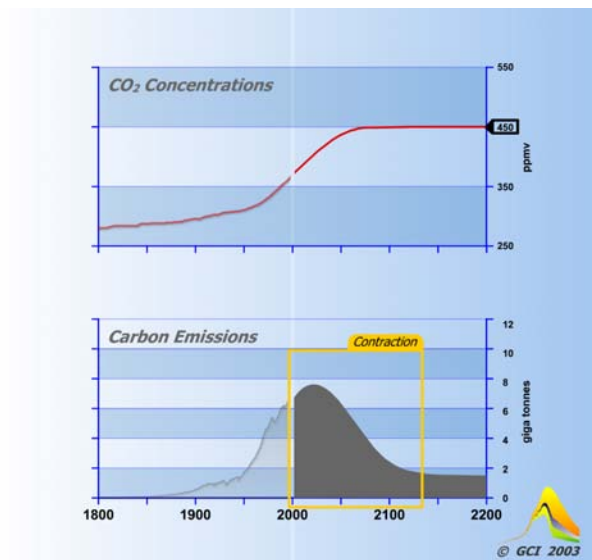
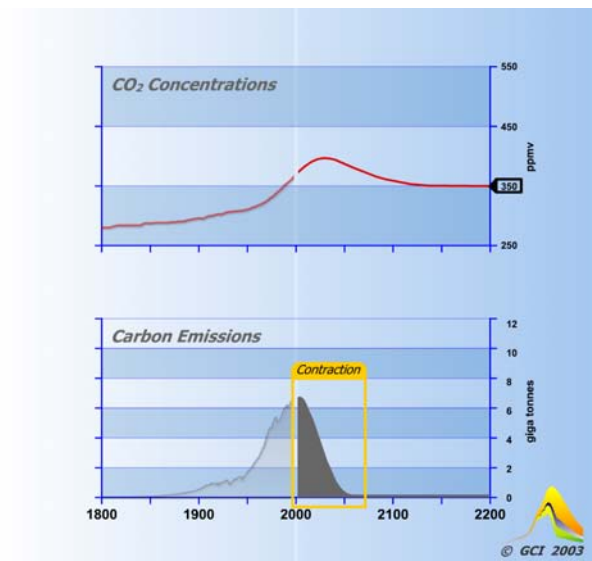
Human emissions from fossil fuel burning have been rising at ~ 2% a year since 1800. The current output is over 6 billion tonnes of carbon a year and rising.

The higher we allow this level to go, the greater are the dangers of runaway global warming and climate change.

So far the atmosphere has been retaining about half this amount each year, with the other half returning to the biosphere where natural sinks have been enlarging partly reabsorbing the increase.

Recent evidence shows that the rate of reabsorption is reducing and the rate of atmospheric retention is increasing.

This suggests that the natural sinks are saturated and in some cases turning to sources themselves e.g. forests.



Contraction and Convergence [C&C]

on-line at: - [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)

Whatever level of atmospheric CO₂ concentration is deemed to be the 'ceiling' on what is 'safe', the effort to keep concentrations at and/or below that level will require an inclusive full-term global contraction budget of future emissions to achieve it.

This by definition means that international shares in this will converge.

Many have taken the position since 1990 that the standard for convergence should be per capita globally. The ethical case for this seems self-evident as the atmosphere is a global public good.

GCI takes the position that at the first order of argument, any other standard will remain too contestable to organize.

Future emissions permits are being negotiated and pre-distributed as 'tradable emissions entitlements'.

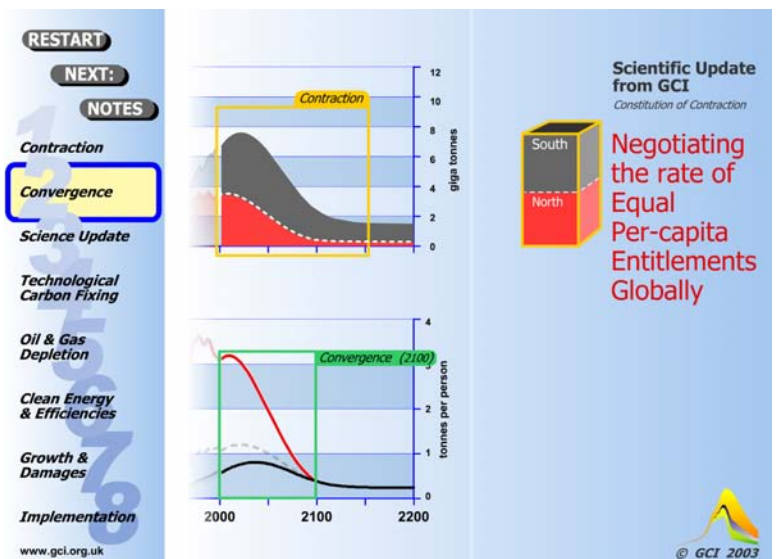
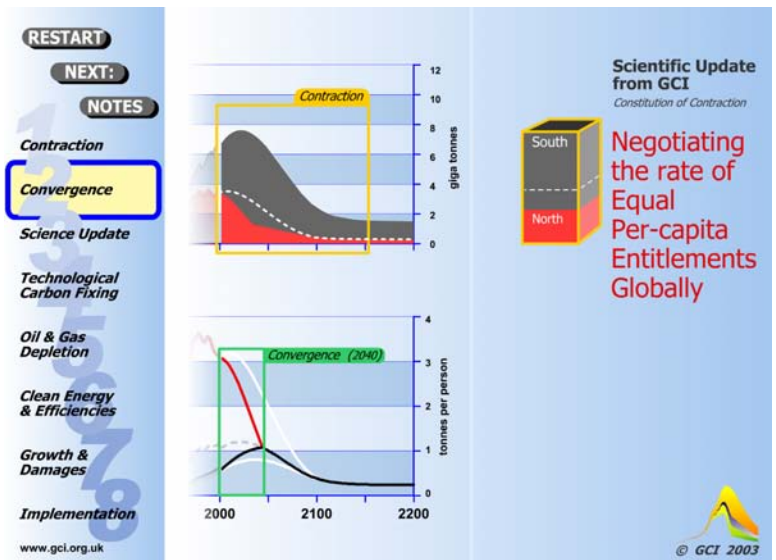
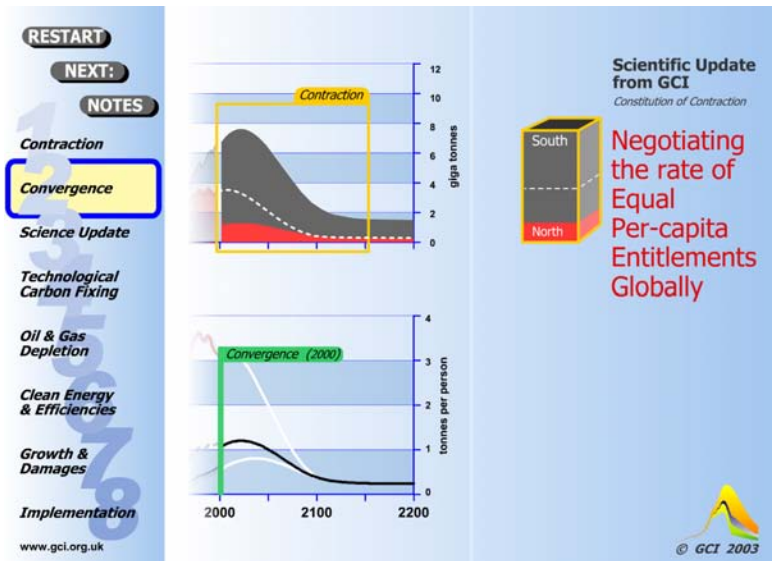
Thus they are commercially valuable and by definition not identical with the actual emissions that will occur.

80% of emissions accumulated in the atmosphere so far have come from the 20% of global population who have lived in the industrial countries.

In order to settle this historic debt against the development opportunity cost to the industrialising countries, GCI has also proposed that the rate of convergence should be accelerated relative to the rate of global contraction.

Here convergence is shown at three rates; immediate, by 2050 and by 2100.

It seems likely that a compromise rate will be agreed around half way between the beginning and the end of the contraction budget.



C&C - Sunrise, Moonshine and Damages

on-line at: - [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)

Clean energy technology is already available in non-polluting and renewable forms, such as wind-power and photo-voltaics.

As we achieve stable concentrations with global contraction and convergence, the volume of energy consumption might double, as shown here in the 'sunrise' scenario.

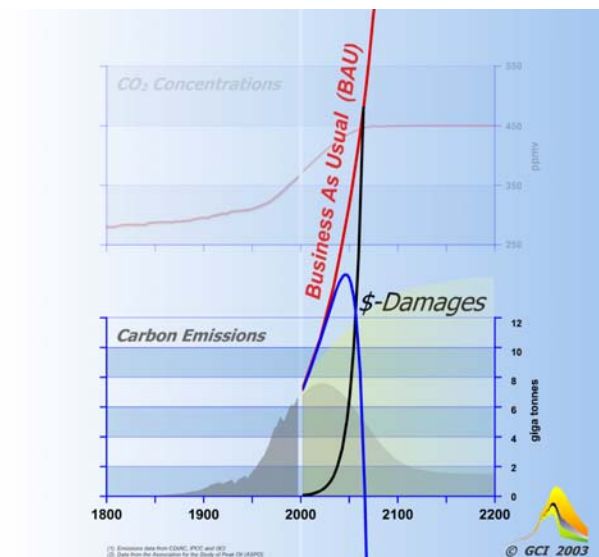
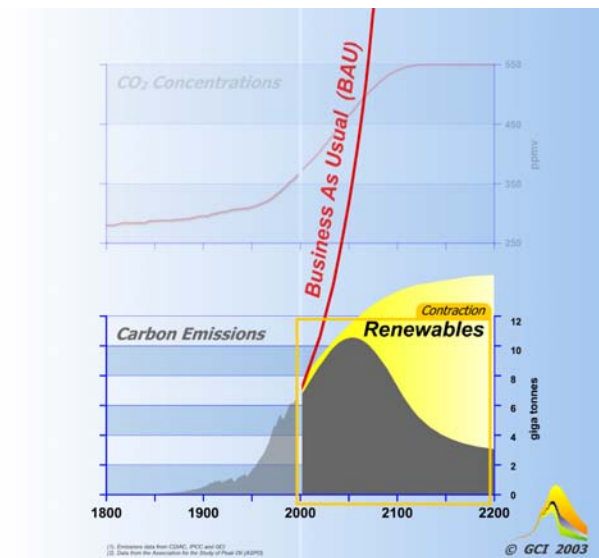
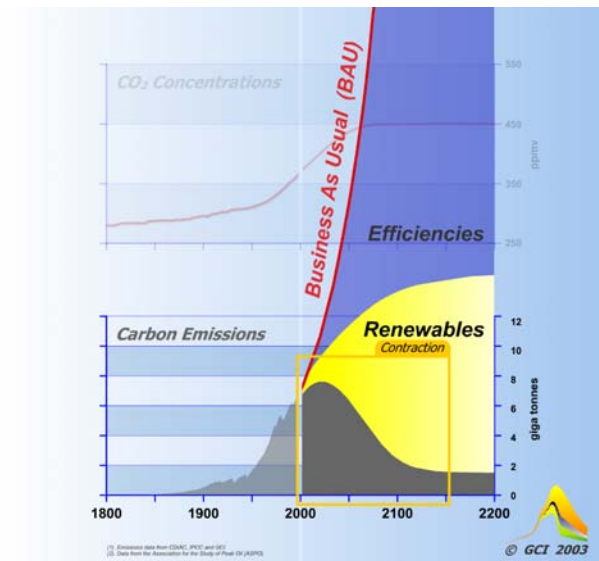
Some economists insist that the economy as a whole will continue to grow at a constant rate due to what they call 'efficiency gains'.

GCI takes the view this is 'moonshine'. The economy cannot grow indefinitely on a finite planet.

Moreover, economists largely ignore the mal-distribution of "Expansion and Divergence" where the trend has persistently been for one third of global population have 94% of global purchasing power and the other two thirds have the other 6%. [See pp 12 and 13].

Furthermore, with increasing damages coming into play as a result of the climate change that we have not managed to avoid, there is the increasing tendency for the growth to become 'uneconomic growth'.

This is portrayed in the lowest image here where growth at 3% a year is gradually overtaken by damages growing at 6% a year [as recorded by the Re-Insurance Industry]. Unless these trends are averted, climate change damages will bankrupt us all.



Carbon Cycle and Sequestration

on-line at: - [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)

Recent carbon-cycle modelling from the UK Met-Office 'Hadley Centre' suggests that when this effect is taken into account, future levels of atmospheric CO₂ concentrations associated with a contraction budget that would have yielded an outcome at 450 ppmv would in fact give an outcome nearer 550 ppmv.

These estimates show that a smaller and more rapid emissions contraction budget would be required to achieve a 450 ppmv outcome.

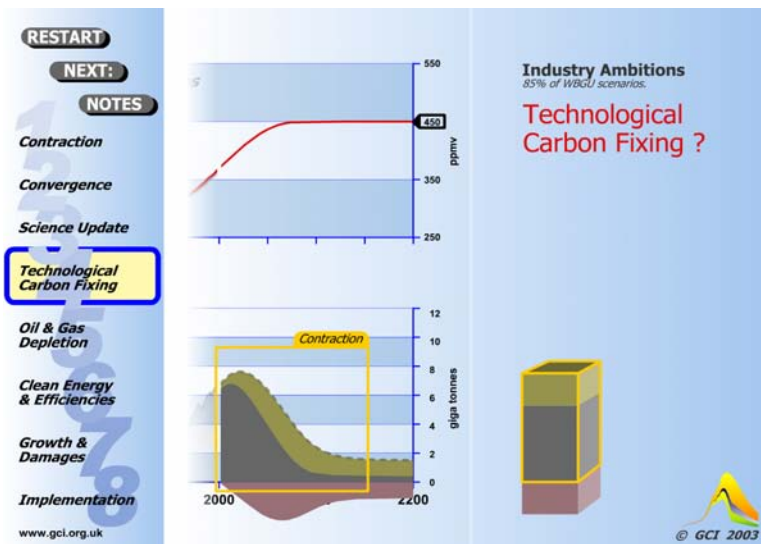
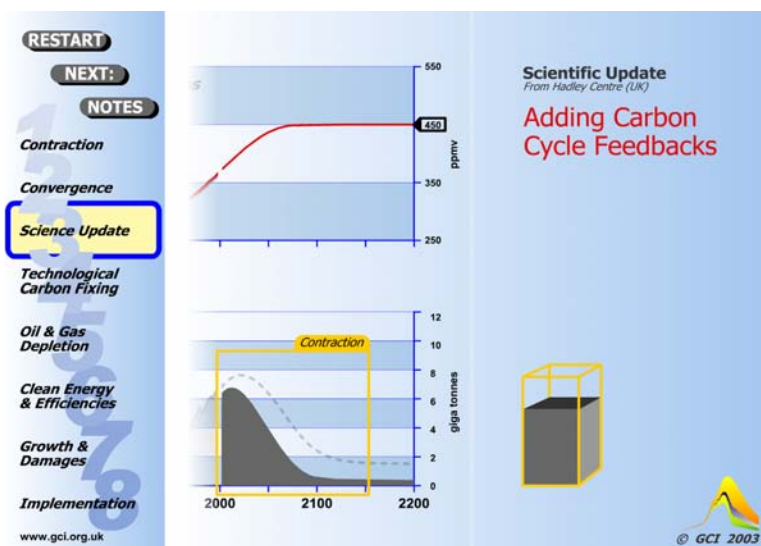
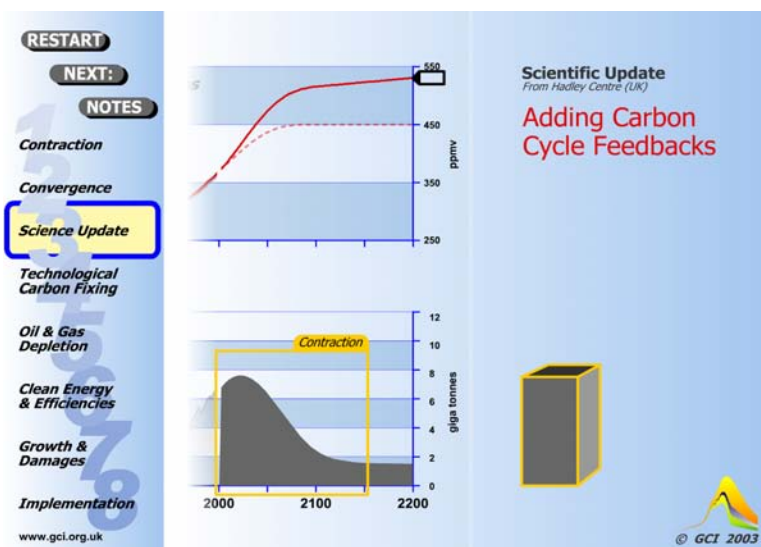
Yet more recent evidence shows that these estimates need to be revised downwards yet again.

