



OUR PLANET

The magazine of the United Nations Environment Programme - May 2008



KICK THE HABIT

Towards a low carbon economy

OUR PLANET

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also

page 3 reflections
page 4 people
page 8 verbatim and numbers
page 9 books
page 18 awards and events
page 19 www
page 26 products

New Zealand's Prime Minister **Helen Clark**...



... reflects on the environmental challenges of our era ahead of World Environment Day.

climate change: a global issue
- page 5

Angela Merkel, Chancellor of the Federal Republic of Germany...



... talks to Our Planet about the prospects for a new global agreement on combating climate change.

unique challenge - page 6

Dr. Wan Gang, Minister of Science and Technology of the People's Republic of China...



... describes important programmes for helping the world triumph over the ecological havoc of climate change.

crucial science - page 10

Thórunn Sveinbjarnardóttir, Minister for the Environment, Iceland...



... describes the decarbonisation of her country and calls for a drive to develop climate-friendly technologies.

cooling with heating - page 12

Dr. Tewolde Berhan Gebre Egziabher, Director General of the Environmental Protection Authority, Ethiopia...



... appeals for developed and developing nations to join in cutting carbon emissions to save life on Earth.

salvaging the biosphere - page 14

Ray C. Anderson, Founder and Chairman of Interface Inc...



... describes how one formerly oil-intensive company is set to achieve zero impact on the environment by 2020 by harnessing the power of the possible.

mission zero - page 16

Vinod Khosla, Founder of Khosla Ventures...



... explains how the power of ideas and entrepreneurship will solve the world's energy issues, while tackling climate change.

inventing the future - page 20

Rob Fyfe, Chief Executive Officer of Air New Zealand...



... describes first steps in cutting the carbon emitted by airlines.

green sky thinking - page 22

Meenakshi Raman, Chair, Friends of the Earth International ...



... argues for fundamental changes, particularly in developed countries, to stabilise the climate.

living simply - page 24

Rock star **KT Tunstall** ...



... shares her unorthodox advice on reducing your carbon footprint.

step by step - page 27

reflections

by Achim Steiner,
UN Under-Secretary-General and
Executive Director, UNEP

World Environment Day (WED) 2008 uses the theme of Kick the CO₂ Habit to catalyze grassroots action on the challenge of this generation — climate change. It is more than a strong and catchy phrase. If we are to move the global economy to a greener and cleaner one, a sharp reduction in the inefficient use of fossil fuels allied to an increased up take of renewable energy must be at the centre of the international response. There are also powerful arguments in favour of the making the transition 'Towards a Low Carbon Economy', with ever clearer evidence that this represents a huge opportunity rather than a burden. The Intergovernmental Panel on Climate Change (IPCC), established by UNEP and the World Meteorological Organisation, concludes that greening the global economy might cost as little as a few tenths of global GDP annually over the next 30 years. It will also be a driving force for innovation, new businesses and industries and employment opportunities across the developed and developing worlds. There are already many encouraging signs. Earlier this year UNEP launched its climate neutral network (CN Net). Countries, including Costa Rica, Norway and New Zealand, our main host for the global WED celebrations in 2008, are among the early movers. These countries, alongside a growing number of corporations and cities, are demonstrating that reducing emissions and engaging in carbon markets brings not only environmental benefits, but social and economic ones too.

UNEP is also a part the CN Net initiative and part of a wider UN one that is working towards climate neutrality across the organization's buildings, missions and operations. It has the full support of Ban Ki-Moon, the UN Secretary-General, who has made climate change among his top priorities. During 2008, we will look to broaden participation in the CN Net to communities, non-governmental organizations, households and individuals. There are other promising signals, driven by the existing emissions reductions treaty, the Kyoto Protocol, and the promise of even deeper emissions reductions on the near horizon.

- Close to 60 countries have targets for renewables, including 13 developing countries, while around 80 have market mechanisms in place to encourage renewable energy development.
- Over 20 per cent of new investment in renewable energy is in developing countries, with China, India and Brazil taking the lion's share with 9, 5 and 4 per cent respectively in 2006.
- Renewables now provide over 5 per cent of global generation and 18 per cent of new investment in power generation.
- The Clean Development Mechanism of the Kyoto Protocol in 2006 mobilized investment in renewables and energy efficiency projects worth close to \$6 billion.
- Emissions trading, developing mostly as a result of the European Union's Trading Scheme, saw 362 million tonnes of CO₂ traded in 2005 worth around 7 billion Euros.



- UNEP, working with two Indian banks, has developed a household consumer credit market that has brought solar power to 100,000 people on the subcontinent. The initiative is now self-financing and set to be piloted elsewhere.
- The decision at the last climate convention meeting in Bali to include Reduced Emissions from Deforestation and Degradation (REDD) opens the door for forests to be more widely factored into efforts. The Government of Norway has announced it will provide \$2.7 billion over the next five years as incentives for REDD.

Adaptation funds are also beginning to flow for 'climate proofing' economies. There is now an urgent need to secure significant additional funds to assist developing and least developed economies. There is also a great deal of creativity being stimulated. A Solar Grand Plan for the United States that, by 2050, could supply almost 70 per cent of the country's electricity and 35 per cent of its energy needs has been proposed. Surplus electricity from solar would be used to compress air which would be stored in aquifers, caverns and so on and used to turn turbines at night.

In America alone \$40 billion worth of heat goes down the drain. A firm is making tiny pumps that extract the heat from warm washing-up water, to supplement a house's hot water supplies. Icelandic scientists are piloting a project to inject CO₂ into rock strata where it turns into limestone. In Kenya, researchers are isolating the enzymes termites use to convert woody wastes into sugars to put towards environmentally-friendly biofuel production.

So, WED 2008 does not come in a vacuum but is very much part of a global effort to de-carbonize societies that is touching and empowering all areas of private and public life. It is also a milestone along the Bali Road Map that is designed to guide the world to a decisive post-2012 emissions reduction regime by late 2009. Last year's WED successfully used the theme Melting Ice: A Hot Topic? to catalyze grassroots action by millions of people in close to 100 countries around the world on the climate change challenge. On this special UN day, let us send a loud and clear message that the global public wants the transformational changes already underway to continue and to accelerate — that each and everyone wants personal, corporate and political action to "Kick the CO₂ Habit".

UNEP promotes
environmentally sound practices
globally and in its own activities.

This magazine is printed on 100% recycled paper, using vegetable-based inks and other eco-friendly practices. Our distribution policy aims to reduce UNEP's carbon footprint.

Cover photo © ANTHONY WEST/ Corbis. Kick the Habit is the theme of this year's World Environment Day on 5 June, a call for worldwide action against global warming. Climate change is the defining issue of our era — in order to address this, countries, companies, communities and individuals must focus on reducing their greenhouse gas emissions and kicking the carbon habit. There are many paths to low carbon economies and lifestyles, from energy efficiency and alternative energy sources to forest conservation and eco-friendly consumption.

people

Dr. **BALGIS OSMAN-ELASHA**, the winner of the Champions of the Earth award for Africa,



is a senior scientist from Sudan who is at the forefront of global research on climate change. A leading author of the Intergovernmental Panel on Climate Change (IPCC) reports, she has produced groundbreaking work on global warming in Africa, with an emphasis on northern and eastern Africa. Dr. Osman-Elasha's work is of vital relevance given the strong links between climate change and conflict in Sudan. The award also recognizes Dr. Osman-Elasha's efforts to educate Sudanese university students about climate change, thus raising awareness among the country's new generation.

The 2008 Champion of the Earth for Asia and the Pacific comes from Bangladesh, a country highly vulnerable to climate change and flooding.

Dr. **ATIQ RAHMAN**, Executive Director of the



Bangladesh Centre for Advanced Studies is an eloquent advocate for sustainable development. He has transformed the NGO into a leading think-tank on sustainable development issues in South Asia. As one of the most highly respected and referenced specialists in his field, with extensive publications

on environment and development in Bangladesh, Dr. Rahman has helped to raise awareness of the hazards of global warming throughout Asia.

One of His Serene Highness **PRINCE ALBERT II**'s first acts as sovereign of Monaco was to sign the Kyoto Protocol — an eloquent indication of his longstanding commitment to the environment. Prince Albert II, the 2008 Champion of the Earth for Europe, has been a prominent voice on environmental issues since the early 1990s. Prince Albert's involvement in raising awareness on climate change includes leading an expedition to the North Pole in 2006 to draw attention to the consequences of global warming. The Prince



Albert II of Monaco Foundation, which he created in 2006, works to protect the environment and promote sustainable development. Prince Albert is also a patron of the Billion Tree Campaign, which successfully led to the planting of more than a billion trees across the planet in 2007.

For the last 30 years, **TIMOTHY E. WIRTH** — the 2008 Champion of the Earth for North America — has been an advocate for the environment in the United States. During his time as US Under Secretary of State for Global Affairs, Mr. Wirth — a



strong supporter of the Kyoto Protocol — was instrumental in raising awareness and calling for policy action on global warming. As the president of the UN Foundation and Better World Fund, Mr. Wirth has established the environment as a key priority, and is mobilizing resources to address crucial issues from biodiversity to climate change and renewable energy. Mr. Wirth was also a steadfast advocate on environmental issues during his time as a member of the US Senate, when he authored the Colorado Wilderness Bill as well as other successful legislation on energy, conservation and environmental protection.

H.E. **LIZ THOMPSON**, the Champion of the Earth for Latin America and the Caribbean, has become one of the recognized leaders on environmental issues in Small Island Developing States. During her time as Minister of Energy and the Environment of Barbados, she enacted a range of progressive policies for sustainable development and environmental protection. She also became a key voice raising awareness of global warming in Barbados and has played a role in environmental awareness and protection across the Caribbean



region. She has encouraged Small Island Development States to diversify their economies, undertake sustainability assessments, and promote community-based programmes that have positive environmental impacts.

H.E. **ABDUL-QADER BA-JAMMAL** has had a truly pioneering influence on environmental protection in Yemen — a country which faces acute challenges from water scarcity to desertification. During his time as Minister and then Prime Minister, he established Yemen's Ministry of Water and Environment and Environment Protection Authority and implemented a series of groundbreaking environmental policies in Yemen



and the region. The 2008 Champion of the Earth for West Asia has also orchestrated conservation efforts for the Socotra archipelago, a site of global importance for biodiversity, and established a state agency for the development of Yemeni islands with a focus on the conservation of marine resources.

By setting a carbon neutral goal for New Zealand, Prime Minister **HELEN CLARK** is blazing new trails in the fight against climate change. Helen Clark's policy initiatives to make her country greener have earned her the UNEP Special Prize in this year's Champions of the Earth awards. The Prime Minister's policies promote renewable energy and energy efficiency across key sectors of the economy, with initiatives including the New Zealand Emissions Trading Scheme and the Energy Efficiency and Conservation Strategy. Helen Clark's government is also achieving substantial advances on environmental protection, from forestry and agriculture to improving public awareness and boosting private sector involvement in



sustainability. Aptly enough, New Zealand will be hosting this year's World Environment Day on 5 June with the slogan 'Kick the Habit! Towards a Low Carbon Economy'.

