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Safe energy

Kyoto Special

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Emissions trading: lowering costs or delaying action?

Climate chaos

Sir John Houghton talks to *Safe Energy*

A dangerous lack of will

EASEing in the reductions

Plus: Europe relieves nuclear's back end

So what's so special about Kakadu?

Inaction is an action

"All that is required for evil to flourish is that good people do nothing"

Civil rights campaigners have always said that if a person ignores racism, it is a conscious act of complicity which signals that prejudice is acceptable in a civilised world.

In the same way, those obstructing the Kyoto negotiations have to be made to realise that non-action is not doing nothing, it is actively doing something that will result in irreversible, dangerous climate change.

A failure to agree a binding treaty at Kyoto which will protect the climate should be accompanied with a health warning. Those responsible for hijacking the treaty should issue a statement to the effect that the loss of human life and devastation which will follow, largely in poorer areas of the world, is an acceptable sacrifice for rich countries being excused the effort to gradually shift their investment profiles.

Politicians are not of course policy-making in a vacuum. To a greater or lesser extent they take their cue from the electorate.

Recent adverts in the US picture ordinary citizens horrified at the petrol pumps as gasoline prices rocket with the signing of the Kyoto treaty. Those same US citizens are concerned and outraged when Third World famine pictures beam into their living rooms.

Scientific evidence tells us there will be more and more droughts as climate change reaches dangerous levels. So the message to inveterate car drivers everywhere must logically be: either indicate to your government that you want a switch to sustainable energy use, including transport, or accept that starvation in the Third World is a direct consequence of your reluctance to embrace a different but nevertheless thriving future.

It is a harsh message and it will take some time to sink in. Nevertheless, Kyoto should be a time for everyone to begin to take on board their responsibilities.

Safe energy

Safe Energy was brought to you by...

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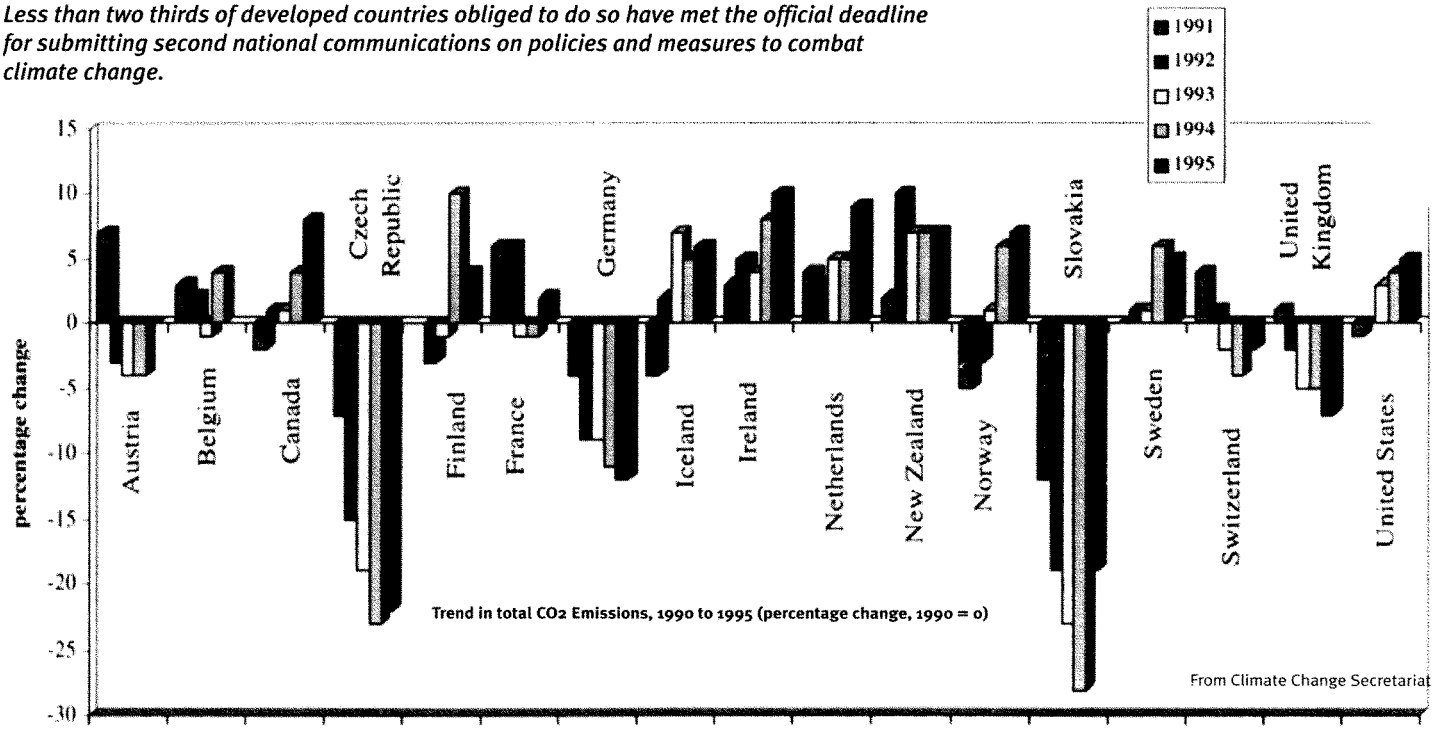
Communication commitments

Less than two thirds of developed countries obliged to do so have met the official deadline for submitting second national communications on policies and measures to combat climate change.



Of those Parties that have reported to the climate change secretariat, the majority recorded an increase in carbon dioxide (CO_2) emissions compared to 1990. Furthermore, the rationale behind the majority of reported measures was "economic", with climate change an "important" but not primary objective of the measures.

Under the terms of the FCCC, developed country signatories (called Annex 1 countries) promised to "adopt" policies and measures "on the mitigation of climate change" and to periodically communicate these activities to the climate change secretariat. At the last Conference of the Parties in 1996, it was decided that Annex II countries (Annex 1 minus economies in transition) were to submit their second national communications by 15 April 1997.

By 15 August, 15 Annex II countries (out of 24 signed up to the Convention) had submitted communications. A further two economies in transition had submitted by 15 August despite not being required to do so until April 1998, while Monaco met the deadline despite not being bound to ever produce such a report.

Those submitting on time were Austria, Belgium, Canada, Finland, France, Germany, Iceland, Ireland, The Netherlands, New Zealand, Norway, Sweden, Switzerland, the UK and the US. Results from these 15, plus those from the Czech Republic, Slovakia (both economies in transition) and Monaco have been compiled into an interim synthesis report.

Those missing the deadline were Australia, Denmark, Greece, Italy, Japan, Luxembourg, Portugal and Spain.

The communications detail emissions of CO_2, methane and nitrous oxide in 1995, together with policies and measures responsible for greenhouse gas (GHG) reductions.

Taken together, the 18 reporting Parties account for 59% of total GHG emissions from all 35 Annex 1 countries. 9 Parties (accounting for 42% total GHG 1990 Annex 1 emissions) reported an increase in 1990-95 GHG emissions, the growth ranging from 1-10%. Another five parties (representing 13% of Annex1 1990 GHG emissions) reported emission reductions in the range 4-21%. For three parties, 1995 emissions were roughly the same as those in 1990.

Aggregated 1995 GHG emissions of the 18 Parties represented an increase of about 1.7% on 1990 levels.

Policies and measures (PAMs) said to have contributed to emissions reductions were mostly applied for economic reasons. Mitigation of climate change was usually an added extra. For example, a majority of the reports cite energy market restructuring initiated through economic policy as contributing to emissions reductions. The UK lists both fuel switching and nuclear productivity under the objective of market liberalisation, while an increase in domestic fuel prices — presumably VAT — was enacted out of a desire to reduce emissions.

Evidently, Parties are latching on to existing PAMs, a great many implemented prior to the FCCC's existence, for the purposes of their reporting commitments. Yet, in the words of the Convention, signatories are asked to "adopt" climate mitigating PAMs.

Nine Parties project an increase in GHG emissions on 1990 levels by 2000, six project a decrease. The secretariat concludes that information in the communications on projections to the year 2000 "continues to suggest that for the majority of reporting Parties additional measures would be needed to return CO_2 emissions to their 1990 level by 2000."

Just two parties, Germany and Finland, envision being able to maintain any reduction on 1990 levels to 2020. Canada, New Zealand, Iceland, Sweden and the US all project increases of more than 25% by 2020.

Forg[o]ing a treaty

Reporting back from the last United Nations meeting before Kyoto, NGO's are without exception relying on nothing short of a miracle to produce a Kyoto treaty that will protect the climate.

America, Japan and Australia are particularly unpopular in green circles. The US and Japan have both announced greenhouse gas (GHG) targets couched as reductions but which will in fact allow GHG emissions increases, while Australia seemingly refuses to countenance any measures whatsoever. And additional detail introduced into the proceedings at this late stage are threatening to delay the signing of a treaty purely by dint of complication.

Returning from the eighth session of the Ad Hoc Group on the Berlin Mandate (AGBM8), — with a remit to agree the substance of a post-2000 legal agreement on limiting GHGs for industrialised countries — green NGOs are in despair at the lack of progress made with so little time to go before Kyoto.

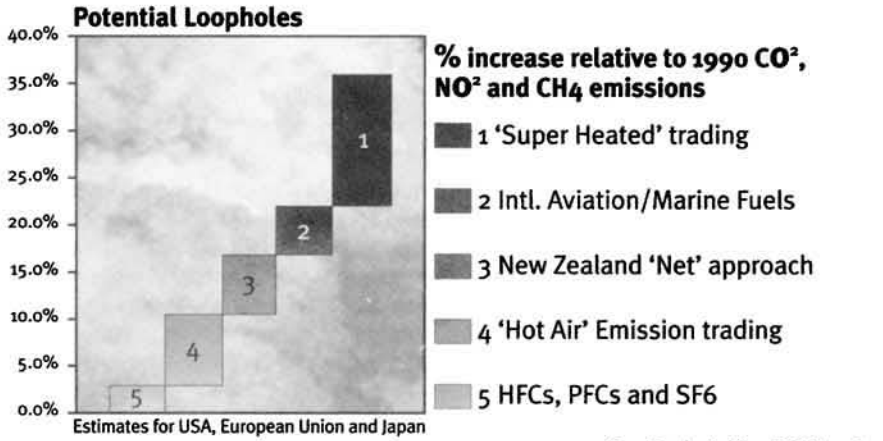
"Its seems the only thing that was agreed was that there was no agreement", says Cherry Farrow, co-ordinator of the climate change campaign for WWFUK.

Ute Collier, senior research officer on climate change at FoE EWNI elaborates: "During the nine negotiating days, delegates showed little sense of urgency. In fact, rather than engaging in real negotiations, most delegations did little more than posture."

Following on from the European Union's March announcement of a proposed 15% cut in GHGs by 2010 ("Climate negotiations", SEJ 112), Japan and the US laid their cards on the table in time for this October's AGBM8. The new proposals, hailed by their proposers as progress on combating warming, were not greeted with any great warmth.

And it is not even the targets themselves, bad enough, which have elicited the most incredulity. Various additional 'loopoholes' would effectively result in what Collier has dubbed an "emissions increase protocol".

Japan's proposal for Kyoto, announced on 7 October, calls for at most a 5% reduction in a basket of carbon dioxide, methane and nitrous oxide by 2008 – 2012. However, countries can be eligible for a lower than 5% target, dependant upon either per capita emissions, per unit of GDP emissions or population growth. Plus there is a 2% flexibility clause exercisable on the appearance of any new discoveries in the intervening period.



Graphic adapted from ECO Magazine

After a series of rumours, the US finally announced its preferred target on 22 October, as AGBM8 got underway: stabilisation at 1990 levels of a basket of six GHGs by 2008-2012, plus unspecified reductions thereafter. This delays stabilisation, already promised at the '92 Earth Summit for 2000, for another 15 years.

Meanwhile Australian prime minister John Howard has rejected Japan's proposal, which would commit Australia to just a 1.8% reduction by 2008-2012. In fact the last reported contribution from the Australians was a proposal to give the World Trade Organisation some kind of specific sway over the Kyoto treaty.

Delegates were additionally sprung with new loopholes seeking to cash in on the fact that GHG emissions in East European countries are at present up to 30% below 1990 levels. It is quite likely that these countries will easily meet and probably exceed any emissions reduction target brokered at Kyoto.

The so-called "hot air" and "super-heated trading" loopholes propose to allow East European countries to sell their right to emit more than they actually do, to another country wanting to emit more than it can. Under such a scenario, emissions of the buying parties could increase by up to 15%, delaying emissions cuts in these countries even further.

Eco, a newsletter on the UN climate talks published by the Climate Action Network, has calculated a worst-case scenario of an allowed 35% increase in emissions from 1990 levels for the US, EU and Japan. In addition to the trade of East European emissions deficits, the estimate is based on inclusion of a New Zealand 'net' approach, the exemption of aviation and ship freight fuel from any reductions and the non-inclusion of three potent GHGs — hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride — in targets.

It is suspected by some that loopholes are being introduced at this late stage to generally inveigle, obfuscate and obscure, or to delay the proceedings while everyone struggles to get their heads round it all. Chair of the proceedings Raul Estrada described the current text as "complete" but containing a "mosaic" of positions.

On the day AGBM8 was due to close, delegates agreed the meeting was not finished, merely "suspended" until a hastily-arranged resumption of discussion on 30 November (the day before Kyoto starts).

• As *Safe Energy* went to press, Japanese papers were reporting on some possible deals emerging from informal sessions in Tokyo.

The US is apparently relaxing its demand for developing country commitments, the net approach is becoming a strong contender for the final text and the EU may be negotiated down to 10% plus an acceptance of joint implementation with developing countries.

As the US is still, however, stuck at 0% reductions, there remains a gulf between the EU and the US.

Negotiators were reportedly agreed they have to agree an agreement in order to make Kyoto "successful".

Nigerian reprieve

As the two year anniversary of the execution of Ken Saro-Wiwa and eight others came and went, Shell celebrated 100 years of existence by wining and dining with the Queen, while N igeria was given a one year reprieve by the Commonwealth.

Just one day after Ken-Saro Wiwa's death, on 11 November, the queen visited the Shell Centre in London as part of the 100th year celebrations for Shell Transport and Trading Company. A commemorative book is also being published to mark Shell's occasion. As environmental journalist Andrew Rowell points out in the magazine *Delta*, "whilst it may mention the Shell Better Britain Campaign and even Brent Spar, certain skeletons, smelling of dirty dealing and double standards, will not be mentioned."