Soils beginning to release CO₂ and in the melting tundra threatening to release Methane.

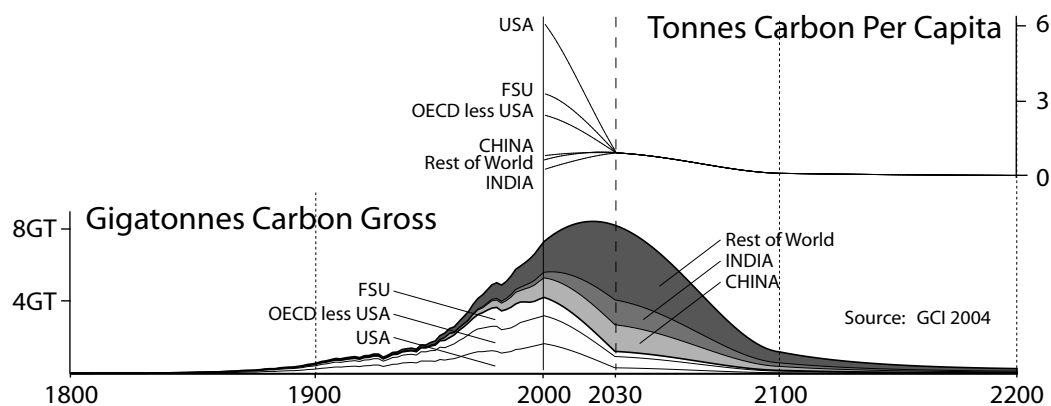
One of the technical options suggested to try and mitigate this is the re-capture of CO₂ emissions [where these result from fossil fuel burning] followed by the deep disposal or geological sequestration of this capture.

The figure shown here [up to 2 GtC/year] has been suggested in scenarios published by the German Advisory Council on Environmental Change [WBGU].

The technology is unproven and the energy and economic cost of doing this on this scale, formidable.



GCI BRIEFING: "CONTRACTION & CONVERGENCE"



This example shows rates of C&C negotiated as regions.
This example is for a 450ppmv Contraction Budget, Converging by 2030.

The Global Commons Institute [GCI] was founded in 1990. This was in response to the mainstreaming of global climate change as a political issue. Realising the enormity of the climate crisis, we devised a founding statement on the principle of "Equity and Survival". [1]

In November 1990, the United Nations began to create the Framework on Climate Convention [UNFCCC]. GCI contributed to this and in June 1992 the Convention was agreed at the Earth Summit in Rio. Its objective was defined as stabilizing the rising greenhouse gas [GHG] concentration of the global atmosphere. Its principles of equity and precaution were established in international law. Climate scientists had showed that a deep overall contraction of GHG emissions from human sources is prerequisite to achieving the objective of the UNFCCC. In 1995 negotiations to achieve this contraction began administered by the specially created UNFCCC secretariat.

Between 1992 and 1995 and at the request of the Intergovernmental Panel on Climate Change [IPCC], GCI contributed analysis highlighting the worsening asymmetry, or "Expansion and Divergence" [E&D] of global economic development. It became clear the global majority most damaged by climate changes were already impoverished by the economic structures of those who were also now causing the damaging GHG emissions. [2]

To create a sustainable basis on which to resolve this inequity, GCI also developed the "Contraction and Convergence" (C&C) model of future emissions. In 1995 the model was introduced by the Indian Government [3] and it was subsequently adopted and tabled by the Africa Group of Nations in August 1997. [4]

Negotiations for the Kyoto Protocol to the UNFCCC ran from 1995 until 1997. In December 1997 and shortly before they withdrew from these negotiations, the USA stated, "C&C contains elements for the next agreement that we may ultimately all seek to engage in." [5]

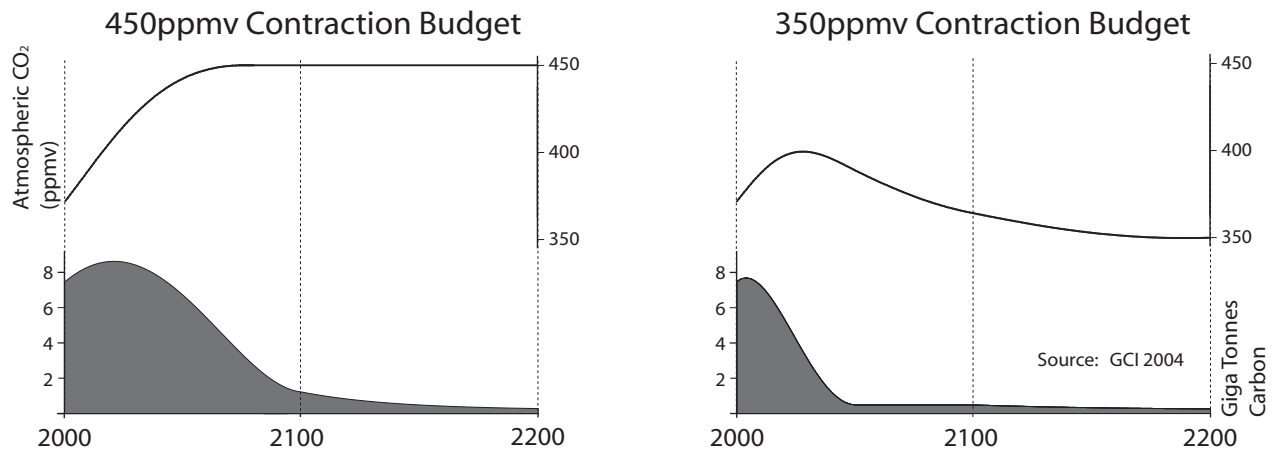
Since then C&C has been widely referenced in the debate about achieving the objective of the UNFCCC. In 2000 C&C was the first recommendation of the UK Royal Commission on Environmental Pollution in its proposals to government. [6] In December 2003 C&C was adopted by the German Government's Advisory Council on Global Change in its recommendations. [7] In 2003 the secretariat of the UNFCCC said the objective of the UNFCCC, "inevitably requires 'Contraction and Convergence'." [8] The Latin America Division of the World Bank in Washington DC said, "C&C leaves a lasting, positive and visionary impression with us." In 2004 the Archbishop of Canterbury took the position that, "C&C thinking appears utopian only if we refuse to contemplate the alternatives honestly." [9] In 2002, the UK Government accepted GCI authorship of the definition statement of C&C, recognising the need, "to protect the integrity of the argument."

This statement follows and is available in thirteen languages. [10] It has been adopted by the House of Commons Environmental Audit Committee and in part in the UN's forthcoming "Millennium Assessment." In 2005, the UK Government will host the next G-8 summit. The Government has already committed this event to dealing strategically with the problems of Africa and Climate Change. Numerous civil society and faith groups are now actively lobbying the Government to have C&C adopted as the constitutional basis for avoiding dangerous future climate change.

- [1] <http://www.gci.org.uk/signon/OrigStatement2.pdf>
- [2] <http://www.gci.org.uk/articles/Nairobi3b.pdf>
- [3] http://www.gci.org.uk/Archive/MegaDoc_19.pdf [page 116]
- [4] http://www.gci.org.uk/nairobi/AFRICA_GROUP.pdf
- [5] http://www.gci.org.uk/temp/COP3_Transcript.pdf
- [6] http://www.gci.org.uk/Endorsements/RCEP_Chapter_4.pdf
- [7] http://www.gci.org.uk/Endorsements/WBGU_Summary.pdf
- [8] http://www.gci.org.uk/slideshow/C&C_UNFCCC.pdf
- [9] <http://www.gci.org.uk/speeches/Williams.pdf>
- [10] <http://www.gci.org.uk/translations.html>

“CONTRACTION & CONVERGENCE” - DEFINITION STATEMENT

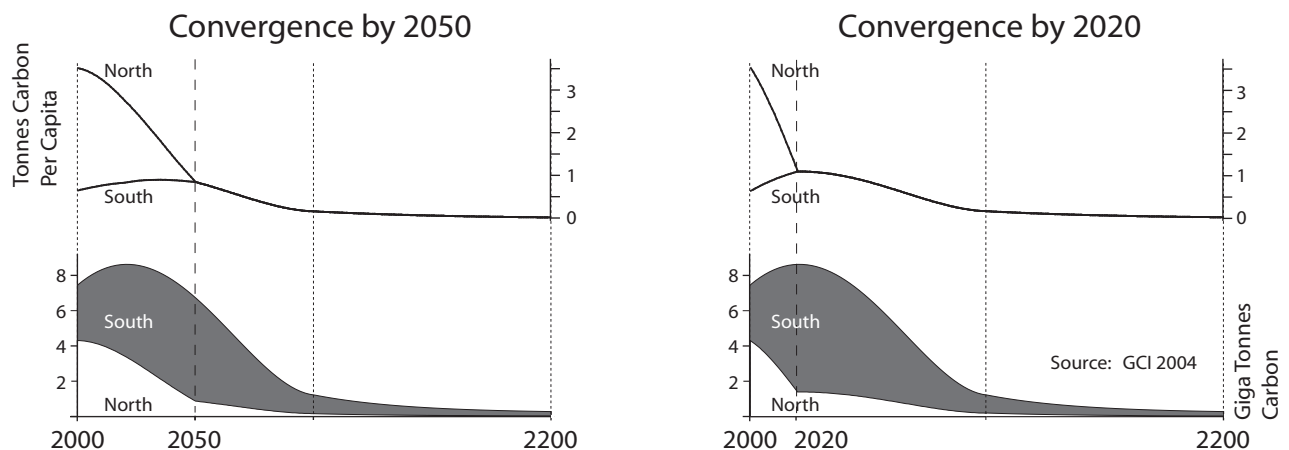
Negotiating Rates of Contraction



Annual Carbon Emissions contract over time to a sustainable level. This is the "Contraction Event".
The Choice of a "safe" CO₂ stabilisation level determines the total tonnage of carbon to be burnt during the contraction event.
Two examples of CO₂ stabilisation levels are shown above, with their corresponding contraction budgets.

1. "Contraction and Convergence" (C&C) is the science-based, global climate-policy framework, proposed to the United Nations since 1990 by the Global Commons Institute (GCI). [1,2,3,4]
2. The objective of safe and stable greenhouse gas concentrations in the atmosphere and the principles of precaution and equity, as already agreed in the "United Nations Framework Convention of Climate Change" (UNFCCC), provide the formal calculating basis of the C&C framework that proposes:
 - * A full-term contraction budget for global emissions consistent with stabilising atmospheric concentrations of greenhouse gases (GHGs) at a pre-agreed concentration maximum deemed to be safe, following IPCC WG1 carbon cycle modelling. (See Image Two on page two - GCI sees higher than 450 parts per million by volume [ppmv] CO₂ equivalent as 'not-safe').
 - * The international sharing of this budget as 'entitlements' results from a negotiable rate of linear convergence to equal shares per person globally by an agreed date within the timeline of the full-term contraction/concentration agreement. (GCI suggests [a] between the years 2020 and 2050, or around a third of the way into a 100 year budget, for example, for convergence to complete (see Image Three on page two) and [b] that a population base-year in the C&C schedule is agreed).
 - * Negotiations for this at the UNFCCC should occur principally between regions of the world, leaving negotiations between countries primarily within their respective regions, such as the European Union, the Africa Union, the US, etc. (See Image One on page one).

Negotiating Rates of Convergence

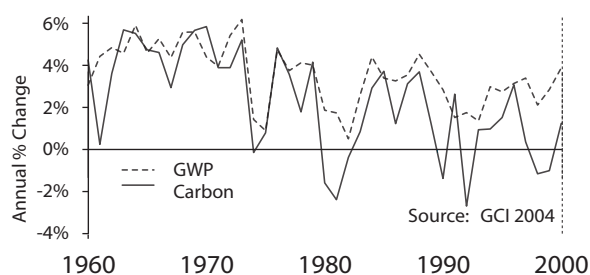


Per capita emissions around the World converge on equality by a negotiated "Convergence Date".
Two examples of convergence are shown here, each within a 450ppmv contraction budget.

- * The inter-regional, inter-national and intra-national tradability of these entitlements in an appropriate currency such as International Energy Backed Currency Units [EBCUs - 5] should be encouraged.
- * Scientific understanding of the relationship between an emissions-free economy and concentrations develops, so rates of C&C can evolve under periodic revision.

3. Presently, the global community continues to generate dangerous climate change faster than it organises to avoid it. The international diplomatic challenge is to reverse this. The purpose of C&C is to make this possible. It enables scenarios for safe climate to be calculated and shared by negotiation so that policies and measures can be internationally organised at rates that avoid dangerous global climate change.
4. GHG emissions have so far been closely correlated with economic performance (See Image Four Page Three). To date, this growth of economies and emissions has been mostly in the industrialised countries, creating recently a global pattern of increasingly uneconomic expansion and divergence [E&D], environmental imbalance and international insecurity (See Image Four Page Three).