Climate Change: A Global Issue

Message from New Zealand's
Prime Minister Rt Hon Helen Clark



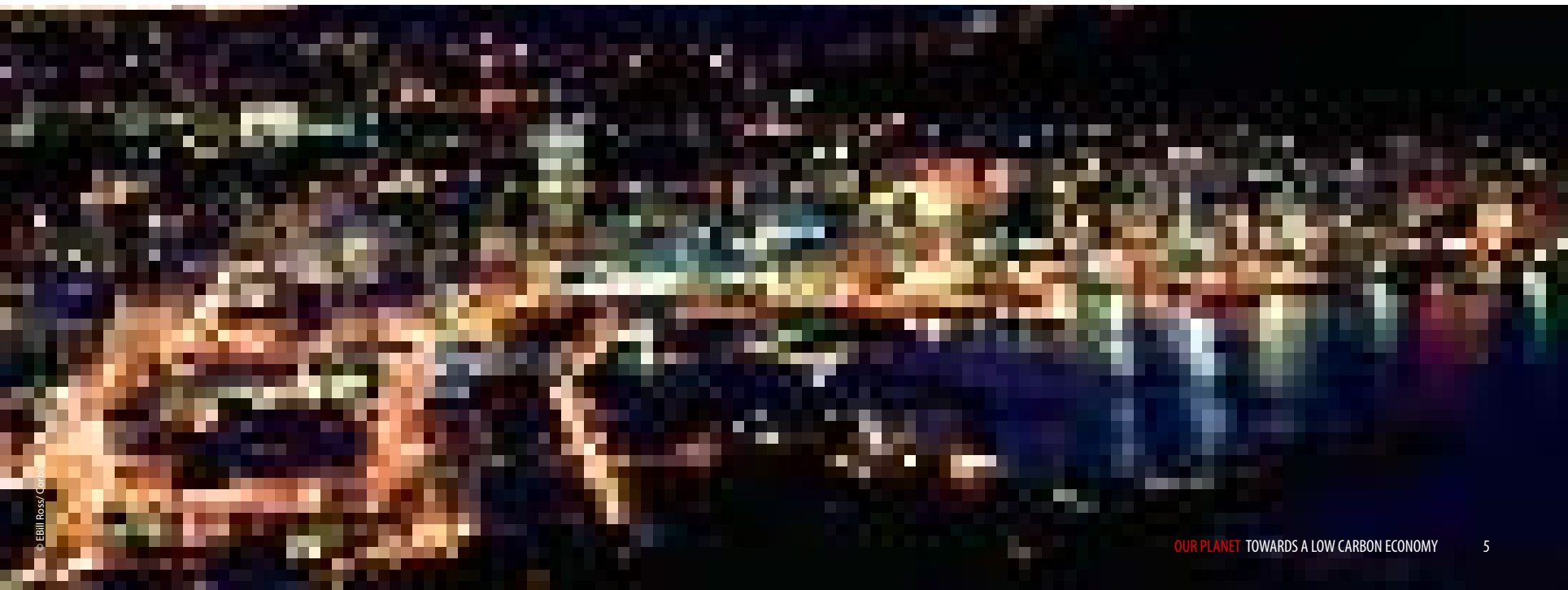
It was with great pleasure that New Zealand accepted the invitation to host World Environment Day 2008. Climate change is the single biggest environmental issue facing the world today and I am honoured New Zealand has been invited to host this year's event.

Droughts and floods, rising sea-levels, melting ice, degrading eco-systems, loss of biodiversity and other impacts of climate change pose the potential for problems on a global scale requiring nations to collaborate to develop solutions. Countries around the world are recognising their roles in finding creative ways to face up to unprecedented challenges.

New Zealand is very aware of its responsibility to act. We take pride in our clean, green identity as a nation and we are determined to take action to protect it. We appreciate that protecting the climate means behaviour change by each and every one of us.

In early 2007 I issued the challenge for New Zealand to become a truly sustainable nation and even to aspire to be carbon neutral. Our government has launched a comprehensive set of policies for sustainability, including an emissions trading scheme, energy strategies (including energy efficiency and conservation), and programmes to help householders and businesses become more sustainable. These are designed to meet the challenges and grasp the opportunities of climate change. During 2008 we will build on these.

Every year World Environment Day focuses us all on the critical importance of protecting our environment. It provides an opportunity to learn from the experience of others. My hope for World Environment Day 2008 is that it will motivate governments, businesses, and communities around the world to take the actions necessary to bring about lasting improvements, and by these actions ensure the ability of the planet to sustain future generations.



unique challenge

Angela Merkel talks to *Our Planet*

Why did you decide, from the start of your Chancellorship, to put a high priority on addressing climate change? How important in this was your background as a scientist and your experience as Environment Minister in the 1990s?

Climate change is a key issue for the future that confronts each and every one of us. Not in ten or twenty years' time, but right now. How will climate change alter our personal environment? Is our home safe? Can we take any precautions? What energy sources should we choose? More and more people in the world are asking themselves these questions.

Climate change is also an ethical challenge. We must allow future generations the things we claim for ourselves. They too must have the chance of an environment worth living in.

Climate change has long been a personal concern of mine. Certainly my experience as Federal Environment Minister left its mark. The World Climate Conference, which I chaired in Berlin in 1995, and the negotiations in Kyoto in 1997 were decisive points for me. The Kyoto Protocol was the correct first step towards international climate protection. We must make sure further steps follow — in particular, a follow-up agreement to the Kyoto Protocol in 2009.

How great, in your view, is the threat of dangerous climate change and how urgently does action need to be taken to combat it?

I am convinced we will need to make crucial decisions very soon indeed on the course to be taken. By the middle of this century we must have reduced global greenhouse gas emissions by at least half compared with the 1990 level. Doing so will pay off in economic terms too. We know that investment in sensible climate protection is worthwhile. The cost of doing nothing is greater than the cost of investment in climate protection. But the longer we wait, the more expensive it will be.

From the security aspect as well, there is a need to change our approach now. The consequences of climate change become more and more of a security problem when the repercussions become life-threatening for many people. For instance, I am greatly worried by the danger of global migratory flows owing to water shortages. UNEP estimates that in 20 years' time 1.8 billion people could be at risk of absolute water shortages.

What is your assessment of the outcome of the Bali negotiations? What now needs to be done to build on it?

Bali took us a good way forward on some key issues: we have a comprehensive negotiating mandate for a follow-up agreement to the Kyoto Protocol and a clear timetable up to 2009. All states are involved — industrial countries, emerging economies and developing countries. Now it is a matter of taking the negotiations forward rapidly and in a concentrated manner.

What are the chances of reaching a new agreement, measuring up to the scale of the challenge, by the end of 2009? What elements should it contain?

We have a good basis from which to start, because the international community has made it clear that it is willing to face up to the challenge. Now the aim must be to decide on concrete measures to limit climate change. We must lay down who has to make what contribution towards reducing greenhouse gases, towards the better spread of climate-friendly technologies, towards adapting to climate change and, not least, towards the financing of necessary measures.

It is important for the success of the negotiations that all states understand this: combating climate change contributes to sustainable development

and does not — as is occasionally claimed — endanger economic progress, particularly in emerging economies and developing countries.

I am convinced that the agreement must build on a shared vision of future climate protection endeavours, and contain clear targets for reductions by industrial countries and verifiable contributions by emerging economies. To this end, we must stipulate how climate protection measures by the developing countries should be credited under this international agreement. Industrial countries must help developing countries in their efforts — for instance via cooperation in the field of technology.

Has the world taken adequate steps to address adaptation to climate change? What needs to be done?

Only if we have a clear idea of how far we want to reduce greenhouse gas emissions can we estimate how much of an effort will be needed to adapt. It is already clear, however, that the least developed countries, in particular, will be hard hit by climate change. We are already familiar with many of the effects of climate change: more extreme weather conditions, new health risks, problems with the cultivation of agricultural products or shortages of drinking water.


In Bali we succeeded in setting up an adaptation fund for the developing countries. It is intended to help them take preventive measures against the worst effects of climate change. The future climate protection agreement will need to contain further financial instruments, because experts estimate that many billions of euros might be needed each year for adaptation.

What has Germany done to combat global warming? What more do you plan to do, and how will it be achieved?

In Germany we have cut greenhouse gas emissions by more than 18 per cent since 1990. We want to continue to play a leading role in climate protection. So on 5 December 2007 the Federal Government adopted the first part of an integrated energy and climate programme. The programme is an ambitious one and includes, in particular, measures to expand co-generation of heat and power and renewable energies in the electricity sector, the promotion of renewable energies for heating and measures to improve the energy efficiency of buildings. A total of €2.6 billion is available for this in 2008. Thanks to this programme, Germany is establishing an important platform from which to cut its greenhouse gas emissions by 40 per cent (as compared to 1990 levels) by 2020.

What do you believe to be the chances that humanity will succeed in avoiding dangerous climate change?

Tackling climate change poses a unique challenge. We can only meet it if all states work together. That is why climate policy also opens a window for international cooperation. In technical and economic terms, many of the requirements for reducing greenhouse gases are already in place. Examples of this include efficiency technologies such as heat insulation and energy-saving bulbs, or renewable energies which are becoming more and more affordable. Such innovations are already contributing to economic growth and thus to the creation of new jobs.

In other areas, however, there is still a great deal to be done. We must rethink the way we produce energy and goods. We need a new way of living, with new economic opportunities, which enhances our quality of life while using up fewer resources. If we pursue the principle of sustainable development in both the industrial and the developing countries, then we can prevent climate change from becoming a danger threatening life all over the world. 

verbatim



© AFP/Getty Images

“It is clear that a failure to address climate change is a failure to protect children. Those who have contributed least to climate change — the world’s poorest children — are suffering the most. If the world does not act now to mitigate and adapt to the risks and realities of climate change, we will seriously hamper efforts to reach the Millennium Development Goals (MDGs) by 2015 and sustain development progress thereafter.”

David Bull, UNICEF UK Director

“Producing biofuels is a crime against humanity”

Jean Ziegler, the UN’s special rapporteur for the right to food

“While many are worrying about filling their gas tanks, many others around the world are struggling to fill their stomachs.”

World Bank President Robert Zoellick

“Biofuels aren’t the villain that threatens food security. On the contrary... they can pull countries out of energy dependency without affecting foods.”

Brazilian President Luiz Inacio Lula da Silva

“Energy must not be a barrier to our comfort. Our emerging middle class... demands lots of energy and it is our job to ensure comfortable supply.”

