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GENERAL NEWS

1) NEW KYOTO CLASH ON HORIZON

Calgary Sun

April 23, 2003

Internet: <http://www.canoe.ca/CalgaryNews/cs.cs-04-23-0036.html>

OTTAWA -- Alberta and the federal government are working on rival schemes for cutting greenhouse gas emissions and industry fears being caught in a double bind. The parallel efforts could set the stage for a new confrontation like that which preceded ratification of the Kyoto climate accord in December, observers say. "It is a matter of considerable concern," said Bob Page, vice-president for sustainable development with Transalta Corp., a major electric utility. Page said his company is concerned about "double jeopardy" under two different sets of rules.

The debate focuses on how to set up an emissions-trading system which would allow large emitters of greenhouse gases to buy and sell emissions credits. The idea is that companies capable of making cuts at low cost could sell credits to other companies for which the cost would be higher, resulting in lower overall costs to all emitters. "This is very much to our benefit, to try and find the least-cost way of doing that so we have a competitive advantage over other electricity producers," said Page. Page said Alberta is far ahead of Ottawa in its work, noting that province has already tabled enabling legislation for an emissions trading system. "I would estimate today, Alberta is about two years ahead of the federal government in terms of dealing with this."

But Alberta's plan appears to be incompatible with the federal proposals, because it does not meet the requirements of the Kyoto accord. Under Alberta's Climate Change and Emissions Management Act, which has received first reading, the goal would be to cut Alberta emissions in half from 1990 levels by 2020. The Kyoto accord requires greenhouse emissions to be cut six per cent from 1990 levels by 2010. Federal officials say that confining emissions trading to a small provincial market is a recipe for inefficiency. "It's very hard for me to understand the economic logic of restricting trading of permits to a single province," said Howard Brown, senior deputy minister of Natural Resources. "It's counter-productive."

2) EARTH DAY FOUNDER NOT THE ONLY ONE TO LINK CLIMATE CHANGE AND INVESTING

Social Funds

April 22, 2003

Internet: <http://www.socialfunds.com/news/article.cgi/article1099.html>

The voices of institutional investors representing public pension funds join those from the insurance industry to advance a business case for addressing climate change. SocialFunds.com -- In his keynote speech at the

Coalition for Environmentally Responsible Economies (CERES) conference earlier this month, Earth Day founder Denis Hayes observed some similarities between man-made markets and natural ecosystems. Economic bubbles, he said, can be likened to ecological overshoots, such as when prairie dogs reproduce beyond the land's carrying capacity.

"Everything seems to be going swimmingly until suddenly, like cartoon characters, they find that they have run over the edge of the cliff," Mr. Hayes stated. "And no matter how fast they churn their legs, they can't avoid a long drop." "And as with bubble economies, the greater the violation of the boundary conditions, the sharper and deeper the eventual collapse," he continued. During his talk Mr. Hayes cited several historical examples of classic bubbles, including the Soviet economy and the recent irrational exuberance over technology stocks. However, he said, those bubbles pale in comparison to the severity of the current "ecological" bubble. "Throughout the global economy, prices don't reflect ecological reality," Mr. Hayes told the CERES conference attendants. "We've been liquidating our natural capital and not reflecting this on our books. Indeed, when we consume a natural resource, we stick this loss in the income column."

This liquidation of natural capital also applies to greenhouse gas emissions. Many companies emit greenhouse gases without restraint and do not view climate change as a threat. Mr. Hayes pointed out that precious few companies are following the examples of BP (ticker: BP), DuPont (DD), IBM (IBM), and Johnson & Johnson (JNJ), which are recognizing the business case for improving environmental performance and reducing greenhouse gas emissions. In the absence of governmental regulation (the Bush Administration's voluntary greenhouse gas goals actually allow for increases in emissions), Mr. Hayes exhorted shareowners to advance the cause of addressing climate change at the corporate level.

Later in the CERES conference, state and city treasurers and comptrollers from Connecticut, Vermont, New York State, and New York City echoed this call by summoning institutional investors to a summit addressing climate change. These officials act as the principal fiduciaries for approximately \$130 billion in combined investments. They also helped file many of the record 31 resolutions involving global warming at 27 companies this year. "We need to pull corporate America's heads from the sand and look at this obvious long-term economic risk," said Connecticut State Treasurer Denise Nappier in her CERES speech. Shareowner action is not the only avenue for promoting the assessment of climate change risk. Insurers and reinsurers, which are often stereotyped as conservative number crunchers, may be the most progressive voice addressing climate change risk comprehensively. Perhaps this is because risk-assessment is their stock-in-trade.

"Reinsurers such as ourselves are making business decisions based on climate change prediction," said Christopher Walker, managing director of greenhouse gas risk solutions at Swiss Re (TUKN.SW). "We anticipate risks by trying to understand them before they've come to pass. Along the way, we manage risks and try to mitigate them." "We're also a facilitator. An important part of our role is our ongoing effort to educate our clients and the public about risks," Mr. Walker told SocialFunds.com. Toward this end, Swiss Re released a report last year entitled Opportunities and Risks of Climate Change. While much controversy surrounds the determination by the International Panel on Climate Change (IPCC) that human activity contributes to global warming, the report points out that climate change will affect us regardless of whether it is human-induced or not.

"As an industry, we can raise awareness and change attitudes [regarding climate change risks] with our investment clout," said Mr. Walker. "Investors need to be similarly aware of the risks facing the companies they are invested in." The state treasurers and comptrollers are heeding this advice and adding their investment clout to help create a compelling business case for corporations to address climate change risks or suffer the consequences. "We have two options: we can begin working very hard to build a global economy designed along ecological principles to operate within the planet's carrying capacity," said Mr. Hayes in his CERES address. "Or we can carry on with business as usual and race off the cliff."

3) RUSSIANS SAY KYOTO PACT OFFERS NO ECONOMIC BENEFIT

Japan Today
April 22, 2003

Internet: <http://www.japantoday.com/e/?content=news&cat=1&id=257445>

MOSCOW — The Russian Ministry of Economic Development and Trade, the government agency in charge of evaluating the 1997 Kyoto Protocol on global warming, has concluded that the treaty would yield no economic benefits for Russia, hinting that Moscow has no economic grounds for ratifying the treaty. According to diplomatic sources, the Russian officials made the argument in a policy paper drafted in late March that they circulated to members of an inter-ministerial panel set up to discuss climate change issues.

4) OECD NATIONS CAN CUT ENERGY USE BY 1/3 BY 2010 - IEA

Planet Ark
April 22, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/20517/story.htm>

LONDON - The world's rich industrial countries could slash nearly a third of their energy use by 2010 by using more energy-efficient electrical appliances, energy watchdog the International Energy Agency said. Such a move by members of the OECD, the Organisation for Economic Cooperation and Development, would cut the emissions of polluting greenhouse gases by the equivalent of removing 100 million cars from their roads. Home appliances such as computers, fridges, mixers, toasters, televisions and videos are the fastest growing energy users after automobiles in OECD countries and many of them consume power when switched off in stand-by mode.

Such devices account for 30 percent of OECD electricity consumption and 12 percent of greenhouse gas emissions, largely blamed for global warming. IEA projected electricity demand to grow by 13 percent by 2010 and by 25 percent by 2025, based on current appliance standards. "Additional efficiency gains of up to 30 percent are possible by setting energy performance targets for appliances from 2005 onwards as the minimum efficiency performance standard," the IEA said in a new study "Cool appliances: Policy Strategies for Energy-Efficient Homes."

It said 642 terawatt hours of electricity could be saved and 322 million tonnes of the greenhouse gas carbon dioxide (CO₂) emissions reduced by 2010 if OECD members took action by 2005 and implemented tougher standards for appliances. "These savings can be achieved at a negative cost to society. The extra costs of more efficient appliances are offset by savings in running costs over the life of the appliance," IEA said in a statement. It said such measures would achieve up to 30 percent of IEA countries' targets under the global United Nations Kyoto protocol to cut greenhouse gas emissions by developed countries by 5.2 percent of 1990 levels by 2008-2012. Each saved tonne of CO₂ could save European consumers up to 169 euros (\$183.2) between 2005 and 2020 as well as reduce costly electricity bills. The OECD has 30 members of which 26 are members of the IEA. The United States introduced its first national federal standards for electrical home devices in 1987 and Japan is in the process of setting up its own standards which also include cars.

5) EU READIES FIRST IDEAS ON HYDROGEN FUEL DREAM

Planet Ark
April 22, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/20518/story.htm>

BRUSSELS - The European Union's dream of weaning people off dependency on oil and getting them hooked on hydrogen-fuelled transport may be closer to reality but critics say it disguises an emphasis on coal and nuclear power. European car and energy firms have joined forces in a group founded by the European Commission to keep the EU's hydrogen firms on track with rivals in Japan and the United States.

Both the EU and the United States have voiced ambitions to move to a "hydrogen economy" where the carbon-free gas is used in fuel cells to create electricity that one day could replace oil as the main propellant for cars. For the European Commission, the goal is for renewable energy sources to meet 12 percent of the EU's needs by 2010, as well as contributing 22 percent of its electricity. Hydrogen, a potential source of energy, is key to hitting the target.

Most hydrogen is produced on a large scale by reforming natural gas, using steam. This is an energy-intensive process and requires temperatures of up to 900 Celsius, so nuclear power has been suggested as a source of cheap heat. Hydrogen can also be thermochemically generated from water decomposed by nuclear heat at high temperature. In addition, the light gas is a by-product from oil refining or electrolysis. The group's draft report, which has Thursday as a deadline for comments and objections, concludes that fossil fuels are likely to be the main source for hydrogen generation in the short term. In the longer term, nuclear power could be used.

"Early on, these resources will probably be fossil fuels, with their widespread availability and low prices. Successful carbon sequestration techniques would allow fossil hydrogen to be used on a large scale with limited greenhouse gas emissions," said the draft report. As renewable energy technologies matured and costs continued to fall, more hydrogen would come from renewable sources, it said. In the distant future, hydrogen might be produced from a wide range of resources and sent through pipelines to end-users. "In the longer term, nuclear energy could provide large amounts of cheap hydrogen, complementing the renewable energy sources," said the report.

GREENS SCEPTICAL

Environmental groups favour hydrogen as a green fuel of the future because gram for gram, it produces more energy than any other substance and produces only water and energy when burnt. But the idea of using fossil fuels and nuclear power in order to generate it has, unsurprisingly, raised their hackles. "It's not an efficient or cost-effective way (to use fossil fuels and nuclear power). It doesn't make sense at all," said Oliver Raps, environment and climate change officer at the World Wildlife Fund's Europe Policy unit in Brussels. "All the investments that would have to be taken are long term. If you build the facilities for doing this, you won't build them only for 10 years and shut them down. The life-cycles in these industries are usually between 30 and 50 years.

The Commission plans to spend close to 2.1 billion euros (\$2.30 billion) on hydrogen-related research over the next four years, up from about 120 million over the last four. It will hold a conference on hydrogen fuel in June, where the proposal will be presented. "This is a draft report and not final. It's true that nuclear and coal are mentioned," said a senior Commission official. "They (the group) consider coal and nuclear energy as being one possible source for hydrogen." "The idea is that the development of hydrogen could be supported in the first stage by fossil fuels - then it would facilitate the transition to renewables in the longer term."

6) CRACKDOWN URGED ON COAL POLLUTION

Washington Post

April 22, 2003

Internet: <http://www.washingtonpost.com/wp-dyn/articles/A7331-2003Apr21.html>

A congressional advisory panel yesterday called for a crackdown on pollution by aging coal-fired power plants and criticized efforts by the Bush administration to weaken clean air enforcement rules governing utilities, refineries and industrial plants. Members of the National Academy of Public Administration concluded in a two-year study that a Clean Air Act enforcement program known as New Source Review has effectively controlled pollution from newly built facilities but has performed poorly in reducing health-threatening pollution from the nation's oldest and dirtiest factories and power plants.

The panel called for an overhaul of clean air laws to adopt a new performance-based system that would

force older power plants to shut down within 10 years unless they install anti-pollution equipment and reduce their emissions to meet legal standards. The report also called for more vigorous enforcement of New Source Review regulations by the Environmental Protection Agency and the Justice Department and cautioned against creating "even broader loopholes or more exemptions."

"Contrary to congressional intent, many large, highly polluting facilities have continued to operate and have expanded their production (and pollution) over the past 25 years without upgrading to cleaner technologies," the report said. "The result: thousands of premature human deaths, and many thousand additional cases of acute illnesses and chronic diseases caused by air pollution." The study, mandated by Congress in September 2000, highlights problems with an enforcement program that has been praised by environmental groups and northeastern state attorneys general as the most effective tool available for combating industrial pollution but criticized by industry and administration officials as an impediment to energy industry expansion and investment.