GWP, Carbon Lockstep



Year to year percentage change of Gross World Product, GWP (measured in US\$) and Global Carbon emissions

5. The C&C answer to this is full-term and constitutional, rather than short-term and stochastic. It addresses inertial argument about 'historic responsibilities' for rising concentrations recognising this as a development opportunity cost to newly industrialising countries. C&C enables an international pre-distribution of these tradable and therefore valuable future entitlements to emit GHGs to result from a rate of convergence that is deliberately accelerated relative to the global rate of contraction agreed (see Image Three on page two).
6. The UK's Royal Commission on Environmental Pollution [6] and the German Advisory Council on Global Change [7] both make their recommendations to governments in terms of formal C&C. Many individual and institutional statements supporting C&C are now on record. [8, 9] The Africa Group of Nations formally proposed it to the UNFCCC in 1997. [10] It was agreed in principle at COP-3 Kyoto 1997. [11] C&C conforms to the requirements of the Byrd Hagel Resolution of the US Senate of that year [12] and the

European Parliament passed a resolution in favour of C&C in 1998. [13]

7. This synthesis of C&C can redress the increasingly dangerous trend imbalances of global climate change. Built on global rights, resource conservation and sustainable systems, a stable C&C system is now needed to guide the economy to a safe and equitable future for all. It builds on the gains and promises of the UN Convention and establishes an approach that is compelling enough to galvanise urgent international support and action, with or without the Kyoto Protocol entering into force.

- [1] <http://www.gci.org.uk>
- [2] <http://www.gci.org.uk/model/dl.html>
- [3] [http://www.gci.org.uk/images/CC_Demo\(pc\).exe](http://www.gci.org.uk/images/CC_Demo(pc).exe)
- [4] http://www.gci.org.uk/images/C&C_Bubbles.pdf
- [5] <http://www.feasta.org/events/debtconf/sleepwalking.pdf>
- [6] <http://www.rcep.org.uk/pdf/chp4.pdf>
- [7] http://www.wbgu.de/wbgu_sn2003_engl.pdf
- [8] http://www.gci.org.uk/Archive/1989_2004
- [9] <http://www.gci.org.uk/consolidation/Sasakawa.pdf>
- [10] <http://www.gci.org.uk/papers/zew.pdf> [appendix C, page 16]
- [11] http://www.gci.org.uk/temp/COP3_Transcript.pdf
- [12] <http://www.gci.org.uk/briefings/C&C&ByrdHagel.pdf>
- [13] http://www.gci.org.uk/consolidation/UNFCCC&C_A_Brief_History_to1998.pdf [pp 27 - 32]

The charts on page four are stacked one above the other on the same horizontal time axis [1800 - 2200]. This helps to compare some of what is known about existing rates of system change with an underlying assumption in favour of a C&C arrangement being put in place.

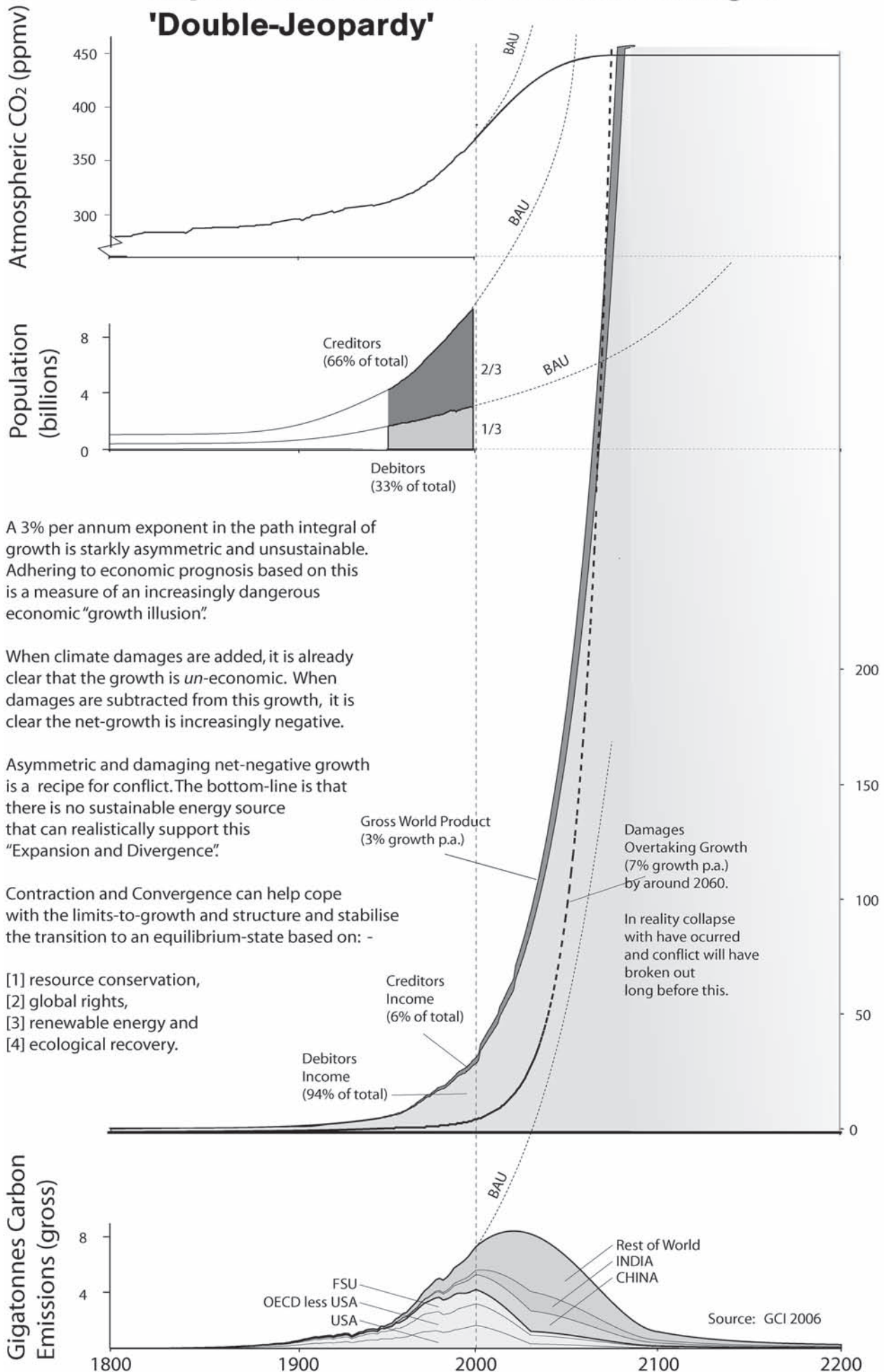
A new feature shown is the rate of economic damages from increasingly 'unnatural disasters' (measured as 'uninsured economic losses' by Munich Re) now rising at 7% per annum, twice the rate of global growth. Another is the devastating and worsening economic asymmetry of "Expansion and Divergence" (E&D). This shows a persistent pattern of increasingly dysfunctional economic growth. One third of population have 94% of global purchasing power and cause 90% of GHG pollution. [We call these 'debtors']. The other two thirds, who live on less than 40% of the average global per capita income, collectively have 6% of global purchasing power and a 10% share of GHG pollution. [We call these 'creditors'].

To escape poverty, it is creditors who embody the greatest impulse for future economic growth and claim on future GHG emissions. But this group also has the greatest vulnerability to damages from climate changes.

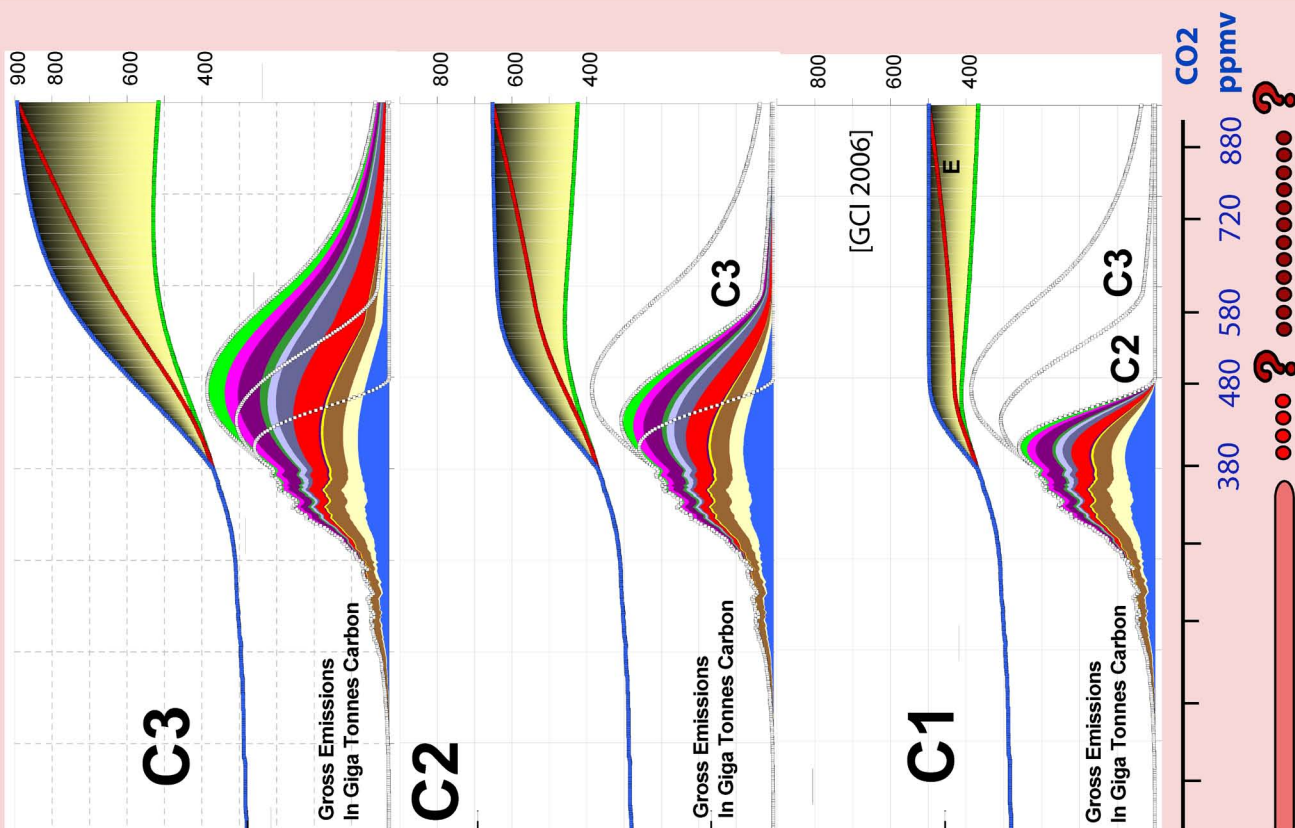
Most institutions now acknowledge that atmospheric GHG stabilization, "inevitably requires Contraction and Convergence". However, some of the response to C&C, sees it merely as 'an outcome' of continued economic growth with only tentative acknowledgement of the damages and little comprehension of E&D.

While C&C is not primarily about 're'-distribution, it is about a 'pre'-distribution of future tradable and valuable permits to emit GHGs. Its purpose is to resolve the devastating economic and ecological imbalance of climate change. GCI's recommendation to policy-makers at the United Nations is for the adoption of C&C globally for ecological and economic recovery as soon as possible.

Asymmetric Growth & Climate Damages 'Double-Jeopardy'



in the decades 'NOW' [2000 - 2100]



C&C briefing with references is at: - www.gci.org.uk/briefings/ICE.pdf

The C&C framework is supported by manifesto commitments from the **Welsh Nationalists [Plaid Cymru]** and the **Scottish Nationalists** and the **Liberal Democrats** and the **Greens** and the **Respect Party**.

http://www.gci.org.uk/presentations/RSA_C&C_G-8_Quotes.pdf

Many individual Labour Party MPs advocate C&C, **some Conservative MPs** do too.

<http://edmi.parliament.uk/EDMi/EDMDetails.aspx?EDMID=29500&SESSION=875>

<http://edmi.parliament.uk/EDMi/EDMDetails.aspx?EDMID=27350&SESSION=873>

<http://edmi.parliament.uk/EDMi/EDMDetails.aspx?EDMID=27080&SESSION=873>

The network of support for the C&C framework is now considerable. With its initial introduction in 1990, C&C was established and has been on the record as a formal well-supported position at the UNFCCC since 1996: -

<http://www.gci.org.uk/briefings/zew.pdf>

http://www.gci.org.uk/briefings/UNFCCC_A_Brief_History_to1998.pdf

<http://www.gci.org.uk/Endorsements/UNEPFI5f.pdf>

Indeed the United Nations Framework Convention on Climate Change (UNFCCC) administration itself has said since 2003 that: - *"Contraction and Convergence is inevitably required to achieve the objective of the convention":* -

http://www.gci.org.uk/UNFCCC/C&C_Janos_Pasztor_UNFCCC.pdf

The Africa Group of Nations have supported C&C since before COP-3 1997, United Nations Framework Convention on Climate Change (UNFCCC): -

http://www.gci.org.uk/briefings/AFRICA_GROUP.pdf

The transcript of COP-3 Kyoto as C&C was agreed at climax of COP-3 in 1997: -

http://www.gci.org.uk/temp/COP3_Transcript.pdf

The C&C Booklet 13 languages from COP-11 12/2005: -

<http://www.gci.org.uk/briefings/MONTREAL.pdf>

An archive with a 15 year history of this campaign: -

http://www.gci.org.uk/Archive/Mega_Doc_1989_2004.pdf

The Urgency Briefing: -

"Can we do Enough Soon Enough: History and Future Airborne Fraction of Emissions Increasing"

http://www.gci.org.uk/briefings/RSA_Occasional_Paper.pdf

shows some of the serious consequences of substituting the politics of blame for global strategy, and highlights the risks of atmospheric concentrations rising much faster than originally supposed because the fraction of emissions retained in the atmosphere is increasing, above the acceleration of emissions per se.