Vsevolod Gavrilov, the official in charge of Russia’s Kyoto obligations

“The climate debate has become a series of disconnected discussions. It’s odd how intelligent people can continue to argue like this in the face of such stark evidence. (...) We run the risk of the greatest policy failure in the history of mankind.”

UNEP Executive Director Achim Steiner

“Africa’s future need not be entrenched in vulnerability and hopelessness in the face of climate change. I believe Africa has extraordinary potential and opportunity to contribute to sustainable development and thereby set an example for the rest of the world.”

Balgis Osman-Elasha, senior climate change scientist from Sudan who was awarded UNEP’s 2008 Champions of the Earth award

“We can all take practical steps to be more energy-efficient and we all have lots to learn in the coming years on how to improve our carbon footprint on the planet.”

Ellen MacArthur, solo round-the-world sailor

“The world we have created today as a result of our thinking thus far has created problems that cannot be solved by thinking the way we thought when we created them.”

Albert Einstein

numbers

5
percentage of total global of carbon dioxide emissions produced by shipping — *Institute for Physics and Atmosphere in Wessling, Germany*

155
number of years during which coal will be available at current production levels. This compares to 41 years for oil and 65 years for gas — *World Coal institute*

99 million
barrels of oil China will need every day by 2031 if it uses oil at the rate that Americans do today. Current total world production is about 85 million barrels daily — *Earth Policy Institute*

2
tonnes of CO₂ that the average UK household could save annually by making its home energy-efficient — *World Business Council for Sustainable Development*

99
percentage of world trade which is carried by sea — *Institute for Physics and Atmosphere in Wessling, Germany*

20
percentage of global energy supply consumed by personal and commercial transport. 80 per cent of this comes from fossil fuels — *‘Kick the habit: the UN guide to climate neutrality’*

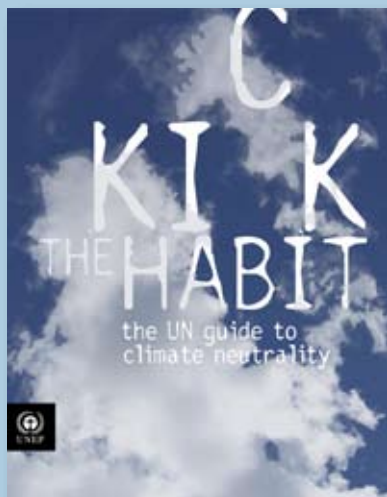
1.21
tons of standard coal used for every 10,000 yuan of GDP in China in 2006. Energy consumption in 1980 was 3.39 tons per 10,000 yuan of GDP — *‘Kick the habit: the UN guide to climate neutrality’*

30
percentage growth in the Earth’s population since 1987. Global economic output has risen by 76 per cent over the same period — *‘Kick the habit: the UN guide to climate neutrality’*

11
percentage of global energy used by heating, cooling and lighting homes and using household appliances — *World Business Council for Sustainable Development*

100
rise of atmospheric CO₂ concentration in parts per million (ppm) over the last two centuries of human industry. Over the previous 610,000 years, long-term change in atmospheric CO₂ concentration was just 22 ppm — *Nature Geoscience*

Kick the habit: the UN guide to climate neutrality



This new UNEP book — launched on World Environment Day — shows how various levels of society can work towards climate neutrality. Written and reviewed by experts from many disciplines and various countries, the book is aimed at a broad audience, with solutions for individuals, small and large businesses, NGOs, international organizations, cities and countries. With case studies, illustrations, maps and graphics the book is intended as a valuable reference publication and entry point for anyone wanting to find

out more about going climate neutral. A web version of the book will be launched following the print publication, helping to make this guide easily accessible as well as climate neutral.

Ting and the possible futures

This children's book, released for World Environment Day, brings to life the frightening but real possibilities of an out-of-control climate crisis — and the positive and achievable steps we can all take to save our climate. Ting and her friends travel to two different futures using a time machine. The first future Ting explores is one of drought, submerged coastal cities, and refugee shantytowns. In the second possible future, Ting sees a huge change in attitude as well as landscape because people acted in time and averted the worst effects of climate change. Ting sees creative sources of energy, the power of planting trees and urban gardens, and a transport system that relies on trains, trams, bikes, and walking.



Africa: Atlas of our changing environment

This 350-page atlas chronicles the dramatic environmental change taking place in each of Africa's 53 countries. Through a combination of ground photographs, current and historical satellite images, and narrative based on extensive scientific evidence, it illustrates the ways in which human activities impact Africa's environment. Side-by-side displays of before-and-after satellite images show at a single glance the changes wrought over time — including forest loss, urban growth, shrinking lakes and receding glaciers. The Atlas documents the changes and their causes to communicate the urgency of addressing them to policy makers and the general public.

Green breakthroughs

This booklet, distributed to Ministers and senior officials at UNEP's Governing Council in February 2008, describes effective policies and laws that have been used to solve environmental problems. Regional and country success stories from around the world include energy and climate change solutions, the management of various kinds of wastes, the preservation and restoration of ecosystems, and the sustainable use of biodiversity and fisheries. The book shows how innovative policies and laws can reduce damage, increase efficiency and sustainability, and ensure environmental, social and financial benefits.

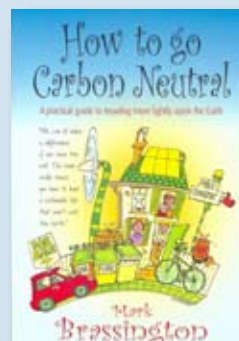


w w w . u n e p . o r g / p u b l i c a t i o n s

How to Go Carbon Neutral: A Practical Guide to Treading More Lightly upon the Earth

Mark Brassington (Oxford: How To Books, May 2008)

This book offers instructions on how to change your lifestyle to become more carbon neutral, based on the principle that every step matters — from low-energy light bulbs to electric cars and a 50KW wind turbine. The author has doggedly set about trying to make his own house carbon neutral, searching through many sources, including books and websites. Having tried a variety of approaches, including the more unusual ones such as putting vegetable oil in his car, and he uses this broad knowledge as the basis for the advice in his book. The chapters include sections on heating, electricity, water, transport, food and shopping.

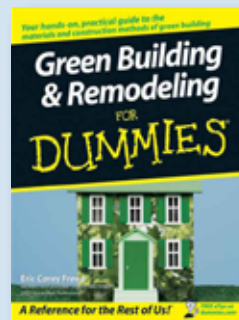


Green Building & Remodeling For Dummies

Eric Corey Freed (For Dummies, December 2007)

This recent addition to the 'For Dummies' series is a step-by-step guide to green building techniques.

Over its 361 pages, the book introduces every facet of green building and renovating, from selecting materials to reducing energy and water use. It includes sections on the lifecycle of building materials, choosing green building methods and sustainable systems, as well as information on asbestos and lead-paint hazards and on how to avoid costly mistakes. Finally, it lists 10 green things to do on every construction project and 10 things you can do right away in your home in order to go green. To quote the book's back cover, this is "The fun and easy way to plan and build your dream green home".

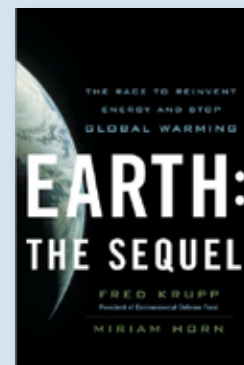


Sustaining Life: How Human Health Depends on Biodiversity

Eric Chivian and Aaron Bernstein (Oxford University Press, June 2008)

The Earth's biodiversity is disappearing at an alarming rate. While many books have focused on the expected ecological or economic consequences of this loss, Sustaining Life

is the first to examine the full range of potential threats that diminishing biodiversity poses to human health. Edited and written by two Harvard Medical School physicians, with contributions and reviews by more than 100 leading scientists, the book presents a sobering view of how human medicines, biomedical research, the emergence and spread of infectious diseases, and the production of food, both on land and in the oceans, depend on biodiversity. Sustaining Life was supported by UNEP, the World Conservation Union, the UN Development Programme and the Convention on Biological Diversity.



Earth: The Sequel: The Race to Reinvent Energy and Stop Global Warming

Fred Krupp, Miriam Horn (W. W. Norton, March 2008)

Fred Krupp, the President of the Environmental Defense Fund, and journalist Miriam Horn, explore breakthroughs

in solar, wind and biomass technologies in the fight against climate change. The book offers a business-centred prescription for alleviating climate change, coupling the market force of capitalism with technological innovation and entrepreneurial inventiveness. The authors argue in favour of strict federal carbon caps, which would induce innovators to explore new ways to control carbon dioxide emissions. The book notes the global and historical successes of cap and trade mechanisms, such as the Clean Air Act of 1990 — designed specifically to control sulphur dioxide (which causes acid rain), the Clean Air Act cut emissions 30 per cent more than the law required by providing coal plant operators with a financial incentive to modernize. The book balances science with profiles of individuals who are blending business and science in an attempt to save the planet.



crucial science

by Wan Gang

Global climate change is not just an environmental issue but, even more importantly, a development one. As a developing country, and a signatory to the UN Framework Convention on Climate Change, China has always taken an active part in the global campaign on climate protection, undertaken international obligations within its capacity and contributed to global environmental protection.

Protecting the environment is a time-honoured tradition, deeply embedded in Chinese culture. The philosophy of “harmony between man and nature” has guided the life and work of its people for thousands of years. The advanced agricultural civilization of ancient China testifies to the important achievements the nation has made in learning about the climate and properly using and preserving the environment.

China has always placed climate change and other environmental issues high on its agenda. It established a National Coordination Committee on Climate Change as early as 1990, participated in a series of domestic and international campaigns, and made important contributions to global environmental protection. Since 2006, it has stepped up national efforts as a key component of the Outline of the National Medium and Long-term Programme for Science and Technology Development. The Eleventh Five-Year Plan and Medium and Long-term Plan for Forestry Development published in 2007 set the target of raising forest coverage to 20 per cent and 23 per cent respectively by 2010 and 2020. In June 2007, the National Leading Group on Climate Change, headed by Premier Wen Jiabao, was established. China’s National Climate Change Programme was also promulgated, setting the goal of reducing energy consumption per unit of GDP by 20 per cent from its 2005 level by 2010, and proposing a series of national campaigns to deal with climate change. Other efforts include publishing the National Assessment Report on Climate Change and the Handbook on Nationwide Energy Conservation and Emissions Reduction, and launching the Public Campaign on Energy Conservation and Emissions Reduction. According to incomplete statistics, China has already introduced more than 60 regulations in this area.