Power plant emissions have been linked to serious illness and premature death, and have been a target of the government's long-term efforts to clean up the nation's air. The Clean Air Act, as amended in 1977, requires new plants and utilities to install the best available pollution-control technology. Aging utilities and refineries were exempted by Congress from installing the new technology unless they made improvements to extend a plant's life and thereby created a new source of emissions.

The administration contends that the existing program creates too much uncertainty for the industry, and last December it outlined proposals that would allow older coal-fired power plants to do "routine maintenance" and upgrade their facilities -- and likely increase their emissions -- without having to install costly anti-pollution equipment as they now must do. The EPA also issued a final set of revised enforcement rules governing the nation's refineries and industrial plants, which will give them new flexibility to make repairs without fear of prosecution under the Clean Air Act. The EPA and the Justice Department have pledged to continue to vigorously enforce the existing regulations, as they did in reaching the largest settlement ever with a utility last week. Dominion Virginia Power Co. agreed to spend \$1.2 billion to reduce pollution at eight power plants in Virginia and West Virginia and to pay a \$5.3 million federal fine. But the administration is determined to phase out the enforcement program in favor of its proposed "Clear Skies" legislation, which would force power plants to gradually reduce overall pollution levels of sulfur dioxide, nitrogen oxide and mercury by 70 percent by 2018.

Jeffrey Holmstead, an assistant EPA administrator for air quality, said he agrees with some of the panel's recommendations, including one to create a national or regional cap-and-trade program for reducing most power plant emissions. But he said that it was unrealistic to think that the utility industry could meet a 10-year deadline for sharply reducing its emissions without creating economic havoc. The administration strongly opposes another recommendation -- that Congress and the administration consider reductions in carbon dioxide and other greenhouse gas emissions along with other power plant pollutants in drafting new clean air legislation. President Bush has opposed mandatory cuts in carbon dioxide because he says such action would harm the economy. Sen. James M. Jeffords (I-Vt.), ranking member of the Senate Environment and Public Works Committee, said the academy's report "demonstrates that the New Source Review program is critical for protecting public health, and that this administration's new regulatory changes will only broaden loopholes and further diminish polluter accountability.

7) UNDERGROUND SITES MAY STORE GREENHOUSE GAS EMISSIONS

Sydney Morning Herald
April 22, 2003

Internet: <http://www.smh.com.au/articles/2003/04/21/1050777215083.html>

A geological survey has identified 65 sites where large quantities of carbon dioxide could be injected deep underground as a way of cutting greenhouse gas emissions. But none of the sites is close to Sydney, the area of greatest carbon dioxide pollution in the country. This burial approach to the CO2 problem, known as geosequestration, has the strong support of the Federal Government, but critics say it is unproven and

expensive. It involves capturing and separating the CO₂ from the emissions of power plants and gasfields, compressing it and storing the liquid in rocks more than 800 metres below the surface. Geoscience Australia researcher Dr John Bradshaw said the sites studied so far could safely store half the annual CO₂ emissions from stationary sources of greenhouse gases. "This is extremely exciting." However, Sydney's sandstone was not geologically suitable and the nearest good injection sites were in Bass Strait, he said. "Sydney is a particular technical problem. This really stood out [in the survey] as a potential issue."

Economics would determine whether it was better to make a more detailed search for suitable sites closer to Sydney or pipe the liquid CO₂ hundreds of kilometres south. Dr Frances MacGuire, climate change campaign manager for Greenpeace Australia, said geosequestration was a largely unproven approach and problems could emerge for later generations, such as leaking of the CO₂, or earthquakes. Money would be better spent developing renewable energy approaches, such as solar and wind. Dr Bradshaw said geosequestration was needed as a "bridging" technology because it could take decades for renewable energy sources to replace fossil fuels. The approach is in commercial operation in Norway, at the Sleipner field in the North Sea, where about 1million tonnes of CO₂ a year are injected below the sea floor.

A lot was known about how and where to store CO₂ underground safely from experience with gasfields. The biggest hurdle was finding an economically viable way of separating and collecting the CO₂ from power plants, he said. The study of environmentally sustainable sites for CO₂ injection, or ESSCIs, was carried out by members of the Australian Petroleum Co-operative Research Centre which recently was renewed for seven years with a \$22million government grant to become the Co-operative Research Centre for Greenhouse Gas Technologies, or CO₂CRC. Dr Bradshaw said the overall potential for CO₂ storage was enormous, particularly in areas such as the North West Shelf and Bass Strait. "Our ultimate capacity would allow us to store Australia's total emissions for the next 1600 years." Sydney, Newcastle and Wollongong account for 15per cent of the country's total CO₂ emissions.

8) AFRICAN COUNTRIES SEEK TO BOOST GEOTHERMAL POWER

Planet Ark

April 22, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/20528/story.htm>

NAIROBI - Ten African countries are aiming to boost geothermal power generation to reach a combined 1,000 megawatts by the year 2020, officials said. Geothermal power is electricity produced by trapping steam released by hot rocks with water reservoirs deep in the earth. The electricity is clean and also reliable, unlike hydroelectricity, production of which fluctuates according to rainy seasons, experts said. Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda and Zambia planned to increase the production from the current tiny 57 megawatts (MW) produced only in Kenya.

Geothermal power in the African countries has remained underdeveloped despite its untapped potential of 7,000 MW mainly because of the high initial costs required to assess the commercial viability of a geothermal resource, the United Nations Environmental Programme (UNEP) says. "Part of the plan is to get additional funding from many organisations and to do exploration and initial drilling," Peter Omenda, a senior geologist with KenGen, Kenya's state-owned electricity producer said. Three American organisations, the U.S. Department of State, the U.S. Trade and Development Agency and the Overseas Private Investment Corporation of the United States, have pledged to help finance the countries in exploring and expanding their geothermal resources. Total amounts pledged for this projects were not readily available. Omenda spoke after a UNEP-organised conference on geothermal energy held in Nairobi. "Another factor inhibiting geothermal energy is that African nations are perceived as high risk by the international finance community," said John Garrison of the Business Council for Sustainable Energy that helped organise the conference. One of the resolutions of the conference was to set up a risk guarantee fund for exploratory and appraisal drilling projects, Garrison said.

See Also:

Geothermal Power Boost for Kenya and Eastern Africa, UNEP Press Release, April 11, 2003; Internet: <http://www.unep.org/Documents/Default.asp?DocumentID=309&ArticleID=3963>

9) RAINFORESTS MIGHT SPEED UP GLOBAL WARMING

UPI

April 24, 2003

Internet: <http://www.upi.com/view.cfm?StoryID=20030421-010931-6248r>

LA SELVA, Costa Rica, April 21 (UPI) -- Global warming could force tropical rainforests to release abnormally large amounts of carbon dioxide gas, which could accelerate temperature rises worldwide, scientists reported Monday. "This suggests that further warming will have even stronger effects," lead researcher Deborah Clark, a tropical forest ecologist at the University of Missouri at St. Louis, told United Press International. Like all plants, trees live off sunlight via photosynthesis, the process by which energy from the sun breaks down water and carbon dioxide to make sugar and oxygen.

However, like animals, plants also consume oxygen, using the gas to burn sugar for power. This process of respiration spews off carbon dioxide, a potent "greenhouse gas" that traps solar heat and helps warm the planet. Normally, the balance between carbon dioxide emission and consumption within plants is tipped in favor of consumption, which fuels plant growth. However, the more heat the plant absorbs, the more plant growth declines and carbon dioxide is emitted. Clark and colleagues reasoned tropical rainforests might be among the first to show increased carbon dioxide emission levels in response to global warming, because they are among the warmest ecosystems on Earth, averaging roughly 80 degrees Fahrenheit annually.

"We became interested in this when our long-term measurements of tree growth had come to cover several years, and we could see that tree growth varied greatly from year to year," Clark said. "We realized that something about yearly differences in weather patterns must be doing this, and we started to focus on what that might be." The scientists examined the annual growth of six tree species in an old-growth rainforest at the La Selva Biological Station in Costa Rica. They measured the trunk diameter of 164 adult tree species between 1984 and 2000 in an area the size of about 700 football fields.

"To measure some of these trees required carrying two to three ladders cross-country through the forest in order to be able to measure the tree trunk diameter, often 3 to 10 feet above the ground to get above the large buttresses that protrude from many tropical trees," Clark said. The researchers had no direct way of measuring carbon dioxide emissions from the La Selva rainforest. Instead, they calculated CO₂ emissions from tropical lands worldwide during the same time span using data collected by nine climate monitoring stations located from the Arctic to the South Pole, five of which are positioned either in or outlying the tropics.

In findings made public Monday from the Proceedings of the National Academy of Sciences, when Clark and her team matched tree growth with local temperature readings, they found growth often was stunted during the hottest years -- most notably during the record-hot, 1997-1998 El Niño. During warm years, atmospheric gas samples revealed tropical regions as a whole also spewed more CO₂ than they absorbed. "There is now an urgent need for studies to see if what we found at La Selva is occurring generally across tropical forests," Clark said. "If the patterns we have found prove to be general, it would mean that the rate of global warming will be much greater than what has been expected based on human fossil fuel use alone." She added, "no one knows that the optimum temperature is for photosynthesis of a tropical forest. This is clearly a burning question now." Ecologist Chris Field, of the Carnegie Institution of Washington in Stanford, Calif., said although the findings are not definitive, "it's an important suggestion and it needs to be explored further."

10) REGIONAL WORK ENDORSED

The Daily Post (Fiji)

April 21, 2003

Internet: <http://www.fijilive.com/news/show/news/2003/04/21/21p.htm>

The South Pacific Applied Geoscience Commission annual general meeting has endorsed the recommendation that "island countries in the region work together to achieve a regional target where the aim is to increase the share of renewable energy source to at least some per cent of the primary energy supplied by 2010".

On a similar note the World Earth Day that will be celebrated on the 22nd of the month has a theme "Energy for Life" and is celebrated as a collective expression of public will to create a sustainable society. Paul Fairbairn, the manager Community Lifelines South Pacific Applied Geoscience Commission (SOPAC), says the celebration aims to link citizens' activities, and educate and motivate people worldwide with the view to improving the environment.

The Regional Earth Day Competition has been held for the past two years and once again the Community Lifelines Programme at SOPAC has been holding its Regional Earth Day competition since March 17th till May 16th focussing on this years theme. The Regional Earth Day was an initiation by SOPAC for the Pacific in recognition of World Earth Day. This year Pacific Island Countries through their respective energy departments and in collaboration with SOPAC have launched a poster and essay competition focussing on "Energy Efficient Homes". The competition is focussed on schools and educational institutes throughout the region. It is a weapon that will see the improvement of the use and management of scarce energy resources.

Mr Fairbairn said in the global context, the region's energy consumption is relatively insignificant. "But within the Pacific context, it is extremely important and we ourselves can make significant improvements in the way we use and manage our energy and natural resources" he said. Energy conservation in the Pacific can be done particularly through electricity that will directly assist in reducing imported petroleum products and hence save valuable foreign exchange. Other issues such as climate change and climate variability and sea level rise resulting from the greenhouse gas will also be addressed.

11) U.S. HELPING FINANCE PROJECT IN CARIBBEAN TO COUNTER GLOBAL WARMING

Washington File

April 21, 2003

Internet: <http://usinfo.state.gov/cgi-bin/washfile/display.pl?p=/products/washfile/latest&f=03042103.llt&t=/products/washfile/newsitem.shtml>

Washington -- The United States is helping finance a project in conjunction with the World Bank's Global Environment Facility (GEF) to counter the destructive effects of global warming in the Caribbean. The "Mainstreaming Adaptation to Climate Change Project" will benefit 12 small island and low-lying countries in the region, the Bank said in an April 18 statement. Those countries are: Antigua & Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines, and Trinidad and Tobago.

The Bank said that throughout the Caribbean region, global warming is expected to cause significant changes both in sea temperatures and sea levels, and to intensify extreme weather events such as floods, heavy rains, and hurricanes. As a result, both natural ecosystems and man-made projects will be at increased risk. The project helps Caribbean nations plan how to counteract these climate changes. The project is being financed by a \$5-million grant from the GEF, to be administered by Caricom (the Caribbean Community trading bloc). That money is supplemented by grants of \$800,000 from the United States, \$2 million from Canada, and \$3.15 million from Caricom governments.

The United States is engaged in a number of other activities to protect the Caribbean. For instance, the U.S. Coast Guard-led federal Caribbean Regional Response Team in Puerto Rico provides oil-spill response and response-training capability to the wider Caribbean region, while the U.S. National Oceanic and

Atmospheric Administration supports projects in fisheries and marine-protected areas. Another initiative, the U.S.-led "White Water to Blue Water" partnership, supports the management of watersheds and marine ecosystems, with help from the private sector and non-governmental organizations.