An issue to some is that C&C merely describes generically an 'outcome' of many future aspirational phases of the Kyoto Protocol. This is what the corporations collectively call 'an inadequate patchwork', see slides 20/1 here: -

http://www.gci.org.uk/presentations/RSA_C&C_G-8_Quotes.pdf

To cure this very randomness, C&C formally means the structure a of full-term, concentration-target-based framework endowed by GCI from the outset, as accepted for example by DEFRA: -

http://www.gci.org.uk/correspondence/Meacher_15_11_02.pdf

and in 2004 by the House of Commons Environmental Audit Committee and result: -

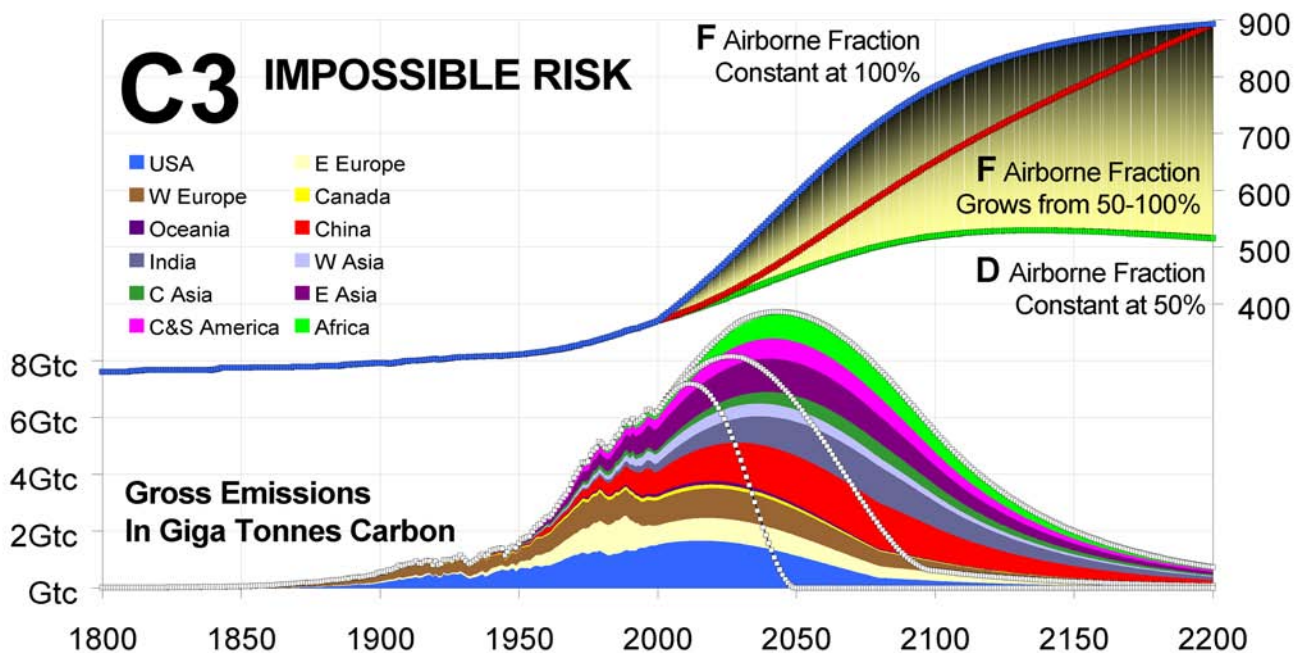
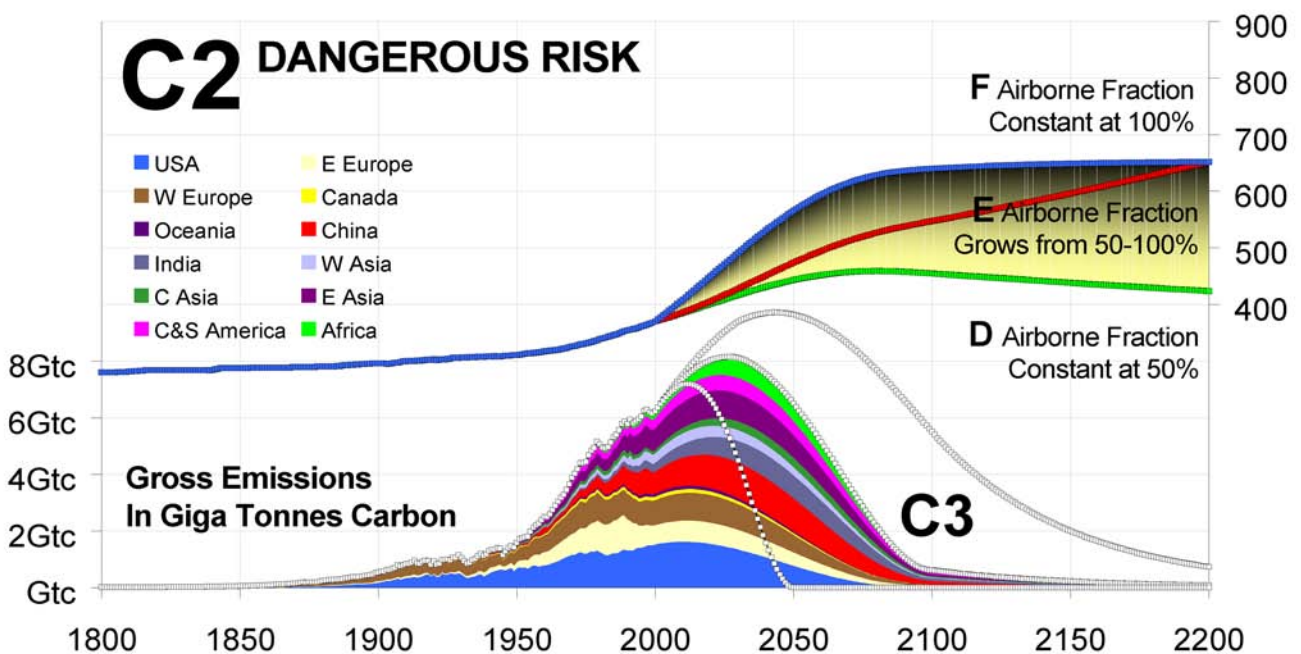
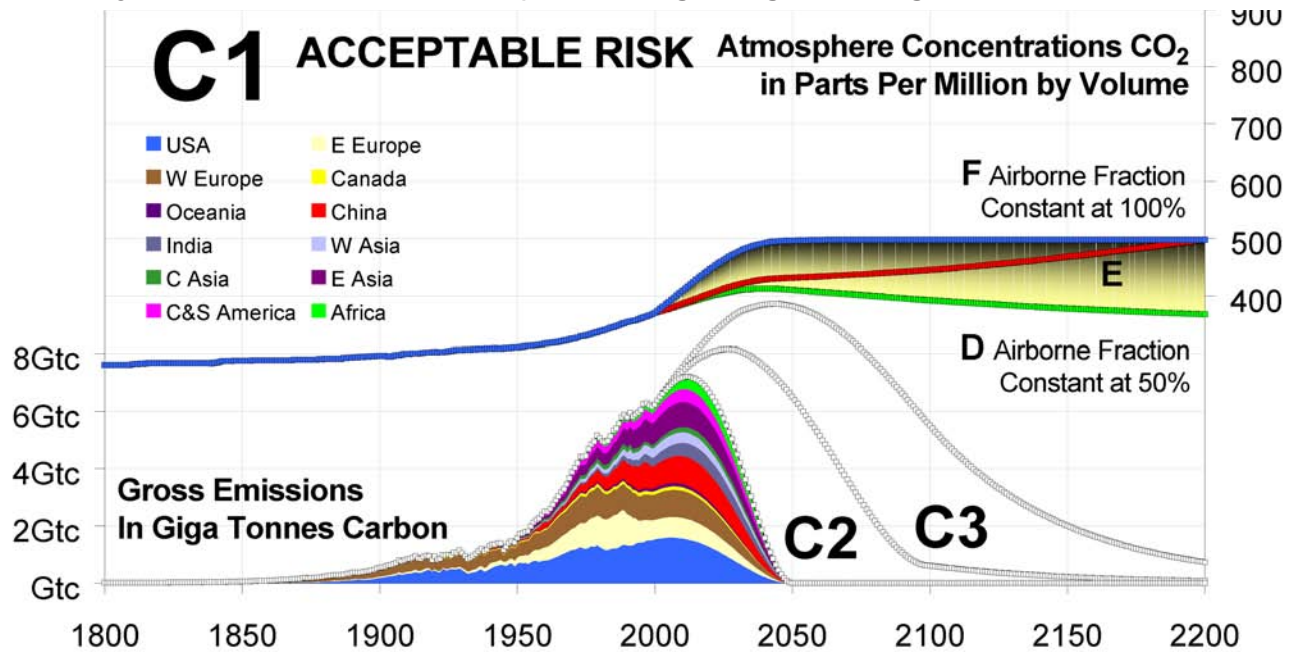
http://www.gci.org.uk/correspondence/EAC_response_GCI_300904.pdf

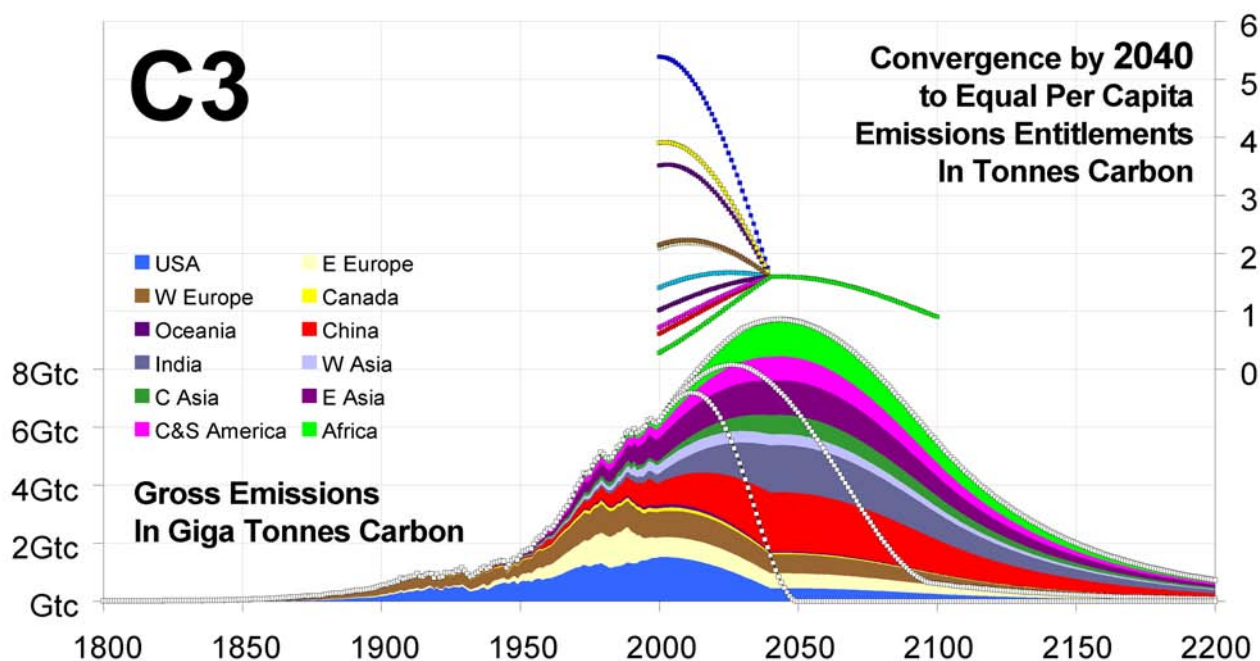
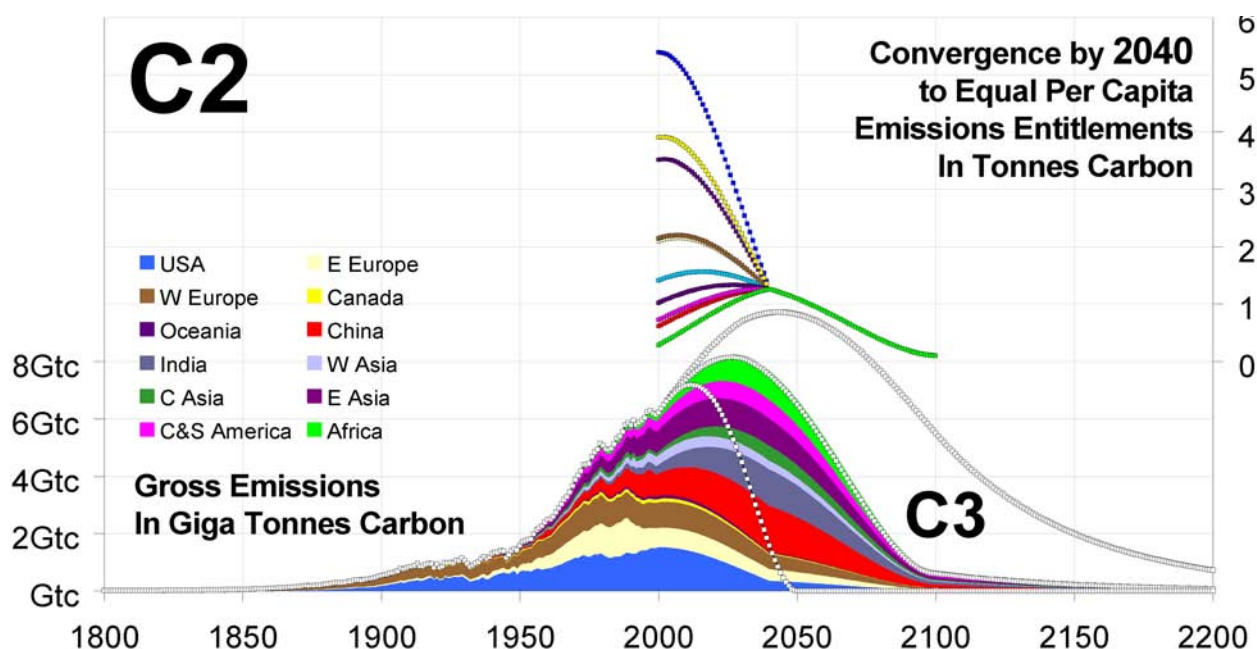
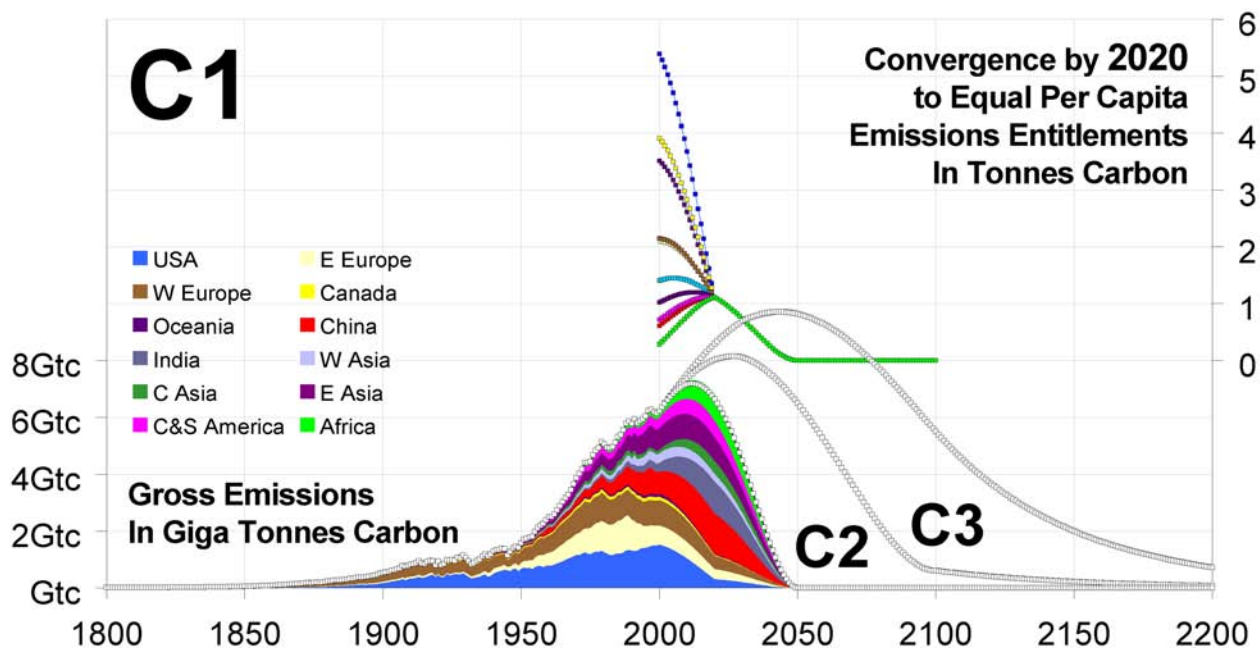
http://www.gci.org.uk/briefings/EAC_Final_C&C.pdf

C&C briefing to the May 2006 all-party enquiry into climate-consensus and result: -

http://www.gci.org.uk/briefings/APGCCC_Evidence_single_A4_pages.pdf

http://www.gci.org.uk/briefings/Consensus_Report.pdf





Inconstancy in the 'Constant Airborne Fraction' [CAF] of CO₂

Until recently, the ratio of rising emissions and concentrations [or sources minus sinks] has been assumed to be constant. The ratio of what has been accumulation in the atmosphere has remained constant at the net 50% of the flow of emissions for the last two hundred years. The CDIAC data record shows these things clearly;

1. Emissions of CO₂ from fossil fuel burning rose from about ten million tonnes of carbon a year in 1800 to around six and a half billion tonnes at the present rising at an average rate of between 2 and 3% per annum, [See Chart overleaf],
2. Concentrations of CO₂ in the global atmosphere rose during this period 100 parts per million by volume (ppmv) from 280 ppmv in 1800 to 380 ppmv at the present time, [See left hand side Charts overleaf - "Different Rates of CO₂ Rising"]].