Making sure Nigeria's dirty dealing didn't pass unnoticed, Ken Wiwa, son of Ken Saro-Wiwa, visited the October Commonwealth Heads of Government meeting (CHOGM) in Edinburgh. Representing the Movement for the Survival of the Ogoni People, Wiwa was there to highlight the plight of 20 Ogonis literally deteriorating in Port Harcourt prison, Nigeria.

Human rights lawyer Chief Gani Fawehinmi, who applied for bail for the 20, reports that "most of the applicants [for bail] have developed various diseases" while one "is now blind" and another "is left with incomplete fingers" through torture. Applications for bail were all rejected in June — the third rejection since arrest in 1994.

Nigeria's membership of the Commonwealth was on review at Edinburgh, two years on from its suspension at the time of Saro-Wiwa's execution. A condition of continued membership set in 1995 was a return to democracy within two years.

Despite being concerned about evidence of human rights abuses in Nigeria, the Commonwealth Ministerial Action Group recommended Nigeria be given another year to hold democratic elections. Miliatary ruler General Achaba would face expulsion from the Commonwealth and severe sanctions if he does not stick to his present timetable for democratic elections, due to take place December this year and October next year.

Campaigners also pointed out that while the ousted Sierra Leone president participated at CHOGM, Nigeria's elected (ousted) leader MKO Abiola was in a Nigerian jail throughout and beyond the Edinburgh proceedings.

Tough choices on 20%

A report on the UK government's aim to reduce carbon dioxide emissions by 20% indicates it can't be done without upsetting the same coal industry Labour courted prior to the election. Furthermore, the report says, any hopes the nuclear industry might have for helping to meet the target will be dependant upon government assistance.

At the second Earth Summit this June, Tony Blair reiterated Labour's manifesto commitment to make a 20% cut in CO_2 emissions by 2010. His announcement came just months after Labour's pre-election indications that a Labour government would look favourably on coal.

But government advisers have subsequently told energy minister John Battle they believe there will be a minimal to non existent role for coal in electricity generation if 20% is to be achieved. Breaking with custom, John Battle made public the advice of the government's advisory panel when he ordered its publication alongside an official annual energy report.

Chaired by an ex–Department of Energy civil servant, with the 13 members split between industry (6), economists (3) a trade union, a consumer group, a solar expert and an environment agency, the government's energy advisory panel advises ministers on matters it considers of importance. Of importance just now is how Labour will meet its 20% commitment.

The panel used a Department of Trade and Industry model to simulate the effect of imposing a carbon tax to achieve CO_2 reductions. Modelling the imposition of a carbon tax "was not intended as a realistic assessment of how such a tax might be applied in practice; the purpose was simply to illustrate some of the consequences of using the price mechanism to reduce emissions."

The model predicts that at a 10% and 20% level of reduction in CO_2, "coal use in power stations largely disappears, in favour of gas." Furthermore, "somewhere between the 10% and 20% targets, the model 'flips' and opts for nuclear, with little additional gas beyond 2000." For the full 20% target, the panel suggests new nuclear build required would be "the equivalent of 12 Sizewell B's."

Stressing the hypothetical nature of the exercise, the panel describes sole reliance on a carbon tax as "not a feasible option", going on to advocate a balance between economic instruments and regulation.

It does nevertheless go on to make recommendations for the future of the power station sector, which it believes has a particularly significant role to play in achieving CO_2 savings. On other sectors, it says there are "difficulties envisaged in securing savings ... notably [in] road transport."

In setting out the implications for the UK's power industry, the panel was not hopeful for the coal industry's preferred future, clean coal. "In all cases clean coal options appear to have little relevance to the UK except perhaps as an exportable technology" it says.

On the nuclear option, 12 Sizewell Bs "is clearly not feasible" while the investment risk for any new nuclear stations "would be too high for the private sector to contemplate in the absence of government guarantees." Going further, panel member Dieter Helm of Oxford university, told the *Observer* newspaper in October that "building more nuclear reactors is not something I would recommend."

Summarising the panel's findings, Battle said there were "serious challenges" for the UK coal industry.

Battle's remarks were published as the Confederation of Coal Producers appealed to the electricity regulator to halt the as yet unabated dash for gas. In February, Battle indicated Labour would, if elected, take measures to curb the rise in the use of gas for electricity generation.

• A report by the Labour-affiliated Socialist and Environment Resources Association, published in June, also outlines how the government might meet its 20 % target. It concludes the target will be possible through action in five main areas: a major home energy efficiency programme; prioritising renewables and Combined Heat and Power in electricity planning; shifting corporate taxation towards energy; toughening standards for vehicle and appliance efficiency; and implementing a package of transport measures to stabilise and reverse road traffic growth.

Safety limits questioned

Exposure to very small amounts of radiation may be more risky than conventional understanding dictates, supporting the belief that radiation may also be responsible for a much wider range of diseases than previously thought.

While medical biologists are yet to find the last link in a sequence which could lead to cancer, they are convinced of its existence.

Conventionally, biologists explain radiation-induced cancer by a sequence of events: radiation exposure leads to irreparable damage to a cell's DNA; the damage is then passed on as the cell divides and in the case of cancer, uncontrolled growth results.

In an article published in the *New Scientist* in October, journalist Rob Edwards reports on a number of experiments replicating a phenomenon whereby radiation induces biological damage to living cells which is only detectable in subsequent generations of the irradiated cells.

Outlining research at the Medical Research Council (MRC), the article quotes MRC biologists starting to talk about another possible mechanism for radiation-induced cancer. They have found that cells exposed to just 0.5 grays of alpha radiation — the lowest dose a cell can receive as it is equivalent to one alpha particle passing through a cell — and left to divide 10-13 times, produced progeny (children) containing three and a half times as many chromosome aberrations as the non-irradiated controls. That is, the damage to a cell's DNA appeared only after the exposed cells had divided, rather than in the exposed cells themselves.

At least six other laboratories have found similar results.

The phenomenon is called 'radiation induced genomic instability'. Because it is established that DNA damage can cause cancer, researchers believe genomic instability could be a mechanism whereby low level radiation exposure causes cancer.

It is particularly important because safe levels of radiation exposure are set according to measurable radiation effects on A-bomb survivors. The use of A-bomb data has already been criticised on the grounds that using survivors of a massive burst of radiation exposure to set safe levels for a population exposed to much lower levels, but over a much longer time frame, is not a like for like comparison. However, genomic instability adds a new dimension to the safe levels. Namely, studies on the statistical likelihood of radiation being the cause of cancer are simply not sophisticated enough to pick up the effects of extremely small doses causing cancer a generation on from those exposed to any radiation. In fact the usual methods of monitoring exposure may not even detect very low levels of radiation.

But sticking by the A-bomb data, the National Radiological Protection Board (NRPB) thinks colleagues at the MRC have made one jump too far in the interpretation of their results — there is no proof that the genetic damage detected in progeny of irradiated cells goes on to cause cancer. The NRPB says it is "quite some way" from seriously doubting current risk estimates, and is doubly sceptical on suggestions that genomic instability could also be the cause of other diseases such as Alzheimers and Parkinsons.

Nevertheless, the MRC researchers and others are convinced enough to limit their own personal radiation exposure while they continue to learn more about genomic instability.

• Sellafield is now the only remaining reprocessing plant without an exclusion zone, following the imposition of a fishing ban off the coast of Dounreay.

The taking, landing and use of all species of fish and shellfish within a 2km sea zone adjacent to the Dounreay plant has been banned. The exclusion zone was placed on the recommendation of the Scottish Environmental Protection Agency.

Nuclear offers next stop after frying pan

Proffering itself as the only realistic answer to dangerous climate change, the nuclear industry has at least one ally in the shape of the Japanese government.

Ever since global warming first became a serious political issue, the nuclear industry has fancied itself a white knight, taking the opportunity to offer its services as a "green shield". Now international negotiations are teetering on some form of binding greenhouse gas reduction targets, the industry is stepping up its campaign for a comeback.

Notoriously pro-nuclear, the Japanese government needs little convincing. In fact it is doggedly trying to push through an ambitious plan for nuclear new-build on the strength of climate benefits.

International negotiations have so far resisted nuclear temptation. Conceding this "failure to get ... [the] message across" Linda Gunter of European Atomic Forum (Foratom) told news service *ENDS daily* that nuclear was "playing the long-term game". On Kyoto, she thinks that "if there is a mandatory target, people will be forced to rethink nuclear and renewables".

In a similar vein — preceding Ms Gunther's November comments by a day — Dominique Vignon, chairman of French nuclear firm Framatome, told a climate change conference in Brussels that "although nuclear power is not popular now ... producing more electricity without more carbon dioxide means relying massively on renewables and nuclear" in the future.

Meanwhile the Japanese government has scandalised environment groups by producing a million leaflets promoting the construction of 20 new nuclear power plants under the auspices of a greenhouse gas reduction programme. Costing Japanese taxpayers eight million yen, the leaflets are made to look as if they are official UN documents. The front page uses the official name and logo of the Kyoto conference, with the Japanese government identified as the source in small type at the bottom of the last page.

Japanese group Kiko Forum, a citizens forum which campaigns specifically on climate change, describes the leaflets as "scandalous" and "deceitful". It has demanded the government stop distributing the leaflets "immediately" saying the leaflets will "make the adoption of the protocol at COP3 even harder."

Previously, at AGBM8, Japanese delegates had failed to secure specific mention of nuclear energy in the draft Kyoto protocol. Reporting on the occurrence, which happened during a closed technical meeting, Japanese paper *Mainichi* said opposing voices from both developing countries and OPEC members prompted a quick withdrawal of the suggestion.

Climate Change

Assessing the change

All science has political implications and it's very important to appreciate those implications

Co-chair of the Science Assessment Working Group of the Intergovernmental Panel on Climate Change, **Sir John Houghton CBE FRS,** *talks to Safe Energy on the life of a scientist in a political world.*

Safe Energy: For nearly a decade now you have been chair (co-chair since 1992) of the group established by the world's governments to assess the science of climate change. It is quite a position to be in. How has the experience affected you?

Sir John: It's a very exciting and rewarding experience, to get 95% of the climate change scientists in the world to be associated with the work of the IPCC. The discipline of science has enabled us to provide honest, sensible, useful, statements, and to get strong agreements, which the scientists feel are their own, and also governments feel are their own because government officials have also been involved in the process. We're not negotiating text in the way that politicians do. We bring all opinions together and not so much make compromises, but try to ascertain just what is the truth and what is not.

SE: How easy is it to separate your scientific work from its political implications?

SJ: It is relatively easy to separate the science from the politics in the scientific work I've been involved in, which is physical, chemical and biological, the more precise end of science. All science has political implications and it's very important to appreciate those implications, so that statements and reports are politically relevant. Otherwise of course we are wasting our time. It is harder for the social and political scientists, but nevertheless the IPCC has tried to separate the two, believing it important to do so.

SE: In your words, the task of the working group is to "present in the clearest possible terms our knowledge of the science of climate change together with our best estimate of the climate change next century which is likely to occur as a result of human activities." The summary for policy makers is still necessarily quite technical. Are you satisfied that the world's policy makers are making informed choices?

SJ: Policy makers are more or less informed depending on their background and understanding. Hopefully they have advisers who really do understand the science and technicalities. For a very complex subject, I think it's remarkable we've got as far as we have with policymakers, especially that we've managed to put it over in a way that remains balanced in the hands of policymakers. Governments by and large are saying we believe there's a problem, we accept what the scientists say and we realise something has to be done.

I haven't done much direct briefing of politicians in the way that I did for the British Cabinet in 1990. I've been involved in the US with talking to members of their government, especially Al Gore, but Al Gore knows all about it anyway.

SE: How do you see your role in formulating a response to the IPCC's assessment of climate change? For instance, your book, *Global Warming,* goes beyond the straight climate change science and touches on possible future mechanisms for reducing fossil fuel reliance. Is that something you wanted to do or is it something you see as necessary?

SJ: It's absolutely necessary to cover the whole ground. I wanted to write a more complete account, which drew on the other working groups of IPCC. I try to steer away from saying precisely what we should do about climate change, but I point out what are the possibilities for action, which I think are very large. We shouldn't just chicken out of it and say there's nothing we can do, which is a great temptation to many.

SE: In your book you also touch on your religious beliefs, concluding that "an attitude of humility is also one which lies at the heart of responsible stewardship of the earth". Climate change is a case in point — nature is simply too complex for us to arrogantly assume we can fix it.

SJ: I think an attitude of humility is one that's very important in many areas of life. It's very important in science. Thomas Huxley said humility before the facts is at the heart of science. The assumption that we can always fix it when it goes wrong and that we need not take precautionary action is one way to carry on, but it's very poor stewardship. There are so many examples now of how that sort of behaviour doesn't work at all. We're just too vulnerable, especially with the population of the world we have at the moment,

we can't just leave enormous spoil heaps and run away from them, because we are running out of living space. Humans are capable of doing very big and damaging things which means that we need to plan very carefully and very humbly.

SE: As with all research, the advancement of knowledge involves a dynamic, healthy process of critical assessment. However, in the case of the IPCC's work, academic discussion that would have been confined to the pages of academic journals is a lot more public.

SJ: We've had some very rough meetings, as you can imagine, because we have observers at our meetings, from bodies like the Global Climate Coalition at one extreme and greener than Greenpeace at the other, things are said that are very loaded politically or questions asked which are extremely critical. If the challenge is honest, saying you've said this here and you've said something else somewhere else, so what do you really believe, then the process actually makes our reports better. Each time we've been through the process we've ended up with a better report than we began with, one which is more accurate, clearer, and more satisfactory. So we mustn't be frightened of honest criticism.

It is better that scientific debate is carried on through academic journals rather than through the media because there is no control in the media about what is said, no peer review of the kind that occurs in scientific journals. In the media we often suffer from those who know little writing whatever they please.

SE: In your opinion, what has been the key to achieving scientific consensus among hundreds of scientists across the globe?

SJ: Absolute honesty, and a refusal to bow to any sort of political pressure, from whatever quarter, and to accept the facts for what they are.

SE: Are scientists consulted on the practicalities of the implementation of emissions reduction targets, such as the use of a basket or the net approach?