12) GREENHOUSE EMISSIONS DOWN, REPORT SAYS; STILL LONG WAY TO REACH KYOTO

CNEWS

April 21, 2003

Internet: <http://cnews.canoe.ca/CNEWS/Canada/2003/04/22/70197-cp.html>

OTTAWA (CP) - Canada's greenhouse gas emissions declined for the first time in a decade in 2001 even though the economy grew, according to a new report by Environment Canada. The modest 1.3 per cent dip is being hailed as a turning point because it occurred while the economy grew 1.4 per cent. However, Canada still faces a big challenge in meeting its commitment under the Kyoto climate accord to reduce greenhouse gases to six per cent below 1990 levels by 2012. Despite the decline from the previous year, emissions in 2001 were 18.5 per cent higher than in 1990. That means a further cut of 24.5 per cent from the 2001 level is needed to meet the Kyoto target.

"It's a very, very, very steep trajectory to meet our Kyoto commitments by the deadline," said Elizabeth May of the Sierra Club. "But we're convinced it can be done. "Any time that we put the brakes on and start moving in a different direction when you're heading toward a brick wall, that's good news." She noted that the 2001 decline took place before Ottawa had developed a Kyoto compliance strategy, and was relying on voluntary efforts by industry. "This is big," said Gerry Scott of the David Suzuki Foundation. "It shows that increased economic growth doesn't require increased energy use and the pollution that goes with that."

Emissions fell to 720 megatonnes in 2001 from 730 megatonnes the previous year, while the economy grew by 1.4 per cent, says the report to the UN Framework Convention on Climate Change. It's the first decline in greenhouse emissions since 1991, and the first since 1990 in a period of economic growth. "While a mild winter helped, the data demonstrated that we can grow our economy and reduce greenhouse gas emissions at the same time," said Environment Minister David Anderson. "We do anticipate a further decoupling of Canada's emissions and economic growth in the years to come as new technology and processes are developed and implemented."

Emissions in 2001 fell 18 per cent in the manufacturing sector, 18 per cent in iron and steel, and 11 per cent in pulp and paper. Road transportation showed a 1.6 per cent increase. There was a dramatic 150 per cent increase in emissions associated with the production and transportation of natural gas, attributed to surging natural gas exports to the United States. Canada still hopes to get emissions credits for those exports under Kyoto arrangements. Anderson noted that there has been steady improvement in Canada's "greenhouse emissions intensity" - the amount of emissions produced per unit of economic activity. Emissions intensity has been dropping by about one per cent a year since 1990, he said.

Canada ratified the Kyoto accord in December after prolonged debate. The accord applies to a number of gases but the most important is carbon dioxide (CO₂), produced by the burning of fossil fuels. The report measures emissions in terms of "CO₂ equivalent tonnes." Scientists say greenhouse gases are destabilizing the global climate, causing an increase in weather extremes and a rise in average temperatures. American emissions also declined slightly in 2001, but that was partly due to an economic downturn. However, there are many emissions-cutting initiatives at the state level.

13) NEW HAMPSHIRE COALITION FIRED UP ABOUT GLOBAL WARMING

ENS

April 18, 2003

Internet: <http://ens-news.com/ens/apr2003/2003-04-18-09.asp#anchor6>

CONCORD, New Hampshire, April 18, 2003 (ENS) - On Monday, a coalition of New Hampshire citizens, businesses and environmental groups will descend on the state's capital to launch a new initiative to pressure state and national politicians to get serious about tackling global warming. The nonprofit Carbon Coalition's new grassroots campaign to fight global warming will outline the risks of continued inaction to the state's environment, economy and health. "Global warming threatens public health, the economy and the environment in our state and across the nation," Coalition co-chair Ted Leach, a Republican state representative from Hancock, said in a prepared statement. "In town halls, living rooms and lunch counters across the state over the next 18 months, concerned New Hampshire citizens will be asking politicians from both parties about their plans to reduce the carbon dioxide pollution that causes global warming."

The Carbon Coalition's effort calls on politicians to commit the nation to realistic goals for reducing carbon dioxide pollution that causes global warming. The coalition urges New Hampshire residents to use the spotlight of the presidential campaign - the state traditionally holds the first presidential primary - to put the issue of global warming squarely on the nation's political map. The Bush administration withdrew the United States from the Kyoto Protocol, an international accord designed to reduce the world's emission of greenhouse gases, which most scientists are convinced cause global warming. President George W. Bush has opted for voluntary agreements with greenhouse gas emitting industries, rather than strict regulations many environmentalists believe are needed to address climate change.

"New Hampshire was the first state in the nation to adopt legislation curbing carbon dioxide pollution," according to Joseph Keefe, former chair of the state Democratic Party and co-chair of the Carbon Coalition with Leach. "In addition, the New England governors have embraced ambitious goals for reducing carbon dioxide emissions." "At the national level, however, Congress has failed to act," said Keefe. "The Carbon Coalition will press politicians from both parties to follow New Hampshire's lead and adopt ambitious goals for reducing carbon dioxide emissions."

14) FIRMS CAN CASH IN ON ANTI-POLLUTION SUCCESSES

New Haven Register

April 18, 2003

Internet:

http://www.zwire.com/site/news.cfm?newsid=7753396&BRD=1281&PAG=461&dept_id=7546&rfti=6

NEW HAVEN — Companies that cut their pollution may soon be able to make money from their environmental success through carbon credits. "The greenhouse effect as a scientific phenomenon is agreed upon. The debate is not whether (to reduce carbon emission), but how fast and how," said panelist Lee Solsbery, a director of climate change for Environmental Resources Management in London. Companies get carbon credits for the amount of carbon emissions below a target level set by the government.

Environmental experts believe that even without government mandates, the United States can entice companies to reduce pollution through carbon-credit trading. Carbon-credit trading may be one vehicle businesses can use to turn tighter pollution regulations into another profit center. A panel discussion Thursday at the Yale School of Forestry & Environmental Studies on "Trading for Carbon: A Business Response to Climate Change" offered ideas on how to trade carbon-emission credits. The United Kingdom started a carbon-credit trading program in April 2002. Solsbery's firm helped the United Kingdom set up its own carbon-trading system and British companies recently completed their first round of trades. As an incentive, the U.K. implemented an energy tax that gets reduced by 80 percent for companies that meet their carbon emission targets, Solsbery said.

Carbon credits get their name from carbon dioxide, a main ingredient in polluted air. Carbon dioxide is one of the main pollutants blamed for the greenhouse effect — a phenomenon in which heavy pollution alters climate patterns with disastrous environmental results. So governments and businesses have a major stake in controlling pollution, said panel moderator Brett Gentry, a senior lecturer on sustainable investments at Yale's Environmental School. But many companies find pollution control can be too costly to implement immediately. These companies can benefit by buying carbon credits from companies that have managed to

reduce their pollution levels below government-set targets. That way both companies get credit for meeting the target. "There's an incentive to do better than the target, then you have something to sell," Solsberry said. "Since President Bush decided to pull the United States out of the international agreement on climate control (in 2001), people think that the U.S. has gone to sleep on the issue," Gentry said. But throughout the country, and across the state, many businesses have given thought to pollution reduction, and how to make money from it, Gentry said. Panel experts scheduled to appear included Dave Findlay of Dupont Canada, Anda Kalvins of Ontario Power Generation, and Andrei Marcu, executive director of the International Emissions Trading Association. Marcu's group is already preparing to buy up carbon credits. "Connecticut, given its lead in clean energy technologies and energy efficient technologies, is well positioned to benefit," Gentry said.

15) GOVERNMENT OPENS UP ON CARBON DEALS

New Zealand Herald

April 17, 2003

Internet:

<http://www.nzherald.co.nz/business/businessstorydisplay.cfm?storyID=3401580&thesection=business&thesubsection=general&thesecondsubsection=>

The Government has made it easier for large emitters of greenhouse gases to negotiate deals exempting them from the planned carbon tax. Negotiated greenhouse agreements (NGAs) are intended for firms whose international competitiveness would be at risk if they were subject to the carbon tax the Government plans to introduce in 2007 under its Kyoto Protocol commitments. A discussion document issued just before Christmas set high hurdles for whether a company's competitiveness would be considered at risk: would the tax cut its profitability (return on capital employed) by more than 20 per cent? Or would the drop in profit exceed normal profit variability over the past 10 or 15 years?

These criteria have been softened in the final policy announced yesterday. The profitability test is now whether earnings before interest and tax would fall more than 10 per cent. The return on capital test is whether it would fall below "the appropriate internationally accepted industry investment hurdle". And a third alternative has been added: would the firm face a significant increase in costs, defined as firms for which energy represents more than 20 per cent of their total expenses?

Climate Change Minister Pete Hodgson said the criteria were intended to be less stringent than those in the discussion document. Otherwise, the policy in that document was substantially unaltered. In return for a full or partial exemption from the tax, firms would have to commit to a path that would get them to world's best practice in emissions for comparable plants. Hodgson said he did not know how many NGAs the Government would be invited to do. He was thinking dozens, but that might include sector-wide agreements. Chris Baker, chairman of the Greenhouse Policy Coalition, a lobby group for the big emitters, welcomed the prospect of simpler and less stringent eligibility criteria.

"Clearly the Government has listened to some of our concerns, but we still maintain that there are significant constraints on access to the NGAs, including the costs of negotiating agreements and then complying with them." Hodgson and Baker both say that negotiated agreements would be more effective in reducing emissions of greenhouse gases than the blunt instrument of a carbon tax. "You get engagement and commitment from board level down to a programme of energy and emissions management. A change of ethos," said Baker. Consequently, measures which restricted access to NGAs were counterproductive.

The Government has said a policy for small and medium enterprises, which cannot face the costs of negotiating an NGA but which face a loss of export competitiveness or are at risk from imports from non-Kyoto countries, was some time off. Meanwhile, the Government said yesterday it would call for proposals around the middle of the year under its climate change projects scheme. It offers incentives, in the form of promissory notes for internationally tradeable carbon credits, for projects that will reduce greenhouse gas emissions.

The story so far:

- Government plans to tax the carbon content of fuels from 2007, to combat global warming.
- Big firms whose international competitors don't face such costs could suffer.
- They will be able to negotiate agreements that exempt them.
- In return they must cut their "greenhouse gas" emissions.
- The Marsden Pt Refinery is likely to be the first with such a deal.
- Smaller firms with the same problem may get some relief, but details are months away.

16) CARBON CREDIT DETAILS STILL FUZZY

Western Producer

April 17, 2003

Internet: <http://www.producer.com/articles/20030417/news/20030417news02.html>

Agriculture Canada is a month away from unveiling its \$110 million greencover initiative, but senior government officials still have no idea how a key component of the program is going to work. The initiative is part of Ottawa's controversial agricultural policy framework, a new era of farm policy that producer groups say is far too thin on details. The greencover initiative devotes \$10 million to shelterbelts and another \$100 million over the next five years to encourage farmers to take marginal land out of annual production and seed it to perennial forages and trees.

Because the federal government will pay them to take land out of production, farmers want to know if they will be entitled to any of the carbon credits generated by those acres. "I think producers need to understand what they are signing on to," said Cecilia Olver, vice-president of Agricultural Producers Association of Saskatchewan. Under the Kyoto Protocol, a carbon sink is created when agricultural land absorbs more carbon dioxide than it releases. Those sinks will be worth credits that can be used to reduce Canada's overall greenhouse gas emissions.

Farmers want to know who owns those credits: producers or the federal government? That's a good question, said John Sharpe, policy analyst with the federal government's Greencover Canada. He said Kyoto is a far-reaching agreement. Details on how things such as carbon credits will work have to be hashed out between government departments and that is unlikely to happen before the initiative is "rolled out" in the next month or so. Unfortunately, Sharpe said, that leaves farmers in a bit of a bind. "It will be up to them to determine whether it is in their best interest to apply for the incentive as it stands now and essentially take the risk that, should a carbon program develop, that they may be in some way restricted."

Confusion also surrounds the broader issue of who will be rewarded for credits generated from past farming practices such as zero till seeding. In its Climate Change Plan, the federal government estimates that agriculture will generate a carbon sink of 10 million tonnes during the first Kyoto commitment period by having employed practices such as low tillage seeding leading up to that period, which runs from 2008-12. Ottawa wants to use those credits to offset Canada's emissions reduction target established under the Kyoto agreement. But Olver said those credits belong to farmers. She estimates they are worth between \$100 million and \$500 million, adding that farmers should be compensated for helping Canada meet its Kyoto target. The Saskatchewan Soil Conservation Association said rewarding farmers for what they do after 2008 but ignoring what's called the "business-as-usual sink" they contributed to before that date creates two classes of farmers. Association executive manager Blair McClinton said trying to separate business-as-usual credits from other credits will be a complicated and messy process.