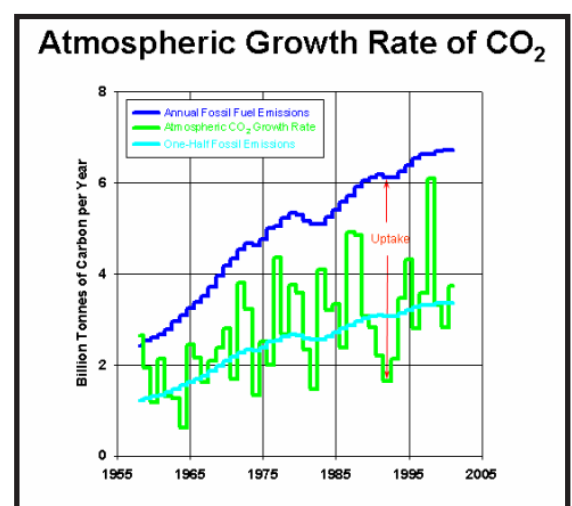
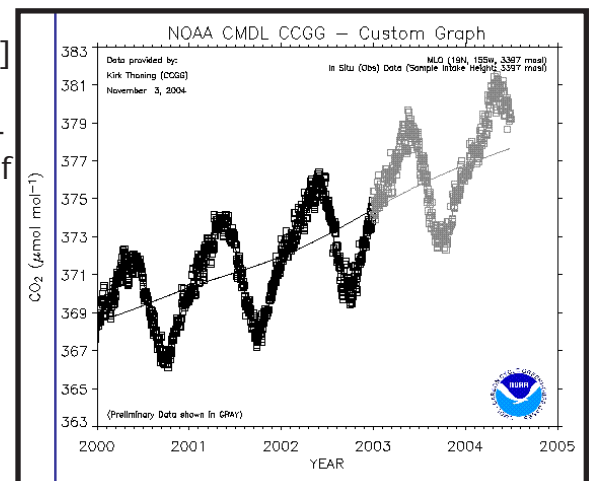
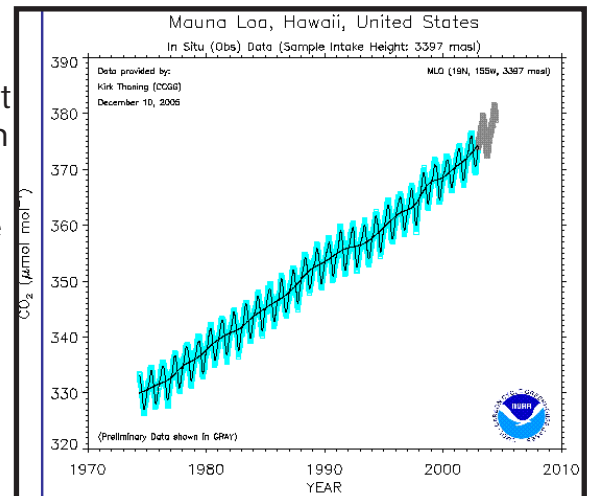
So far on average, a constant half of each year's emissions has been retained in the atmosphere and half has been returned to the natural sinks.

It is this so-called 'constant airborne fraction' [CAF] that now appears to be increasing. The biosphere 'sinks' appear no longer to be expanding in proportion to the growth rate of emissions. The fraction of each year's emissions retained in the atmosphere is increasing.

Data collected at Mauna Loa Observatory [MLO] in Hawaii [NOAA] show the rise in CO₂ in the global atmosphere as an average of measurements taken from many points around the globe since the early 1970's. The one on the right enlarges the detail from 2000 until mid 2004. The significant feature is the accelerated rise recorded between 2002 and 2004. This recent average of increase is 1.5 parts per million by volume (ppmv) a year. The last two years appear to have doubled the rate to nearer 3 ppmv. Each atmospheric ppmv CO₂ weighs 2.13 billion tonnes of carbon [GtC] so 1.5 ppm weighs 3.2 GtC. A rise per annum of 3 ppmv is a weight-gain of 6.4 GtC.

This is roughly equal to the entirety of human emissions from fossil fuel burning in that single year. Why? The global economy didn't grow 100% in that year. It grew at under 3%. So up to the net equivalent of 100% of emissions appears to have been retained in 2003/4.

This breaks sharply with the average pattern of the past. Ralph Keeling of MLO, said informally if one wanted to know what positive feedback would look like, it would look like this. This is not reassuring. Positive feedback within the system as a whole increases the potential for rates of global climate change to become 'runaway', rates over which we will lose any control we might have had through emission control.



If this trend persists, the odds for achieving the objective of the UNFCCC worsen. It means that the contraction and convergence of emissions required for stable concentrations must be even faster than was outlined in the IPCC 2nd and 3rd Reports. The delaying consequences of merely aspirational climate politics come at a price.

Overleaf are graphs of future CO₂ emissions and their possible effects on future atmospheric concentrations. In two - 600 GtC and 300 GtC - integrals of emissions atmospheric retention of CO₂ is projected at three rates:

C: Airborne Fraction Constant at 50%, after original modelling;

A: Airborne Fraction Constant at 100%, constantly projecting the recent rate;

B: Airborne Fraction Constantly increasing from 50% to 100%.

Even if B is increasing only gradually, this needs to be considered. This shows that the deep cuts in CO₂ globally we are contemplating may prove ineffectual unless they are structured and pursued as a top priority, immediately. The case for urgent contraction is clear. If the overall rate is kept to not exceeding 400ppmv, the risk of accelerating atmospheric accumulation into the curvature of the C path is reduced.

As soon as we look at futures that were previously quantified in IPCC 2nd and 3rd Assessments as raising concentrations no higher than 450 ppmv, the accelerating increase in the airborne fraction means that even with the global contraction of emissions the concentrations can and probably will continue to rise. This means that temperature and damages will continue to accelerate as well.

CO₂ Emissions and Concentrations A 'Bath-Tap' Analogy

The dominant greenhouse gas from human sources is carbon dioxide or CO₂. The relationship between atmospheric CO₂ concentrations and the emissions of CO₂ from human sources is a 'stock-flow' relationship and can be thought of as a 'bath-tap' analogy. Just as the bath accumulates the flow of water to it from the tap, the atmosphere accumulates the flow of emissions to it from sources such as the burning of fossil fuels. Emissions are the short-term flow to the atmosphere which slowly accumulates a fraction of these as long-term stock.

On the flow side, the bath-tap analogy extends further introducing the 'plug-hole' through which water is drained away, where the tap represents the 'sources' of emissions, the plug-hole represents their natural 'sinks'. Sinks are for example oceans and forests and where some of the extra CO₂ emissions are 're-absorbed'.

If the plug hole is open while the tap is on, the level of water in the bath [the stock] slowly rises. In other words that level of the bath is the net balance of the rates of flow in to it through the tap [the source] and out of it through the plug-hole [the sink]. If the tap runs in at twice the rate the plug-hole drains away, the net rate of water accumulating in the bath is 50%, or half the rate, of the flow from the tap into the bath.

If the bath approaches the point of over-flowing, the tap needs to be turned off completely to avoid over-flow. The bath level however, continues to rise even while the tap is being turned off and at least until it is turned off.

The danger of the over-flow is increasing not decreasing. Rates of the flow from the tap into the bath and from the bath out through the plug-hole - are accelerating - as is the rate of retention. In the real world this is manifest and there is real cause for concern. Emissions are increasing driven by efforts to correct 'Asymmetric global development' and sinks are failing due to increased forest combustion, warming and acidification of the oceans consequently the airborne fraction of emissions is increasing too.

In the analogy, the tap is opening wider, the pressure behind it is increasing, the plug-hole is blocking up, the rate at which the bath is filling is accelerating and there are more and more people in the bath wanting to fill it; - the likelihood of the bath overflowing is itself, rapidly growing.



“Contraction and Convergence secures survival by correcting fatal poverty and fatal climate change”

The fair choice for Climate Change BBC - VIEWPOINT

<http://news.bbc.co.uk/1/hi/sci/tech/4994296.stm>
support: <http://www.gci.org.uk/links/detail.pdf>

This week and next, government representatives attend UN talks in Bonn looking for the next step forward on climate change. In The Green Room this week, Aubrey Meyer argues that the effective and fair model they need already exists.

Contraction and Convergence secures survival by correcting fatal poverty and fatal climate change

The impact of climate change, it is generally agreed, will land hardest on the poor.

So perhaps it is time to listen to what people from the poorest continent, Africa, are asking for.

At the climate negotiations in Bonn this week, the Africa Group of Nations has called for the adoption of a concept called Contraction and Convergence - C&C, in the jargon.

They first made their call a decade ago. And with 12m people in Central Africa likely to die this year alone because of drought and famine linked to climate, they have good reason to assert that C&C is right, that it is urgently needed, and ask: *“For how long must Africa suffer at the hands of others?”*

Contraction and Convergence is the only long-term framework for regulating greenhouse gas (GHG) emissions which does not make carbon dioxide production a luxury that only rich nations can afford.

It creates the social equity which Africa needs, and the carbon reductions which are in all our interests.

Global shares

Contraction and Convergence is a straightforward model for an international agreement on greenhouse gas emissions.

It sets a safe and stable target for concentrations of greenhouse gases in the atmosphere, and a date by which those concentrations should be achieved, based on the best scientific evidence.

The atmosphere being a “global good”, C&C declares that all citizens of the Earth have an equal right in principle to emit, and will actually be given an equal right by this future date, the individual allowance for each citizen being derived from the “safe” global target.

So from the grossly inequitable situation we have now, per capita emissions from each country will “converge” at a far more equitable level in the future; while the global total of emissions will “contract”.

That is C&C in a nutshell.

A maximum, or “ceiling”, of 450 parts per million (ppm) atmospheric CO₂-equivalent is set, giving rise to a future global emissions “budget” that contracts year-on-year to near zero by around 2080, to keep concentrations within that “safe” ppm ceiling.

The tradeable shares in this future budget are agreed as “one person one share” globally, but moderated by a convergence to the global average of equal per capita shares over, say, 20 or 30 years as a compromise to ease the transition.

Poverty correction

The constitutional logic of C&C is unarguable; there are no grounds for defending unequal use of the atmosphere.

The economics are impeccable. C&C secures survival by correcting both fatal poverty and fatal climate change in the same arrangement.

Greenhouse gas emissions from industrial development in the West have been accumulating in the atmosphere for 200 years

So far, GHG emissions have been a close proxy for wealth. Per capita emissions in rich countries are now way above the global average, let alone a sustainable average; and in poor countries, way below.

Africans in particular have good reason to complain about this, as in no sense are they the authors of their misfortunes at the hands of global climate change.

Greenhouse gas emissions from industrial development in the West have been accumulating in the atmosphere for 200 years, and still today Africa's accumulated emissions are a fraction of the total produced by a country such as Britain.

The global account so far shows that 33% of people have 94% of the global dollar income and account for 90% of the global historical total of greenhouse gas emissions, while the other 66% of people have 6% of global dollar income and a history of emissions totalling 10%.

The ratio of poor to rich life value in all this is worse than 15 to one.

The rising climate-related mortality has led UK MPs to observe that this asymmetry, if uncorrected, becomes the economics of genocide.

Symmetry restored

Contraction and Convergence corrects all this.

Internationally, the list of eminent individuals and institutions supporting C&C is already large and growing fast

Shares created by C&C are valuable because they are tradeable. A C&C agreement makes it possible for poor countries to finance their future defence against climate change and their "clean development", by trading their considerable excess emission shares to rich countries.

The rich countries would use their capital to retire their "dirty development", and put in place economies that are clean and geared to reduced consumption.

This is a "framework-based-market"; and organised this way, the trade marries poetic justice and economic efficiency into a plan which the British magazine *New Statesman* described this week as a "compelling logic that could, without exaggeration, literally save the world".



"Greenhouse gas emissions from industrial development in the West have been accumulating in the atmosphere for 200 years."

In Britain, five of the seven political parties support C&C, as does more than half the total number of MPs. There is a Private Members' Bill that seeks to put C&C on the statute book.

Internationally, the list of eminent individuals and institutions supporting C&C is already large and growing fast; and then there is the UN itself.

As a country's wealth grows, so do its greenhouse gas emissions

Most governments of the world have been bound since 1992, when they signed the UN Framework Convention on Climate Change (UNFCCC), to "avoid dangerous climate change" - to stabilise the rising concentrations of greenhouse gases in the atmosphere below a "dangerous" value.

The Kyoto Protocol was the first attempt at finding a mechanism to curb emissions from the industrialised world, emerging as an alternative to C&C.

It is now seen as completely inadequate. The UNFCCC executive has said since 2003 that *"C&C is inevitably required to achieve its objective."*

Was it this, and a keen sense of justice for Africa, that caused the Archbishop of Canterbury to observe: *"Anyone who thinks that*

C&C is Utopian simply hasn't looked honestly at the alternatives"?

Will governments represented at the Bonn talks this week look at the alternatives and reach, finally, for C&C?

Now that leading lights of the British government and the anti-poverty movement such as Tony Blair, Gordon Brown and Bono have bonded so publicly with Africa on climate change and poverty, and declared that its voice must be heard, perhaps Africa's call for C&C will at last be listened to.

It is the international agreement they seek, and that we all need to survive.

Aubrey Meyer is director of the Global Commons Institute (GCI), an independent group concerned with the protection of the global commons.

The Green Room is a series of opinion pieces on environmental issues running weekly on the BBC news website.

Climate Change (Contraction and Convergence)

Private Member's Bill to the UK Parliament

Contents

- 1 Interpretation
- 2 Duty of Secretary of State
- 3 Implementation of policy
- 4 Report to Parliament
- 5 Regulations
- 6 Expenses
- 7 Short title

Climate Change (Contraction and Convergence) Bill

A Bill To Make provision for the adoption of a policy of combating climate change in accordance with the principles of contraction and convergence; and for connected purposes.