SJ: Yes there is a lot of scientific background covering different gases and different approaches, for example the IPCC has large volumes of workbooks which tell countries how to estimate their own emissions. Hopefully they will help in discussions about the practicalities of reductions.

Fossil fuel emissions are easily monitored but CO_2 changes as a result of land use changes are not easy to estimate because the processes are complex. Some apparent sinks, for instance, turn out to be sources when the processes are considered. We know reasonably well where CH_4 comes from and there are some good suggestions for reducing CH_4 emissions. Regarding possible agreements between nations about emissions reductions, it is important in the first phase to concentrate on the largest contribution to the problem, namely fossil fuel CO_2 emissions. N_2O we really know very little about and it's hard to include in a sensible way.

SE: You seem to have some frustration at the way climate change is reported in the media. How would you prefer to see the issue portrayed in the press?

SJ: One wishes it was portrayed accurately and in a balanced way. Let me give an example. Frequently people report in the media that we're going to get far more hurricanes as a result of climate change. The IPCC report says we have no evidence at the moment that the frequency or intensity of hurricanes will change. It may do, but we have no evidence to that effect. The media ignore that part of the report. Now we do say we are likely to get more droughts and more floods, that's an accurate statement. But the media don't seem very happy at leaving it at that, they tend to want to go to one extreme or the other, either to over hype it or else to say that there is no problem.

SE: You often read that the IPCC are recommending a 60% reduction in greenhouse gases.

SJ: It's been quoted for years that we demanded 60% reduction. We did not demand or even recommend any particular reduction. We merely said 60% would be required to stabilise at today's levels of atmospheric concentration of CO_2.

SE: People want a number.

SJ: Yes. I've been in meetings explaining IPCC reports to people involved in the climate convention, and they continually ask us what is dangerous, in the context of the climate convention objective of dangerous interference. We say we cannot tell you, we are just explaining the impacts and costs as far as we can judge them. If we go outside our science, our credibility will go down, and our scientific message will be muddied.

SE: In your opinion, what would be a satisfactory outcome from the Kyoto negotiations?

SJ: I hope there will be sufficient positive statements and positive commitments made, that the process will carry on in a positive way. I think the worst outcome would be if people threw up their hands and said it's too difficult — we can't do anything about it. Because it is not a difficult or impossible political problem. The cost of doing something about it is not that large in world terms: the first stage is to try to attempt to balance the likely damage against what the cost might be. And if that is done in a sensible manner I think we could come up with sensible solutions.

It is important in the first phase to concentrate on the largest contribution to the problem, namely fossil fuel emissions

Sir John Houghton is co-chair of the Science Assessment Working Group of the Intergovernmental Panel on Climate Change (IPCC), chairman of the Royal Commission on Environmental Pollution in the UK and a member of the UK government's Panel on Sustainable Development.

Climate Change

Southern Comfort?

The US will miss its year 2000 greenhouse gas target by roughly 13%, an overshoot which is alone greater than the entire 1990 carbon emissions of India. Ambassador of Malaysia* Dato Renji Sathiah, *speaking from the Southern perspective, puts some perspective on the Kyoto negotiations.

After two years of tough, unrelenting negotiations in the run-up to the 1992 Rio Earth Summit, a "package deal" was practically rammed down the throats of developing countries at the eleventh hour on a take it or leave it basis. Arm-twisting was so prevalent that the AOSIS group, representing the small island states — who were at the forefront of the demands for clear cut commitments from developed countries to limit and reduce greenhouse gas emissions — suddenly backed away from their long-held position and accepted the package, at the heart of which was the infamous Article 4.2(a) on the critical specific commitments of developed countries.

And the negotiations following the adoption of the Convention have been nightmarish, especially as whatever euphoria Rio had produced subsided and economic realities — an expression we have heard a lot of in the build-up to the Kyoto Conference of Parties (COP3) — became the order of the day.

Millions of dollars have been spent in the US by business lobby groups to pressurise the administration not to agree to any commitments without developing countries doing the same. Disinformation from powerful vested interests has muddied the issues in the public mind in the US and, to a lesser extent, in Europe. There has been much talk of loss of jobs, investment and economic competitiveness if meaningful commitments on reducing and limiting greenhouse gases are undertaken.

It has been suggested in the US that developing countries are getting "a free ride", a view endorsed by the US Senate, severely constraining the administration's policy options for Kyoto.

Developing countries see this distortion as being aimed at reducing the domestic pressure on the various governments to commit themselves to a strong and meaningful agreement.

While the UN Framework Convention on Climate Change (UNFCCC) is an imperfect instrument, it represents a fair balance of equity between the North and South, recognising that the current state of the climate was the cumulative effect of excessive consumption of fossil fuels by developed countries. The Convention is thus based on the spirit of common but differentiated responsibilities towards the objective of modifying the long-term trend of greenhouse gas concentrations.

Technology Transfer?, Shell make a major contribution to road safety in Nigeria

Developing countries do not see this as a free ride. They are committed to sustainable development and to bring about changes in policies and implement measures that address the adverse effects of climate change.

But there is pressure for developing countries to undertake new commitments at Kyoto, contrary to the Berlin (COP1) Mandate. But unless and until the developed countries take the lead and keep their promises under the UNFCCC, it would be unacceptable for them to demand new commitments from the developing countries.

Given the stance of the US, and of the host nation Japan — with its proposal of only a 5% reduction for QELROs — it is left to Europe, as the major economic community, to take the lead in pushing for meaningful QELROs and to narrow the growing disparities between North and South.

My own country, Malaysia, strongly supports the AOSIS target of a 20% reduction by 2005 based on 1990 levels, but we commend the EU for the negotiation target of at least a 7.5% reduction of CO_2, CH_4 and N_2O by 2005 based on 1990 levels. The EU must now convince its wavering developed country partners to join it and make the Kyoto COP a watershed in the effort to seriously address climate change.

Technology Transfer

It is not just the issue of emissions targets which needs to be addressed. While the EU has consistently stressed that transfer of technology is crucial for developing countries, it has not shown leadership on this issue. There has been no real transfer of technology and developed countries have still to come up with a list of technologies available for transfer, as agreed two years ago in Berlin.

Many developed countries have pinned all their hopes on activities implemented jointly (AIJs) and have even made it a condition of technology transfer. This is a great concern to the majority of developing countries.

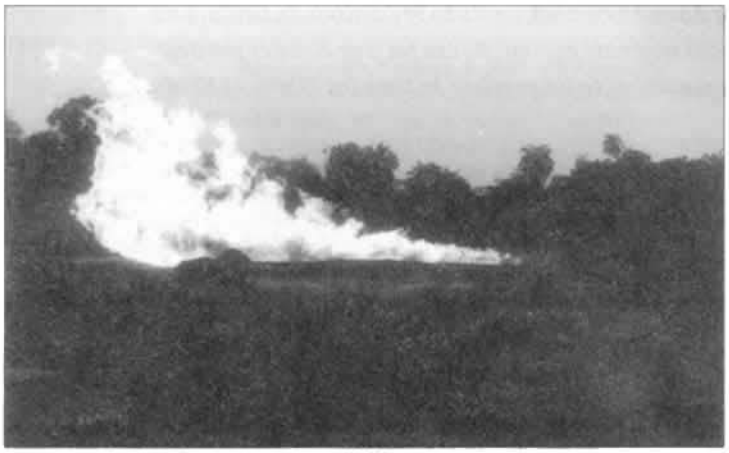
AIJ is generally perceived in the South as a means of transferring commitments from the North to the South under the guise of transfer of technology. If carbon crediting is allowed in the future, equity would be further distorted.

Lastly, developing countries are very unhappy over the US proposal for "evolution" as a process to introduce new commitments for developing countries. Japan has also been pressuring the ASEAN countries to take on new commitments. Such initiatives undermine the Berlin Mandate and will not help make COP3 productive. The success of the Kyoto Meeting will not lie in the so-called "post-Kyoto" process but rather on the conclusion of an effective and meaningful protocol that seriously addresses the adequacy of the commitments of the developed countries.

This article is a synthesis of a speech given at the Climate Network Europe conference, 'Climate Change. Targeting Kyoto and beyond. The Role of Europe'. 16 -17 October 1997, Der Wasserwerk, Bundestag, Bonn. The full text is some 4,000 words.

Dato Renji Sathiah is Ambassador of Malaysia to Belgium and Luxembourg and head of the Malaysian Commission to the EU.

Emissions Trading: Lowering costs or delaying action?



In some countries flares have never gone out of fashion

The climate change pariahs are also the most vociferous proponents of tradable permits. Should we smell a rat, or are tradable permits a good idea hijacked by self interest?* Karen Gill *of WWF thinks their time will come, but not just yet.

As Kyoto nears, the most visible arguments revolve around the timing and level of emissions controls. But these headline issues are dependent on less public debates — chiefly over the amount of flexibility countries will have to meet their targets, and the extent to which future commitments for developing countries will be included at Kyoto.

The United States is pushing for maximum flexibility through the wide use of emissions trading between countries with binding targets ("Annex 1" countries), and the US Senate wants high emitting developing countries to be included in any agreement. Ranged against the US position, a wide body of international opinion, led by the European Union, is sceptical. Trading limits domestic emissions reductions, weakening the signal that countries should be immediately reducing their own fossil fuel dependence.

What is emission trading? Permits are allocated to participating parties which allow them to emit a specified quantity of Greenhouse Gases (GHGs) over a certain period. The total number of permits allocated sets a cap on the total allowable amount of emissions in that period. Permits can then be bought and sold between parties, depending on whether it is cheaper to control emissions directly, or to buy a permit. Tradable permit schemes allow flexibility in meeting targets, theoretically reducing costs while maintaining the same level of total emissions reductions.

Existing trading schemes do appear to reduce industry compliance costs. Under the United States Sulphur Dioxide (SO_2) Allowances Programme, costs dropped from an estimated $800 per ton of SO_2 to $200 per ton.

The aim of any trading system is to increase the efficiency of GHG reductions, which both lowers compliance costs and allows more ambitious environmental targets. An important part of the negotiations at Kyoto will centre around how much extra emissions reductions the US may be prepared to offer in return for gaining agreement on a trading system.

In the longer term there are also strong development policy reasons to favour the use of tradable permits. Worldwide per-capita distribution of permits would give developing countries the option to sell permits to the industrialised world. An extra flow of capital into developing nations could stimulate both direct improvements in the standard of living, and facilitate purchase of new, efficient, clean technologies.

Trading seems to be an unalloyed good, reducing costs, emissions and potentially promoting global development. Why then is there so much scepticism about trading? As with most policy disputes, the problems lie in moving from theory to practice.

What should be traded? For an efficient system to work the unit of trade must be clearly defined. It seems likely that the Kyoto agreement will be based around total GHG gas reductions over a basket of gases: carbon dioxide (CO_2), methane (CH_4) and nitrogen oxides (NO_X). However, using a basket of gases will reduce the reliability of a trading system as only one of the three gases, CO_2, is easily monitored.

Who should trade? Should trading be allowed just between individual governments, or bought from an international pooled market? Can international trading take place between private sector companies, such as the US SO_2 market? Bilateral trading is the most simple to monitor, but a pool approach gives more efficient trading. Intra-industry trading would take many years to establish, but has strong support from the business sector.

How should permits be distributed? Agreeing a trading system will further complicate the negotiations at Kyoto. Studies suggest that any targets likely to be agreed at Kyoto will be achievable in the near-term by low or no-cost efficiency measures, and so trading will give few cost savings. Therefore, the value of discussing permit systems at Kyoto seems small but the risk of them delaying implementation is high.

Which countries should participate? Any trading system discussed at Kyoto would be limited to trade between Annex 1 parties which have binding targets. However, since the fall of the Berlin wall industrial decline in the Annex 1 countries of the former Soviet Union has reduced their CO_2 emissions by 20-25% below 1990 levels, greater than any target likely to be agreed at Kyoto. These countries will have plenty of spare capacity to sell, and if allowed to trade, there will be little incentive for other governments to introduce serious GHG reduction policies. More years will be wasted in inaction.

Given the low reduction targets proposed for Kyoto, trading will do little to reduce costs while introducing many new political, organisational and technical complexities into the agreement. Hence, the position of the World Wide Fund for Nature is that if intra-governmental trading is introduced it should apply to specific CO_2 targets, not a basket of gases, and be limited to only 10% of emissions reductions.

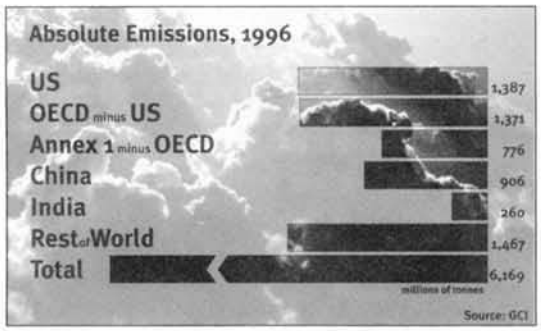
Trading could potentially save costs and lead to stronger GHG emissions targets. However, the use of trading as a political ploy to delay significant action to reduce the use of fossil fuels has obscured the many advantages it could hold in the long term. While it is important that trading is not a part of the Kyoto agreement, it is also vital that an equitable, efficient and monitorable scheme is developed in the future, and that such a system is used to strengthen environmental targets and not just reduce economic costs to already rich countries.