17) GOVT TO OFFER FUNDS FOR PROJECT TO CUT GREENHOUSE GASES

Stuff

April 17, 2003

Internet: <http://www.stuff.co.nz/stuff/0,2106,2408836a7693,00.html>

New Zealand companies are to be given a chance to tender for Government funds for projects reducing greenhouse gas emissions in any sector of the economy. Initial incentives for the "exploratory" bidding round will be promissory notes for "carbon credits" or Kyoto Protocol emission units that will be internationally tradeable when the protocol comes into force, probably later this year. Science Minister Pete Hodgson, who also holds the Energy portfolio and is the convener of the cabinet committee on climate change, said yesterday there would be "significant" incentives for business to adopt measures that reduced or slowed growth in greenhouse gas emissions. The bidding round would create business opportunities while developing a "low-emissions economy". But projects would have to be additional to business-as-usual for any applicant, which could be individual firms, groups of companies, or industry organisations.

The minimum reduction in emissions which would qualify would be the equivalent of 10,000 tonnes of carbon dioxide over the Kyoto Protocol's first commitment period, 2008-2012, less than the 100,000 tonnes proposed by the Government earlier this year. "Projects that would improve New Zealand's electricity supply security will be given priority in processing for this round," Mr Hodgson said. The Government has already agreed to help the development of two wind farms: Trustpower's 36 megawatt extension of its existing 32 megawatt capacity Tararua wind farm, and Meridian Energy's new 40-80 megawatt capacity wind farm at a site which has not yet been disclosed. Mr Hodgson estimated the two wind farms could deliver emissions reductions of up to one million tonnes of carbon dioxide between 2008-2012. The first round of the "exploratory" projects bidding is planned for shortly after June.

18) U.S. RENEWABLE ENERGY FUELED BY LOCAL EFFORTS

ENS

April 17, 2003

Internet: <http://ens-news.com/ens/apr2003/2003-04-17-10.asp>

WASHINGTON, DC, April 17, 2003 (ENS) - The House energy bill passed last week contains some \$20 billion in tax credits for oil, gas and nuclear power, and offers little to bolster the nation's development of renewable energy. But this disinterest in renewable energy at the national level is not matched by U.S. states and local communities, many of which continue to demonstrate increasing interest and commitment to developing and purchasing energy from renewable sources. The country's bottom up adoption of renewable energy is detailed in a report released Wednesday by the U.S. Public Interest Research Group (PIRG), which finds that these small steps taken at the state and local levels provide a ready blueprint for a national strategy to accelerate the nation's development of renewable energy.

"While Congress is promoting legislation that would make our energy problems worse, the states are leading the way and generating solutions," said U.S. PIRG clean energy advocate Katherine Morrison. The report, "Generating Solutions: How Clean, Renewable Energy is Boosting Local Economies and Saving Consumers Money," examines renewable energy in 35 states and provides policy suggestions to accelerate the national embrace of renewable energy. PIRG's report finds the United States has the potential to generate four times its current electricity use just from domestic wind, geothermal and biomass resources. Solar power, which is not yet as competitive as these other renewable sources, has even more remarkable potential - the energy from the sun that hits the Earth's surface each minute is greater than the total amount of energy the world uses each year.

But the United States has been slower than others around the world to embrace renewable energy and only two percent of the nation's electricity is generated from clean, renewable sources. The nation continues to depend heavily on coal, oil, natural gas and nuclear power, and environmentalists are frustrated by the federal government's continued focus on subsidizing these industries. PIRG and other environmental groups are lobbying the U.S. Senate to include renewable energy in its energy bill and a good place to start, Morrison said, would be with the adoption of a renewable energy portfolio standard (RPS). Fifteen states have these standards, which require a percent of electricity be generated from renewable sources, and at least

a dozen have shown interest in developing their own RPS. "States have demonstrated that this can work," Morrison said, "but leaders at the national level have not been following through."

A national RPS that called on the nation to shift 20 percent of its electricity supply to renewable sources by 2020 would not just benefit the environment, Morrison, explained, it would provide a lift to the U.S. economy. Such an RPS could create three to five times as many jobs as a similar investment in fossil fuels, consumers by saving \$4.5 billion by 2020, and the environment by reducing global warming emissions from power plants by 19 percent in 2020, according to PIRG's report. In addition, mandating the diversification of the energy supply would reduce the threat and impact of price spikes, Morrison explained, and consumers would not be held "captive to the volatility of the fossil fuel market." One study cited in PIRG's report finds the energy potential in one percent of the heat in the top ten kilometers of the Earth's crust is 500 times more the energy than all the planet's oil and gas reserves.

The report recommends the U.S. adopt national net metering standards, which offer financial incentives to individuals who generate their own electricity from renewable energy sources. Thirty eight states have already adopted some form of net metering standards. The other policy recommendations outlined in the report are the creation of a public fund to provide money for energy efficiency programs, investments in promising renewable energy technologies and low income assistance programs, and the extension of the Production Tax Credit for builders of renewable energy for at least five years. Fifteen states have public benefit funds, 19 have some kind of production tax credit. The House bill extends the federal production tax credit for wind, but added in credits for municipal solid waste incinerators, a renewable energy source considered by environmentalists to be too polluting to pursue.

The Bush administration has opposed forcing utilities to buy energy from renewable sources. And its latest budget plan cuts funding for most renewable energy programs and virtually eliminates \$23 million in grants and loans to farmers, ranchers and small businesses for the development of renewable energy projects. Still, the Bush administration has taken some steps to encourage renewable energy development, primarily through new reports that document the availability of resources on public lands. But even this approach has been criticized by some environmentalists, who fear the administration is simply trying to further open public lands to all energy development and is not all that serious about the renewable side of the equation. "There are still some places too wild to open," Morrison said.

Tensions over the environmental impact of clean, renewable energy has the potential to put environmentalists on opposing sides of the fence, something that is playing out in Cape Cod, Massachusetts. A plan to build a 130 turbine wind farm five miles off the coast of Cape Cod is opposed by some environmentalists because of concerns about the impact on the ocean floor, migrating birds and marine species, but is supported by others who favor the development of this clean energy source. It is incentives for development and purchasing of renewable energy that will drive the market forward, according to PIRG's report, and there are plenty of examples at the state and local level that indicate Americans are becoming more serious about renewable energy. Late last year the Nevada Power Company signed six contracts that will add some 200 megawatts of renewable generating capacity to the utility's power supply. More than half of the new generating capacity will come from wind power, with the remainder coming from geothermal.

In December 2002, Tucson Electric Power expanded its solar capacity to 2.4 megawatts, enough to power 420 homes, and plans to expand the system to 4 MW by 2004. Earlier this year, New York Governor George Pataki set in motion a process that will require 25 percent of the electricity sold in the state of New York to come from renewable sources within the next decade. At the county level, Maryland's Montgomery County pledged to buy five percent of its energy from wind sources. In March, a power company controlled by billionaire investor Warren Buffet announced it plans to build a 310 megawatt wind farm in Iowa. The \$323 million project could generate electricity for more than 300,000 and would be the world's largest land based wind farm.

Wind is the renewable energy source that looks set to blossom sooner, rather than later, in the United States. PIRG's report finds that the wind resources in just four states - North Dakota, South Dakota, Kansas and

Nebraska - are enough to meet the electricity needs of the entire country. According to the American Wind Energy Association the United States added some 1,700 megawatts of new wind energy capacity in 2002, and the organization predicts 2003 will see even better growth. And although there appears limited appetite for renewable energy investment at the federal level, that does not mean some are not trying. Democratic Representatives Tom Udall of New Mexico and Mark Udall of Colorado introduced a bill last month that would require electric utilities to increase their use of wind, solar and other renewable energy sources from 20 percent by 2025. "This bill will develop our nation's cleanest and most abundant energy resources," said Alan Noguee, director of the clean energy program at the Union of Concerned Scientists. "Renewable electricity is the key to reducing power plant pollution and diversifying our energy supply in the near term. In the long term, renewable electricity could produce hydrogen to run fuel cells and replace imported oil." For a copy of PIRG's report, [click here](#).

19) SATELLITE WATCHES DISASTER HAZARD

BBC

April 17, 2003

Internet: <http://news.bbc.co.uk/2/hi/science/nature/2951093.stm>

Images taken from space are being used to monitor a potentially dangerous glacier in Peru. A US space agency (Nasa) satellite is sending back data on a glacier that feeds Lake Palcacocha in the Andes. Government officials and geologists are concerned that a large ice chunk could break off and fall into the lake. They are monitoring the situation closely, in case it triggers a flood, threatening the city of Huaraz in the Rio Santa Valley below. The images are being captured by an instrument on Nasa's Terra satellite.

Project scientist Dr Michael Abrams said remote sensing instruments like Aster (Advanced Spaceborne Thermal Emission and Reflection Radiometer) serve a vital role in hazard management. "In Huaraz, Peruvian authorities and scientists will incorporate Aster data along with data from ground-based monitoring techniques to better assess current conditions and take steps necessary to reduce risks to human lives and property," he said. Emergency plans Glacial flood-bursts, known locally as "aluviones," occur when water is released suddenly from a lake within a glacier.

The burst of water can carry a stream of mud, rock boulders and blocks of ice through any settlement it encounters. This has happened many times in the Rio Santa Valley since the 18th Century. One particularly devastating event in 1941 killed an estimated 5,000 to 7,000 people. Since then, the Peruvian government has tried to control the water level in Lake Palcacocha and other potentially hazardous lakes in the region. The efforts appear to have worked and there have been no destructive glacial floods since 1972. But officials are monitoring the current situation closely in case emergency plans have to be implemented.

20) ASIAN UNDEREXPLOITING CDM PROJECTS

Edie weekly summaries

April 17, 2003

Internet: http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/6907.cfm

A lack of awareness may see China and other Asian countries failing to exploit their enormous potential for Clean Development Mechanism projects under the Kyoto Protocol, according to the author of a new report. The report, published by the Dutch Energy Research Centre, shows that CDM investors currently favour established technologies such as hydropower and cheap solutions to emissions reductions such as capturing methane emissions from landfill sites and converting the gas to an energy source. Large-scale hydro, gas capture and fuel switching each constitute 25% of total CDM emission reductions, says the report.

Latin America is making the biggest strides in CDM, Heleen de Coninck, co-author of the report, told edie. Since 1997, the region has been gaining experience in joint projects, thanks to US efforts to raise awareness amongst local businesses of the benefits of climate change abatement projects, says Coninck. Costa Rica,

Panama and Brazil have been particularly successful at attracting investors. China, which has a big potential for CDM projects, is suffering from a general lack of awareness by the Chinese government of how to tap into the CDM stream. Governments need to understand how to apply for and attract projects, and may also to set up a separate CDM unit to oversee projects, says Coninck. Asia mostly employs small-scale CDM projects, but this could change when Japan becomes more active once the Protocol enters into force, says Coninck.

21) HUNGARY CAN MEET ITS KYOTO GREENHOUSE GAS COMMITMENT

Hungarian News Agency (MTI)

April 16, 2003

Internet:

http://huknews.hoovers.com/fp.asp?layout=displaynews&doc_id=NR20030416670.4_fc7a00083e406559

Budapest, April 15, 2003 (MTI-Econews) - By 2010 Hungary will be able to cut its greenhouse gas emission to the level set out in the Kyoto agreement, Gyorgy Hatvani, deputy state secretary in the Ministry of Economic Affairs and Transport said on Tuesday. Emissions from energy production declined from 101,000 tonnes in 1987 to 82,000 tonnes in 1998, and Hungary committed itself in the Kyoto agreement to cut its greenhouse gas emission 6pc compared to 1987. While the cut achieved so far is larger than what was promised, energy production could grow by 2010 and some of the cut could be sold to other countries unable to reduce emission. Energy production is responsible for 65pc of greenhouse gas emission.

The national environmental programme, which is currently on the drawing board, devotes a separate action plan to greenhouse gas emission, and a committee composed of experts from various ministries will soon be set up to guarantee delivery of the promised cut, Environmental Ministry state secretary Istvan Ori said. As the European Union agreed to cut its emission 8pc by 2012, Hungary will have to speed up its cut rate to meet the stricter EU target after it becomes a member of the EU next year.

22) GLOBAL WARMING PUT TO SENATE FLOOR

The Washington Times

April 16, 2003

Internet: <http://washingtontimes.com/national/20030416-51244156.htm>

The Senate energy bill slowly winding through committee has been stripped of its climate-change provisions, moving the debate over global warming to the Senate floor early next month. The bill's climate-change provisions — which environmentalists called too weak and conservatives deemed too onerous — were scrapped last week when Senate Energy and Natural Resources Committee Chairman Pete V. Domenici, New Mexico Republican, saw that no global-warming measure had the support to pass the committee. "We just couldn't get consensus," said Republican committee spokeswoman Marnie Funk, adding that competing proposals made by ranking member Sen. Jeff Bingaman, New Mexico Democrat, also lacked sufficient support. "So it seemed like a common-sense approach to put the question to the floor," Mrs. Funk said.