Scientific advance is essential for protecting the climate and tackling climate change. China is introducing policies that set directions and programmes that turn words into deeds. The Law on Science and Technology Progress, enforced in 1993, legally guarantees the implementation of climate change policies. The Ministry of Science and Technology promulgated the



Outline of Science and Technology Programmes for Social Development, the Outline of Science and Technology for Sustainable Development and the Science and Technology Actions on Climate Change in 1995, 2002 and 2007 respectively, identifying the goals, tasks and supportive measures of China’s efforts to tackle climate change, save energy and reduce emissions.

Since 1991, China has been fully upgrading its ability to do basic climate change research and run research and development programmes on energy conservation and emissions reduction — such as the National Key Science and Technology Programme, the High-Tech Research and Development Programme, the Basic Research Programme, the Innovation Project of the Chinese Academy of Sciences and National Natural Science Foundation projects. Policy incentives have been introduced to engage the public and the business community in nearly 1,000 climate change projects (covering energy conservation, emissions reduction, low-carbon economy and renewable energy), with a total research and development investment of over RMB 20 billion. The country has taken an active part in global



© Regis Duvignaul/Reuters

research on climate change with some 100 countries, participated in major international research programmes, and hosted the Monsoon Asia Regional Integrated Study

China has already established an observation system covering a wide range of subjects, such as meteorology, hydrology, disasters and ecology, and now has 18 state key laboratories, hundreds of research teams and nearly 10,000 professionals studying global climate change. It has developed its physical climate system and regional climate pattern and participated in the international programme on climate pattern comparison. Significant progress has been made in research on high-resolution climate series (loess, ice core and literature), the mechanism of monsoon change in East Asia, extreme climate events, and carbon estimation of the eco-system. China also contributed to the IPCC evaluation report on climate change. Backed by the Government, Chinese research institutes and enterprises have developed technologies and techniques that save energy and use such renewable sources as biomass. These achievements have been widely applied in industrial production.


The country has substantially curbed its greenhouse gas emissions by increasing energy efficiency and developing renewable energies. It is now the world's biggest producer of photovoltaic cells. It also has leading technologies for clean coal power generation which greatly facilitate energy conservation and emissions reduction.

Between 1991 and 2005, China saved 800 million tons of coal equivalent — equal to reducing CO₂ emissions by 1.8 billion tons. By the end of this period, renewable energies accounted for 7.5 per cent of total energy consumption, equivalent to cutting another 380 million tons of CO₂. Between 1980 and 2005, net CO₂ absorption through afforestation amounted to 3.06 billion tons, with another 1.62 billion tons absorbed through enhanced forest management. The Government has approved more than 1,000 Clean Development Mechanism (CDM) projects, accepted by the CDM Executive Board, achieving over 100 million tons of certified emission reductions a year. Since the turn of the millennium, it has been committed to developing and applying technologies for clean energy, energy conservation and emissions reduction while sustaining its economic boom — as well as to exploring a development path that balances economic growth with resource and environmental conservation.

China is to implement the National Climate Change Programme, based on science and technology, in pursuit of its scientific outlook on development. It will improve its industrial structure, energy mix and efficiency, and promote renewable energy, afforestation and family planning. The aim is to build a resource-conserving and environment-friendly society and enhance the capacity to mitigate and adapt to climate change.

China is fully aware of the crucial role of science and technology in dealing with climate change, and will inject more funds into scientific research projects, technology development programmes and capacity building efforts in this area. It will continue to improve its climate change monitoring network, establish more state key laboratories, and launch science and technology programmes to support research on Asia's monsoon system, typical regional climate change, the impact of climate change, adaptation and mitigation, renewable energy technologies and low-carbon economy strategy, among others. The goal is to provide science and technology support for protecting the global climate and tackling climate change.

From now to 2009 will be a crucial period for global negotiations on establishing an international system for climate protection, and will call for the concerted efforts of all countries. When it comes to climate change, helping others is helping oneself. Only cooperation can bring mutual benefits and win-win outcomes. The Bali Roadmap, concluded at the end of 2007, embodies the wisdom and expectations of people across the world, and should be fully respected and implemented.

Developed countries should continue to take the lead in honouring their obligations to substantively reduce greenhouse gas emissions, and are encouraged to transfer technologies and provide financial support to developing countries' capacity building in dealing with climate change. Developing countries should take corresponding measures and contribute to global environmental protection efforts in the light of their own conditions. Developed and developing countries should have more practical cooperation and concrete actions, and less disputes and empty talks. Only with mutual trust can we have harmonious and close cooperation on protecting the global climate. Only in this way can human beings triumph over the ecological havoc of climate change. We look forward to working with the rest of the world to build a new future. 

cooling with heating

by Thórunn Sveinbjarnardóttir

Iceland was given its chilly name by one of its Viking discoverers, when he saw a fjord full of ice. By contrast, the country's first official settlement was named Reykjavík — or 'Bay of Smokes' — after the plumes of steam rising from the hot springs in the centre of the future capital. Today, Reykjavík is a warm city in a cool country, thanks to the abundant natural heat that supplies its geothermal public utility, the biggest of its kind in the world.

But it wasn't always so. As it grew in the early 20th century, Reykjavík was heated by imported coal — and a black cloud can be seen hanging over town in some photographs of the time. But why would people with piping hot water, literally underneath their feet, ship in coal from overseas for heating? The answer is simple: coal-fired generators were the ubiquitous technology of the day, and it took some time for Icelandic engineers to master the task of utilizing geothermal energy.

By the early 1970s, however, Reykjavík's heating and electricity generation were essentially decarbonized. Yet oil heating was commonplace in the countryside, as many parts of Iceland are outside the main volcanic zone, and thus considered geologically "cold". The government therefore sponsored a drive to find and utilize geothermal in these places. Partly as a result, the share of geothermal in space heating has increased from 43 per cent in 1970 to about 90 per cent today; with less than 1 per cent of households relying on fossil fuels for heating. Electricity in Iceland is also almost entirely produced by renewables: hydro and geothermal steam.

It could be said that Iceland is exceptional, with a small population sitting on top of vast renewable energy resources. Indeed, this is so. But this not the only place where the Earth sweats off its internal heat, and geothermal energy has huge potential worldwide.

Geothermal is now used in dozens of countries, and is seen by many of them as a relatively cheap and reliable source of electricity (and heating, in cooler areas). Current geothermal energy production places it third among renewables, after hydro and biomass, and ahead of solar and wind. Yet its present level of use is tiny compared to its potential. Geothermal is no less abundant in developing countries in such areas as Central America, the African

Rift Valley and the archipelagos of East Asia, raising hopes of combining the twin goals of reducing energy poverty and mitigating climate change.

So what is stopping us from tapping more of the Earth's internal energy in the world's hot spots? Not patents or legal restrictions. Perhaps it is the effect of similar forces to those that prevented Icelanders from using geothermal instead of coal at the dawn of our journey from poverty to prosperity — lack of knowledge and reliance on existing top-of-the-shelf technologies rather than innovation.


Iceland is helping to spread expertise in geothermal engineering to developing countries and economies in transition through hosting the UN University's geothermal training programme. Decision makers in governments and financial institutions must know and accept this and other renewable energy options. We should step up research in clean energy. The Fourth Assessment of the Intergovernmental Panel on Climate Change tells us that, unlike in the 1970s, there has been no noticeable increase in funding for energy research. Three decades ago we were stirred by the 'oil shock'. Is the threat to our future from climate change not a loud enough alarm? Besides big opportunities to spread the use of conventional geothermal energy, new and exciting technology, including deep drilling, could theoretically increase power output of geothermal fields five or ten times over.

Last December the countries of the world met in Nusa Dua in Bali and decided on an ambitious agenda towards a new comprehensive global climate agreement. The Bali Action Plan envisions a big emphasis on technology development and transfer as one of five key elements of the future-oriented talks. This is indeed fitting. Without developing and spreading climate-friendly technology it will be very difficult to fight climate change and achieve sustainable development.

Iceland aims both to import and export cleaner technology. We have effectively decarbonized our energy production, and cleared coal soot from the Reykjavík sky, but we have not entirely kicked our carbon habit. Our fishing ships and our cars are still running on fossil fuels. Our car fleet is one of the biggest, per capita, in the world. And Icelanders tend to like big cars, as any visitor to our country will soon notice.

To change this, we have started 'phase two' of the Iceland's decarbonization. We will encourage buying cars that run on alternative fuels, and continue to support research and development in fields such as hydrogen and electric vehicles. We can not do this alone, but we can engage in partnerships with other countries and private companies to develop new technologies and put cleaner cars on the streets and cleaner ships on the waves. Demonstrating our willingness to kick the habit, Iceland was one of four pioneer countries that volunteered to join UNEP's Carbon Neutral Network (CN Net) in February 2008.

Iceland wants to step up its effort to stimulate worldwide use of geothermal energy. In 2010 there will be a meeting of the World Geothermal Congress in Nusa Dua. Bali is an appropriate place for it, one of a string of volcanic islands that offer great potential for geothermal power production in the context of a rapidly growing economy and energy demand. By then we hope to have in place a new agreement that will help us put global warming under control. By then we will hopefully have given our negotiators a break, making it a good time to ask the engineers to go full steam ahead and develop practical solutions to match our political commitments.

It is time for the energy revolution to gather steam. And what more fitting way to cool the Earth's atmosphere than by using its own infernal heat. 



salvaging

Unintentionally destructive it may have been, but the behaviour of the human species has still been the most devastating environmental factor to have appeared in the long history of the biosphere. As a result we are now witnessing the fastest rate of species extinction since the cosmic cataclysm of the end of the Mesozoic era 65 million years ago.

Our unwitting disruptiveness arises from our virtually unlimited ability to modify the environment to turn it into what we think will best suit us. Unfortunately, we usually do this without thought for the long-term consequences, and we usually press on with our modifications — unnecessarily, but at a cost to the environment — on the basis of flights of fancy rather than of serious adaptation. Yet, the changes that we induce are often irreversible.

Perhaps our most drastic unintended change is to the atmosphere. Our pollutants — emitted in pursuit of wealth from industrialization — blanket the biosphere. They have altered our climate and are set to continue changing it. As the least industrialized continent, Africa has contributed the least to these pollutants. But because of its poverty, it stands to suffer the most. Who says that life is just?

Most countries signed to the United Nations Framework Convention on Climate Change in Rio de Janeiro in 1992, and eventually ratified it. The convention subsequently produced the Kyoto Protocol, specifying the cuts in greenhouse gas emissions that industrialized countries must make to stabilize the climate. Unfortunately, the government of the United States of America, the biggest emitter of greenhouse gases, did not ratify it, and nor did the government of Australia until this year.

Some have suggested that cosmic justice can be seen in the fact that Australia has suffered the most intense drought in its history (its crop production is said to have fallen by 70 per cent in 2007), and that Katrina, the most destructive hurricane in America's history, hit Louisiana. But I would not agree. Apart from any other considerations, the most recent climatic calamities have been the floods that devastated the Sahelian Zone and the southern parts of Africa in 2007 and 2008. Who says that life is just?