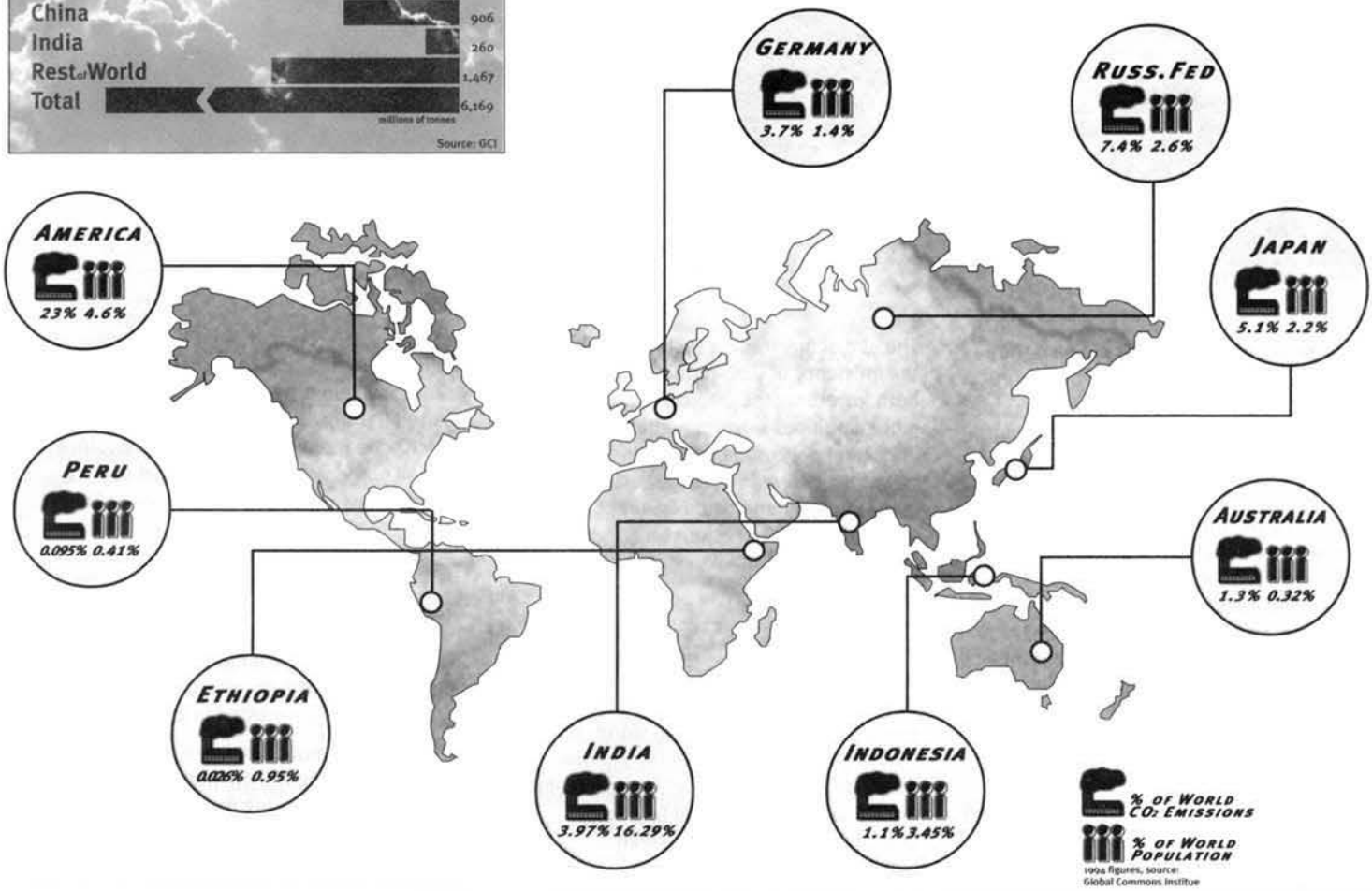
Karen Gill is climate change policy assistant at World Wide Fund for Nature UK.

Climate Change

The BERLIN MANDATE

At the first Conference of the Parties, delegates agreed to establish another group — the Ad hoc Group on the Berlin Mandate, AGBM — to discuss appropriate action beyond 2000 "as a matter of urgency": specifically, stronger, legally binding Annex 1 commitments to reductions in GHGs, and ruling out any new commitments for non Annex1 parties. AGBM agreement to be reached in time for COP-3 at Kyoto.





TARGETS? YES, BUT ...

When a country says it wants to stabilise emissions of GHGs at year X levels by year Y, it doesn't mean that in year Y, it wants emissions of GHGs in the the country to be stabilised at year X levels. Confused? Unfortunately, it is not just a case of % reduction of said gas by said date. This is a very simplified ABC to the main terms and 'yes buts' which are proposed for the Kyoto agreement.

BANKING: is where credit is given for emissions reductions already achieved or achieved during the period to which the QELRO applies. BORROWING is emitting more than the allowed amount, resulting in an emissions 'debit' on the account for future generations (needless to say without securing prior consent).

QELROs and PAMs: 'Quantified Emissions Limitation and Reduction Objective' with implementing 'Policies and Measures' are negotaiting-speak for targets with a timetable and action plan. Note the target is not necessarily a reduction, but could be a "limitation" of an increase. Kyoto's raison d'etre is to agree QELROs for beyond the year 2000.

JI and AIJ: Joint Implementation is being trialled as Activities Implemented Jointly. JI involves one country being credited in some way for funding emissions reductions or emissions sequestration in another country. So instead of cutting emissions, fossil fuel industries can instead take the cheaper, much less verifiable option and plant trees in Indonesia. There are fears that joint implementation will be used to support nuclear power projects in Eastern Europe, Asia and Latin America.

NET: Net emissions are anthropogenic emissions minus (the difficult to calculate with any certainty) uptake by anthropogenic sinks. There is no proposal to add on the emissions that would have been sequestered by human-destroyed sinks. New Zealand has proposed a net approach which subtracts base level anthropogenic emissions alone from net emissions in the period by which reductions are to be reached.

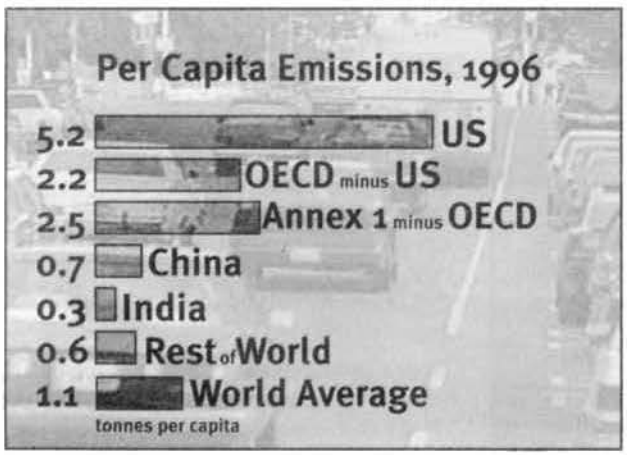
LOOPHOLES: a general term for any small print which allows emissions increases under the auspices of an emission limitation or reduction target.

BASKET: Instead of a separate target for each GHG, a basket approach sets one target reduction for a number of gases grouped together. As GHGs differ in their unit contribution to the greenhouse effect, reductions of each gas in the basket are corrected for their relative warming effect. An optimists basket allows greater flexibility in achieving a desired reduction in GHGs. A pessimists basket allows greater flexibility in getting away with dubious GHG reductions (by including gases in which reductions are not verifiable).

DIFFERENTIATION: Different countries have had/do have differing reliance on and efficiency of use of fossil fuels, and hence will also differ in responsibility for the problem to date and the cost and ease with which emissions reductions can be achieved. Taking these and other differences into account in setting reduction targets results in "common but differentiated" country reduction targets. A BUBBLE is a set target for an area, within which individuals can agree differentiated targets and/or trade emissions permits.

CLIMATE CHRONOLOGY

1827 French scientist Jean-Baptiste Fourier recognises and names greenhouse effect
1860 British scientist John Tyndall measured absorption of infra red by CO_2 and water vapour
1896 Swedish chemist Svante Arrhenius calculates doubling concentration of CO_2 would increase global average temperature by 5 to 6ºC
1940 GS Callendar calculates warming due to increasing CO_2 from burning fossil fuels.
Feb 12-23, 1979 Geneva. First World Climate Conference creates World Climate Programme, WCP.
October 1980, Geneva. Interim WCP meeting
November 1980, Villach. First meeting of experts. Assess role of CO_2 and other GHGs
October 1985, Villach. Second meeting of experts.
June 1988, Toronto Confenence on 'The Changing Atmosphere' calls for 20% cut in CO_2 emissions by 2005.
1988, Inter-Governmental Panel on Climate Change, IPCC, set up by UN and World Meteorological Organisation to assess existing knowledge about climate change.
July 1990, Geneva, Second World Climate Conference. Principles for a climate convention.
Autumn 1990, IPCC publishes '1990 Scientific Assessment of climate change".
11 December 1990, UN General Assembly resolution establishes the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change, INC/FCCC.
4-14 February, 1991, Virginia, USA. First INC session, INC-1.
19-29 June, 1991, Geneva. INC-2.
9-20 September, 1991, Nairobi. INC-3
9-20 December, 1991, Geneva. INC-4
18-28 February, 1992, New York. INC-5
29 April-9 May, '92, New York. INC-5 resumed. Treaty agreed.
JUNE 1992, Rio de Janeiro. United Nations Conference on Environment and Development or the Earth Summit. FCCC open for signature.
7-10 December '92, Geneva. INC-6.
15-19 March '93, New York. INC-7.
17-30 August '93, Geneva. INC-8.
7-18 February '94, Geneva. INC-9.
22-31 August '94, Geneva. INC-10. AOSIS proposes "at least" 20% GHG reduction by 2005
6-17 February '95, New York. INC-11.
28 March-7 April '95, Berlin. The first COP, COP-1, agrees the Berlin Mandate
21-25 August '95, Geneva. AGBM-1.
28 August-1 September '95, Geneva. SBI + SBSTA-1.
30 October-3 November '95, Geneva. AGBM-2.
27 February-4 March '96, Geneva. SBI + SBSTA-2.
5-8 March, '96, Geneva. AGBM-3.
1996, IPCC publishes Second Assesment Report (SAR II)
8-19 July '96, Geneva. COP-2, AGBM-4, SBI+SBSTA-3. The "Geneva Declaration," from COP-2 endorses IPCC's SAR II conclusions and called for legally binding objectives and significant reductions in GHG emissions.
9-18 December '96, Geneva. AGBM-5, SBI+SBSTA-4. AGBM-5 inched towards concrete proposals.
25 February-7 March '97, Bonn. SBI + SBSTA-5.
2 March, '97, EU Ministers agree target of 15% reduction in GHGs by 2010
3-7 March '97, Bonn. AGBM-6.
28 July-8 August '97, Bonn. AGBM-7, SBI + SBSTA-6.
6 October '97, Japan announces Kyoto target: a maximum reduction in emissions of GHGs of 5% for the years 2008-2012.
20-31 October '97, Bonn. SBI + SBSTA-7, AGBM-8. Dress rehearsal for Kyoto.
22 October '97, US announces target: to stabilise GHG emissions at 1990 levels between 2008 and 2012 and then make unspecified reductions over the next 5 years.
1-10 December '97, Kyoto. COP-3.



Change in world CO_2 emissions from 1992, when FCCC signed, to 1996

The Framework Convention on Climate Change

90 days after the 50th ratification, enters into force on 21 March1994. Non-signatories remaining after this date can accede to the Convention at any time.

153 countries and the EU signed at the Rio Earth Summit.

As at 3 Sept 97 the Convention had received 169 instruments of ratification.

Puts to paper a set of agreed facts, principles and desirable actions, and provides for the subsequent development of more specific and legally binding commitments.

Ultimate objective of Convention is to "achieve ... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food protection is not threatened and to enable economic development to proceed in a sustainable manner."

Signatories (parties to the convention) inter alia ...are concerned about the enhanced greenhouse effect, note that the bulk of emisions have been and are from developing countries, affirm that responses should avoid adverse effects on economic development, are determined to protect the climate system, agree on the ("cost-effective") precautionary principle

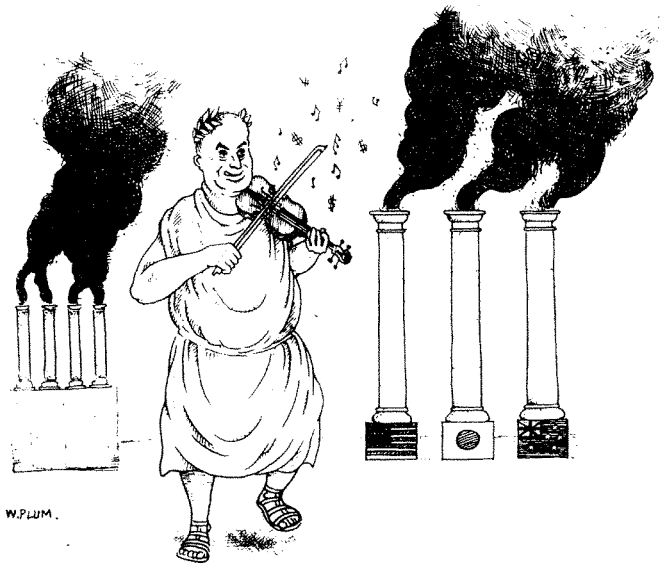
Parties are obliged to develop inventories of sources and sinks for human generated GHGs not controlled by the Montreal Protocol; to implement measures to mitigate climate change; to facilitate and co-operate in preparing for adaptation to climate change; to promote appropriate greenhouse friendly technology; to promote GHG sinks and reservoirs. Further weaker requirements relate to national policy formulation, scientific co-operation and education. All parties agree to report on implementation of the Convention.

Developed (annex 1) countries are further obliged to adopt "policies and measures" to limit GHG emissions and enhance sinks and to provide periodic detailed reports on these policies and measures. It is generally accepted that developed countries are also committed to reducing GHG emissions to 1990 levels by 2000.

Annex 2 countries (Annex 1 minus economies in transition) agree to provide funds to developing countries for implementing their commitments under the Convention.

The FCCC sets the framework for further negotiation in establishing the Conference of Parties, COP, to meet on a yearly basis, aswell as the Subsidiary Body for Scientific and Technological Advice, SBSTA, and the Subsidiary Body for Implementation — who both advise the COP.

Climate chaos



Nice words on the environment come easy to most politicians, but it appears that for some of them, the acid test of legally binding targets for Kyoto is too much like doing something. On the domestic front,* Mike Townsley *finds Clinton battling Congress, Howard hammering the South Pacific and Hashimoto having first-time host nerves.

"Let there be no doubt about the conclusions of the scientific community," said Nobel Laureate Henry Kendal. Speaking on behalf of 1,500 scientists, including 102 Nobel Prize winners, attending a conference in Washington at the beginning of October, he warned: "the threat of global warming is very real and action is needed immediately."

"It is a grave error to believe that we can continue to procrastinate. Scientists do not believe this and no one else should either."

Echoing the warning, another Nobel Prize winner, Dudley Herschbach, added: "This is a wake-up call for world leaders. Never before has the senior scientific community spoken so boldly on the urgent need to prevent disruptions to our climate."