That puts the global-warming issue on one of Washington's biggest stages. Environmentalists say worldwide temperature increases are caused by industrial activity and automobile emissions. Conservatives say the scientific basis for those claims is inconclusive, and that restrictions would cripple the U.S. economy. The bill Mr. Domenici drafted would have required a national strategy to "stabilize and over time reduce net U.S. emissions of greenhouse gases." Conservatives say that provision states that global warming is real and caused by human activity. Mr. Domenici also would have revived the position of White House climate czar and offered incentives for companies to reduce their emissions of greenhouse gases. Jerry Taylor, director of natural-resource studies at the libertarian Cato Institute, said while such provisions are largely "symbolic," many conservatives worry that they would open the door to stricter policies. "This might create a corporate constituency to game the system," Mr. Taylor said. "There are colleagues on the right that consider this

provision as the most dangerous thing in the energy bill. I consider it pretty empty," Mr. Taylor said. "A voluntary [emissions] report and a quarter will buy you a cup of coffee."

To environmental groups, the energy bill is more than symbolism: It's a sop to energy corporations that will not curb pollution. "The climate-change provisions are far too weak," said Debbie Boger, a senior Sierra Club representative. "We have an energy bill before Congress that doesn't save a drop of oil. It doesn't do anything near where we need to increase solar and wind production, and it would make more people susceptible to Enron-type corruption." The House passed its version of an energy bill on Friday. The bulk of the \$18.7 billion bill is devoted to subsidies and incentives to energy producers.

"If you're in wind power, you get subsidies. If you are in little squirrels in cages, you get money. If you are in petroleum, you get money," Myron Ebell, director of global-warming policy at the Competitive Enterprise Institute, said of the House bill. Mr. Ebell said trying to hammer out global-warming policy on the floor of the Senate makes the outcome unclear. While Republicans generally have enough clout to get their way in committees, bipartisan coalitions can gain unexpected momentum. Sen. John McCain, Arizona Republican, can be counted on to push his bill with Sen. Joseph I. Lieberman, Connecticut Democrat, to impose strict, enforceable limits on emissions from factories and automobiles.

23) AUSTRALIAN CAR SECTOR SETS TARGET TO CUT FUEL USE

Planet Ark

April 16, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/20484/story.htm>

CANBERRA - Australia's car industry unveiled plans yesterday to reduce fuel consumption of new passenger cars by about 18 percent by 2010 to help cut emissions of carbon dioxide blamed for global warming. The Federal Chamber of Automotive Industries said a voluntary code of practice set a target to cut the amount of fuel used by new cars to 6.8 litres per 100 km (68 miles) by 2010 from the 2001 level of 8.28 litres.

"To achieve the new target, we will need to introduce sophisticated new engine and fuel system technologies to many of the vehicles sold in Australia," the chamber's chief executive Peter Sturrock said in a statement. Sturrock said additional research was needed by 2004 to expand the industry's efforts to develop targets to cut carbon dioxide emissions from other categories of light vehicles, including four wheel drives and light commercial vehicles. Australia is home to four major automakers, which are all units of overseas players. They include Holden, the Australian arm of General Motors Corp, and Ford Motor Co of the United States and Japan's Toyota Motor Corp and Mitsubishi Corp.

The U.S. parent companies have resisted attempts at home to impose higher fuel efficiency targets, saying they could result in weaker auto frames that, in the case of accidents, could prove more dangerous to their passengers. The transport sector accounts for almost 20 percent of Australia's total emissions of so-called greenhouse gases like carbon dioxide. The Australian government welcomed the move. "The new voluntary code of practice will lead to a reduction of up to two million tonnes of greenhouse gases by 2010," Environment Minister David Kemp said in a statement. A spokeswoman for the Australian Greenhouse Office said Australia produced about 553 million tonnes of greenhouse gases in 2000.

The country is one of the world's top coal exporters and has refused to ratify the global Kyoto treaty on combating climate change, under which industrialised nations must cut emissions by an average five percent by 2012 from 1990 levels. Canberra argues Kyoto is unviable without the United States, the world's biggest polluter, which has rejected the accord. However the conservative government has repeatedly stressed that it will still abide by its Kyoto target to limit the increase in greenhouse gas emissions to eight percent by 2012. Environmental groups say official statistics show Australia's carbon dioxide emissions have already risen by 17.4 percent since 1990 and will have risen by 30 percent by 2012.

24) RENEWABLE ENERGY TARGET URGED

Business Day

April 16, 2003

Internet: <http://allafrica.com/stories/200304160283.html>

GOVERNMENT should set a target for 15% of electricity produced in SA to come from renewable resources by 2020, according to an independent report released yesterday. The study, undertaken by the University of Cape Town with input by an international reference group, calls for five interventions by government to be prioritised to address greenhouse gas emissions.

This comes as government is seeking to get the private sector to build new power stations in the country as Eskom's current excess capacity comes to an end. Eskom is also considering the construction of a mini-nuclear facility, the pebble bed modular reactor, which has raised the ire of environmentalists. As a result, the Sustainable Energy & Climate Change Partnership of Earthlife Africa commissioned a study into the options for policies on renewable energy and energy efficiency in SA. The five interventions recommended by the report include mandating codes and standards for energy-efficient buildings in government, commercial and residential sectors, and setting equipment standards for industry and commerce.

The report also calls for government to subsidise the production of renewable electricity to compensate for historical subsidies for conventional energy and make emerging technologies competitive under current market conditions. Finally, the study recommends that a pollution tax be implemented. This should focus on air pollutants and be levied per mass unit of emissions. The study showed that a transition to sustainable energy could be achieved at little or no additional cost to the economy.

Richard Worthington, the partnership's project co-ordinator, said the study should give greater confidence to government to introduce clear and substantial measures in the renewable energy strategy which was currently in development. "We don't need to rely on the prospects of carbon financing' (selling units of avoided greenhouse gas emissions to industrialised countries) to support a more responsible approach to energy development. "Targets should not be based on what the advisers from the World Bank's Prototype Carbon Fund assure our officials can be achieved through their projects, but rather on the public benefits that can be achieved through best practice and full-cost accounting," he said.

25) TREASURERS WARN OF RISKS TO INVESTMENTS FROM CLIMATE CHANGE

GreenBiz.com

April 16, 2003

Internet: http://www.enn.com/news/2003-04-16/s_3809.asp

NEW YORK — Four state and city treasurers and comptrollers, representing approximately \$130 billion in investments, have expressed concern about the risks of climate change to long-term investments and have announced plans to hold a summit with other institutional investors to examine the issue. Denise Nappier, treasurer, Conn.; William C. Thompson Jr., comptroller, New York, N.Y.; Alan Hevesi, comptroller, N.Y.; and Jeb Spaulding, treasurer, Vt., all expressed concern that global warming poses long-term economic risks that threaten the value of retirement funds. They made the announcements at the Coalition for Environmentally Responsible Economies (CERES) conference, a gathering of investors, environmentalists, analysts, and business leaders in New York City.

Nappier and Hevesi also indicated that funds they represent will likely vote their proxies in favor of shareholder resolutions filed this year against portfolio companies requesting disclosure of and plans to reduce greenhouse gas emissions. Thompson, as chief investment adviser to five New York City funds, recommended they vote their proxies in favor of the resolutions. In a series of speeches at the conference, the officials cited a variety of potential risks posed by climate change, from damages caused by climate change itself, to future potential regulatory scenarios, competitive pressures in development of new

technology, and potential future legal liabilities for heavy emitters of greenhouse gas. In her speech, Nappier announced plans to hold an institutional investors' summit to examine the issue further.

"All funds, but particularly pension funds, have a responsibility to their shareholders to be sure that they're adequately assessing risk in their portfolio companies," Nappier said. "These resolutions should serve as a notice that we will not tolerate irresponsible corporate behavior that could potentially undermine the integrity and soundness of our pension funds and the health of our planet and its people. We need to pull corporate America's heads from the sand and look at this obvious long-term economic risk. In my view, institutional investors are in a position to lead that effort."

Hevesi said, "It's not hard to see that global warming is going to have an effect on many sectors of our economy. As we see disruptions in water supply, changing agricultural seasons, insurance losses, and rising premiums from severe storms and other changes, we know that all has associated costs." He continued, "CEOs in charge now might not be around to see all those costs hit, but retirees will be. It's my job to watch out for risks on the horizon to keep New York's investments solid and strong over the next 20 or 30 years." Thompson said, "In 1989, we helped found CERES because we recognized that many environmental issues pose long-term risks to business if not managed properly. Climate change is a prime example of that kind of long-term risk, and yet there is little movement to address it."

Spaulding expressed support for Nappier's proposal for a summit to examine the relationship between climate and portfolio risk. "Fund managers are routinely asked questions about how large-scale trends are likely to affect a portfolio," he said. "Climate change is the definition of a large-scale trend. I would be interested in our fund managers' views on the way in which climate risk should be evaluated in our long term portfolio strategy." A record 31 global warming resolutions were filed against 27 companies this year, primarily with companies from heavily emitting sectors such as auto, electric utilities, oil and gas, and manufacturing. The resolutions requested disclosure of, and in some cases plans to reduce, greenhouse gas emissions. The average support level for these resolutions has more than doubled since 2000, rising to an average 18.8 percent support level in 2002.

The state of Connecticut was the primary filer of one such resolution against American Electric Power (AEP), the largest single emitter of greenhouse gases in the world. Nappier explained her state's concern. "In American Electric Power's own disclosure to the SEC they acknowledge climate change as a risk factor," she said. "And yet, they, like most companies, haven't presented to their shareholders a comprehensive assessment of these risks and how they plan to address them." Properly submitted shareholder resolutions appear in company proxy statements, which are circulated to all shareowners in advance of a company's annual meeting. Though such resolutions are not binding, they prompt top executives and board members to draft and approve statements in response (and almost always in opposition) to these proposals. For some companies, such proxy statements provide the most detailed and current assessment available to shareholders on the global warming issue.

The global warming shareholder campaign is one of the longest running since the South Africa divestment campaign of the 1970s and 1980s — and is fast becoming one of the most widely supported as well. Pension fund concern was a cornerstone of the movement to divest from apartheid-era South Africa. Robert Massie, senior fellow of CERES and author of *Loosing the Bonds, The United States and South Africa*, compared the divestment movement to current rising investor concerns about global warming. "With South Africa, we saw a similar situation, where the U.S. government had decided not to deal with the issue and so Wall Street decided not to be concerned," said Massie. "But then individual state funds began to ask their fund managers to examine the issue, and gradually there was a nationwide move toward consensus to divest. That's happening now with global warming: This issue is not going to disappear." Mindy Lubber, executive director of CERES, explained the funds' concern about climate risk. "Climate risk is pervasive, global, volatile, and inexorable — the very definition of long-term risk. No fund manager could deny that it will have some impact on the market value of a portfolio. The question is how much."

26) CARBON TAX EXEMPTION PROCESS STARTING UP

The National Business Review (New Zealand)

April 16, 2003

Internet: http://www.nbr.co.nz/home/column_article.asp?id=5696&cid=4&cname=Business+Today

All eyes will be on Wellington for signs of reasonableness as it start negotiating exemptions for companies that face the prospect of becoming uncompetitive as a result of the planned carbon tax. The tax will come into force in 2007, as part of New Zealand's commitments under the Kyoto Protocol. The minister overseeing climate change policy, Pete Hodgson, says companies facing competition from countries with less stringent policies will be able to apply for an exemption - but in return must move to lower their emissions.

As American companies have learned, some of that activity can lead to more efficient processes that in turn shave costs of operation, but some businesses are heavy polluters by nature under the Kyoto rules. In those cases, consumers can expect to see prices jump at retail -- or supply to be cut back. Mr Hodgson says the exemptions will help preserve economic activity, while supporting international efforts to halt global warming.

Elsewhere, the Washington Times reported recently that one of the top items on PM Blair's shopping list from America in the wake of Iraq is likely to be a request for President Bush to relax his stiff opposition to the Protocol. Patrick J. Michaels, a senior fellow in environmental studies at the Cato Institute, wrote in the Washington Times that: The Kyoto Protocol is wildly popular in Britain largely because the country seems to lack scientists courageous enough to point out that the government's alarmist view of climate change is without merit. That's not the case here. And as everyone in the Bush administration knows, warming in the next 100 years, given a very small range of error, is likely to mirror what has happened in the last 40 years.

Several bits of legislation that would put the US on a de facto compliance track are currently in the US legislature and could "slip through" with a nod from the White House. Russia's Rosbalt News says that Russia may ratify this Spring, driven by fears that it will accrue a WTO membership-threatening loss of trust from already ratified nations should it balk.