Tewolde Berhan Gebre Egziabher was named a UNEP Champion of the Earth in 2006. The award is given annually to seven outstanding environmental leaders who have significantly influenced the protection and sustainable management of the planet's environment.

Each issue of Our Planet features the views of one of UNEP's Champions. For more information on the UNEP Champions of the Earth award see <http://www.unep.org/champions/>



g the biosphere

by Tewolde Berhan Gebre Egziabher

The government of the United States of America is now saying that we should collectively try to reduce greenhouse gas emissions, but at the same time it believes that we should not specify the amounts of the reductions, and insists that cutting emissions should not slow economic growth. But should we perish through pursuing an imagined limitless economic growth in a limited biosphere? And where would we pile up the limitless dollars, anyway?

So what should we do? We should hope that the United States Government will go along with Australia, and with others within its borders — like the State Government of California — in wishing the biosphere well, as we cannot but help but do here in impoverished Africa. All humans would then collectively act to clean it up.


The Kyoto Protocol requires us, as developing countries, to use as clean technologies as possible as we industrialize. All of us must accept this requirement. The populations of the industrialized countries add up to only a fifth of humanity. So if developing ones were to industrialize by generating as much pollution per capita as they have been doing, the load on the atmosphere would be five times what it is now. That would certainly end life as we now know it. So it is in the interest of the industrialized countries to help us — newcomers to their irresistible culture — to industrialize like them but without polluting the atmosphere. And it is, of course, of even greater interest to us to solicit that help because our relative poverty makes us much more vulnerable to the impacts of climate change. And the poorest continent of all is Africa.

The Kyoto Protocol's Clean Development Mechanism provides one strategy for cooperation between industrialized and developing countries. It asks developed nations to help developing ones industrialize without polluting the atmosphere, in return for reducing their records of emissions by the amounts of pollution thus avoided. In this way, the world accepts collective responsibility or collective sin, and searches for collective redemption. When mishandled, however, the record keeping can become a mere gesture to sustain pollution — and turn us all into culprits.

In any event, the Kyoto Protocol ends in 2012. We must learn from our experience and replace it — less than four years from now — with a succeeding instrument that is more effective at salvaging the biosphere. In the coming negotiations, we have to recognize and support the service impoverished Africa's extensive forests and relatively chemical-free agricultural soils perform in sequestering carbon, rather than bypassing it as did the Kyoto Protocol. If we fail to do so, this service will be ended by multinational corporations' new focus on producing biofuels in the name of fighting climate change. I cannot see the logic in assuming that releasing carbon dioxide by felling forests, destroying soil humus and adding fossil fuel to the soil in the form of chemical fertilizers to produce substitutes for fossil fuels will reduce greenhouse gas emissions. But who says that the corporate chase after profits is bound by logic? So it must be bound, instead, by international law.

In any event, again, the Earth's climate has changed, and it will continue significantly to do so, irrespective of what we do now and after 2012. We have no choice but to adapt our respective societies to this inevitable change. We need all the agricultural biodiversity that we can muster to ensure that we adapt agriculture effectively to keep on producing more food — but genetic erosion is steadily reducing this all the time. Fencing off biodiversity with intellectual property rights, especially patenting, is further diminishing the availability of what is left.

As temperatures rise, human, animal and crop diseases will multiply. Already, malaria, sleeping sickness and dengue fever are expanding their territories. Already, HIV, Ebola and bird flu have appeared out of nowhere. Already, it is clear that there will be more horrors to come. We have no choice but to learn how to deal with these proliferating problems, whether they are deserved or not. Who says that life is just?

If the wish to live on is to prevail over myopic pushing on with business as usual, we have enough scientific know-how in the world to deal with our problems. So either we join hands to save the biosphere, and survive ourselves, or else founder and perish — and condemn most other species to extinction too. 

mission zero

by Ray C. Anderson

"If it exists, it must be possible," asserts Amory Lovins, co-founder and chief scientist of the Rocky Mountain Institute think tank. He is talking about my company. Fellow industrialists, I dare say, thought my ambition impossible to realize when fourteen years ago I described my aspirations for Interface Inc. to turn into what it actually is becoming today. Indeed, around then, the CEO of a major competitor looked me in the eye, and said, "Ray, you are a dreamer". Yet, as Amory says, "If it exists..."

The "impossible" that exists today is a petroleum-intensive carpet manufacturer (for both energy and raw material) that has reduced net greenhouse gas (GHG) emissions by 88 per cent, in absolute tons, and its water usage by 79 per cent since 1996, even as sales have grown by two-thirds and earnings have doubled. In 1994 Interface set out on a mission "to be the first industrial company that, by its deeds, shows the entire industrial world what sustainability is, in all its dimensions: people, process, product, profit, and place." Our definition of sustainability is to operate our petro-intensive company so as to take from the Earth only that which is naturally and rapidly renewable, and to do no harm to the biosphere.

By the end of 2006, the company I founded in 1973 to produce carpet tiles in America — now a billion US dollar (US) global enterprise with operations on four continents and sales in 110 countries — had reduced its overall impact on the environment by nearly 50 per cent (including the GHG and water use reductions cited above).

The amount of our energy derived from fossil fuels has been cut by 55 per cent. All the electricity for six of our eleven factories now comes from renewable sources (solar, wind, geothermal, and biomass), as does 17 per cent of our total energy usage: the goal is 100 per cent by 2020. Forty-seven per cent of our smoke stacks and 81 per cent of our effluent pipes have been abandoned, obviated by process changes. 127 million pounds of used products are collected at the end of their lives to be recycled into new carpet. Twenty per cent of our raw materials are derived from renewable sources, recycled or bio-based materials: the goal, again, is 100 per cent by 2020.

Cumulatively, we have avoided \$372 million in costs by eliminating waste, in a quest that is half way to achieving waste-free perfection by 2020. We define waste as any cost that does not add value for our customers. This translates ambitiously into doing everything right the first time, every time. We even define energy that still comes from fossil fuels as waste, something to be eliminated. Indeed, while offsets have a critical role to play in helping Interface (and, indeed, all of us) to reach our sustainability goals, we will not achieve them until we begin to redefine fossil fuel energy in this way. Sounds incredible? Remember, "If it exists..."

So how did this come to exist? In 1994, Interface was 21 years old, and successful by anyone's definition. We kept our eye on the bottom line — the financial bottom line — and didn't notice or care that the company consumed enough energy each year to light and heat a city. Or that we and our supply chain

processed more than a billion pounds of raw materials (mainly derived from oil) annually, and burned up another seven billion pounds of fossil fuels and turned them into carpet tiles for offices and hospitals, airports and hotels, convention centres, libraries, museums, schools, universities and retail stores all around the world. Or that each day just one of our plants sent six tons of carpet trimmings to the local landfill. What happened to it there? We had no idea. Why should we? That was someone else's problem.

Indeed our belching smokestacks, our gushing effluent pipes, our mountains of waste — all completely legal — provided tangible proof that business was good. They meant jobs, orders coming in, products going out, and money in the bank.

That all changed with a question that came from our customers: "What is Interface doing for the environment?" We had not heard that question before, and had no good answers. For a 'customer-intimate' company, this was untenable. Looking for an answer — and a determination to respond with credible, demonstrable, and measurable results and transparent accountability — set us on this course.


Can taking a profitable business apart at the height of its success makes business sense? The waste elimination initiative alone — and the avoided costs of \$372 million over 13 years — have more than offset all the investments and expenses incurred in pursuit of our goal which we now call "Mission Zero™": zero environmental impacts by the year 2020. This has allowed the business case for sustainability to develop and become crystal clear. Costs are down, not up — dispelling a myth and exposing the false choice between the environment and the economy.

Moreover, Interface products are widely recognized in a competitive industry as cutting edge, aesthetically as well as environmentally. Sustainable design, and especially Biomimicry — design inspired by nature — has produced a wellspring of innovation, and products that would never have been imagined 13 years ago. Interface designers routinely ask themselves such esoteric questions as: How would nature design a floor covering? Or how does a gecko cling upside down to a ceiling? Some of the most strikingly successful products in the industry's history have come from the answers.

The people of Interface are galvanized around the shared higher purpose of sustainability. Better people are applying; the best are staying and working with purpose. In my 52 year-long working life, I have never seen anything equal sustainability for attracting, motivating, and bringing people together. And the goodwill of the marketplace is astounding. No amount of advertising or marketing expenditures could have generated as much, or meant as much to sales and the bottom line, impossible as this might have seemed in 1994.

Amazingly, this initiative has produced a better business model, a better way to bigger and more legitimate profits. It out-competes its competitors in the rough and tumble of the marketplace, but not at the expense of the Earth or future generations. Instead it includes Earth and generations not yet born in win-win-win relationships. As validation of this, the Interface share price has moved from \$2 to \$20 in four years, as we have dug out of the deepest, longest recession in our industry's history, a recession we might not have survived without the enormous boost of sustainability,

But, what about the big picture? What does the Interface journey have to teach us? A sustainable society into the indefinite future depends totally and absolutely on a vast, ethically driven redesign of the industrial system, triggered by an equally vast mind-shift — one mind at a time, one organization at a time, one technology at a time, one building, one company, one university curriculum, one community, one region, one industry at a time — until the entire system has been transformed into a sustainable one existing ethically in balance with Earth's natural systems, upon which every living thing, even civilization itself, utterly depends.