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present

Parliament assembled, and by the authority of the same, as follows: -

1 Interpretation

In this Act -

"carbon emission rights" means rights to discharge greenhouse gases into the atmosphere;

"contraction and convergence" means —

- (a) the stabilising of atmospheric concentrations of greenhouse gases at a safe and stable level, with planned progress towards that objective by an agreed date, and
- (b) the equitable distribution of carbon emission rights among individual states or groups of states, in proportion to their population, with planned progress towards that objective by an agreed date, as agreed in the United Nations Framework Convention on Climate Change, 1992 ("UNFCCC");

"full-term contraction budget for global greenhouse gas emissions" and

"contraction budget" mean an arrangement for the progressive reduction of atmospheric concentrations of greenhouse gases to a safe and stable level over a defined period;

"greenhouse gases" means -

- (a) carbon dioxide,
- (b) methane,
- (c) nitrous oxide,
- (d) hydrofluorocarbons,
- (e) perfluorocarbons,
- (f) sulphur hexafluoride, and
- (g) any other gas which may be prescribed in regulations made by the Secretary of State;

"safe and stable level" means a maximum concentration of 450 million parts per volume, or such lower level as may be prescribed in regulations made by the Secretary of State.

2 Duty of Secretary of State

It shall be the duty of the Secretary of State to pursue a policy of combating global climate change in accordance with the principles of contraction and convergence.

3 Implementation of policy

In order to further the policy set out in section 2, the Secretary of State shall seek to secure international agreement on –

- (a) a safe and stable level of concentrations of greenhouse gases in the atmosphere;
- (b) a full-term contraction budget for global greenhouse gas emissions;
- (c) the distribution of the contraction budget among individual states or groups of states in the form of carbon emission rights in such a way that distribution in proportion to population is achieved before the end of the period to which the contraction budget applies, whether or not a population base-year has been agreed;
- (d) accelerating the rate of global convergence relative to the rate of global contraction in the contraction budget in its application to different regions of the world, whether developed or not
- (e) the sale and purchase of carbon emission rights, both between and within individual states, in order to promote the development of, and investment in, technology which reduces carbon emissions to a minimum; and
- (f) the revision by the Conferences of Parties and Meetings of Parties to the UNFCCC of any agreed rates of contraction and convergence so as to take account of improvements in the scientific understanding of the dangers of climate change.

4 Report to Parliament

The Secretary of State shall in the course of each year lay before Parliament a report containing –

- (a) an assessment commissioned by him of the current state of global emissions of greenhouse gases;
- (b) a statement on the progress made in the previous year in negotiations towards implementing the provisions of sections 2 and 3 of this Act;
- (c) his assessment of the efficacy of the instruments of domestic policy which are designed to give effect to the contraction budget; and
- (d) a statement on the progress made in the previous year towards the implementation of the contraction budget.

5 Regulations

- (1) Any power of the Secretary of State to make regulations under this Act is exercisable by statutory instrument.
- (2) Any regulations under this Act shall be laid before Parliament after being made and shall be subject to annulment in pursuance of a resolution of either House of Parliament.

6 Expenses

There shall be paid out of money provided by Parliament any expenditure incurred by a Minister of the Crown by virtue of this Act.

7 Short title

This Act may be cited as the Climate Change (Contraction and Convergence) Act 2006.

The C&C Logo as Kite-Mark

Presenting a 'Pledge' to establish C&C as soon as possible as the formal basis of the International Framework for Policy to Avoid Dangerous Rates of Climate Change

The global community continues to generate dangerous rates of global climate change faster than it acts to avoid them. The international challenge is to reverse this.

Contraction and Convergence (C&C) makes this possible [see pledge overleaf for C&C definition].

Deepening and formalising the constituency of support for C&C is the purpose of this aspect of the C&C campaign.

"Contraction and Convergence" (C&C) and the C&C logo are trademarked to Aubrey Meyer and will be controlled by a C&C kite-mark trust or other designated body.

This body will be empowered to offer the C&C logo as a Kite Mark to legal entities concerned with preventing dangerous climate change. These collectively will represent a constituency openly advocating that C&C is made the formal basis of United Nations Framework Convention on Climate Change (UNFCCC) negotiations as soon as possible.

The C&C logo will be offered as Kite-Mark for exhibition on licensed entity house-media, subject to agreement with the licensing body, the licensed entity will: -

Supply executive level signature endorsing these conditions and C&C pledge [overleaf],
Support C&C as the formal basis of UNFCCC negotiations beyond 2012,

Be entered on an open global C&C register,

Undertake and publish triennial 'carbon-audits' with C&C approved organisations, to best practice standards,

Informally advocate the C&C pledge made by the licensed entity to colleagues within sector-relevant community,

Pay to the licensing authority an annually renewed/reviewed license-fee, [in proportion to revenue] and exhibit the C&C logo as a kite-mark on its house media indicating the above agreement.

GCI, the C&C licensing authority, will: -

Maintain the register of the licensees as matters progress,

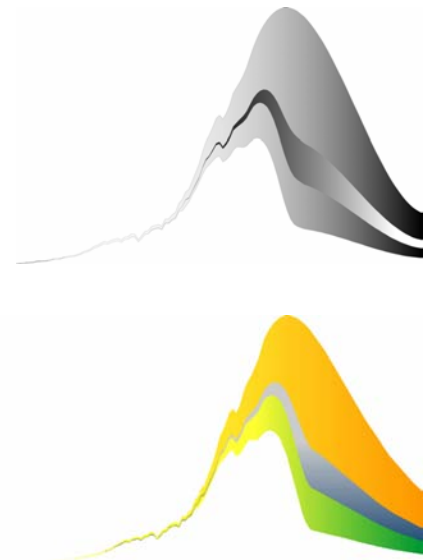
Set-up and maintain a register of approved organisations to carry out best practice carbon audits,

Inform political parties intent on creating cross-party consensus on climate change policy on progress developing the C&C constituency, keep the UNFCCC and other relevant bodies periodically updated with progress,

Carry out and distribute periodic research and survey related to the issues and the campaign,

Pursue misuse or infringements of the C&C terms and conditions of use.

For further information regarding the C&C as Kite-Mark campaign, please contact: -
Terry O'Connell, Director Corporate Relations, Global Commons Institute,
5 Burghley House, Somerset Road, Wimbledon, LONDON SW19 5JB, UK
Ph 0208 946 7045, Mobile 0775 406 9682, Email <terry.oconnell@blueyonder.co.uk>



The C&C Pledge

- The “United Nations Framework Convention of Climate Change” (UNFCCC) has the objective of safe and stable greenhouse gas concentrations in the atmosphere based on the principles of precaution and equity.
- “Contraction and Convergence” (C&C) is the rights-based, global climate-policy framework, proposed to the United Nations since 1990 by the Global Commons Institute (GCI) to achieve that objective.
- “C&C” enables greenhouse gas scenarios for safe climate to be calculated and universally shared by negotiation, enabling policies and measures to be organised internationally at rates that avoid dangerous global climate change.
- Rates of contraction and convergence may be revised periodically as scientific understanding of the relationship between rising concentrations and their impacts on our world develops.
- The C&C framework proposes: -
 - [a] a full-term contraction budget for global emissions consistent with stabilising atmospheric concentrations of greenhouse gases (GHGs) at a pre-agreed concentration maximum deemed to be safe by the UNFCCC;
 - [b] The international sharing of this budget as a pre-distribution of entitlements that result from a negotiable rate of linear convergence to equal shares per person globally by an agreed date.
- These entitlements will be tradable, internationally.
- We, the undersigned, are licensed to exhibit the C&C logo as endorsement of the above and as an encouragement to members of the international community to do likewise so that the adoption of the Contraction & Convergence policy framework is achieved as soon as possible.

Signed

Witnessed

Dated

Additional technical information at: - <http://www/etc>

Contraction &

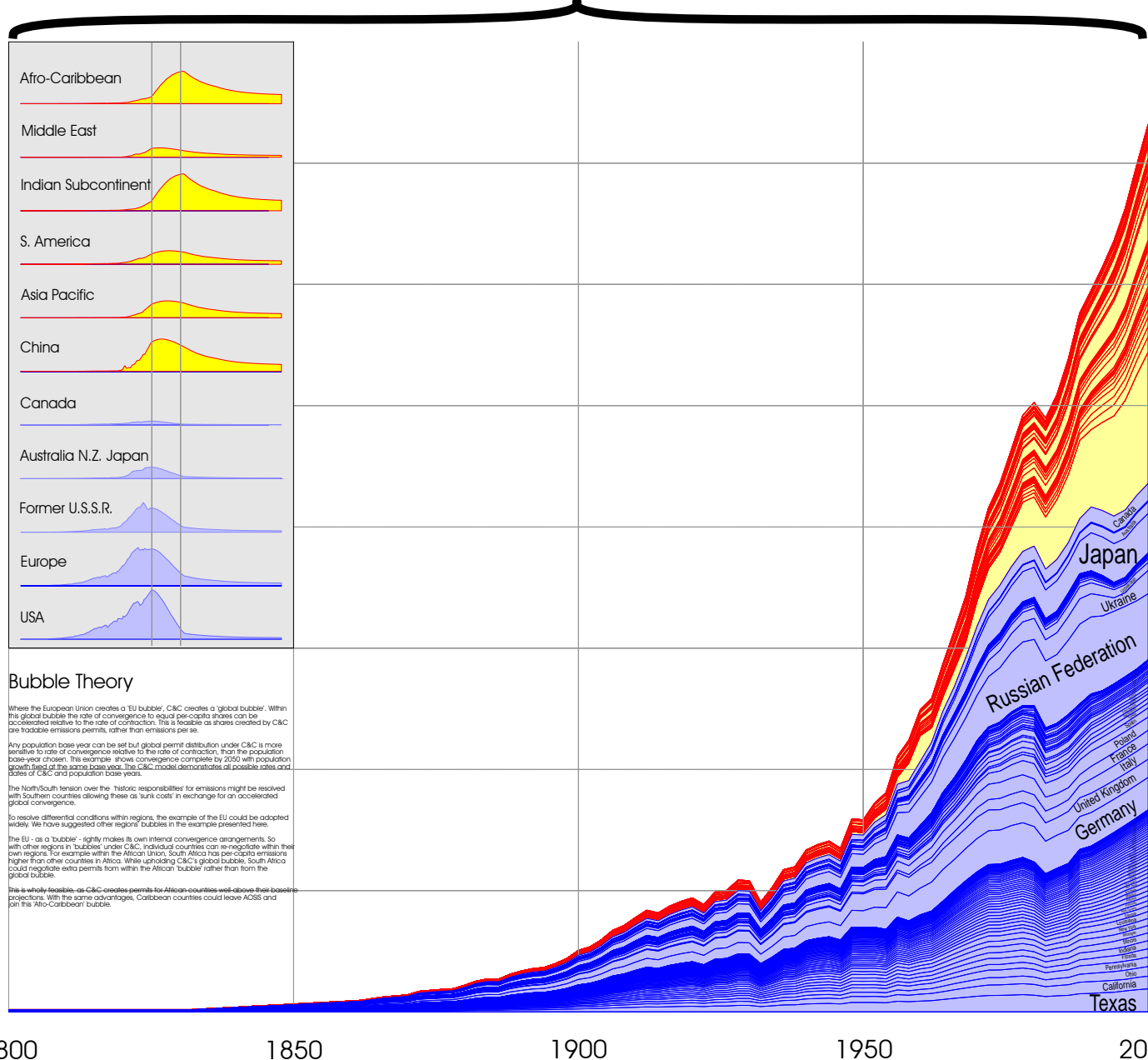
The Objective - stabilise atmospheric ghg concentrations

C&C is based on a global ghg emissions 'contraction' budget calculated from a safe and stable (revisable) ghg concentration target. The example shown is for CO₂ contraction complete by 2100 to give 450 ppmv, as modeled in IPCC Wg1.

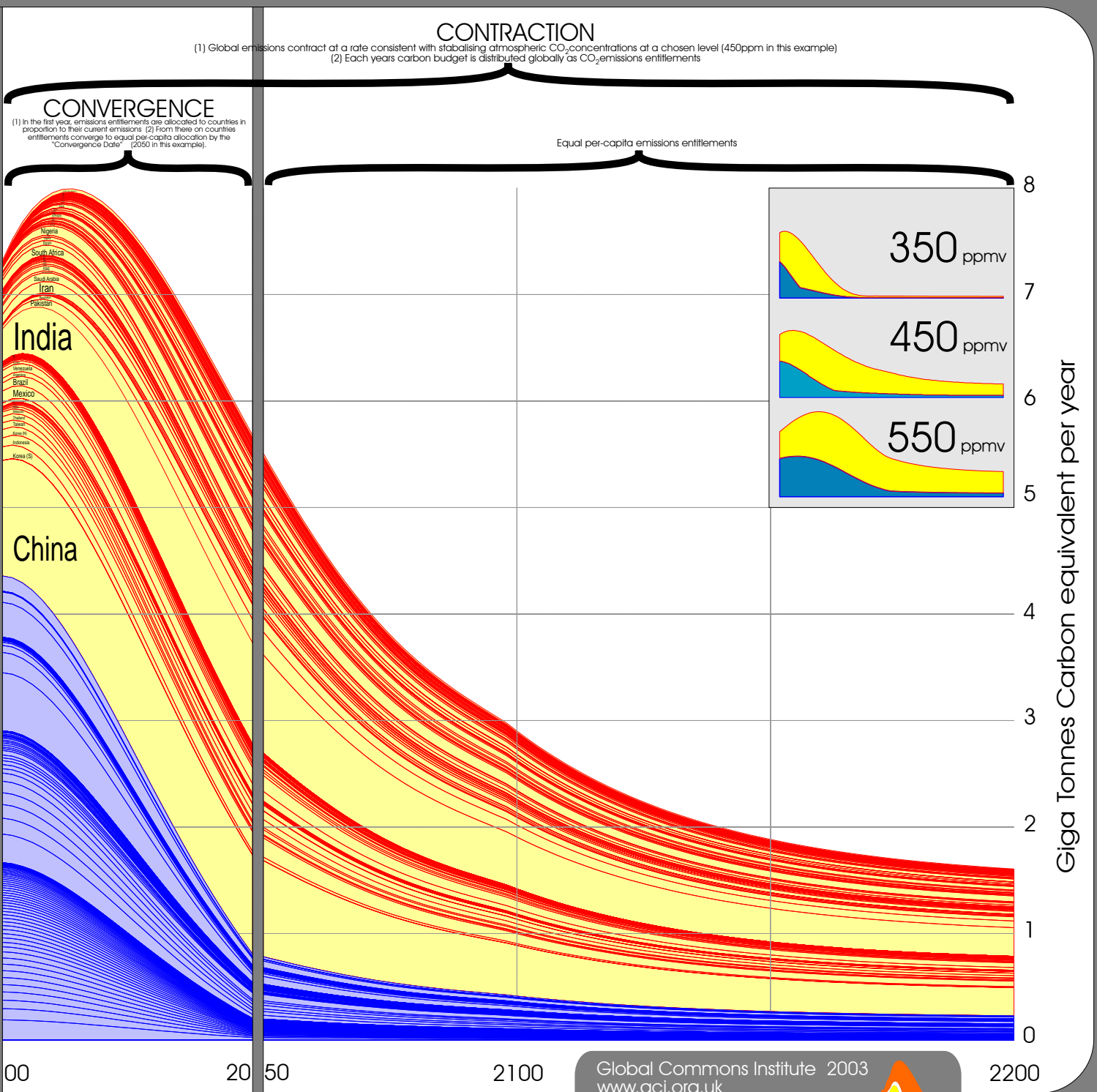
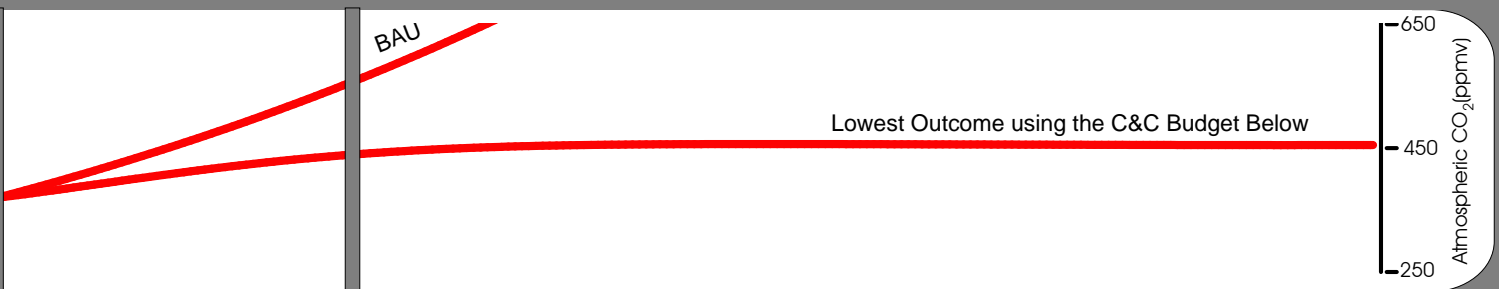
The Framework - contraction & convergence

Convergence is to equal per capita shares of contraction by an agreed date, [here by 2050 [population base year 2050]]. The model will show any rates of C&C.