"Oleg Pluzhnikov, the deputy head of the Russian Energy Ministry's Environmental Department, suggested at a press conference that Russia's failure to ratify the Kyoto Treaty could lead to 'a loss of trust on the part of foreign countries.' Pluzhnikov reminded journalists that Russia had won fairly favourable conditions for signing up to the treaty. 'Bearing in mind that ratification by Russia is needed for the treaty to come into force, the other countries made significant concessions to us,' he said. Pluzhnikov also noted that, in September 2002, Russian Prime Minister Mikhail Kasyanov 'promised the international community that Russia would ratify the Kyoto Treaty.' However, he refused to explain why this had still not happened," the paper reports.

27) ANDERSON: NEW PROJECTS WILL CUT GREENHOUSE GAS EMISSIONS

CNEWS

April 16, 2003

Internet: <http://cnews.canoe.ca/CNEWS/Canada/2003/04/16/67057-cp.html>

VICTORIA (CP) - Ottawa is investing more than \$1.2 million in several community-level projects to reduce pollution from cars and trucks, federal Environment Minister David Anderson said Wednesday.

Transportation accounts for at least one quarter of greenhouse gas emissions in Canada, he said in announcing 21 projects from Halifax to Victoria. Many of the initiatives are geared toward younger people with the aim of building a generation of environmentally aware commuters. "Every one of these 21 projects is aimed specifically at reducing emissions in the transportation sector," Anderson said. On average, every Canadian contributes about five tons of greenhouse gas emissions a year by driving cars and trucks and using fossil fuels. Ottawa would like to see that number cut by 20 per cent or one ton a year.

28) SOUTH AFRICA SEES WIND POWER FUTURE

Solar Access

April 16, 2003

Internet: <http://www.solaraccess.com/news/story?storyid=4097>

Cape Town, South Africa - April 16, 2003 [SolarAccess.com] South Africa, host country of the World Wind Energy Conference & Renewable Energy Exhibition, has made the first concrete steps toward a sustainable energy supply with wind power contributing substantially. A White Paper for Renewable Energy includes clear targets and a baseline study has revealed the country's enormous wind energy potential. The government has also published a brochure encouraging Renewable Energy Independent Power Producers to invest in South Africa.

In February 2003 the South African Department of Minerals and Energy, in collaboration with Danish Co-operation for Environment and Development, released a "Baseline Study on Wind Energy in SA." The study reveals a hub of wind energy activity in the country, all of which point to wind energy being a definite feature of the country's future energy mix. Overall, the report indicates that there is a growing trend of wind energy use, as indicated by the large number of research and demonstration activities and the fact that several new wind power projects are in the planning stage. There is a small emerging market for green electricity, and the market for farm windmills is well established.

The study documents the present use of different wind energy technologies and the level of involvement of industry and skills, painting a favorable picture of capacity. At present there are five grid-connected test facilities and five mini-grid ones, mainly at the feasibility stage but with a few already at the implementation stage. There are four off-grid power-generating projects, mainly involved in manufacturing wind energy technologies. Altogether this makes the current exploited wind energy in South Africa 16,000 kW with an estimated annual production of 32,000 MWh.

The various wind energy projects are investigating the technological appropriateness of wind technologies to local conditions, and in the process are also preparing the market and the energy industry for Renewable Energy implementation. One such success story is SA's first-ever Power Purchase Agreement that was signed between Darling Independent Power Producer and the City of Cape Town in December 2002. The government has officially recognized the Darling wind farm as a national demonstration project. There are other promising signs for wind in SA. A recently released wind map of the country indicates that the country has an abundance of wind resources - theoretically the potential for wind energy harvesting is 26,000 GWh annually. In addition SA is a unique developing country that has industrialized world technical skills and infrastructure that provide competitive economic conditions for the development of wind energy.

In its White Paper on Energy Policy, published in 1998, DME indicated its intention to promote RE via a Renewable Energy Independent Power Producer Programme (IPP) to begin in 2004. Access to finance for IPPs will become available. SA has also ratified the United Nations Framework Convention on Climate Change (UNFCCC) signalling an intention to move away from its current heavy reliance on coal.

29) EMISSION TRADING HELPS COUNTRY CURB AIR POLLUTION

China Daily

April 15, 2003

Internet: <http://www1.chinadaily.com.cn/news/cn/2003-04-15/112075.html>

A team of environmental officials and researchers are working hard to help industrial units tackle China's air pollution problem by increasing market awareness of emission trading. The group has expressed hope that the market-oriented programme, already implemented in some parts of China, will deliver more practical information to China's environmental protection decision-makers. The State Environmental Protection Administration (SEPA) together with the United States Environmental Defence (EDF) taskforce last year began to apply the laws of economics to curbing acid rain.

EDF chief economist Daniel J. Dudek said that the practice, called emission trading, is based on existing caps that limit the amount of pollution produced by industrial sources, such as power plants and other factories. When emissions fall below the permitted level, the factory is allowed to store the excess quota for

future use or to trade with other industrial units which cannot meet the pollution standard set by the environmental protection authorities. The end result provides the buyer with an increased emission quota, a must for its future expansion, while the seller is rewarded for its contribution to environmental protection, he said.

Li Lei, a SEPA official in charge of pollution control said the practice of emission trading does not signal a green light to the generation of pollution. Buyers and sellers are allowed to trade only within the State pollution control limits, a move that does not damage the local environment, Li said. The pilot programme between SEPA and Dudek's organization has been implemented in Shanghai, East China's Shandong and Jiangsu provinces, North China's Shanxi Province and Tianjin, Central China's Henan Province and Liuzhou in South China's Guangxi Zhuang Autonomous Region with great success. "The programme has been conducted steadily and we have made important initial achievements," said Dr Zhang Jianyu, programme manager of the China Emission Trading at EDF, which pioneered the successful emissions trading programme in 1990 in the United States.

China's first agreement on sulphur dioxide emission trading reached by two power plants in different cities will come into effect this July. Both plants, the Taicang Port Huanbao Power Co, Ltd, the buyer, and the Nanjing Xiaguan Power Plant, the seller, are in Jiangsu. The former requires an additional sulphur dioxide emission quota as it plans to generate more electricity to meet local demands. The expansion plan will generate another 2,000 tons of sulphur dioxide a year, which is far beyond the original emission quota the company is permitted. The latter, however, saves an emission quota of 3,000 tons per year, due to the state-of-the-art technology introduced from Finland. According to the agreement, the Taicang Port Huanbao Power Co, Ltd, will pay 1.7 million yuan (US\$204,800) for an annual emission quota of 1,700 tons from the Nanjing Xiaguan Power Plant over the next three years.

30) GREENHOUSE ACTION URGED

Newscom.au

April 14, 2003

Internet: http://finance.news.com.au/common/story_page/0,4057,6280348%255E462,00.html

THE federal and state governments have been urged to develop a national energy efficiency program to help Australia overcome the effects of greater greenhouse gas emissions. And they have been urged to encourage a move to a hydrogen economy in the next 25 years for both transport fuels and electricity generation. The recommendations come from a group of chief executives of Australia's leading companies. The CEOs insist the federal Government continue to pursue a comprehensive international approach that would involve all major greenhouse gas emitting countries, both developed and less developed. Executives from about 30 of Australia's leading companies -- including mining, petroleum and industrial companies -- will meet government ministers in Canberra today.

See Also:

Big Business Backs Carbon Emissions Trading, Dialinfolink, April 15,2003; Internet:

<http://www.dialinfolink.com.au/articles/77/0c015d77.asp>

31) RISING RIVERS SET TO WRECK BANGLADESH

New Scientist

April 12, 2003

Internet: <http://www.newscientist.com/news/news.jsp?id=ns99993605>

Arguments over the causes of global warming will bring little succour to the people of Bangladesh. Flooding in the country is set to increase by up to 40 per cent this century as global temperatures rise, the latest climate models suggest. Each year, roughly a fifth of Bangladesh is flooded, and climate change is forecast to exacerbate the problem as sea levels rise, monsoons become wetter and more intense cyclones lead to

higher tidal surges. To make things worse, heavier rainfall triggered by global warming will swamp Bangladesh's riverbanks, a previously unforeseen effect, flooding between 20 and 40 per cent more land than today, says Monirul Qader Mirza, a Bangladeshi water resources expert now at the Adaptation and Impacts Research Group at the University of Toronto.

Bangladesh is flood-prone because it lies in the delta of three great rivers, the Ganges, Brahmaputra and Meghna, which together drain 175 million hectares. People can grow crops on land regularly fertilised by nutrient-laden silt from the rivers. But extreme floods cause considerable hardship and loss of life: in 1988 and 1998 over two-thirds of the country was under water at some point. Most climate models predict up to 20 per cent more precipitation in South-East Asia if temperatures rise by 5 °C. But no one had investigated how Bangladesh's three major rivers would cope, says Mirza.

SCARY SCENARIOS

His team collected data on the relationship between current precipitation levels and the resulting discharge of water by the three rivers. They then fed this data into a software program developed by the Danish Hydraulic Institute, which simulates how factors such as sediment and water quality affect the flow of water within river basins. Researchers at the Surface Water Modelling Centre in Dhaka helped calibrate the model to Bangladesh's particular geography. Mirza's team then ran the program for four climate change scenarios, known as global circulation models. In each, the peak mean discharge for all three rivers increased as global temperatures rose by 2, 4 or 6 °C. If temperatures rose by just 2 °C, two of the models showed that the mean flow of the Meghna and Brahmaputra rivers would increase by 20 per cent.

If there is an increase in temperature of 6 °C, the maximum predicted by the International Panel on Climate Change, then the greater flow of water through Bangladesh's three great rivers will inevitably lead to between 20 and 40 per cent more flooding. There will also be a steep increase in deeply flooded land - that covered by more than 1.8 metres of water for nine months of the year. Of the 3.1 million hectares that floods each year, 42 per cent is already deeply flooded. That will climb to 55 per cent if temperatures rise by 6 °C. The land available to grow rice, vegetables, lintel, onion and mustard crops will be significantly reduced, placing an intolerable pressure on farmers. Policy planners should begin working on adaptation measures now, Mirza says.

32) ENVIRONMENT TAX EYED FOR '05 DEBUT

Japan Times

April 12, 2003

Internet: <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?nn20030412c4.htm>

The Environment Ministry will levy an environment tax even if the 1997 Kyoto Protocol on global warming does not take effect on time, according to Vice Environment Minister Masaharu Nakagawa. "We must make efforts to curb global warming even if the protocol does not come into effect next year," Nakagawa said. The ministry plans to introduce the environment tax in fiscal 2005 if necessary to carry out the nation's commitments under the protocol.

Japan is required to cut greenhouse gas emissions by 6 percent from 1990 levels between 2008 and 2012. The pact is expected to become effective before the end of this year, but some authorities have voiced concern over Russia's delay in approving the ratification process. The pact, adopted in the city of Kyoto, will enter into force 90 days after Russia's ratification -- having being ratified by 55 states representing 55 percent of industrialized countries' carbon dioxide emissions in 1990.

33) RUSSIA MAY RATIFY KYOTO TREATY THIS YEAR

Rosbalt

April 11, 2003

Internet: <http://www.rosbaltnews.com/2003/04/11/62182.html>

SAINT PETERSBURG, April 11. Russia may ratify the Kyoto Treaty as early as this year, according to Grigory Tomchin, the head of the State Duma Committee for Economic Policy and Business. Tomchin put forward this opinion today at the Petersburg Dialogue forum. He said that 'Russian legislation will be brought in line with WTO legislation' by the end of the spring session of the State Duma. 'The last remaining task is to complete changes to the Customs Code,' the Duma deputy stressed. According to Tomchin, ratification of the Kyoto Treaty is not related to the timescale for Russia's entry into the WTO, although 'ratification will help Russia to enter the World Trade Organisation.'

Yesterday, Oleg Pluzhnikov, the deputy head of the Russian Energy Ministry's Environmental Department, suggested at a press conference that Russia's failure to ratify the Kyoto Treaty could lead to 'a loss of trust on the part of foreign countries.' Pluzhnikov reminded journalists that Russia had won fairly favourable conditions for signing up to the treaty. 'Bearing in mind that ratification by Russia is needed for the treaty to come into force, the other countries made significant concessions to us,' he said. Pluzhnikov also noted that, in September 2002, Russian Prime Minister Mikhail Kasyanov 'promised the international community that Russia would ratify the Kyoto Treaty.' However, he refused to explain why this had still not happened. In another development today, representatives of a number of environmental organisations in Russia have sent a letter to the Russian President and Prime Minister, signed by over 250 scientists from the Russian Academy of Sciences. According to Greenpeace's Russian press office, the Russian scientists have asked for the Kyoto Climate Control Treaty to be sent for ratification in the State Duma as soon as possible.