While the 'wake-up call' was broadcast loud and clear — it was aimed at one world leader in particular. Just across the road from the conference, organised by the Union of Concerned Scientists, US President Bill Clinton was struggling to formulate a policy to take to Kyoto.

Clinton and Vice President Al Gore launched a climate charm, and information, offensive in October, seeking, they said, to impress upon the US people just how serious the situation is. Addressing a specially convened meeting of TV weather forecasters, Clinton said: "Right now, while most scientists see the train coming through the tunnel, most Americans haven't heard the whistle blowing. They don't sense that it's out there as a big issue. And I really believe that, as President, one of my most important jobs is to tell the American people what the big issues are that we have to deal with."

However, according to a recent survey, 74% of Americans are already convinced that climate change is real and already happening, or about to happen. The question is: what are they prepared to do about it? Will they back a strong US stance or, as some commentators believe, will they rebel against any changes to a lifestyle which depends upon petrol being cheaper than bottled water?

The real problem in the US is not its people but the powerful fossil fuel and automotive industries. Under the auspices of the Global Climate Coalition (GCC) they have launched a $13 million advertising pre-emptive strike against any plans Clinton may have to commit the US to radical cuts in emissions of heat–trapping gases.

Its main tactic is to try to undermine a 1995 agreement reached in Berlin that any climate deal struck in Kyoto "would be binding only on the US and other industrialised nations". The GCC complain that "132 out of 166 nations — eg, China, India, Brazil, Mexico, South Korea, most OPEC nations and others — are exempt under present rules and have made it clear they will not agree to any commitments."

The Berlin Mandate recognises that the first steps in tackling global warming should be taken by those countries responsible for the bulk of the pollution — the industrialised nations which have benefited from unfettered fossil fuel combustion. Only then will developing nations be willing to tackle their own growing greenhouse gas emissions. It lies at the very heart of the Kyoto process.

The Coalition does not genuinely expect developing nations to voluntarily cut their emissions at Kyoto. It is a superficial and xenophobic PR offensive aimed at side tracking negotiations during the 10 day Kyoto Conference into trying to renegotiate the Berlin Mandate. Thus, failing to agree legally binding targets for reducing greenhouse gas emissions and allowing 'business as usual.' The position is also being backed by the Republican-controlled Congress, without the support of which, any plan Clinton signs in Kyoto will be no more than hot air. Newt Gingrich, House Speaker, has already warned against any agreement in which "the US would likely bear too much burden."

Yet, the logic for US action is clear. According to Clinton: "With 4% of the world's population we enjoy 20% of the world's wealth. That also explains why we produce over 20% of the world's greenhouse gases. Those two things are related. Now, I believe that we have the responsibility to cut back. First, because the world is looking to us for leadership, and secondly, because we won't have any influence in getting anybody else to cut back if we don't."

"The developing countries of Asia and Latin America will grow at roughly three times the rate of the US, Japan, Europe and Canada in the next twenty years ... If that is true, we'll have to work hard to maintain our standard of living and grow our economy, we won't be for long the world's largest producer of greenhouse gases. So if we expect others to show restraint, we must do the same and we must lead the way."

However, in revealing its proposals the US has fallen far short of taking a lead. It will stumble into the Kyoto negotiations with plans to stabilise greenhouse emissions at their 1990 levels by 2012. At the Rio Earth Summit the US pledged to stabilise emissions at their 1990 levels by 2000. It is now, however, already at least 10% over that target. No cuts on 1990 levels are proposed until 2017.

While Clinton is now committed to signing a legally binding agreement at Kyoto, it is not clear if such a modest proposal wil gain the

backing of Congress. The Big Three car makers in Detroit have already warned that the plan would catapult the world into recession. According to a senior Japanese climate negotiator, "there can be no agreement without the US". Japan is growing increasingly concerned that in hosting COP3 (Convention of the Parties to the UN Framework Climate Convention), it has picked up a poisoned chalice. A position not helped by its own efforts to undermine the Berlin Mandate, and a very weak proposal involving minimal cuts in discharges.It is proposing a maximum 5% cut in industrialised countries' emissions of three main greenhouse gases — carbon dioxide, methane and nitrous oxides — for the years 2008-2012. However, it is also spearheading the principle of 'differentiation' which would allow countries a reduction on the 5% target if: in 1990 their greenhouse emissions were below the average per capita; or if they have experienced higher than average population growth. Japan also supports some form of joint implementation which would allow countries to be given credit for funding foreign abatement efforts.

Japan would be a principle beneficiary of differentiation. Its target would be only 2.5%, which according to a Government spokesman, Kanezo Muraoka, would require the construction of 52 new nuclear power plant: "We have to make a huge effort to even stabilise CO_2 emissions."

Having been in the vanguard of developing and implementing energy efficiency technologies for industry, it wants to be credited with past gains. It is unwilling to face the same targets as other nations which have made little or no effort to improve the performance of their industries.

However, Japan is also keen to take a higher profile role in international affairs. The Climate Conference was seen as an opportunity to display its international leadership and help secure a permanent seat on the UN Security Council. It now fears that the Conference will simply fall apart. One unnamed Japanese Cabinet Minister is now arguing that: "It was a mistake for us to take on the host nation's role."

Dismissing the European Union's proposal for a 15% cut in heat trapping discharges by 2010 as both "unfair and unrealistic", it now hopes that offering countries a compromise between the 15% cuts being sought by the EU, nothing, and the very weak noises emanating from the US, that it can at least prevent the conference from collapsing. However, its fears do not appear to be for future generations or the environment, but its own political standing.

One country has already made it clear that even the Japanese proposal is unacceptable. Australia's Prime Minister, John Howard, has attacked the plan: "Australia cannot sign up to proposals that will lead to the export of jobs and our energy efficient minerals processing industries."

Publicly in favour of differentiation, under the Japanese scheme Australia would have to cut its 1990 emissions by only 1.8%, but claims this "is simply not achievable without enormous economic costs." With high levels of unemployment, proving extremely difficult to cut, the Australian government is unwilling to sign-up to any greenhouse gas reductions. It is also the largest exporter of coal in the world, and fears that a strong treaty will have an impact on its trade.

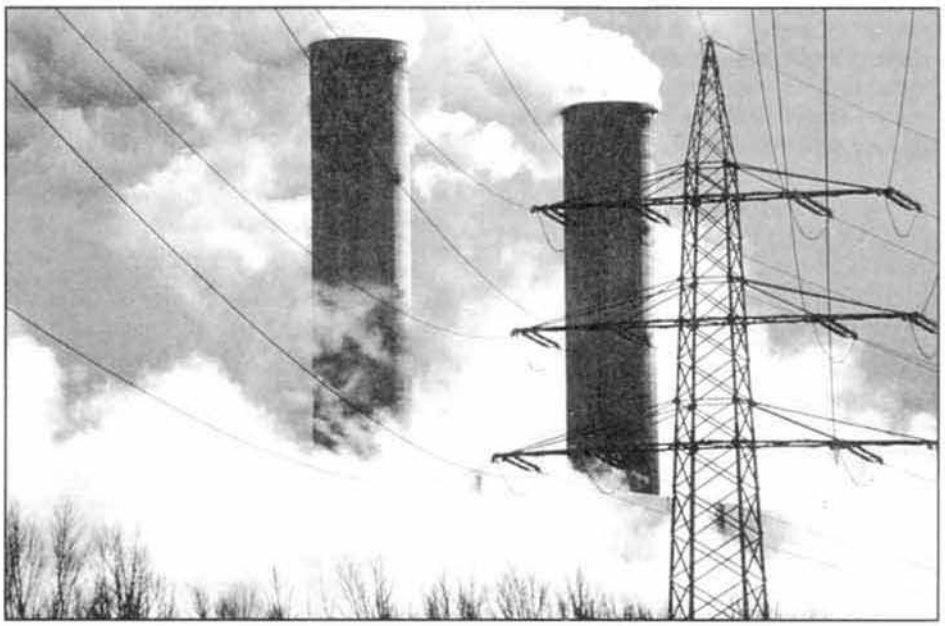
So strong is the Australian government's opposition to significant reductions, that it recently jeopardised breaking the South Pacific Forum, the region's key political group, when it faced down a strong statement from the Forum calling for industrialised nations to cut their greenhouse discharges by 20%. Many of the Forum's island members, including the Cook Islands, the Marshall Islands, Niue, and Nauru, will be among the hardest hit by rises in sea levels threatened by climate change. While no explicit threat was made, it was clear to the leaders of these islands that $450 million of Australian aid in the region was at stake if they did not abandon their call for stringent cuts in emissions.

Howard's government actually wants to negotiate an increase in the country's CO_2 and methane emissions. It is, however, out of step with the business community. A recent survey carried out by the Australian Chamber of Commerce revealed that 70% of company directors favour a legally binding reduction treaty. While half rejected differentiation, 69% viewed environmental control measures as both a cost and an opportunity which would stimulate innovation and enhanced commercial performance.

"Australia attacks us because it is too much and Europe attacks us because it is too little. Somehow we must find a compromise," said Kiyotaka Alasaka, deputy director of Japan's Foreign Ministry. Unfortunately the science of climate change dictates that there can be no success in Kyoto unless a minimum across the board commitment to cut greenhouse gas discharges by 20% of their 1990 levels by 2005 is agreed — backed by most environmental groups. Anything else will leave the world open to changes in climate capable of wreaking disaster around the globe.

Given the pressing need for concerted action, the unprecedented scientific unity and the fact that the conference will take place under the full glare of the international media, world leaders will be keen to avoid being cast as modern day Neros, reaching for their fiddles while the world burns. An agreement which meets the needs of the environment and future generations is still possible, but, sadly, appears unlikely.

Mike Townsley is an independent environmental consultant and freelance journalist.



Climate Change

Seasoned Negotiators

Star Trek Federation Meeting Hall? No - Kyoto Conference Centre

For just short of 365 days a year, international negotiators jet around the world pioneering visionary world agreement in exciting, highly intellectual meetings for the sake of the greater good. Don't they? Helen Snodin reports on the latest climate change version.

Writing in his diaries at a 1987 United Nations trade meeting in Geneva, Alan Clark, then Minister for Trade, planned his escape route: "My plan, to put in an appearance, shake a few hands, 'Excellency, how very agreeable to see you again; how well you are looking; I would so greatly value your opinion on ... ; let us get our staff to arrange a short bilateral meeting; such pleasure, such pleasure.' And all that. A set speech to the assembly (not deviating by one iota from the turgid DTI text). And then, hand over to officials..."

In the event, a last minute crisis thwarted Mr Clark's efforts to steal away to the family chalet in Zermatt. Instead, "thoroughly dejected", he remained in Geneva to preside over a "tedious mini-dispute".

Enter the world of international negotiation, living proof that the tedium one has to endure in a lifetime is directly proportional to one's status.

For the month of October this year the UN hosted some 31 conferences or committees (not including another 27 that meet as required) spread between New York, Geneva, Vienna, Montreal, Berne, Paris, Amman, Bonn and Rome. Conferences last anything from 1 day to more than 2 weeks.

Add on to that regional meetings and 'grouping' meetings such as the EU, G7, G77 or OECD, multiply each conference by a number of bilateral meetings, technical committees, workshops and roundtable meetings, and it soon becomes clear there are a lot of people doing a lot of travelling to do a lot of talking a lot of the time.

The climate change negotiations distinguish themselves in involving an order of subject complexity up on their predecessors on ozone depletion and acid rain. Plus the stakes are somewhat higher — it would be improbable to go to war over free trade in refrigerants.

Nevertheless, the format and formalities of negotiating international agreement remain roughly the same, while the golden rule is observed at all times, namely *nothing* goes without saying.

In the five years since the Framework Convention on Climate Change (FCCC) was signed at the '92 Rio Earth Summit by 153 countries and the EU, there have been eight main conferences on the Convention and 22 subsidiary body meetings, spread between Geneva, New York, Berlin and Bonn. Some 1,300 people typically attend the smallest of these meetings, while around 5,000 people are expected to attend the next main 'Conference of the Parties' at Kyoto. Agreeing (or not) to act (or not) on the scientific evidence is the purpose of negotiations. To do this negotiation, the FCCC set up a process whereby parties meet annually at a Conference of the Parties (COP). The first COP, in 1995, set up a subsidiary body to further negotiations on legal targets called the Ad-Hoc Group on the Berlin Mandate (AGBM). Both the COP and AGBM are helped by the Subsidiary Body for Scientific and Technological Advice, (SBSTA), and the Subsidiary Body for Implementation, (SBI), which meet in conjunction with the COPs and/or the AGBMs, or separately from other climate change UN meetings.

A typical UK delegation to a COP, or one of its subsidiary bodies, will consist of a chief negotiator from the Department of the Environment, 2-3 representatives from the Department of Trade and Industry, 1 from the Foreign Office and 1 from the Department for International Development. In addition, a minister or ministers attend the COPs.

At the most recent meeting in Bonn — AGBM8 — UK negotiators would start the day with an 8.30–10am EU meeting. Then there was a main plenary from 10am–1pm, 1–3pm with the EU again and then 3–6pm (or much later if required) for another plenary. Bilateral meetings and dinners are squeezed in inbetween.

"The negotiators have to work very, very hard" says Cherry Farrow, co-ordinator of the climate change campaign for WWFUK, "it's a very gruelling time for them."

Representatives of Non-Governmental Organisations (NGOs) can attend open meetings, and at certain times can put in a formal request for an intervention — an opportunity to speak for 3-6 minutes.

To simplify inter-delegate relations, everyone is colour-coded. At AGBM8 it was pink for official country delegates, green for NGOs and red for press.

Main meetings are held in large conference halls. Delegates can don headphones which translate the proceedings simultaneously into English, French, Russian, Spanish, Chinese and Arabic. On speaking for the first time, it is customary to congratulate the chair and promise to help him/her in the achievement of success.

Negotiators spend much of their time accommodating different country proposals into one manageable document. The result of this process is a 'consolidated negotiating text' — a very long document with lots of brackets. Conventionally, square brackets denote text that is yet to be agreed. And very helpfully, as a US delegate at AGBM8 formally noted, while brackets reflect disagreement in some cases, in

others the absence of brackets also reflects disagreement.

AGBM8 also included the concept of 'mythical' brackets, where text that was previously uncontroversial and unbracketed, is later bracketed, resulting in a session closing with more brackets than present at the outset. That is, the opposite to what a session is supposed to achieve.