One person, you, can make the difference in your organization. The key is:
Do something, then do something else. 

awards and events

World Environment Day

WORLD ENVIRONMENT DAY 5 JUNE 2008



TOWARDS A LOW CARBON ECONOMY
UNEP
UNITED NATIONS ENVIRONMENT PROGRAMME

This year's global **World Environment Day** celebrations on 5 June take place in Wellington, New Zealand, on the theme 'Kick the Habit! Towards a low carbon economy'. The event will also be celebrated worldwide, with hundreds of activities planned across every continent. Highlights of the New Zealand celebrations include the award ceremony for UNEP's International Children's Painting Competition, which attracted 190,000 entries from children in over 100 countries; an art exhibition with a climate change theme at the Museum of New Zealand Te Papa Tongarewa; and the presentation of the Green Ribbon Awards to people and businesses that protect New Zealand's environment. A Leadership in Climate Change Solutions symposium will be held in Wellington and, in Auckland a Business and Science Leaders Breakfast will discuss the challenges and opportunities of climate change.
www.unep.org/wed/2008



World Day to Combat Desertification

The **World Day to Combat Desertification** on 17 June will focus on Combating Land Degradation for Sustainable Agriculture. Created by the United Nations in 1994, the event aims to raise public awareness and promote the implementation of the UN Convention to Combat Desertification. The 193-member Convention is the only internationally recognized legally binding instrument that addresses the problem of land degradation in drylands, with a special emphasis on Africa. Desertification Day is celebrated around the world organized by UN agencies, NGOs and community groups. It aims to be "a unique occasion to remind everybody that desertification can be effectively tackled, that solutions are possible, and that key tools to this aim lie in strengthened community participation and cooperation at all levels."
www.unccd.int

Following the principle of 'Think globally, act locally', **Clean up the World Weekend** on 19-21 September will see thousands of volunteers from around the world cleaning up in their local community. The campaign, held in partnership with UNEP, was founded in Australia in 1993 by Ian Kiernan; since then, more than four million tonnes of rubbish have been collected by members around the world. Organizers expect around 35 million people to get involved in this year's campaign. "Anyone can get involved in the campaign, from small community groups to businesses," says Ian Kiernan. "Getting active is easy and the benefits are enormous. The satisfaction of knowing you've helped make a difference in our global community is priceless."
www.cleanuptheworld.org



A recent survey of 1,000 people by the Australian National University saw 19 per cent of respondents cite the environment as "the most important problem facing the country today". The **Banksia Awards**, which recognize environmental excellence among Australia's individuals, community groups and corporations, celebrate their 20th anniversary on 18 July. Ten award categories include Water, Land and Biodiversity, Eco Innovation and Indigenous, as well as People's Choice and Gold Awards. According to the organizers, the 2008 edition "will address initiatives aimed towards better environmental stewardship, sustainable growth and actions to combat climate change".
www.banksiafdn.com

20 Banksia awards 2008
Years of Inspiration



The European Commission's **Green Week 2008** will take place in Brussels, 3-6 June, to coincide with World Environment Day. Under the slogan 'Only one Earth - don't waste it!', the event will focus on natural resources, waste management, and sustainable consumption and production. "Many people are unaware of the speed at which we are using up our natural resources, and that we are producing waste far faster than it can be turned back into a useful resource," the EC says. The event will provide NGOs, businesses, government and the public with a platform for debate. Sessions include 'Can businesses be successful while also using resources in a sustainable way?' and 'Can big construction projects such as the London Olympics 2012 be truly 'green'?'. There will also be an exhibition of innovative sustainable development projects from across Europe.
<http://ec.europa.eu/environment/greenweek/home.html>



The Goldman Environmental Prize

Known as the "Nobel Prize of grassroots environmentalism", the \$150,000 **Goldman Environmental Prize** is held every year around Earth Day 22 April. Now in its 19th year, the Goldman Prize recognizes individuals for sustained and significant efforts to protect and enhance the natural environment. The winners are often women and men from isolated villages or inner cities who chose to take great personal risks to safeguard the environment. For 2008 they include activists Pablo Mendoza and Luis Yanza, who are fighting oil company Chevron to bring environmental recovery to an area of the Ecuadorian Amazon devastated by oil pollution; Marina Rikhvanova, a Russian woman working to protect Siberia's Lake Baikal from oil and nuclear interests, and Feliciano dos Santos, a Mozambican activist-musician raising awareness about sanitation and clean water systems.
www.goldmanprize.org

The **Ashden Awards for Sustainable Energy**, held in the UK, reward 'visionary champions who are finding solutions to climate change and bringing real social and economic benefits to their local communities'. This year's event takes place in London on 19 June. This year's finalists from UK and the developing world have "demonstrated considerable success and innovation in delivery of sustainable energy services from solar, wind, biomass, biogas, micro-hydro and other sources — or in promotion of energy efficiency". The Ashden Awards were founded in 2001 by the Ashden Trust, one of the Sainsbury Family Charitable Trusts. Organizers say the awards have helped more than 80 innovative projects develop their work and bring them to a wider audience.
www.ashdenawards.org





Kicking the Carbon Habit: Useful Links

This page contains links to websites from governments, international organizations, non-governmental organizations, businesses, media, and other groups from around the world to help you research issues related to kicking the carbon habit. We have compiled these links from our own review of the vast amount of information available on the Internet to help you to find the most relevant sources for your research. Our Planet magazine does not, however, endorse the viewpoints of any of the groups to which we link, and we cannot guarantee the accuracy of the information posted on these sites. Rather, we hope to provide you with a broad range of opinions and perspectives.

Calculate your footprint

www.carbonfootprint.com

This website allows you to work out the emissions from your house, flights, car, motorbike, bus and rail travel. The 'secondary' category lists other possible sources of emissions, including food preferences (vegetarian, organic and so on), fashion, packaging, furniture and electrical appliances, recycling, recreation and use of financial services.

www.carbonneutral.com

This website by the Carbon Neutral company provides a calculator designed for use by business, and bespoke calculators designed for individual companies who think they need more sophisticated help.

www.bp.com/home.do?categoryId=1

BP's Carbon Footprint Calculator is divided into three main areas: At Home, In the Store, and On the Road, with a range of information about ways to reduce your carbon emissions.

www.earthcharter.org

The Earth Charter Initiative provides a guide to carbon calculators, a list of countries where they are based, and sites where you may find the right one for your purposes.

www.mycarbonfootprint.eu

This European Commission website enables you to find out how much CO₂ you can save every year by choosing from a series of possible lifestyle changes. You can also make a public pledge to reduce your personal carbon footprint. The site provides links to national carbon calculators in a range of European countries.



drive time

The transport sector is responsible for 25 per cent of the world's total energy consumption and greenhouse gas emissions. One path towards more sustainable transport is the car-sharing websites that are sprouting up in Europe, Australia and the United States: people announce where they are going and when, offering a lift to those with the same destination. Here are a few popular sites:

www.mitfahrgelegenheit.de (Germany, Austria, Switzerland)

www.easycovoiturage.com (France)

www.rideshare-directory.com (United States)

www.catchalift.com (Australia)

Meanwhile the following websites provide a wealth of advice on how to drive greener, from simple tips such as shifting to higher gears to steps like buying a fuel efficient car:

www.ecodrive.org/

www.direct.gov.uk/en/Environmentandgreenerliving/Greenertravel/DG_064428

www.eco-drive.ch/go.cfm?was_ist_eco_drive

<http://raga.ouvaton.org/pratique/Dossiers/Eco%20conduite/brochure%20ecodrive.pdf>

www.bedoce.com/2007/08/21/conduccion-ecologica-2-como-ser-un-conductor-eco-eficiente/

www.unep.org

www.unep.org/climateneutral – February 2008 saw the launch of the UNEP Climate Neutral Network known as CN Net. Around the world, a growing group of countries, companies, cities, NGOs and also many individuals are laying out strategies and plans to lower their emissions and become climate neutral over the coming months, years and decades. CN Net is a web-based network that aims to catalyze action and energize this movement. Inaugural participants include Costa Rica, Iceland, New Zealand and Norway, as well as several cities and a number of multinational companies.

The key objective is to facilitate information exchange and networking on achieving a transition to a low carbon society. The network is inclusive and welcomes pledges from interested participants that make a clear and explicit commitment to significantly reduce greenhouse gas emissions.

www.climatecare.org/calculators/flight

Climate Care's calculator enables you to find out what the emissions from a specific flight will be – and what the offset cost is.

www.ipcc-nggip.iges.or.jp/public/public.htm

This page by the International Panel on Climate Change contains a series of guidelines to help countries with the production of their GHG inventories. This includes information on how to assess land-use change – one of the big contributing factors to carbon emissions, but one which is difficult to measure.

Be part of the solution

www.unep.org/wed/2008/english

UNEP's World Environment Day website is packed with information on the event on 5 June, including details of the hundreds of events that will take place worldwide to mark World Environment Day, from Nigeria to Australia.

www.unep.fr/greenpassport

The aim of UNEP's Green Passport site is to introduce travelers to some of the things they can do to make tourism a sustainable activity, with sections on 'Planning my trip', 'Getting there', 'Getting around', 'Before going back', and 'After my trip'.

www.passiv.de

A Passive House relies on its own intrinsic design as far as possible to meet its energy requirements – with things like good insulation, very good glazing and a ground heat-exchanger. This website explains the concept and shows how you, too, can build a passive house.

www.cdmrulebook.org

This website is the first comprehensive online legal database of all the rules, practices and procedures of the Clean Development Mechanism (CDM) carbon trading scheme. It contains information on the CDM cycle for all types of projects – large-scale, small-scale, forestry, small-scale forestry and programmatic CDM activities.

www.energyefficiencyasia.org/

This is a guide for companies in Asia wanting to improve energy efficiency through cleaner production, with versions in Tamil, Mongolian and Bahasa Indonesia among others.

www.iclei.org/

ICLEI – Local Governments for Sustainability – has developed a Cities for Climate Protection Campaign to help cities adopt policies and implement quantifiable measures to reduce greenhouse gas emissions. The organization's draft International Local Government Greenhouse Gas Protocol provides guidance on carbon inventories and mitigation.

www.klimabuendnis.org/start.htm

The Climate Alliance is an association of European cities and municipalities that have entered into a partnership with indigenous rainforest peoples to reduce their GHG emissions. Its aim is to preserve the global climate by reducing GHG emissions to a sustainable level in the industrialized countries of the north, and conserving the rainforests in the south of the planet.

www.ourcarbonnation.com/uploads/File/ConsumersGuidetoCarbonOffsets.pdf

This *Consumer's Guide to Retail Carbon Offset Providers* helps provide guidance to those considering purchasing offsets to help reduce their 'carbon footprint'.

www.carbontradewatch.org

Carbon Trade Watch is one of the determined opponents to carbon offsetting. The NGO argues that if people can simply pay a little for the promise of future climate innocence, it will do nothing to persuade them to cut their emissions radically here and now.

inventing the future

by Vinod Khosla

“Some people see things as they are and say why? I dream things that never were and say why not.” Robert Kennedy said something like this more than 40 years ago, and it’s even more applicable today. We have all seen the forecasts on why the world won’t change — how we’re doomed to our fate, chained to a future where oil remains the dominant commodity, unshakeable, and impossible to replace. The mistakes of the past persist — extrapolating historical data while ignoring deviations from the norm, and failing fully to understand the shock potential of technology. That is the world of economists and econometrics. I live in the world of innovation and innovators — one driven by the power of ideas fuelled by entrepreneurial energy.

Cellulosic biofuels have seen an explosion of interest in the last few years as we start to come to grips with the climate change problem. Meeting the needs of this challenge requires an unprecedented coordination of capital, intellect, and pragmatism. Yet we remain confident that we will succeed — foreseeing \$1.99 a gallon cellulosic ethanol at neighbourhood service stations within 5 to 10 years, with 75 per cent reductions in carbon emissions, water use and land use.

The world of fuel chemistry and production is undergoing exciting change. The broad range of possible biofuels include butanol, cellulosic gasoline, cellulosic biodiesel, cellulosic ‘biocrude’, and many more. The potential for customized chemistries means that we can remove a hydroxyl group here, add a hydrogen there, and create a longer or shorter carbon chain to optimize the fuel for the intended purpose.