34) BIOGAS SHOWS POTENTIAL AS CLEAN ENERGY SOURCE FOR KAZAKHSTAN

UNDP

April 11, 2003

Internet: <http://www.undp.org/dpa/frontpagearchive/2003/april/11apr03/index.html>

Friday, 11 April 2003: An innovative new project is pioneering the use of biogas for home heating and cooking in and around Karaganda, Kazakhstan's second-largest city with a population of 600,000. Biogas production is an ancient technology that originated in China more than 2,000 years ago. Gas is generated when bacteria degrade biological material, often plant waste, in the absence of oxygen. The Kazakhstan project uses animal manure to produce biogas that is 70 per cent methane and 30 per cent carbon dioxide, offering a clean-burning, environmentally friendly alternative to wood. Fertilizer is a useful by-product.

The Global Environment Facility Small Grants Programme, implemented by UNDP, is the main sponsor of the Ecological Centre in Karaganda, which seeks to promote the use of biogas throughout the country. With 15 "digester" units to produce biogas built or under construction, the project has been relatively modest, but Dmitry Kalmykov, the centre's director, is confident that biogas has enormous potential in Kazakhstan.

Farmers using biogas save on energy costs, and Mr. Kalmykov pointed out that the nearby Nura River is spared some pollution. "The main reasons that we started the project were to reduce waste being dumped into our rivers and to show farmers that they could make productive use of animal wastes," he said. The digesters are built with recycled bricks from demolished buildings or, in places with excessive groundwater, from old gasoline tanks. Each unit has an electric heater, warming up the manure to the point where it produces biogas and also generates enough heat on its own to continue the process. Because people in the area had never heard of biogas, they were often sceptical about the process. The centre launched an information campaign through articles and advertisements in newspapers and television features to overcome these doubts. Centre staff also conducted seminars in towns and villages where residents are unlikely to be reached by the press or television. The results so far are encouraging. Though it can be difficult for farms with a limited number of workers to operate larger units, all are functioning without problems and demand for biogas has greatly outstripped the supply. Mr. Kalmykov hopes that with additional support, the centre will be able to build more units

35) AUSTRALIA LAGS BEHIND KYOTO TARGETS

Nine MSN

April 11, 2003

Internet: http://news.ninemsn.com.au/Sci_Tech/story_47588.asp

Australia still had some way to go in developing alternative electricity sources if it was to meet Kyoto greenhouse gas emission targets, a sustainable energy industry expert said. Riccardo Brazzale, executive director of the Australian Business Council for Sustainable Energy (BCSE), said alternative energy sources such as natural gas, solar and wind power and biomass accounted for around 20 per cent of Australia's electricity needs. But it was not enough to meet targets set in Kyoto in 1997. "It's important that total continues to grow as market share if we are going to reduce our greenhouse gas emissions in any meaningful way," Mr Brazzale said today. The targets, still to be ratified by the federal government, allow Australia to limit the emissions to 108 per cent of 1990s levels by the year 2010. We're about three per cent over our target," Mr Brazzale told AAP outside the BCSE conference in Brisbane. "We're running at 111 per cent of 1990 emissions," he said. "Electricity generation technology is the key to lower greenhouse gas emissions."

36) CLIMATE CHANGE – GOOD FOR BUSINESS?

Eddie weekly summaries

April 11, 2003

Internet: http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/6873.cfm

Climate change is a huge challenge, but one that offers economic opportunities, according to the panel at the 2003 Climate Change – Our Business Conference in the UK, made up of energy minister Brian Wilson, Environment Agency chief executive Barbara Young, Janet Asherton of the CBI and Powergen's Dr William Kyte. "The growth in international markets for renewable technologies offers very great opportunities for UK manufacturing to create wealth and jobs," Wilson said, stressing he does not want to see a repeat of Britain's failure to capitalise on the development of wind technologies.

Young insisted that developing partnerships between government, business, regulators and the public were the only way to successfully implement mitigation measures, "because of the way climate change impacts cascade through complete systems". Young suggested that the relationship between the industry and environmental regulator for the water industry would prove a good model for driving the environmental agenda in the sector, although the planning system should be re-appraised to ease the progress of renewable energy projects to implementation. The Environment Agency aims to carefully scrutinise the other environmental impacts of renewable energy plants, such as emissions from biomass and impacts on watercourses from hydroelectric dams. Wilson described delays on planning decisions as "interminable", although he insisted that Energy White Paper aspirations could be met. "What is delivered in the next 12-18 months will determine whether we reach the targets set out in the paper," he said.

37) WORLD WARMING IN 2002 'NEAR RECORD'

BBC

April 10, 2003

Internet: <http://news.bbc.co.uk/2/hi/health/2935883.stm>

Scientists meeting in France say 2002 was the second hottest year on record. It continued a warming trend that has set records for the last five years. Only 1998 was warmer. The planet is now 0.6 Celsius warmer than in 1900, an increase that scientists attribute to human activity. Researchers say even a fractional boost in average temperatures has significant consequences for the health of the planet. The findings appear in The State Of The Climate, an annual report from the US National Oceanographic and Atmospheric Administration (Noaa), based on research from eight countries. It was presented at the first joint meeting here of the leading European and American geoscience societies, the European Geophysical Society (EGS), the European Union of Geosciences (EUG) and the American Geophysical Union (AGU).

FAR-FLUNG EFFECTS

While the Earth warmed in 2002, the trend in Antarctica was toward cooler-than-average temperatures, a pattern consistent with global climate change, according to Dr Anne Waple of NOAA. "The Antarctic is a very different beast," she said. "There is a great big land mass stuck at the South Pole and the circulation around that essentially cuts it off every winter. It has its own weather patterns." The second half of 2002 saw a mild El Niño, the periodic weather phenomenon in the Pacific that disrupts climate patterns thousands of miles away. While global rainfall was average overall, El Niño contributed to extreme drought in the US, comparable with the Great Dust Bowl of the 1930s, and in Canada, Australia, West Africa and India. Droughts continued in parts of central America, and central Europe experienced near-record floods. Tropical storm activity was below normal globally, and in India a failure of the monsoon rains led to the first all-India drought since 1987.

DOUBLE STRIKE

Scientists predict more frequent and extreme weather events because of climate change, but last year's droughts and floods cannot be tied definitively to it, said Dr Waple, as the climate record is not long enough. "But we are operating in a world that is warmer than it was 100 years ago," she said. "Certainly that baseline climate change plays a role." The meeting, the EGS-AGU-EUG Joint Assembly, heard details of research on the cause of Europe's catastrophic floods and the lessons learned from them. Jiri Stehlik of the Czech Hydrometeorological Institute said an unusually sluggish low-pressure system that lingered over central Europe had brought two rounds of intensive rainfall within a week. The second overwhelmed swollen rivers and saturated soils. In Prague, where two rivers meet, the river discharge peaked at 5,200 cubic metres a second, making it a once-in-500-years flood that devastated the city and nearby villages. "It was a very fast-happening flood," said Hans Wiesenegger, an Austrian hydrologist from Salzburg, where the river Salzach inundated the city. "Within 18 hours, we had a peak discharge of 2,300 cubic metres a second. The average is 180 cubic metres."

PROOF AWAITED

Although flood forecasting was fairly accurate, scientists were unable to predict how the land and rivers would respond to the rain. The 2002 floods are still considered rare events and attributed to natural cycles. Dr Waple said: "The flooding in central Europe was probably the most severe in 100 years or so. "But if we were to see that sort of flooding next year and again in five or 10 years, then that is something that is clearly outside the bounds of natural variability."

38) SCIENTISTS PREDICT GLOBAL WARMING DELUGE IN BANGLADESH

ABC News

April 10, 2003

Internet: <http://www.abc.net.au/news/newsitems/s829292.htm>

Flooding in Bangladesh could increase by 40 per cent if global warming pushes temperatures higher. Flooding already affects about a fifth of the country, which lies in the delta of three rivers. But heavier rainfall triggered by global warming could swamp riverbanks with terrible consequences, according to researchers. "Flooding in the country is set to rise by up to 40 per cent this century as global temperatures rise, the latest climate models suggest," New Scientist magazine said.

Using computer modelling Monirul Qader Mirza, a Bangladeshi water resources expert at the University of Toronto in Canada and his team calculated the impact of several climate change scenarios. They showed that if temperatures rose by few degrees Centigrade the flow of two of the country's rivers, the Meghna and Brahmaputra, could rise by 20 per cent. A further temperature rise would result in a greater flow of water through the Ganges and put more land under water for many months of the year. "The land available to grow rice, vegetables, onion and mustard crops will be significantly reduced, placing an intolerable pressure

on farmers," the magazine said. In 1988 and 1998 over two thirds of the country was under water at some point, it added.

39) NUCLEAR ENERGY TO TAKE 3 PERCENT OF CHINA'S TOTAL BY 2005

Peoples Daily

April 10, 2003

Internet: http://english.peopledaily.com.cn/200304/10/eng20030410_114884.shtml

China is to cut its reliance on fossil fuels by increasing the energy output of its nuclear power plants, atomic energy officials said Wednesday in Beijing. They set a goal of 3 per cent of the total national power output coming from nuclear plants by 2005. The country will continue to maintain tight safety surveillance of its nuclear facilities, said Xu Yuming, deputy director of China Atomic Energy Agency. He told an international seminar that China is striving to design and manufacture large-scale nuclear power units independently in line with its principle of "moderately developing nuclear power." Nuclear energy would become more economical compared with other sources of energy, Xu said.

The official made the remarks at a three-day Regional Public Information Seminar on Nuclear Energy and Human Needs in Asia, co-sponsored by his agency and the International Atomic Energy Agency (IAEA). It is due to end Thursday. Xu told 180 participants from a dozen countries that the installed capacity of China's nuclear power plants is expected to reach 8.7 million kilowatts in two years, when four new generating units will be put into operation, joining the current seven sets. China has ratified the Kyoto Protocol, promising to prioritize development of clean energy while improving energy efficiency.

Nuclear power is a clean form of energy which can play a unique role in addressing energy shortages and reducing greenhouse gas emissions, he said. In addition to developing advanced technology with its own intellectual property rights, China will seek to cut the costs for nuclear power plant construction, so that nuclear electricity will become cheaper, Xu said. Pan Ziqiang, of the Nuclear Power of China National Nuclear Corp, said the per kilowatt-hour price of nuclear electricity from China's Daya Bay Nuclear Power Plant is expected to average US\$0.018 by 2014, close to the price of nuclear power of the United States in 1999.

Since it began constructing nuclear power plants more than two decades ago, China has made nuclear safety and the proper handling of radioactive waste key priorities, Xu said. "China's excellent record in the safe operation and environmental protection of its nuclear plants over past years is a good testimony to its nuclear safety surveillance measures, which are becoming mature," he said. Su Xu, director of National Institute for Radiological Protection and Nuclear Safety, said China's Ministry of Health set up a Centre for Medical Assistance in Nuclear Accidents in 1992. Since then the centre has improved its medical response system to radiation and nuclear emergencies in China. Werner Burkart, deputy director-general of IAEA, said he believed the number of nuclear reactors will surge in China, even though the percentage of power supplied by nuclear plants is not high at present.

See Also:

Reliance on Fossil Energy to Lessen, China Daily, April 10, 2003; Internet:
<http://www1.chinadaily.com.cn/cndy/2003-04-10/111485.html>

40) JAPAN NUCLEAR SCANDALS STYMIE KYOTO PACT GOALS

Reuters

April 10, 2003

Internet: <http://www.alertnet.org/thenews/newsdesk/T163323.htm>

Reuters - Japan's plans to meet its obligations under the Kyoto accord on global warming could be in jeopardy as public safety concerns hinder the construction of new nuclear reactors low in greenhouse gas

emissions. A string of safety scandals has shattered public faith in the nation's nuclear industry, pushing back deadlines for rolling out a dozen or so reactors in a country that relies on nuclear energy for about a third of its power. The delay, analysts say, could thwart Japan's aim of cutting greenhouse gases, which many scientists believe could cause disastrous climatic changes, by six percent from 1990 levels by 2008-2012.

"I think it has become quite clear that domestic policy (promoting nuclear energy) alone will not be enough if Japan is to meet its Kyoto Protocol target," Kazuya Fujime, managing director at the Institute of Energy Economics Japan (IEEJ) said. The Kyoto Protocol treaty was drawn up in 1997 and requires signatories to reduce gas emissions below 1990 levels by 2012. Emissions in Japan of some 90 percent of carbon dioxide (CO₂), the main gas concerned, derives from energy consumption and Tokyo sees nuclear power, which generates no CO₂, as key to meeting its global pledge. But the latest long-term business plans by the nation's power utilities show that only eight nuclear reactors are due to begin operating by fiscal 2010/11.

That's down from last year's forecast for 12 units and also far short of the roughly 10-13 new nuclear reactors that the government sees as necessary for it to achieve its goal of cutting the harmful gases by 2010. Analysts see even fewer reactors being built. "(The number of) new nuclear reactors is a very optimistic outlook...the IEEJ's forecast is for five new units," Fujime says. He adds that there are other experts who believe the three nuclear reactors that are already under construction will be the only new units in operation by 2010. Spokesmen at power firms that have delayed reactor construction say they are behind schedule because of recent industry safety troubles. Analysts say the power industry is getting more cautious about building new reactors because power demand is expected to grow at a slower pace, while ongoing industry deregulation is expected to lead to increased competition.