When negotiating, delegates vie for sentences to be inserted and for others to be removed.

Liberating any text from brackets is a surgical procedure.

In an effort to move things along at AGBM8, chairman Estrada-Oyuela opened by saying that this time there would be no additions or omissions to the text unless agreed by consensus.

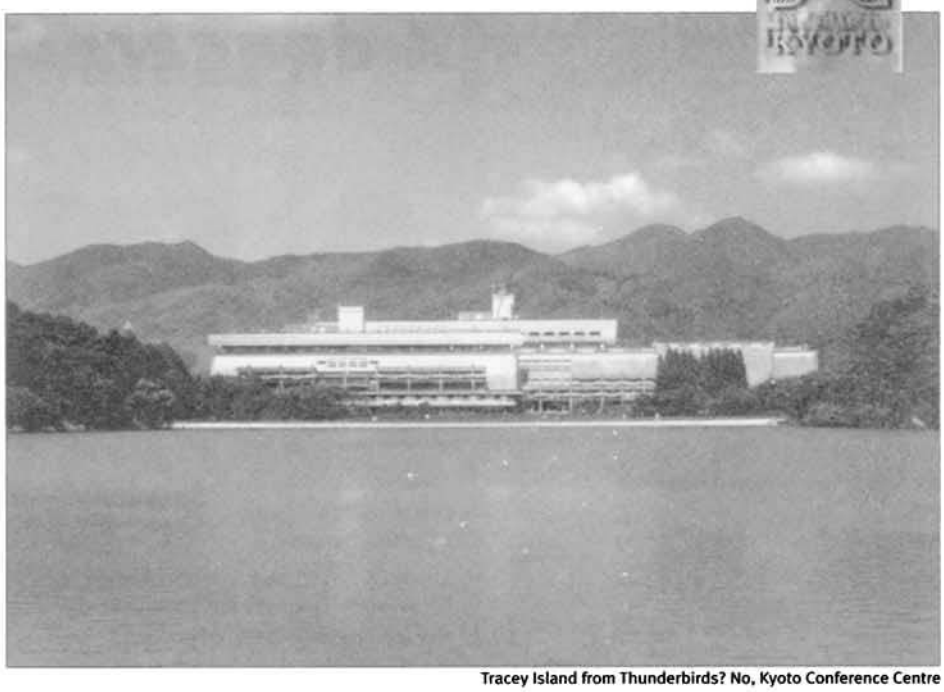
The only problem with this is that there is no consensus on what consensus is. During one particular session, Estrada ruled a certain sentence was agreed by consensus despite objections from the US, Canada and Australia. The US raised a point of order that there was no consensus. Estrada replied the ruling could be challenged under the rules of procedure (that's the 'applied' but not formally 'adopted' rules). Venezuela challenged the ruling, Egypt and the US tried to calm things down, and Iran and Kuwait requested a formal UN system definition of consensus.

Tessa Robertson, consultant with Greenpeace International, has attended most of the negotiations. She has a working definition of consensus: "In effect, consensus is no active opposition. At the finalising of the FCCC itself, all the OPEC countries had their flags up, but they just gabbled it through."

Consensus or not, by September '97, the Convention had received 169 signatures, including those of the OPEC countries. The FCCC is essentially voluntary in its obligations and if commitment-averse countries hadn't signed, they would have no right to be a part of the formulation of further commitments. As it is, they can now legitimately obstruct progress and lower the common denominator.

However the prospect of firmer commitments over the last few year's negotiations has focused the minds. Countries are now objecting to text copied straight from the Convention they ceremoniously signed at Rio.

Genuine examples of pedantry plucked from Bonn include taking the time to: discuss the relative merits of saying "limitation" or "limitation or abatement in the increase" of emissions; replace a reference to methodologies with "modalities"; include a footnote to an article forbidding reservations to the protocol stating that one party placed a reservation on the article.



Tracey Island from Thunderbirds? No, Kyoto Conference Centre

In closing AGBM8, the Chair wondered out loud whether delegates could have arrived at the current point in the process in half the time.

With views as polarised as they are, observers are fearful of a stalemate. This in itself is nothing new for negotiations. Each delegation typically arrives with a set, government-dictated position, to reach which, leaders will have ridden domestic strife. Thus they are disinclined to subsequently alter their position. Negotiators can make headway on newly introduced loopholes and other detail, but they are not able to barter amongst themselves on the main commitments.

As Robertson notes: "there is somewhat of a deadlock at all negotiations when only the officials are there. Their main job is to streamline down the text, but in the event, it just means lots of footnotes."

Cue the only people who can save the day — the ministers. As the official line goes, "civil servants advise, ministers decide."

Typically, they arrive half way through the allotted timetable for negotiations, meet together behind closed doors and emerge sometime later all smiles and waving a ministerial declaration. Hopefully, their combined authority for flexibility will help to break any deadlock.

So, in an ideal world, we will get ministerial agreement, and a legally binding protocol. Mission accomplished.

Except there is one last hurdle. One of the most controversial areas of the text is what legally binding will actually mean. Trade sanctions are extremely unlikely, and even if they were agreed upon, the World Trade Organisation could presumably challenge aspects of the agreement it took exception to. Which leaves proposals floated by the G77 and China for a clean development fund into which defaulting Annex 1 countries would pay, or proposals to restrict voting and trading rights for Parties in non-compliance.

As any Kyoto Treaty is unlikely to happen without US participation — for the treaty to take effect, combined emissions of Parties will have to amount to a certain amount, an unlikely eventuality without the US — and as it is difficult to imagine the US agreeing to a slap that hurts, it will be interesting to see what kind of compliance emerges.

During another of Alan Clark's negotiating meetings, someone asked how international voluntary bans were enforced. "The Honours system" replied Mr Clark, under his breath.[1]

Notes:-1 For readers outwith the UK, the Honours system is a system whereby a person is bestowed the honour of preceding their name with Sir, Lord or Lady and so on, by our monarch, in return for doing good things. Mr Clark was referring to rumours which suggest some honours are given in return for favours to the government.

Climate Change

A dangerous lack of will

Attempts to obstruct an agreement of strong commitments at Kyoto are an implicit acceptance of the onset of dangerous climate change. Have governments really come to terms with this?* Patrick Green *says they are sleeping through a wake-up call

Friends of the Earth International supports:

*the AOSIS target, ie, a 20% reduction of CO_2 emissions (1990 levels) by 2005;

* a separate CO_2 target (as opposed to a basket of gases), as it is the only greenhouse gas for which data is reliable;

* inclusion of HFCs, PFCs and SF_6 in the protocol;

* no new commitments for developing countries;

* no trading of pre-budget-period emission reductions; and

* no agreement on the net approach until methodologies and reporting have been sorted out

The negotiations leading up to the Kyoto Climate Summit have been dominated by the politics of the lowest common denominator with almost the complete absence of any sense of what scale of action will be actually necessary in the medium to long term to prevent dangerous climate change. Without exception, world governments accept that climate change is a fact, and even oil companies such as British Petroleum and Shell UK accept that the evidence mandates precautionary action. However, despite the urgency and some fine words, governments and the oil industry remain committed to a business-as-usual path, which looks set to condemn the world to a climate catastrophe.

The Intergovernmental Panel on Climate Change (IPCC) has given governments a wake-up call they are ignoring: even if global annual emissions of carbon dioxide from fossil fuel burning are stabilised at just present levels they would still lead to a near doubling of pre-industrial atmospheric concentrations by 2100, which would probably result in the onset of dangerous climatic change.

The IPCC has stated that this threat could be averted if global emissions were to be reduced by 60% by 2050 and stabilised thereafter. However, current government policies and business practices are driving emissions in exactly the opposite direction: the IPCC has predicted a 70% increase in global emissions by 2025. An increase that will in all probability trigger the onset of a climate catastrophe for millions of people in low-lying coastal regions around the world.

Disturbingly, governments such as the US now seem to accept that a doubling of pre-industrial atmospheric concentrations, and the onset of dangerous climate change is inevitable. What these governments are effectively saying is that the political will does not exist to prevent the loss of the Small Island States or the flooding of 20% of the land mass of Bangladesh, the Nile Delta, parts of China, the Netherlands, the UK, the US and other low-lying areas around the world, or to prevent an increase in severe weather events, or the loss of life, human suffering and economic damage that would result on a global scale.

Indeed, one has only to look at worldwide weather patterns and the increasing frequency and severity of extreme weather events to realise the seriousness of the IPCC's warning. The IPCC has stated that on regional scales, there is already evidence of changes in some weather extremes and climate variability: weather extremes seem to be becoming more frequent, more severe and more costly. The insurance industry has warned that we may be seeing the first signs of climate change and that they cannot sustain the scale of economic losses which would result from dangerous climate change.

Extreme weather events give us a chilling reminder of the urgency of the threat the world faces. We are not talking about distant changes but significant changes in our life times. Weather extremes have high human and economic costs. However, unless governments act in Kyoto and start to reverse the predicted increase in carbon emissions the world will soon reach the point of non return.

The proposals being put forward by the US and Japan are totally inadequate and there is a real danger that Kyoto will fail to produce a meaningful agreement.

Dr Patrick Green is Senior Energy, Nuclear and Climate Campaigner, Friends of the Earth England, Wales and Northern Ireland.

Joint Statement on Climate Change and Energy Policy

Signed by 32 UK environment and renewable energy groups including Greenpeace, Friends of the Earth, the Royal Society for the Protection of Birds and Climate Action Network.

The Objective of the Climate Convention is to constrain climate change rates and limits allowing ecosystems to "adapt naturally". Scientists advising the United Nations have proposed criteria for a lower, safer limit, which includes a maximum one degree Celsius rise above pre industrial levels and a higher, less safe limit of two degrees. Governments should now use these limits to plan the future permissible global use of fossil fuels. Such a task is long overdue because the existing reserves of fossil fuels — such as oil, coal and gas — will, when burnt, produce at least twice as much carbon dioxide as even the upper limit can tolerate. (This is also the temperature limit adopted by the EU as its policy target.) Ipso facto, a negotiated "carbon budget" is required, and reliance on fossil fuels must be phased out in an orderly way.

EASEing in the reductions

Co-ordinator of the 'Energy Alternatives for a Sustainable Europe' (EASE) project* Dr John Green *outlines an equitable approach to CO_2 reductions and the implications for Europe.

Europe[1] will need to reduce its emissions of carbon dioxide (CO_2) by 85% if they are to fall to a level at which natural ecosystems can adapt.[2] Presently CO_2 emissions per capita in Europe are 7.3 tonnes per year (1990), considerably higher than the environmental space target of 1.1 tonnes per year that each person will be able to emit by the middle of the next century in a move towards achieving an equitable global system.

From this perspective even the European Union's (EU) comparatively ambitious proposals being put to the Kyoto conference are severely inadequate. The call by the EU for a 15% cut in CO_2 emissions over 1990 levels in the 13 years remaining to 2010 will still leave a further 70% cut in per capita emissions over the following 40 years if the environmental space target[2] is to be achieved. Although a step in the right direction this would still leave the bulk of the burden on future generations.

In order to meet its target the European Commission's strategy[3] is to increase the use of Combined Heat and Power (CHP) from 9% to 18% by the year 2010 by making use of tax incentives and other support mechanisms. Renewables are also expected to play an increasingly significant role as they expand to meet 12% of inland energy consumption by 2010, up from the current 6%. Whilst these objectives are eminently achievable, they will need to be backed by concerted action in order to avoid the embarrassing lack of progress characterised by previous objectives — for example, the aim to improve the Region's energy intensity by 20% between 1986 and 1995, achieving only 9% in the event.

A total restructuring of energy institutions and policies in Europe will be essential if the EU is to achieve its aims. These include:[4]

•A complete revision of the Euratom Treaty along with the establishment of an intergovernmental conference to develop a European treaty to provide strategic support for renewables (Eurenew).

•The establishment of a European Renewable Energy Agency, with a remit to promote renewables and integrate all policy towards reducing CO_2 emissions. Agricultural policy, research and development policy, environmental policy, structural funding, external relations, regional policy, as well as energy policy, all need to be integrated.

•The development of an EU-action plan to remove all fossil fuel and nuclear subsidies and other market distortions which obstruct the introduction of clean energy technologies.

•Reallocation of research and development funds from fossil fuel and nuclear programmes (including the fusion program which has little prospect of providing useful energy output in the foreseeable future), into renewables and energy efficiency programmes.

•The introduction of policies to ensure that with energy market liberalisation, provision is made for incentives for renewable energy, CHP and energy efficiency investment.

•Bringing in of a new influx of staff into the European Commission who have a background in renewable energy and energy efficiency. Presently the majority of staff with a responsibility for energy and climate change policies, even those working with a remit for renewable energy, have come from the nuclear and fossil fuel industries. Whilst publicly supporting renewables, there is still a general culture in the Commission which privately supports investment into "safe" nuclear power, whilst belittling the potential of renewable energy technologies.

•Reassessment of the advantages offered by local energy networks compared to those of the Trans-European Energy Networks.

Many other practical measures are also needed. These could include: the introduction of pricing mechanisms which fully incorporate the external environmental and social costs of energy production and use, including the benefits of embedded generation; the promotion of partnerships between local authorities and energy service companies; the introduction of a tax on aviation fuel; and requirements for energy certification of houses and other buildings when they are being sold.

With energy demand in every EU member state (except Portugal) increasing in 1996, at an average of 3.6%, measures such as these are urgently needed if Europe is to meet even its own inadequate targets.

Notes

(1) Assuming a global population of 9.8 billion by 2050.

(2) The constraint on CO_2 emissions is based on the understanding that a rate of climate change greater than 0.1°C per decade is unacceptable. Several studies have concluded that a 50-75% reduction in CO2 emissions is needed by 2050 to prevent higher rates of global temperature change. Taking the lower 50% reduction, and a mid-range UN global population projection of 9.8 billion, results in a target per capita emissions for 2050 of 1.1 tonnes of CO2 per annum (defined as the 'environmental space' target for 2050). N.B. Even this per capita emissions level is over five times greater than the maximum rate at which the global ecosystem can absorb CO_2, estimated to be 2 Giga-tonnes per annum.

(3) As stated in, 'Climate Change — the EU approach to Kyoto', European Commission, 1997.