Some common chemical and biological pathways have been utilized successfully for decades to make biofuels’ such as fermenting sugar to produce ethanol. Others are newer and innovative. Most exciting is how these ideas have come to be the target of companies, varying from small, privately funded start-ups to such behemoths as BP. This is the power of the innovation ecosystem, as researchers and innovators from very disparate fields come together to prove out new approaches. This is why traditional ‘energy research’ organizations and companies are unable to make sufficient progress and why most breakthroughs will come from the innovation ecosystem. It is the reason why traditional ‘pundit’s forecasts’ lag far behind the reality of small entrepreneurial companies. It is why General Motors just announced a partnership with Coskata to produce \$1.00 per gallon cellulosic ethanol made from waste and Range Fuels of Broomfield, Colorado, announced similar cost points using wood waste — both by 2010!

There are many examples of these innovative companies. LS9, in San Carlos, California, is using synthetic biology to move pathways from plants into bacterial cells to try to make petroleum from fermenting cellulosic feedstocks. Amyris, a company funded by \$40 million from the Gates Foundation to develop the anti-malarial drug artemisinin, is transforming itself into a next generation biofuels company using the same technology platform. Gevo, a company formed in response to “you can’t do that with synthetic biology yet” is taking on BP-Dupont in the race to commercialize butanol.

Range Fuels has developed an anaerobic gasification process to convert biomass into ethanol. Elsewhere, researchers looked at its synthesis gas production process and speculated that they could improve it by using bugs that convert syngas to ethanol. Coskata was born as a science experiment with a license to the technology from the University of Oklahoma, a few million in seed funding and a few great researchers. Lanza believes they can produce 50 billion gallons of ethanol from steel mill exhaust, while Mascoma is innovating the traditional biochemical pathway to produce it at dramatically lower costs. Kior is bypassing ethanol and producing a biocrude appropriate for feeding directly into refineries. The ideas and innovations don’t stop!

“While the technology may work”, critics say, “land use and feedstock needs render it impractical as a large scale solution.” Once again, we disagree. We believe that the United States, the world’s most prodigious consumer of

oil, can meet all its light vehicle fuel needs by 2030 with relatively limited additional land. We consider four principal sources of biomass:

- energy crops on agricultural land and timberlands using crop rotation schemes that improve traditional row crop agriculture and recover previously degraded areas;
- winter cover crops grown on current annual crop lands during the winter season when they are generally dormant (while improving land ecology);
- currently unused excess forest product (about 225 million tons according to the US Department of Energy); and
- organic municipal waste, industrial waste and municipal sewage.

Take one scenario: using about 70 per cent of excess forest waste, 50 per cent of annual crop land for winter cover crops, and 15 billion gallons from waste by 2030, we would need only an additional 14 million acres of dedicated crop land (while reclaiming about 15.5 million acres of land currently used to grow corn for ethanol) to meet most (of the United States’) light vehicle fuel needs in 2030.


While science and technology will continue to be important in increasing yields, improved agronomy practices are also a major factor. A few offer significant potential:

- crop rotation;
- polyculture plantations, which have significant environmental benefits and are more efficient;
- perennial energy crops, which need less replanting and help restore soils
- better agronomic practices such as no-till farming and non-irrigated crops

One understated benefit is the potential for biofuels to help places like Africa. In the future world of cellulosic ethanol, the \$300 billion the US spends on oil purchases and the EU’s \$136 billion spending on oil imports could be allocated to Africa, with its vast potential for biomass cultivation. This would also help developing economies in China, India and Latin America by reducing the price of energy, and may be the single most important poverty alleviation tool we have. A focus on biomass will generate new income for Africa, India and Latin America’s rural poor as well as America’s rural population. America, with its agricultural advantages, will almost certainly produce all its own fuel. But Latin America and Africa might supply Europe, China and India, resulting in a new, more distributed and diverse geopolitical balance of energy and incomes.

Are we being too optimistic and overstating the rate of change? On the contrary, I believe we are understating the potential impact. Critics argue from the “what is” as opposed to “what can be” approach. Their argument is circular: “if it isn’t true today, it won’t be true tomorrow and hence is not worth working on”. We disagree, primarily because we are technology optimists.

We have seen exactly the same happening in the past. In 1982, when we started Sun Microsystems, we were told that competing against IBM and Burroughs was inconceivable. In a 1996 meeting with the heads of media giants like the Washington Post, Knight-Ridder, Tribune, Cox, and the New York Times, I attempted to explain how the internet would disrupt their business: now Google is worth more than all of them combined. Just a few years ago, every major telecommunications carrier noted that they would never adopt internet protocols: today, venerable AT&T has been sold for a song because they failed to heed the innovation the internet offered.

The point is to highlight how fast change happens — driven by the power of technology. Alan Kay said it well: “the best way to predict the future is to invent it.” This is clearly starting to come about. 



green sky thinking

by Rob Fyfe



Publicly, however, the most important aspect to be addressed is that the fossil fuel used to power planes contributes toward global warming. Although there is some emphasis on the potential ability of new aircraft design and technology to assist with the amount of fuel use, a major one is on finding alternative fuels.

The recent flight by Virgin Airways using 20 per cent biofuel made from coconut oil and babassu, caused controversy among some environmental groups, who claimed it was a gimmick. This detracted from the positive outcome of the flight, which highlighted that new fuels are on the horizon and will probably be available within the next five to 10 years.

Last year, Air New Zealand announced that we would undertake a test flight using a sustainable biofuel, and it will take place later in 2008. The growing awareness of the potential downsides of biofuel, such as the use of arable land to grow crops for it, is an issue — but the feed stocks being considered by Air New Zealand for the biofuel trial will overcome this. Two possible sources are under consideration: jatropha which grows on marginal land which cannot easily be used for other crops, and algae which grows on sewage ponds or in seawater.

Access to the required amount of suitable biofuel to conduct the trial will guide the timing of the flight, but it is planned to use it in one engine of a Boeing 747 on a test flight out over the Tasman Sea between Australia and New Zealand.

Unfortunately, there is no magic bullet that will be able to solve the biofuel challenge. Yet there is no doubt that algae does have advantages over other feed stocks as it can grow in waste water and only requires sunlight and carbon dioxide. It is also endlessly renewable.

The ultimate aim is to find a commercially viable alternative fuel for the airline from a New Zealand-based source, so algae will likely have the most potential.


Air New Zealand is keen to encourage research into alternative fuels and wants to work hand-in-hand with industry partners and the New Zealand Government in promoting this type of activity.

Alongside the biofuel initiative, we have already made significant steps toward the goal of becoming the world's most environmentally responsible airline through investing in new fleet. The Boeing 787 Dreamliner, due to come into Air New Zealand service in 2010, will save 20 per cent more fuel than similar aircraft, through a combination of new technology and weight reduction.

Together with the Boeing 777s currently flown by the airline, this will mean that Air New Zealand has one of the youngest, most technologically advanced, fuel-efficient and environmentally friendly long haul fleets in the world.

Within the company, we are working toward establishing an environmental management system with the target of attaining ISO14001 by 2010. Already projects are underway in waste management and energy auditing, along with regular compliance programmes.

Staff have been given the opportunity to think more about how they can be environmentally aware in their own lives, the community and at work by joining our Green Team. Nearly 20 per cent of Air New Zealand staff have already joined the team, which has champions across the business helping to get staff involved in environmental activities.

Other initiatives such as general fuel saving, weight reduction and flying techniques go a long way to already positioning the airline at the forefront of environmental responsibility. 

Perception of the environmental issues around air travel may cloud the reality of the size of the industry's contribution to global warming, but it is clear that airlines now face a real challenge in developing publicly acceptable environmental performance.

Less than three per cent of global carbon dioxide emissions currently come from aircraft and, although air travel is destined to increase over the next two decades, aviation will continue to remain only a small part of the big problem of climate change.

Air New Zealand is a small airline from a small country but the company sees the challenge of climate change as an opportunity.

As a country, New Zealand is committed to global leadership in environmental issues. We have a government pledged to environmental sustainability and an image as a 'clean, green country' to protect, both for the health of the planet and for economic necessity, as New Zealand's economy relies heavily on tourism.

As part of this commitment, Air New Zealand would like to become the world's most environmentally aware airline by incorporating environmental standards, products and practices into all areas of the business over the next few years.

Credibility needs to be an integral part of any company's environmental programme, as consumers have already become attuned to 'greenwash'. It is essential that environmental programmes operate not only at the airline's external face but throughout the company, with the engagement and involvement of employees.

living simply

by Meenakshi Raman

Responses to the international climate change crisis — caused by unsustainable over-consumption of fossil fuels, particularly in the North — are at present gravely inadequate. If this is indeed the defining issue of this century, then nothing short of fundamental change is needed.

Poor, vulnerable communities in developing countries — the least responsible for climate change — are being hit the hardest by its impacts and by the false solutions being promoted to tackle it. This is an issue of development, human rights and justice. Those countries with the greatest responsibility for historical and continuing greenhouse gas emissions have sufficient wealth to act and must do so. The inequitable consumption of resources by the North and its exploitation of resources from the South have led to ecological debt that must be repaid.

Science tells that, if the most dangerous impacts are to be avoided, average global temperature increase must be kept well below two degrees centigrade above pre-industrial levels. This implies that the long-term concentration of greenhouse gas emissions cannot exceed 450 parts per million carbon dioxide equivalent — though, even at this level, there will be countries, communities and species that will suffer catastrophic effects.

The science also suggests that global greenhouse gas output needs to be at least halved by the middle of the century, compared with 1990 levels. Hence, there has to be agreement on the principles of 'burden-sharing' between the North and South. The deeper the cuts to be made by developed countries, the less the burden on developing ones.

It is clearly insufficient, for example, for the developed nations to reduce their emissions by between 60 and 80 per cent as part of a global 50 per cent cut by 2050. Let us look, as the Third World Network has done, what that would mean in practice for the South. In 1990 the world produced 38.6 billion tonnes of carbon dioxide; cutting this by half would bring it down to 19.3 billion. The North's original share of this was just under half at 18.4 billion tonnes, and a 70 per cent cut would reduce it to 5.5 billion. That would leave the developing countries with a target of 13.8 billion, 33.3 per cent down on their 1990 level of 20.4 billion tonnes. But since their population is due to more than double over that period their per capita emissions would have to be cut by 65 per cent.

There should be open debate as to whether such a cut is fair, and whether it should be undertaken. Given the North's historical responsibility — and the quality of life it has attained at the expense of the atmosphere and the South's 'environmental space' — it is indeed its responsibility to address the implications of what appears to be an unfair burden on developing countries.

The heart of the matter is whether, and how, we can find a sustainable development pathway for developing countries that leads not only to stabilizing greenhouse gas emissions but to improving living standards and alleviating poverty within an ecological framework — and enables new policies for agriculture, industry, trade and finance.