(1) Historic expansion of annual global CO₂ emissions
(2) Historic divergence of per-capita emissions within different regions and countries



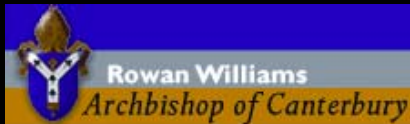
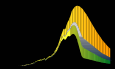
Convergence





*"Achieving the goal of the climate treaty
[stabilize GHG concentrations]
inevitably requires **contraction & convergence**."*

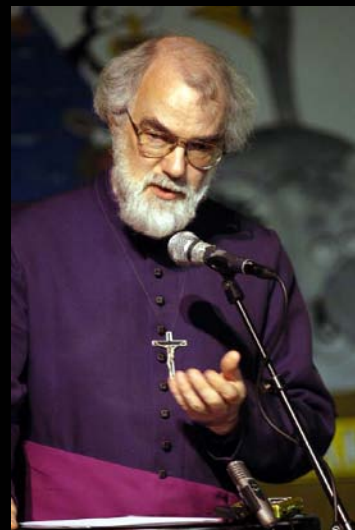
Joke Waller Hunter
UNFCCC Executive Secretary



LAMBETH PALACE

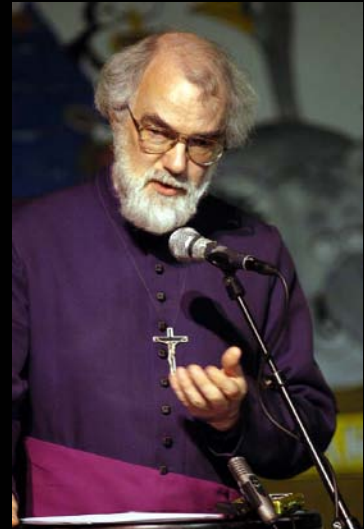
*"**Contraction & Convergence**
appears utopian only if we
refuse to contemplate the
alternatives honestly."*

Dr Rowan Williams
Archbishop of Canterbury



“Contraction & Convergence appears utopian only if we refuse to contemplate the alternatives honestly.”

Dr Rowan Williams
Archbishop of Canterbury



“ . . . preconditions for a successful future [global climate] framework



Define aim & timescale: i.e. a target to stabilize GHG concentrations at a safe (economically affordable) level by a specific date.

Global participation through national targets, consistent with the global limit.

Financial mechanism to generate resources for technology development & transfer.

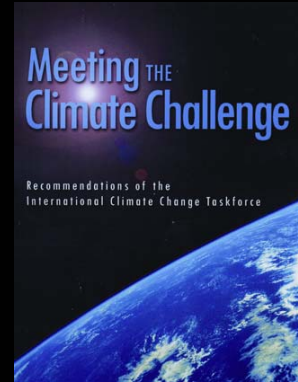
DFID Submission to the Government
“STERN REVIEW” on climate economics.



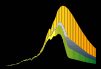
“The Byers report refers to a new basis of equity and common, but differentiated, responsibilities.

We need environmental equity with a cap and trade programme.

Contraction and Convergence is the name that we must give to it. We must link that battle with the battle against poverty.

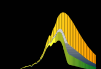


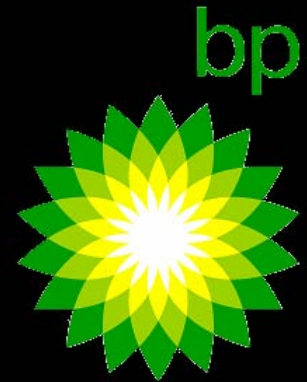
Colin Challen MP
Chair All-Party Group



“A fair distribution establishing the concept of equal per capita rights for all countries as proposed in Contraction and Convergence.”

David Hallman
World Council of Churches





Contraction & Convergence

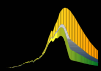
"C&C helps greatly.

It is inclusive and makes clear what needs to be achieved.

Without such a shared model - there will not be the necessary relationships that create the new and exciting possibilities, and the trust for shared action."

Chris Mottershead

Distinguished Advisor, Energy and Environment, British Petroleum plc



"Business and government cannot solve the problem alone. Solutions must be global and participation of all major emitters is essential.

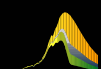


*Companies **cannot determine the scale of needed investment without a stabilization threshold for greenhouse gas concentrations.***

*The **short-term "patchwork" of the Kyoto Protocol** is not cost-effective. A **global long term, market-based policy framework** in a new partnership with China, India, Brazil, South Africa and Mexico is needed.*

*Emissions rights with common metrics that can be adjusted over time to reflect evolving developments will ensure that **a truly global solution** to the problem is achieved."*

G8 Roundtable of Business Leaders



“The UK Government should commit itself to “Contraction and Convergence” as the framework within which future international agreements to tackle climate change are negotiated; and it should actively seek to engage support for this position in advance of the next Conference of the Parties to the UNFCCC.



We do not see any credible alternative and none was suggested during our enquiry.”

**UK House of Commons
Environmental Audit Committee
April 2005**



This government and the Conservatives both speak of a need to ‘search for’ a new framework to control emissions after Kyoto & 2012.



*There is no need to look very far.
There is a framework in place which has the support of the European Parliament, and of many other countries.*

*It is called “Contraction and Convergence” .
Liberal Democrats have supported it since 2001.*

**Sir Menzies Campbell
Leader of the UK Liberal Democrat Party**





*“ preconditions for
a successful future [global climate] framework*

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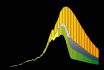


*“We wrote to Mr Blair saying this framework-based market is **Contraction and Convergence**.”*

C&C is global, long-term, effective and importantly - equitable.

From the outset developing countries have a guarantee of equitable allocations and assurance as to when this would happen.”

TEARFUND

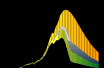


“Conference recognises the urgent need for action to mitigate climate change given the potentially disastrous consequences for the planet.

*We pledge to achieve a low carbon emitting society and commit the SNP to supporting the adoption of the internationally-recognised principle of **“Contraction and Convergence”**.”*



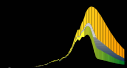
Alex Salmond
Leader
Scottish National Party





*“The WBGU recommends emissions rights be allocated according to the **“Contraction and Convergence”** approach.”*

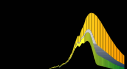
German Advisory Council on Global Change



*“The Government should press for a future global climate agreement based on the **“Contraction and Convergence”** approach combined with the international the framework within which future international agreements to tackle climate change are negotiated.*

These offer the best long-term prospect of securing equity, economy and international consensus.”

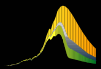
Royal Commission Environmental Pollution





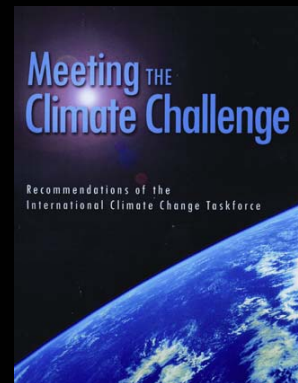
*"I support the concept of **"Contraction & Convergence"** as does the Environment Agency."*

Sir John Harman
Environment Agency

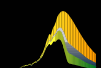


"The global framework develops so that CO2 concentration in the atmosphere is held at or below 400 ppmv.

This long-term climate objective is met by ensuring that short-term targets are linked to and consistent with it, with a gradual transition towards a system of equal per capita rights to use the absorptive capacity of the atmosphere."



Stephen Byers MP
International Climate Task Force



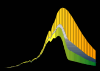
MAYOR OF LONDON

"The solution to climate change requires a globally equitable model of emissions reductions.

*The **Contraction and Convergence** model calls for already large polluting countries to cut their emissions, while newly industrialising countries increase theirs, up to the point that we converge at a sustainable level.*

That, I hope, will be the ethos that will guide cities around the world."

Ken Livingstone
Mayor of London



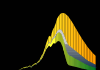
"I urge the UK Government to provide leadership on climate change by committing itself to

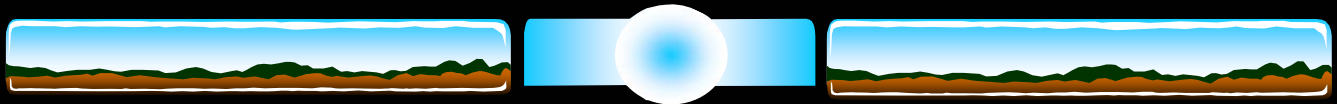
Contraction and Convergence

as the framework within which future international agreements to tackle climate change are negotiated.

I confirm that the party also supports this pledge."

Simon Thomas
Policy Director
Plaid Cymru





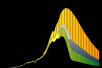
“C&C is better than begging.

Aid is dehumanising and humiliating while C&C gives independence in choice of urgent development priorities.

Without this, Africa’s development aspirations are compromised, Millennium Development Goals remain unmet, NEPAD objectives will be compromised prospects for global security and sustainability will decline.



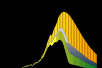
KENYA GOVERNMENT - COP-11 Dec 2005



*“ It does seem to us that the proposals by for example India and perhaps by others who speak to **Contraction and Convergence** are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in ”*



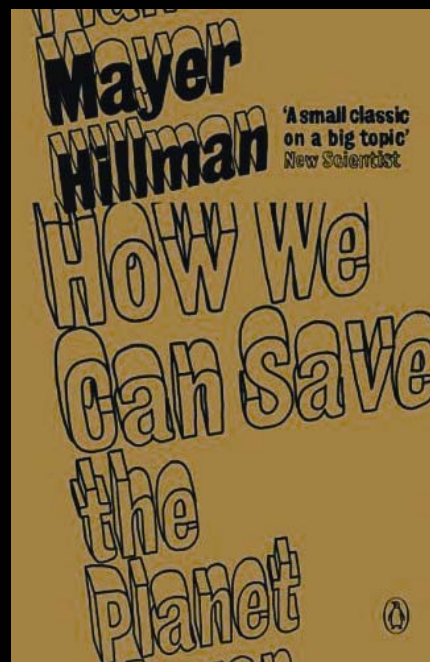
UNITED STATES OF AMERICA Kyoto Climax Dec 1997



"A rational, brilliant and simple means of reaching a just global agreement on emission reductions is called . . .

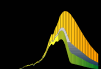
Contraction and Convergence

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."



Mayer Hillman

Hero and Veteran of the War on Error

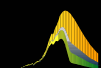


"Rational, Science-Based Unity urgently needed."

*"We **urgently need a framework**, with the necessary targets intelligently applied of the right time-frame that takes us beyond 2012.*

It can only happen if the US, China and India join with Europe and Japan and others to create such a framework".

*"Will Montreal be another round of division or the **sound, rational, science-based unity**, which ensures the right legally-binding framework to incentivise sustainable development."*





RIBA endorses
Contraction & Convergence
*as there is no other method
of rationally and ethically guiding global
reductions in greenhouse gas emissions.*



We recognise that: -

Greenhouse gas emissions control is the greatest priority;

*Endorsing C&C sends a clear message that RIBA is
seriously engaged in tackling climate change*

*Endorsing C&C will boost many others campaigning for
action on climate change*

C&C is congruent with the international character of RIBA



newstatesman

Special
Supplement

'Contraction & Convergence'

"The logic is compelling.

*It is a formula for
future global emissions
that could,
without exaggeration,
save the world."*



newstatesman

Special
Supplement

'Contraction & Convergence'

*"Some big environment groups
such as Greenpeace
see the formula
as a political dead end.*

They are profoundly wrong."



"If we agree to equal per capita emissions allowances for all countries by 2030 in such a way that global emissions allow us to stay below the 2 degrees global temperature increase (equivalent to about 450 ppmv CO₂), then the assigned amounts for Annex B countries would be drastically reduced. However, because all countries would have assigned amounts, maximum use of global emissions trading would strongly reduce the cost of compliance. In such a scenario, industrialized countries would have to do more, but it would be cheaper and easier."

Dutch Environment Minister, Jan Pronk, Chairman of COP-6, July 2000



"Equity should guide the route to global ecological recovery. Policy Instruments such as 'Tradable Emissions Quotas', 'Carbon Taxes' and 'Joint Implementation' may well serve to make matters worse unless they are properly referenced to targets and time-tables for equitable emissions reductions overall. This means devising and implementing a programme for convergence at equitable and sustainable par values for consumption on a per capita basis globally."

Indian Environment Minister, Kamal Nath, COP 1, April 1995

"First, our per capita Green House Gas emissions are only a fraction of the world average, and an order of magnitude below that of many developed countries. This situation will not change for several decades to come. We do not believe that the ethos of democracy can support any norm other than equal per capita rights to global environmental resources."

Indian Prime Minister, Shri Atal Bihari Vajpayee, October, COP-8, 2002



"When we ask the opinions of people from all circles, many people, in particular the scientists think that the emissions control standard should be formulated on a per capita basis. According to the UN Charter, everybody is born equal, and has inalienable rights to enjoy modern technological civilization."

Chinese State Councillor Climate Change & Population, Dr Song Jian, Oct 1997



"Since 1992, we have fallen too far behind in the fight against global warming. We cannot afford any further delay. That is why, I can confirm to you here, Europe is resolved to act and has mobilized to fight the greenhouse effect."

Europe calls upon the other industrialized countries to join with it in this fight. And Europe proposes to the developing countries to join it in a partnership for sustainable development. Let us start thinking about the post-Kyoto period without further ado. Tomorrow, it will be up to us to set forth the rights and duties of each, and for a long time to come.