(4) These recommendations are from the report 'Stepping towards sustainability in energy — practical proposals for Europe' (August 1997), written by the author for Friends of the Earth Europe as part of their 'Energy Alternatives for a Sustainable Europe' (EASE) campaign. The report highlights key practical proposals to tackle the main environmental issues relating to energy use in Europe. Copies of the summary report can be obtained from FoE Scotland priced £5 (address on page 3).

The figures for Europe in this article exclude the Newly Independent States of the former-Soviet Union.

Dr. John Green is the co-ordinator of Friends of the Earth Europe's 'Energy Alternatives for a Sustainable Europe' (EASE) project which is supported by the European Commission.

Europe relieves nuke's back end

Another PR green feather is to be added to the nuclear industry's hat - reusing and recycling contaminated material for general use.* Richard Bramhall *reports on the latest advertising opportunities.

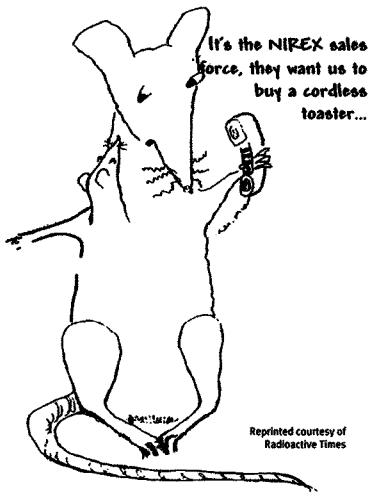
The nuclear industry has huge and seemingly unsolvable "back end" problems: acres of radioactive waste stacked in rusting drums; hundreds of thousands of tonnes of metals, glass, plastic, and concrete too "hot", under current law, to re-use or dispose of; and hundreds of nuclear factories and reactors waiting to be decommissioned. Meanwhile, Nirex's deep disposal plans are back to square one, and the British Government has finally given up its option to dump radioactive waste at sea.

Into this intractable mess the European Council of Ministers has ridden, like the 5th Cavalry, bringing a new law to convert an expensive, embarrassing, and dangerous problem into a financial asset. Council Directive 96/29/Euratom, known as the "Basic Standards Directive", must become law in all member states by May 13, 2000. It is intended to harmonise radiation exposure standards for all sectors, including the public. But it has unbelievably lax "exemption values" (EVs) — radioactivity limits below which businesses handling radioactive substances will not be bound by the Directive at all, and will not have to be authorised or to report their activities. Similarly, it also allows member states to set "Clearance Levels" (CLs) for the disposal and recycling of materials from licensed nuclear sites[1].

EVs were formulated to allow businesses handling small amounts of radioactivity to function without burdensome regulation. CLs, according to the Director of the European Environment and Nuclear Safety Directorate, are "to permit recycling and thus save valuable resources". It is certain that vast and profitable sales of scrap metals depend on the new limits. A 1996 paper by Magnox Electric concludes that decommissioning of nuclear plant "is set to grow into a major business over the next two decades".

As an example the paper describes the dismantling of Capenhurst Diffusion Plant: "The project ... aimed to recycle as much material as possible ... Of the 160,000 tonnes of metal and concrete ... more than 99.3% has been or will be recycled for unrestricted use as clean material." The authors complain about heavy UK restrictions on disposal, and in a reference to the Euratom Directive say that "development in the field of international standards ... will be of considerable assistance to practitioners."

The key to their enthusiastic anticipation is that CLs are expected to be exactly the same as the new EVs, and that the EVs are all more permissive than current British limits. Under the 1993 Radioactive Substances Act everything more radioactive than 400Becquerels/Kg, regardless of what isotopes are present, has to be kept in secure facilities.



The new EVs (which vary for different isotopes) are, without exception, higher than 400Bq/Kg (eg, 2.5 times higher for Plutonium, x250 for Strontium-90 and x2.5 million for Tritium).

The Low Level Radiation Campaign (LLRC) points out that businesses will be able to keep below EVs by simply diluting waste to reduce concentrations, and that exempt material may include "hot" particles because the EVs are averages. The Directive contains no provision to stop even the biggest operators subdividing materials, and selling them off in small lots to scrap metal merchants. In the USA a recent investigation revealed nuclear waste being recycled into fertilisers.

Officials claim, however, that the new law "considerably strengthens regulatory control of the recycling of contaminated materials". To understand this statement you have to know that earlier Directives set a general EV of 100,000 Bq/Kg. Under the new Directive, European EVs for most isotopes remain the same or even increase, but a few — the very massive alpha-emitters like plutonium — are cut to only 1% of the 100,000 Bq/Kg. value.

Conventional radiobiological belief is that alpha radiation is more dangerous than beta and gamma, because it is very energetic and destructive over a very short range. Independent radiation researcher Dr Chris Busby thinks, though, that the cell-killing ability of alpha emitters is irrelevant: "Just as dead men tell no tales," he says, "dead cells don't grow into cancers. It is sub-lethal damage that causes genetic mutation and leads to disease; all the evidence shows that the beta emitters like Strontium-90 are extremely efficient at causing mutation." Busby also points out that researchers have been surprised to find genetic defects cropping up in alpha-bombarded cell cultures, and that the National Radiological Protection Board has re-emphasised that any dose of radiation can induce fatal diseases. "The bottom line is that the precise health effects of internal irradiation are very poorly understood," says Busby, "Even COMARE[2] admits this." Ignoring this scientific debate, official correspondence and literature consistently writes off the radiation dose implications as "trivial".

Bureaucrats also advise that "the use of nuclear waste in consumer goods is expressly forbidden by EU law." LLRC replies that unregulated recycling and re-use of substances below the EVs is expressly permitted under the Directive; it is only the "deliberate" addition of radioactivity that is banned. If manufacturers use radioactive material unknowingly they will not be breaking the law. The new Directive also scraps specific protection given by the superseded Directives. These required that "irrespective of the degree of danger involved", prior authorisation was needed before radioactive substances could be used in the production of toys, foodstuffs, cosmetics, medicinal products and household goods. The crucial phrase "irrespective of the degree of danger involved" has vanished from the 1996 Directive.

Notes1. These levels are not yet published.

2. COMARE: Committee on the Medical Aspects of Radiation in the Environment.

LLRC, Ammondale, Spa Road, Llandrindod, Powys, LD1 5EY 01597 824771

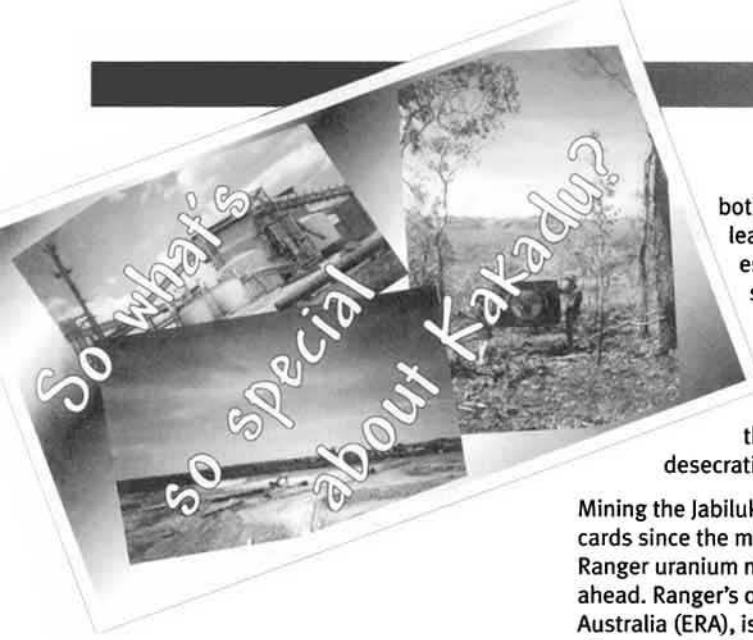
email llrc@mediascope.co.uk

web page http:/www.mediascope.co.uk/llrc

for free copies of the Directive write to: H. Lellig, Jean Monnet Building, L-2920 Luxembourg.

(Quote reference: Council Directive 96/29/EURATOM OJ L159 29th June 1996)

Richard Bramhall is co-ordinator of the Low Level Radiation Campaign.



Australia is the pariah of the pariahs. Not content with just obstructing climate change negotiations, the Australian government has sanctioned mining for uranium in the heart of a national park.* John Hallam *of FoE Australia reports.

Perhaps the major campaign for Friends of the Earth Australia and indeed for the entire Australian environment movement in the last year, has been opposition to the vast expansion in uranium mining planned by the conservative ('Liberal') government, and in particular, to the mining of uranium at Jabiluka, in the middle of the World Heritage Kakadu National Park.

Australia has the largest reserves of uranium on the planet. We have more uranium in one single deposit, the 350,000tonne Roxby Downs deposit, than any other uranium mining country except Kazakhstan. We also happen to have the second-largest deposit in the world, (beating the Namibian Rossing deposit by a narrow margin), the Jabiluka deposit, with mineable reserves of 90,000tonnes.

Kakadu is a very special place. It is recognised as being special by its 'World Heritage' classification, shared with just 17 other places on the planet. World Heritage classification requires a single criterion to be met under a 'cultural' *or* a 'natural' category. Kakadu National park fulfils 3 criteria within the natural category, and 2 criteria within the cultural category. It is therefore, special even amongst the special.

Aah, but the government says, uranium mining won't actually be taking place in the Kakadu national park — it will take place on the Jabiluka and Ranger uranium mining leases, specifically excised from the park. Indeed, Kakadu park has had quite a considerable area arbitrarily excised from it for the Ranger and Jabiluka mining leases. And those areas are not technically part of the park. But they are in every way a part of the same ecosystem as the park which completely surrounds them, and in some ways they are the very core of the park: both the Ranger and Jabiluka leases contain mountains especially rich in Aboriginal sacred art sites. Dating back to 20,000BC and reaching right to the present, mining even in the general vicinity of the art sites constitutes desecration.

Mining the Jabiluka deposit has been on the cards since the mid 1970's, when the nearby Ranger uranium mine was given the go-ahead. Ranger's owner, Energy Resources of Australia (ERA), is in turn owned by a group of companies of which the major one is North Limited. An Australian company, North also operates a highly polluting lead/zinc smelter at Risdon in Tasmania, and has been responsible for woodchipping vast areas of native forest in the temperate regions of southeast Australia and Tasmania. Other Ranger shareholders include the Kansai, Kyushu, and Shikoku power companies of Japan, and Cogema of France.

At Jabiluka, massive opposition stalled plans for a very large, destructive project until the bottom fell out of the uranium market. Original owner Pancontinental mining sold the mineral lease to ERA, who then decided they could best process Jabiluka ore at the existing Ranger mill — lengthening the life and increasing the output (+50%) of the Ranger mill, and necessitating a road from the Ranger mill to Jabiluka, through an area the government's environmental assessment says is of 'high' to 'very high' wilderness value.

Some 60million tonnes of tailings will be created by the entire Ranger and Jabiluka project, which will of course, remain significantly radioactive for the next 300,000-700,000 years. Uranium tailings contain 80-90% of the radioactivity in the original ore, but in an ultra-finely divided state that has been aggressively leached with strong acid and peroxide.

In-Pit disposal of tailings is favoured by regulatory authorities, and if enacted would mean the release of tailings to the park within 1,000-10,000 years after mining. If, as ERA plans, a large portion of the tailings are kept in the already-used above-ground tailings impoundment — an impoundment initially built without the impermeable liner recommended by the Ranger inquiry because it was "temporary" — tailings will be released to the park probably within 200 years or sooner.

Descendants of those whose remote ancestors have lived in Kakadu since such remote times are very much living in the park, and their representatives are the legal owners of the park and of the mine site itself, under not only Aboriginal law, but also under the provisions of the Aboriginal land rights Act of 1976. They do not want mining to go ahead at any price. Yvonne Margarula, the Senior Traditional Owner, and executive director of the Gundjehmi Aboriginal Corporation, have become well-known figures on Australian TV.

When he was leader of the opposition, John Howard was asked if a Liberal government would mine Kakadu. He replied that he felt "environmental considerations" would prevent it. On 8 October, Federal Minister for Resources and Energy, Senator Warwick Parer, cleared the way for the Jabiluka Uranium Project to proceed. Doubtless Howard will now say that since mining occurs only on the mining lease, it doesn't constitute mining "in Kakadu".

Approval will be delayed by the court-case the Gundjehmi Aboriginal Corporation have mounted against the validity of the mining lease. The choice is between incomparable tropical landscapes rich in unique species, and the most ancient art gallery in the world on one hand, and millions of tonnes of radioactive waste on the other. Decisions are being made now that could trash this jewel in the crown of Australia for the next 300-700,000 years.

You can still make a difference to the future for Kakadu. You can write to the Prime Minister, at:

John Howard, Prime Minister, Parliament House, Australian Capital Territory, Australia 2600

Or fax him on: Canberra, (061)(26)273-4100 or (061)(6)273-4100 Sydney, (061)(2)9251-5454.

Or fax the Minister for Resources and energy, Senator Parer, at (061)(26)273-4134.

All you need to say is "Please don't mine Jabiluka".

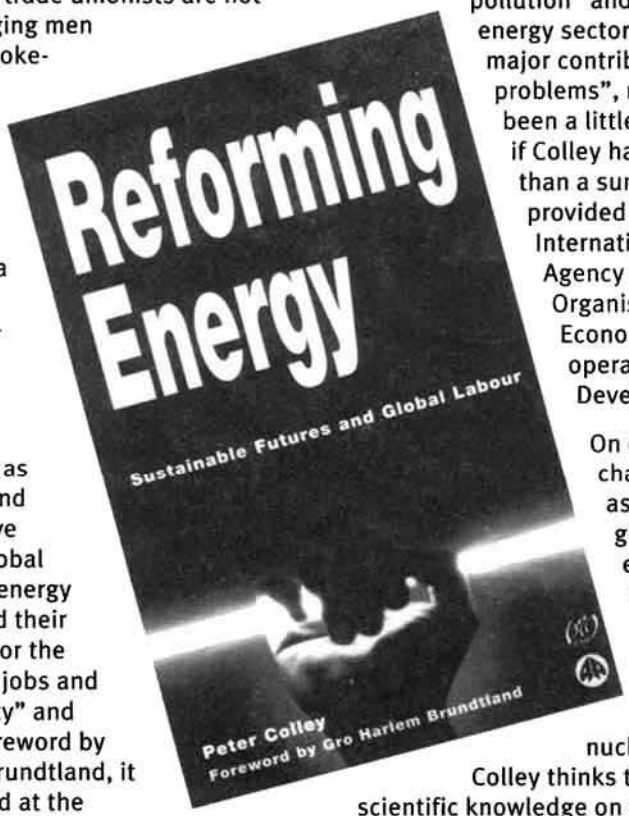
More details available from Safe Energy or from Friends of the Earth Sydney, Australia, fax(61)(2)9283-2005 ph 61-2-9283-2004, foesydney@peg.apc.org

John Hallam is Nuclear Campaigner at FoE Sydney

Not all beer and sandwiches

Much to the consternation of sections of the media, environmentalists do not all sport beards and sandals, and call for the population to return to their arboreal beginnings.