This is an enormous development challenge and one that should not be underestimated by predictions that spending between 1 and to 3 per cent of GNP would be enough to take care of the problem. Much more work and action is needed to show how developing countries can go into a simultaneously low carbon and sustainable development pathway

The following measures are necessary elements for such a way forward.

Developed countries must urgently undertake a major leap in dramatically cutting their emissions, so as to give much of the developing world the environmental space to undertake sustainable development to address the basic needs of their people and overcome poverty. Thus, the burden-sharing arrangement must be frontally addressed.

Lifestyle changes are needed, especially in the North and among the elite of the South. Not enough attention is being given to this fundamental issue, though the outcomes of the 1992 Rio Earth Summit emphasized changes in consumption patterns and production systems. We cannot afford to maintain the position that the lifestyles of the rich are not up for negotiation when so much is at stake. Even the Intergovernmental Panel on Climate Change's Fourth Assessment Report states that changes in lifestyle and behaviour patterns can reduce greenhouse gas emissions. The changes must emphasize resource conservation and contribute to a low carbon economy that is both equitable and sustainable. We have to live simply so others can simply live.

The developing countries must be rapidly enabled and supported with the finance and technology needed to undertake a low carbon pathway. There must be a massive increase in public funds and resources from the North to the South — rather than, as is currently advocated, mere reliance on the private sector and the carbon markets for the additional finance needed to meet the costs of mitigation, adaptation and reconstruction. Revenue for these funds can be raised by redirecting military spending, cancelling debts, contributing 'cap and auction' winnings, and raising levies and taxes.

Barriers, such as intellectual property rules, to transferring and deploying climate friendly technologies to the developing world must be removed or relaxed. Technological options being discussed by some, such as nuclear energy, genetically modified trees (for allegedly improving species), agrofuels, large hydropower plants and carbon capture and storage, are false solutions as they pose grave risks to the environment and health and safety, and threaten a variety of social impacts.

More emphasis and priority should be given to energy efficiency and renewable energy, especially solar and wind power. Decentralized forms of energy production, in the hands especially of the rural poor in developing countries, are a major imperative.

Adaptation efforts should benefit the poor and protect ecosystems, livelihoods and human security. Community-based projects provide the best opportunity to ensure that these are culturally, technically and socially appropriate and increase resilience to the impacts of climate change.

Forest protection programmes must uphold community rights, and the land rights of indigenous and other local peoples, prohibiting any action that seeks to exclude indigenous and forest-dependent communities from 'conservation' areas. Failure to prohibit this is an endorsement of environmental racism and threatens sophisticated cultural conservation practices.

Crucially, there must be coherence, from a climate perspective, in the policies of the World Trade Organisation (WTO), the International Monetary Fund and the World Bank. Some of their policies have promoted climate vulnerability and undermined resilience in developing countries. Mercantilist policies that undermine sustainable development are being pursued through international financial institutions with aid conditionalities, through the WTO, and through Free Trade Agreements designed to open up developing country economies.

How can developing countries give priority to integrating climate change into national policies when international measures exacerbate poverty and inequity, including through displacing small farms and firms and giving access over natural resources to powerful foreign corporations? This must be reversed, in a process that will also require coherence in developed country policies.

As grassroots-based NGOs in developing countries, we will continue to do all we can to enhance their commitment to give top priority to climate change. But this cannot materialize unless international policies complement national efforts. If all the above issues are addressed well, more sympathetic policies and behaviour can be expected from the South.

products

Green picnics



Every year, tonnes of cling wrap, water bottles plastic forks and paper plates are discarded, only to become an environmental problem for years. Nearly a third of the solid waste that ends up in landfills is plastic and paper used for packaging and food service. In response to the rising tide of landfill waste, San Francisco-based company Sustainable Plastic has come up with a range of tableware and utensils which are 100 per cent bio-based and 100 per cent compostable. This innovative range of tableware and cutlery replaces petroleum-based plastic and virgin paper with renewable materials like corn, potatoes and tapioca. A range of cups and plates are molded from an agricultural by-product called bagasse — pulp made from sugarcane stalk. Spoons, forks and knives are made from 100 per cent starch, and yet are heat-resistant to high temperatures. A way to start tackling our planet's growing waste mountain?

www.sustainableplastic.com

Solar powering

Ever been on a trip when your mobile phone charger went missing or your camera died because you couldn't find a power source? All this could change with the Globe Trotter bundle, a new device which converts solar technology into electricity to help you charge up all your portable gadgets. Intended for power-hungry outdoor gadget users such as travellers, backpackers and outdoor sports enthusiasts, the device works in all weather conditions, charging fully in 4 hours. It is compatible with a whole range of gadgets including mobile phones, Blackberries, digital cameras and iPods.

www.ubergizmo.com/15/archives/2008/04/globe_trotter_bundle.html



Shipping is a monumental carbon emitter which has so far been curiously exempt from the climate change debate: it produces 5 per cent of the world's total carbon dioxide, which is twice as much as the airline industry — and more than all African countries combined. The SkySails-System could be a welcome remedy to this: it is an enormous, high-tech towing kite which reduces cargo vessels' fuel consumption by 10 to 20 per cent. In March, the 10,000-tonne MS Beluga SkySails became the world's first commercial ship powered in part by one of these giant kites as it completed its two-month maiden voyage, sailing from Germany to Venezuela, the United States and Norway. It recorded fuel savings of 10 to 15 per cent, amounting to savings of \$1,000 to \$1,500 per day.

www.skysails.info

Fridge savers

Refrigeration is one of the world's great energy wasters. The eCube, a newcomer on the green gadget scene, promises to drastically cut energy consumption from industrial refrigeration. Fridges work harder than necessary because their thermostats react to air temperature rather than food temperature, which rises much more slowly. The eCube solves this by latching on to the thermostat and making it read food temperature only. This may not seem like much, but eCube's producers say it has been proven to reduce energy consumption by up to 33 per cent. Not bad, considering the mass refrigeration required by supermarkets, hotels and food producers worldwide.

www.ecubedistribution.com



Recycled basketball



With increasing environmental scrutiny on the Olympic Games and other athletic events, sports are starting to shape up on the green front. Following the motto 'Think Globally, Hoop Locally', US sporting goods company Wilson has introduced a basketball made of 40 per cent recycled rubber. The move is not insignificant, as the average basketball uses up to 600g of rubber. According to Wilson, 70 of its new eco-friendlier balls are equal to taking one car tyre out of landfill. And to add to the green motif, the box for the 'Rebound' (as it is known) is made from 80 per cent recycled cardboard.

www.wilson.com

Play for today

Water-related diseases are one of the leading causes of death in the globe. More than a billion people do not have access to clean water, and running water is a luxury in much of the developing world: 40 billion hours are lost annually to hauling water, a chore primarily undertaken by women and girls. PlayPumps is an innovative answer to these problems: it is a children's merry-go-round attached to a water pump. While the children have fun spinning on the merry-go-round, they draw clean water from underground into a storage tank. The water comes out of a tap with the turn of a handle. PlayPumps International, the South African organization behind the project, has so far donated more than 1,000 pumps in South Africa, Mozambique, Swaziland and Zambia, benefiting millions of people. The NGO aims to reach 10 million people by 2010 by bringing 4,000 PlayPumps to Ethiopia, Kenya, Lesotho, Malawi, Tanzania and Uganda.

www.playpumps.org



Love and ecology



Who knew you could save the rainforest and fight AIDS in one fell swoop? The Brazilian government is doing just that: it has just opened a factory that produces condoms using rubber manually extracted from trees in the Amazon. The factory, in the north-western state of Acre, will allow rubber tappers to profit from the rainforest without destroying it. With this project, Brazil's government will work towards two of the Millennium Development Goals — combating AIDS and ensuring environmental sustainability — while also reducing its dependence on condoms imported from Asia. The move is significant as the Brazilian government is one of the world's largest single buyers of condoms, purchasing more than a billion of the contraceptives in recent years to give away free. The latex will come from the Chico Mendes reserve, named after the conservationist, rubber tapper and 1990 UNEP Sasakawa Prize winner who was shot dead by ranchers in 1988.

www.brasil.gov.br/ingles/

Rock star KT Tunstall has achieved the rare feat of getting the message on kicking the carbon habit into lurid tabloid newspapers. She told a reporter how she avoided using air conditioning in the summer by “walking around my house naked.” And she added: “I also highly recommend sharing a bath, hitting yourself on the head with a ladle if you need to boil the kettle twice, and turning your heating down by two degrees.”

The 32 year old singer — who has sold five million records, won three BRIT awards, and received a Grammy nomination — has taken steps to reduce her own carbon footprint, and is reaching a wide audience with her forthright, if quirky, advice.

Born to Chinese and Irish parents, she was adopted at two weeks by a physicist and a schoolteacher in the Scottish university town of St. Andrews. “I grew up on a craggy coastline that is crumbling into the wild North Sea,” she says. “To me, nature is an obviously omnipotent force, and we are guests. As long as we are graceful, appreciative lodgers, the earth remains healthy and wondrous. But we are trashing the guest house, and it feels wrong.”

Tunstall did not even start listening to pop music until she was 17. Her home had no television or stereo because her younger brother is profoundly deaf, and the noise interfered with his hearing aid. But she taught herself the guitar from a busker’s booklet, and formed her first band while on a scholarship in Connecticut, USA. She returned to Britain, took the name KT (“I needed to do something with my name to stick out of the crowd”) and performed frequently. But success was a long time coming; she finally broke through as a last minute stand-in on a television show, giving a barnstorming rendition of her single ‘Black Horse and the Cherry Tree’, which then shot to the top of the charts.

She is now intent on using her fame to tackle climate change. “I’m not out to preach”, she says “but global warming is the most important issue in our lives. Even small changes can make a difference. But if we don’t all change our attitudes — and make wider choices — we’ll be living in a very different reality in ten year’s time. It won’t be nice.”

She has set about making such choices in what she admits is “the pretty environmentally unfriendly job” of a rock star. She does not own a car, insists that her tour buses run on biodiesel, adds a small charge to each ticket so that she can offset fans’ trips to see her, and has planted a wood of 5,000 trees.

She has greened her London flat — insulating it with 95 per cent recycled board and sheep’s wool; adding eleven solar panels; fitting water saving devices and using solvent-free paint; and sticking to wood that has either been reclaimed or certified by the Forest Stewardship Council.

And she continues to urge practical measures, in her own style. “Go topical not tropical: these days everyone’s turning their thermostat down a degree or two.” “Tell everyone in the family to have a shower, not a bath: that will stop them singing.” And: “Forgotten what those funny things on the end of your legs are for? Find out. Walk.” GL

KT Tunstall



www.unep.org/ourplanet