In order to move forward while respecting individual differences and special circumstances, France proposes that we set as our ultimate objective the convergence of per capita emissions. This principle would durably ensure the effectiveness, equity and solidarity of our efforts."

French President, Jaques Chirac, COP6, November 2000



"On the issue of equity, Sweden strives for a global convergence, meaning that the long term objective of the international community should be a per capita emissions target equal for all countries. The work towards sustainability embraces the right for the poorest countries to continue their development and requires that the developed world contribute to this. In other words the industrialised countries must reduce their emissions in order to enable the least developed countries to develop."

Swedish Minister of the Environment, Kjell Larsson, September 2000

"Emissions should converge towards a common international target, expressed as emissions per inhabitant."

Sweden's third national communication on Climate Change, 2001



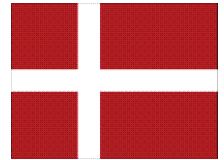
"We are conscious that in the end, we will have to inevitably evolve towards a more equitable partition between the north and south, of the capacity of our common atmosphere to support green house gases, by a gradual convergence of the levels of emissions on a per capita basis."

Belgian Environment Minister, Olivier Delouze, COP6 November 2000

"The approach of "Contraction and Convergence" secures a regime that would allow all nations to join efforts to protect our global commons from being over-exploited, without the risk that any country would be deprived of its fair long-term share of the common environmental emission space.

It allows for consistent and efficient management of the global emissions that would enable us to strive for constraining global interference with the climate below fixed ceilings.

Danish Environment Minister, Svend Auken, April 1999



"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. It 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 Advice 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."

Kenyan Planning & Development Minister, Anyang Nyong'o, April 2004

"Avoiding dangerous rates of climate-change from fossil fuel dependency must be strategically guaranteed with appropriate structural adjustment of the international system.

The Contraction and Convergence" (C&C) scheme presented by the Africa Group at COP-3 in Kyoto, is the basis of this. Combined with international currency arrangements, C&C determined carbon shares create an inclusive global standard for sustainable resource use.

The full rent for the use of the environmental and atmospheric space of Developing Countries, can be paid by the Developed Countries, helping the world move from uneconomic growth to sustainable development for all."

Kenya, Director General of the ruling NARC, Alex K Muriithi, April 2004

The UK Government should commit itself to Contraction and Convergence as the framework within which future international agreements to tackle climate change are negotiated; and it should actively seek to engage support for this position during 2005 in advance of the next Conference of the Parties.

We do not see any credible alternative and none was suggested in evidence to our inquiry.

We therefore recommend that the UK Government should formally adopt and promote Contraction and Convergence as the basis for future international agreements to reduce emissions.

UK House of Commons Environmental Audit Committee, April 2005

While technology will be an important part of the solution, we do not believe that recent attempts to focus exclusively on this area (for example, the Asia-Pacific Partnership on Clean Development and Climate) stand any major chance of success. A framework involving technology together with social, political and economic change – importantly with quantifiable targets – is in our opinion the only way forward.

This is why we support the well-known concept of "Contraction and Convergence" (C&C) as proposed by the Global Commons Institute as the basis for an agreement which is both effective and fair. It would satisfy both developing countries' demands for equity and US demands that major developing countries such as China and India be involved in any targets.

Scientists for Global Responsibility, October 2005





THE CHARTERED
INSURANCE INSTITUTE



International Federation
of Red Cross and Red Crescent Societies



"Contraction and Convergence - and its mechanism for financing sustainable development is the only proposal so far which is global, equitable and growth-oriented."

Congressman John Porter
Chair, GLOBE USA

"The assiduous campaigning over the last decade by the Global Commons Institute - based on its idea of 'contract and converge' - under which the rich nations undertake to reduce emissions even as developing nations are permitted to grow their emissions until such time as per capita emissions converge at the same level, has given this kind of approach some real credibility. So, too, has the readiness of developing countries such as China, Brazil, Indonesia and Argentina to accept emissions targets for their own counties - not least because they are already beginning to feel the impacts of climate change. The real strength of this approach is that it is based upon a trading system, with rich nations needing to purchase additional carbon credits from poorer nations. This appeals a lot to those campaigning for global economic justice: a global trading system in carbon would begin to shift substantial resources from rich countries to poor countries as nations with wasteful, carbon-intensive lifestyles had to purchase additional carbon credits from nations with low-carbon economies."

Jonathon Porritt
Programme Director, Forum for the Future

"The most realistic way to bring about the required reduction in ghg emissions (which will have the combined effect of reducing the damage imposed on the insurance industry and encouraging the transition to renewable energy) is that proposed in the concept of Contraction and Convergence."

UK Chartered Insurance Institute

"Any political solution to climate change will need to be based on reductions in emissions, otherwise known as contraction. As the climate is owned by no one and needed by everyone, we will also have to move towards equally sharing the atmosphere, known as convergence. Collective survival depends on addressing both."

World Disasters Report 2000
International Red Cross/Crescent

"The vision of 'Contraction and Convergence' combines ecology and equity most elegantly."
Heinrich Boell Foundation

"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."

UK Liberal Democrats
Proposals on Energy Policy

"I support the concept of 'Contraction and Convergence', as does the Environment Agency."
Sir John Harman; Chairman, UK EA

LAMBETH PALACE

"Contraction and Convergence appears Utopian only if we refuse to contemplate the alternatives honestly."
Dr. Rowan Williams; The Archbishop of Canterbury

"The Green party of England and Wales strongly endorses the GCI/GLOBE campaign for Contraction and Convergence as the key ingredient in a global political solution to the problem of Climate Change."

UK Green Party



"A formulation that carries the rights-based approach to its logical conclusion is that of contraction and convergence."

Intergovernmental Panel on Climate Change, TAR WG3



"A fair distribution, establishing the concept of per capita emission rights for all countries, as proposed in the 'Contraction and Convergence' scheme."

David Hallman, World Council of Churches



world council of churches

"For the long-term, policy makers should reach consensus on a global framework for climate stability based on the principles of precaution and equity such as Contraction and Convergence which would aim to achieve equal per capita emissions for all nations by an agreed date."

UNEP Finance Initiatives



"Admiration is frequently expressed, regarding the elegance and simple logic of Contraction and Convergence and it has been widely supported by policy makers as a basis that should underlie the next stage of policy formulation."

Sir John Houghton, Former Chair IPCC Working Group One

THE JOHN RAY INITIATIVE
promoting environmental sustainability

"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."

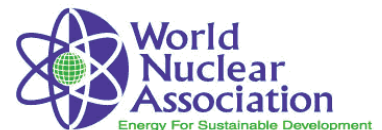
Grace Akumu

Director, Climate Network Africa



"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. 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 is both fair and feasible."

John Rich; World Nuclear Association



"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."

Tessa Tennant, Chair

Association for Sustainable & Responsible Investment in Asia



"We regard Contraction and Convergence as no less than the logical starting point for any sustainable future."

Ed Mayo, New Economics Foundation



The solution to climate change is not to restrict the growth of newly industrialising nations so that we can carry on polluting. A globally equitable model of emissions reductions is required.

The contraction and convergence model calls for already large polluting countries to cut their missions, while newly industrialising countries increase theirs, up to the point that we converge at a sustainable level.

That, I hope, will be the ethos that will guide cities around the world.

Ken Livingstone, Mayor of London

MAYOR OF LONDON



THE WORLD BANK

"... an approach receiving significant attention is Contraction and Convergence [C&C] - a science-based global framework whereby total global emissions are reduced (contraction) to meet a specific agreed target, and the per capita emissions of industrialized and the developing countries converge over a suitably long time period, with the rate and magnitude of contraction and convergence being determined through the UNFCCC negotiating process. It applies principles of precaution and equity; principles identified as important in the UNFCCC but not defined."

World Bank on Contraction and 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."

Mayer Hillman on C&C



world council of churches

"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."*

David Hallman WCC on C&C



"The Scientific Case for Setting a Long-Term Emission Reduction Target.

The framework of this study builds on the RCEP work which uses a contraction and convergence methodology. Contraction and convergence is an international policy framework for dealing with global climate change developed by the London-based Global Commons Institute."

DEFRA on C&C



CEOs of the 23 largest corporations in the Davos World Economic Forum made a joint statement to the G8 leaders - governments must define an atmospheric greenhouse gas concentration that is stable and safe, and create a common global framework to enable investment in markets that operate effectively to this purpose from now on.

WEF CEOs on need for Common Climate Framework



UK building industry leaders wrote to Mr Blair saying this framework-based market is contraction and convergence. "We highlight the point made by the Corporate Leaders Group on Climate Change that getting the right global climate change framework in place is the most urgent action. The Contraction and Convergence Framework, accepted by the UN and by the Royal Commission on Environmental Pollution (amongst others) could well provide a fair structure for the engagement of all nations."

CIBSE and ICE on C&C



Tearfund wrote to Mr Blair saying this framework-based market is contraction and convergence. "The C&C framework is global, long-term, effective, and, importantly, equitable, without which it would stand no chance of being agreed. From the outset developing countries have a guarantee of equitable allocations and assurance as to when this would happen."

TEARFUND on C&C

Contraction & Convergence (C&C) provides a simple framework for globally allocating the right to emit carbon in a way that is consistent with the physical constraints of the biosphere.

The approach rests on two simple principles:

- *contraction: reducing humanity's emissions to a rate that the biosphere can absorb*
- *convergence: distributing total emissions so that each person ultimately gets the same portion of the "global budget".*

The extension of C&C to all demands on the biosphere is referred to as Shrink & Share.

GFN - WWF on C&C

The global framework develops so that CO₂ concentration in the atmosphere is held at or below 400 ppmv, this long-term climate objective is met by ensuring that short-term targets are linked to and consistent with it, with a gradual transition towards a system of equal per capita rights to use the absorptive capacity of the atmosphere.

Byers Report on Global Framework

*"To minimise the danger of global temperature rises exceeding 2°C, a level considered dangerous, a concentration of no more than 400ppm of CO₂ in the atmosphere is recommended [Byers Report] . . . and the EU's burden of responsibility to meet *this science-based cap should be apportioned on the basis of equal global rights to carbon consumption*."*

Greenpeace on Byers Report

"A recommendation in the Byers report is to build on the global climate change framework of both the United Nations framework convention on climate change. It refers to a new basis of equity and common, but differentiated, responsibilities. We need environmental equity with a cap and trade programme. Contraction and convergence is the name that we must give to it. We must link that battle with the battle against poverty."

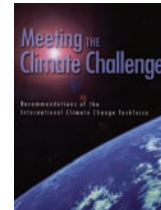
Colin Challen MP - Byers Report is C&C

"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. This 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 thus providing an excuse for further procrastination by the US. An immediate per capita allocation of emissions would not stand much chance as it would mean that industrialised countries would have to cut their emissions by far more, while many developing countries could increase theirs. There will have to be an adjustment period in which nations' quotas converge on the same per capita level. This transitional framework is known as 'Contraction and Convergence' and was first proposed by the London based Global Commons Institute."

Tony Juniper Director of Friends of the Earth on C&C



Global Footprint Network
Advancing the Science of Sustainability



"Stabilization [of GHG concentrations] inevitably requires 'contraction and convergence'."

**COP 9, Milan - 4th December 2003
Secretariat to UNITED NATIONS FRAMEWORK
CLIMATE CHANGE CONVENTION**

"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."

**Dr Clive Hamilton;
One of Australia's leading economists**

"... to say - as a growing number of people now do - that the right to emit carbon dioxide should be considered a human right and that emissions permits should therefore be issued to all humankind on an equal basis. 'Contraction and Convergence', a surprisingly flexible plan is based on this idea."

**Richard Douthwaite;
One of Ireland's leading economists**

"The approach of contraction and convergence presents a new economic development paradigm for the twenty first century and beyond."

**Mrs. Rungano Karimanzira
Chair, Africa Group**

"The government should press for a future global climate agreement based on the 'Contraction and Convergence' approach, combined with international trading in emission permits. These offer the best long-term prospect of securing equity, economy and international consensus."

Sir Tom Blundell; Chairman, RCEP

"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."

Lord Bishop of Hereford

"... WBGU recommends emission rights be allocated according to the 'Contraction and Convergence' approach."

**Dr. John Schelnhuber;
Chairman, German Advisory Council on Global Change**

"... a set of common principles will have to be based on agreement to have a worldwide binding limit on global emissions consistent with a maximum atmospheric concentration with progressive convergence towards an equitable distribution of emissions rights on a per capita basis by an agreed date with across-the-board reductions in emissions rights thereafter."

European Parliament Resolution; 1998



**Royal Commission On
Environmental Pollution**



RIBA endorses
Contraction & Convergence
as there is no other method
of rationally and ethically guiding global
reductions in greenhouse gas emissions.



COP-12 UN Climate Treaty **Nairobi, November 2006**



C&C AT THE CLIMAX OF THE KYOTO [COP3]

UN CLIMATE NEGOTIATION, 10 12 1997

For full transcript of final COP-3 Kyoto negotiation, see: -
http://www.gci.org.uk/temp/COP3_Transcript.pdf



THE AFRICA GROUP [Rungano Karimanzira]:

" we do support the amendment that is proposed by the distinguished delegation from India, and just to emphasise the point of the issues that still need a lot of clarification, would like to propose in that paragraph the inclusion, after "entitlements" that is the proposal by the delegation of India, the following wording.

After "entitlements, the global ceiling date and time for Contraction and Convergence of global emissions because we do think that you cannot talk about trading if there are not entitlements, also there is a question of Contraction and Convergence of global emissions that comes into play when you talk about the issue of equity "

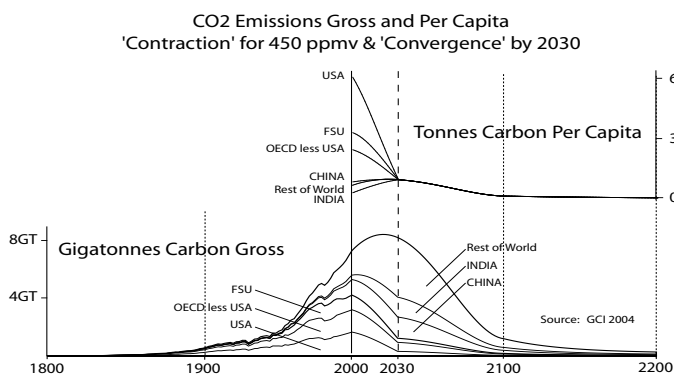
CHAIRMAN [Raul Estrada Oyuela]:

"I thank you very much. May I ask again the distinguished delegate of the USA if they have another suggestion to propose in connection with the proposals made by the distinguished delegate of India he does "



UNITED STATES OF AMERICA [Jonathon Pershing]:

" It does seem to us that the proposals by for example India and perhaps by others who speak to Contraction and Convergence are elements for the future, elements perhaps for a next agreement that we may ultimately all seek to engage in "



For details of widespread support for C&C, see: -
http://www.gci.org.uk/briefings/EAC_document_3.pdf
http://www.gci.org.uk/events/City_of_London_Award_Sheet_03.pdf
http://www.gci.org.uk/Archive/Mega_Doc_1989_2004.pdf