Reforming Energy by Australian trade unionist Peter Colley is the embodiment of the other great stunner of the 1990's: trade unionists are not all beer-swigging men inhabiting smoke-filled rooms and writing off environmentalists as the be-sandalled anathema to a productive (employment-generating) economy.



Billed by the press release as "an original and comprehensive analysis of global trends in the energy industries and their implications for the environment, jobs and the community" and boasting a foreword by Gro Harlem Brundtland, it is firmly aimed at the environment as well as the labour sector. Nevertheless, Colley is at the very most a lilac green, less than glowing in his references to the bottle green greens. Greenpeace, for instance, "is worried about the long-term threat of global climate change rather than the effect of coal dust on mineworkers' lungs or the effect of polluted minewater on agricultural production".

Divided into three main sections, the book introduces the energy industries, defines the constraints on energy use and lastly outlines a path to a sustainable energy future.

It opens by contrasting development of energy industries in the developed and the developing world, followed by a knocking on the head of Club of Rome predictions of a looming fossil fuel scarcity crisis.

Part two catalogues "new limits" on energy industries, namely global investment, limits to city growth and the environment. Sentences such as "oil fields which are well maintained generate little direct pollution" and "overall the energy sector is not a major contributor to water problems", might have been a little more critical if Colley had read wider than a summary provided by the International Energy Agency and the Organisation for Economic Co-operation and Development.

On climate change, classed as a long-term global environmental impact — along with ozone depletion but not nuclear waste — Colley thinks that "the scientific knowledge on the issue to date does not justify drastic measures to curtail fossil fuel industries — but at the very least we should be seeking to reduce vulnerability ... by diversifying".

'Towards solutions', the final section, lists constraints and suggests solutions for reforming energy. Conventional, capital intensive energy multinationals are given short thrift: "whenever energy production industries are threatened ... the companies are quick to bring out the employment numbers. But these claims are beginning to ring hollow." An over-riding theme in the book is that it is workers who invest the most in an industry (and have the most to lose), while industry itself serves profit first and foremost, shifting operations and capitalising production with little or no thought of the human price.

Colley does conduct an analysis of the energy industry from both an environment and a labour perspective, principally by mentioning both. To an environmentalist used to much stronger language, it could come across as tokenism. However, an environment document mentioning jobs in passing might similarly smack of tokenism to a trade unionist. So when Colley says "trade unions need to build links, especially with environmental groups, so that employment considerations are integrated into their agenda for change", there wouldn't be any environmentalists who would disagree. Certainly not Walt Patterson, former Friends of the Earth energy specialist, who wrote of the human effect of "saving labour with electricity" some 20 years ago.[1]

Such a person writing such a book is in itself eminently welcome, and worth it for that alone. Hopefully it will lead to a universal recognition that jobs and the environment are both equally as important and neither should be sacrificed to profiteering. A person is miserable with a job in a poor environment, and a jobless person is miserable in a good environment. At the moment, the miserablest of all are the jobless living by the landfill site, boxed in by motorways, too poor to properly treat pollution-induced ill-health and too poor to afford a holiday, or even a train fare, to get away from it all.

(1) Patterson, Walter C. 1977. The Fissile Society. Energy, electricity and the nuclear option. Earth Resources Research Ltd.

Helen Snodin

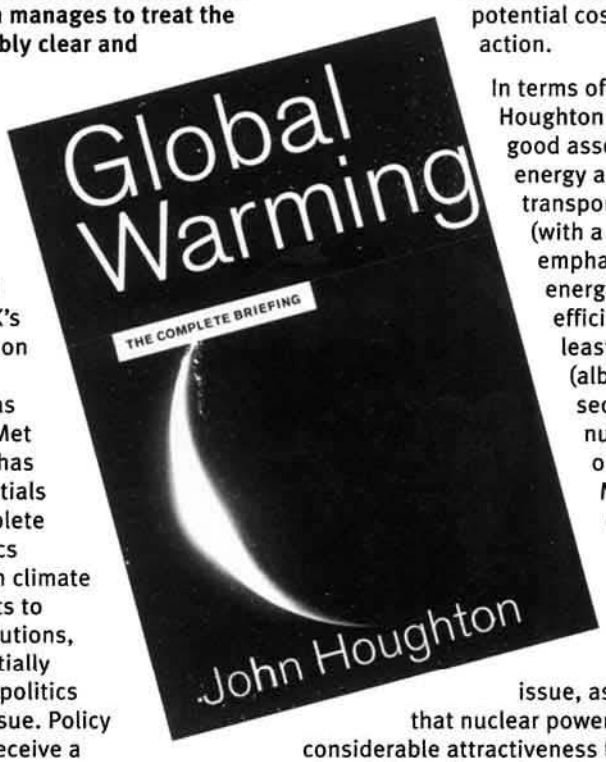
Reforming energy: sustainable futures and global labour

by Peter Colley

Pluto Press and the International Federation of Chemical, Energy, Mine and General Workers' Unions, 1997, 168pp, £35 (hb), £11.99 (pb)

Clarity and coherence on climate change

Climate change (and the associated global warming) is one of the most complex environmental problems around but John Houghton manages to treat the issue in a remarkably clear and coherent fashion.



As co-chairman of Working Group 1 of the Inter-Governmental Panel on Climate Change (IPCC) and chairman of the UK's Royal Commission on Environmental Pollution (as well as ex-director of the Met Office), Houghton has impeccable credentials for writing a "complete briefing". The topics covered range from climate science, via impacts to challenges and solutions, although he essentially steers clear of the politics surrounding the issue. Policy instruments also receive a somewhat cursory treatment.

Chapter 9 'Weighing up the Uncertainty' is interesting, as here Houghton draws on his personal experience in the IPCC process. He stresses the commitment of the scientific community to the understanding of global climate change, presumably to counter the arguments of a number of climate 'sceptics' who claim that most scientists are involved to obtain more research grants. The chapter also links the discussion to sustainable development and the precautionary principle, as well as weighing the uncertainties against the potential costs of action.

In terms of solutions, Houghton presents a good assessment of energy and transport options (with a heavy emphasis on energy efficiency), at least until the (albeit short) section of nuclear power on page 216. Many readers will want to disagree with Houghton on this issue, as he claims that nuclear power has considerable attractiveness from the point of view of sustainable development. Yet, in chapter 9, he quotes the UK government's strategy report on sustainable development, which states that "where potentially serious risks exist, precautionary action may be necessary". There is a clear inconsistency in Houghton's arguments, as on the one hand he advocates action on climate change *because of the risks*, on the other hand he favours nuclear power *despite the risks*.

Generally, Houghton attempts to remain factual, although chapter 8 (entitled 'Why should we be concerned') provides an excursion into more philosophical issues. Here, Houghton, a devout Christian, links his arguments to principles about stewardship embodied in Judeo-Christian beliefs. A number of readers may find this a little awkward but Houghton has actually cut this section considerably compared to the first edition. In any case, his conclusions on the need for moral and spiritual challenges, rather than material ones, should find general acceptance.

Overall, this book provides a good, broad introduction to the climate change issue. Its particular strength lies on the science side, where Houghton provides a comprehensive, yet accessible assessment for the interested citizen, NGOs or students. The former might want to ignore the questions at the end of each chapter!

The only clear omission is a more detailed treatment of national climate change policies, as Houghton has included only a few paragraphs on Denmark. But hopefully by the time the third edition is written, effective policies will be in place in more countries to deserve a separate chapter.

Ute Collier
FoE EWNI

Global warming: the complete briefing
by John Houghton
Cambridge University Press, 1997, 251 pp, £15.95 (pb), £45 (hb)

Safe Surfin'

Surfing is made easier by having a browser that supports Frames, and Adobe Acrobat™ Reader software to read official UN documents and Eco newsletter in their original form.

http://www.unfccc.de/
Official site of the climate change secretariat, which does all the administration for the Framework Convention. Negotiating texts and all other official documents of the negotiations can be found here.

http://www.unep.ch/iuc/
Information Unit on the Conventions. Covers all the UN conventions under the UN Environment Programme. On the UNFCCC, more than 90 factsheets available, from the science to the negotiations.

http://www.ipcc.ch
Official site of the IPCC

http://www.cru.uea.ac.uk
Climate Change Research Unit, University of East Anglia. Lots on science and a link to the magazine Tiempo.

http://www.iisd.ca/linkages
Go to linkages and find the Earth Negotiations Bulletin, an invaluable commentary on the negotiations

http://www.igc.org/climate/Eco.html
Eco is a newsletter published by Non Governmental Organisations at major international conferences. Invaluable.

http://www.wmo.ch/
Site of the World Meteorological Organisation

http://www.epa.gov/global warming/sub4/index.htm
a list of 86 climate change web sites

http://www.foe.co.uk/cgi-bin/climate-home.pl
FOE International climate campaign

http://www.panda.org/climate/
World Wide Fund for Nature climate campaign.

http://www.greenpeace.org//~climate/
Greenpeace climate campaign.

http://www.gn.apc.org/gci/
Global Commons Institute, with downloadable data for a working model based on emissions scenarios predicated on an equal right for everyone to have the same per capita emissions.

http://www.globalchange.org/infoall/linka-c.htm
A-Z of climate related sites

http:\\climatefacts.org.
Group called the Global Climate Information Project, behind multi-million dollar anti-climate ad campaign in the US.

Little Black Rabbit

with illustrations by Wilf Plum

an imaginative climate

Don't believe everything you read in the papers, especially if it's a reporter's virgin foray into sensationalising climate change.

While scientists across the world are messing about with desk-top calculations of carbon emissions based on estimated fossil fuel use, the Mirror newspaper reports on the latest satellite technology "for tracking harmful gas emissions."

"Pioneering" satellite photographs "show greenhouse gases as blobs of light. The brighter the light, the denser the emissions of carbon gases." Naturally then, in Britain, "the major cities produce the biggest splashes of light, with London being the worst affected."

Granted, the (real) story — 'Satellite pictures of the earth taken at night show lots of lights on in cities. Researchers conclude there is a link between lit area and carbon emissions per person (except nuclear-powered France mucks it up a little),' — doesn't quite have the same ring about it.

climate for advertising

As a rule, advertising isn't geared to the rabbit market.

For you humans who were seduced by the latest glossy British Nuclear Fuel's (BNFL's) advertising, little black rabbit has provided a rewrite.

BNFL portrays itself as a recycler of used nuclear fuel, re-using and re-using the same fuel, using an analogy of reprocessing being akin to using the ashes from a burnt match to make a new match, again and again.

Except ashes are burnt wood, while reprocessing, in the case of uranium, merely extracts *un*burnt fuel from a used fuel rod. If it was burnt, it wouldn't be uranium any more. A better analogy would be recovering, re-bagging and re-microwaving unpopped popcorn kernels from a bag of microwave popcorn.

In the case of plutonium, a particularly nasty by-product of burning uranium, a better analogy would be trying to set light to the unfortunate gaseous by-products of digestion — a dangerous act and done for no other reason than that it is there.

Newspaper ads tell us that at the Thorp "recycling" plant, used uranium fuel is "made into fresh nuclear fuel" while plutonium can be mixed with uranium to form Mixed oxide fuel (Mox) "to make new fuel capable of being burnt again."

But BNFL doesn't quite seem to have grasped the fundamental concept of recycling, namely the recycled products are subsequently used. Mox fuel is *capable* of being burnt (but not again), just about, but it's quite tricky and British Energy (BE) say they have no plans to use Mox. In the absence of any immediate prospect of use, mounting plutonium stockpiles at Sellafield are somewhat of a liability

There is also not a very strong incentive for the use of recovered uranium when spot prices for fresh uranium are low.

BNFL has reprocessing contracts because it is a way for utilities get used fuel off their hands. BE send their used fuel to BNFL to be reprocessed *or not* at BNFL's discretion. ie, they don't much care about getting recovered uranium back, and they don't want to ever see the plutonium again.

So when BNFL say: "instead of somehow, we have know-how" they mean that instead of somehow responsibly dealing with nuclear waste, they know how to give you the impression they are responsibly dealing with nuclear waste.

an expensive climate

Fred Singer, the climate sceptic and supporter of the theory that solar activity is the sole cause of climate change, should get a new manager.

'On tour' in the EU over November, an audience with the man at a German hotel cost an astonishing 690 DM, that's about £240!

At that price, he's preaching to the converted.

acclimatising to advertising

Passing on the opportunity to temper BNFL's creative imagination, British Energy boss John Robb has instead written to Guinness complaining about their latest in a series of "Not everything in black and white makes sense" adverts.

The offending poster campaign quotes a professor D Heardman as saying "nuclear power is completely safe with no environmental problems", illustrating the quote with a two-headed fish served up on a bed of lettuce.

Seems fine to LBR, but BE took umbrage at the irresponsibility of the advert. According to BE, as it isn't "spending any money on an ad which features a crash car with a picture of the driver being breathalysed," Guinness similarly shouldn't be seeking to "damage any other company or industry".

Meanwhile HM government *has* spent rather a lot of money on adverts featuring a crash car with a picture of the driver being breathalysed. And LBR has the gem of an idea for what the next public information campaign should be.

Not everything the nuclear industry does lends itself to reason.

An informing climate

The morning after the Scottish Office had ordered fishing to cease within a 2 kilometre radius of Dounreay, LBR heard a Radio Scotland reporter interview a Caithness fisherman on the subject. The conversation went something like this:

Reporter: Good morning. Can I ask how felt when you were told the news.

Fisherman: First I heard of it was one of you lot ringing me up. I had to ask him what he was on about.

Reporter: So let me get this straight. The Scottish Office banned fishing from last night but didn't manage to inform the fishermen?

Fisherman: That's about the size of it.

Talk about the one that got away!