OTHER OPTIONS

Some analysts say Japan should review its Kyoto policy goals, which lean too heavily on the use of nuclear power to cut CO₂ emissions, saying other measures should also be encouraged. Britain, which launched a voluntary CO₂ emissions trading scheme in April 2002, said last month that it was on track to meet its Kyoto Protocol targets. Japan, on the other hand, is trailing. CO₂ emissions resulting from energy consumption in the fiscal year ended March 2002 amounted to 1.13 billion tonnes in Japan, down 2.7 percent from a year earlier but up 6.3 percent from 1990/91 levels. A Trade Ministry official attributed the year-on-year decline to Japan's prolonged economic slump. "By far the main reason for the decline is the deterioration in the economy...which meant less energy consumption," he said.

OUTPUT KEY?

The government target for launching 10-13 nuclear reactors is based on the goal for Japan's nuclear output to be 418.6 billion kilowatt-hours (kWh) in fiscal 2010/11, accounting for some 40.7-42.0 percent of total power output. This compares with 2002/03 when nuclear power accounted for roughly 31.4 percent of total power output. Officials at the Ministry of Economy, Trade and Industry (METI) said they believe that the output targets can still be reached -- even without all the planned new reactors coming online. "It is not just a case of counting how many nuclear reactors are needed...but it is a matter of reaching our target in terms of nuclear power generation," one METI official said.

METI officials say raising the operating rate of current nuclear power plants is one way of increasing supply if opposition to building new nuclear facilities continues. That opposition, particularly from local communities around the plants, shows no sign of abating after a string of scandals fanned safety concerns. In the latest incident, Tokyo Electric Power Co Inc <9501.T> -- Japan's largest utility -- was forced to successively close down its nuclear reactors after it admitted in August last year that it had falsified data during safety checks. It has already closed down all but one of its 17 nuclear reactors, while no timetable has been set for their restart.

41) COAL, NUCLEAR POWER TAKE AIM AT EXPENSIVE NATGAS

Reuters

April 10, 2003

Internet: <http://www.climateark.org/articles/reader.asp?linkid=21631>

HOUSTON - High natural gas prices may have taken the glow off a fleet of efficient new power plants, but major hurdles are limiting a return to coal and nuclear sources, industry sources said. Natural gas prices for benchmark Henry Hub futures hovered above \$5 per thousand British thermal unit this week, well above the estimated \$3.00-\$4.00 upper limit most gas-fired power plants say they need to remain profitable.

"To put your customer at a point where it's uneconomic to use your product is not a good way to balance demand," Tim Bullock, president of BP Gas & Power North America (BP.L), told a gas conference.

The lowest gas storage levels in a decade and a colder than normal winter in much of the country combined to drive gas prices to nearly \$12 per mmBtu in late February, and energy industry forecasters have warned of even tighter supplies in the coming years. "We're either putting our current customers off our business or potential customers off our business," Bullock added. Natural gas became the fuel of choice for merchant energy companies in the late 1990s, since it produces far less pollution than other fossil fuel sources.

But slumping power prices caused by a glut of new efficient combined cycle gas plants have eroded generators' profit margins, forcing owners to close plants or trim output to a fraction of their designed capacity. Advocates said coal-fired power plants, which still make up 51 percent of the total U.S. power production, could see a revival because of their stable prices and improved pollution controls. "Even at \$4 per mmBtu, coal is very competitive," said Mark Gabriel, vice president for strategic planning at the industry research group Electric Power Research Institute.

But utilities have shied away from building new coal-fired plants because of the strict permit process and tight environmental checks that typically take seven years to satisfy from the time a plant is proposed until its completion - adding costs few companies are willing to shoulder. "You're going to have to have regulatory changes" for coal to challenge gas dominance in the new power plant market, according to Kelly Krattenmaker, vice president for commercial operations at Xcel Energy Inc. (XEL.N).

The nuclear industry is also trying to raise its profile as the best-suited power source to battle global warming, since unlike natural gas, coal and oil, it produces no carbon dioxide. "New nuclear power can be competitive with combined cycle gas at about \$5 per mmBtu," said Dan Keuter, vice president for nuclear power development at Entergy Nuclear (ETR.N), the country's second largest nuclear power plant operator. No new U.S. nuclear power plants have begun commercial operation since 1993, and most date from the 1970s or 1980s. In total they produce about 20 percent of the U.S. power supply.

But declining costs, new technology and reduced worries about accidents have given the industry hope that political opposition may be waning. While nuclear power plant owners are pushing to extend the permits for their plants, which usually expire after 40 years, it was not yet tenable to build new facilities, he added. "I don't think you're going to see a new nuclear power plant in this decade," he said, but added that if there is a change of policy, new plant planning could start after 2010.

42) MARSHES ARE NATURAL DEFENCE

EDP24

April 10, 2003

Internet:

<http://www.edp24.co.uk/content/News/story.asp?datetime=10+Apr+2003+06%3A51&tbrand=EDPOnline&tCategory=NEWS&category=News&brand=EDPOnline&itemid=NOED09+Apr+2003+19%3A52%3A18%3A807>

Some sea defences built after the 1953 floods will be removed as part of an Environment Agency scheme to create salt marshes. The agency said the marshes would offer a natural, more effective and cheaper form of defence against the sea. The project is being discussed during a two-day international conference on world-wide climate change being held at the University of East Anglia. Professor Andrew Watkinson, programme manager for managing coastal zones at the Tyndall Centre for Climate Change Research at the UEA, said the need for defences was being assessed.

He said the 1953 disaster had sparked the building of concrete defences, which did not always offer the best or most economical protection. "There are certain areas of coast that need to be defended like this but there are other areas where we can take a more flexible approach and utilise natural defences, which will also be good for wildlife." Prof Watkinson admitted that farmland may be lost to the salt marshes but decisions had to be reached on a national scale. Jane Rawson, spokesman for the Environment Agency, said it would only risk land that is scarcely used. "Money for sea defences is not a bottomless pit," she said. Ms Rawson said the impact of the sea is reduced by up to 95pc after washing over salt marshes as it becomes absorbed by vegetation. The news of the scheme comes as scientists at the Tyndall Centre prepare to open a hi-tech virtual reality suite to make crucial decisions on the future for East Anglia's coastline. The £114,000 project, expected to open in July, will graphically predict the effect of climate change.

43) SPEEDED-UP CLIMATE CHANGE 'A MAJOR CHALLENGE'

Evening Telegraph

April 9, 2003

Internet: <http://www.climateark.org/articles/reader.asp?linkid=21612>

Climate change will speed up and could lead to unprecedented change in the Earth's weather systems over the coming years, a top scientist was warning today. Professor Mike Hulme, a senior climate change scientist, was telling an international conference at the University of East Anglia in Norwich that it was a major challenge. He was to say the environment had changed significantly throughout history and global climate change posed a different type of threat, with the rate of warming already exceeding anything experienced in the last 100,000 years.

The question was whether mankind could survive this dramatically changing climate and whether the Earth's ecosystems were resilient enough to survive in their current form given the other pressures they are subjected to by human development. Professor Hulme said: "Our atmosphere gives us both resources like rain and wind, and hazards - hurricanes, blizzards and droughts. "Species and ecosystems are adaptable and fashioned to a considerable extent by these climatic constraints - they are "tuned" to the climate in which they evolve.

"All ecosystems are resilient to some climatic variability, indeed may actually require it. Exactly how much they can bear varies greatly within and between ecosystems, some are more vulnerable to weather and climate change than others. "Climate change will certainly continue. It will probably accelerate and we could see unprecedented changes in the Earth's climate over the coming years and decades. "These changes in such a powerful influence on ecological development will introduce new challenges for the way we conserve our natural world.

"Some of these challenges may be foreseeable, many of them may not. Some of the risks associated with a rapidly changing climate may be quantifiable, many of them may not. Doing nothing is not an option." The "Global Climate Change and Biodiversity" conference brings together biologists and conservationists studying climate change from all over the world. It is looking at some of the planet's ecosystems and how they have been affected by climate change, predictions for further changes and their ability to adapt. The organisers said it would define the next steps for both scientists and conservation policy makers alike to deal with the effects

44) INDIA TO SUFFER DUE TO CLIMATIC CHANGES AND HUMAN RAVAGES

Hindustan Times

April 9, 2003

Internet: <http://www.climateark.org/articles/reader.asp?linkid=21593>

Global climatic changes and the Indian failure to conserve land and water resources are going to cost the country dearly, leading to more and more floods and droughts, a top Indian expert has warned. RK Pachauri, the only Indian representative to the UN-mandated Intergovernmental Panel of Climate Change (IPCC), said the far-reaching climatic changes could already be seen in the Himalayas. "Satellite images have shown glaciers in the Himalayan region melting more rapidly. Our droughts and floods will become more frequent and more severe," Pachauri told IANS in an interview. "We will be increasingly under pressure due to water problems, because of what we have done to our land and water resources," he added.

IPCC is slated to hold meetings at Marrakesh, Morocco, from April 14-17, while another meeting will followed in September in Berlin. "The meeting in Marrakesh will be an exercise for the fourth assessment report to build a knowledge body and assess the past work. We will be looking at every region of the globe to study the impact of climatic change till the end of 21st century," said Pachauri, who is also director general of The Energy and Resource Institute (TERI). Pachauri said in India the evidence of climatic changes was already evident, with increased water shortages, salinity and impact on monsoon in several parts of the country.

This was affecting life and agriculture in areas that solely depended on rainfall for irrigation. "The satellite imagery has shown that glaciers in the Himalayas are melting more rapidly, much faster than anybody had anticipated," said Pachauri. While India is taking steps to protect the environment and increase the forest area, it still remains much below the desired 33 percent cover. "India has a long way to go in enhancing the forest cover, particularly as we have large areas of wasteland," he said. Pachauri said the government should open barren land to the private sector to help it develop them into forests. "India is particularly vulnerable to climatic change because of our geographical location," said the IPCC chairman. Though fluctuations in weather patterns are natural and tend to occur, Pachauri said India would undergo more severe changes. Globally, the climatic changes were making an impact. The US and parts of Europe experienced severe cold last winter while Australia faced severe drought. "Our fourth assessment report will try to analyse what is happening naturally and what is due to human factors," said Pachauri

45) UK INDUSTRY CUTS CO2 EMISSIONS BY WELL OVER TARGET

Planet Ark

April 9, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/20408/story.htm>

LONDON - Britain's industry has slashed emissions of polluting carbon dioxide (CO₂) by more than three times above targets as plans to cut greenhouse gases take effect, the government said. About 5,000 UK companies cut the amount of CO₂ they produce by 13.5 million tonnes last year under the Climate Change Agreements (CCA) scheme, the UK Department for the Environment, Food and Rural Affairs (DEFRA) said in a statement.

"The results of our agreements demonstrated real gains in energy efficiency, achieved in a cost-effective way," Sustainable Energy Minister Lord Whitty said. Under the CCA programme UK companies risk a hefty tax on energy use if they miss targets to cut CO₂, largely blamed for global warming. The cut was about 10 million tonnes above the 3.5 million target set under the programme for 2002 and DEFRA said most of the reductions were made by the steel industry - the greatest energy consumer in Britain.

The government said CO₂ emissions fell 3.5 percent last year and that industry played a big role in helping Britain meet goals under the United Nations Kyoto Protocol to cut UK emissions by 12.5 percent by 2010 on 1990 levels. "Today's figures are another boost for the government's aim to cut out carbon emissions by 60

percent by 2050," UK Environment Minister Michael Meacher said, adding industry's contribution under the CCA scheme was significant. A voluntary CO2 emissions trading scheme was launched in April last year as part of CCA to enable companies that cut greenhouse gas emissions above government agreed targets to sell allowances to those unable to meet the reductions.

DEFRA said companies traded almost 600,000 emissions allowances to meet targets under the CCA scheme in 2002, either selling or keeping the equivalent of four million tonnes of CO2. The UK government hoped for a large uptake to help meet its commitments under the Kyoto protocol ahead of mandatory European trading from 2005 and possible global trading. Britain produced the equivalent of 150.4 million tonnes of carbon dioxide in 2002 compared with 156.1 million in 2001, according to DEFRA.

See Also:

Food industry cuts emissions Note; Food Production Daily, April 9, 2003; Internet: <http://www.foodproductiondaily.com/news/news.asp?id=2613>

British Voluntary CO2 Emissions Cuts Produce Results ENS, April 7, 2003; Internet: <http://ens-news.com/ens/apr2003/2003-04-07-02.asp>

46) EUROPE MOVES CLOSER TO ENERGY DEMAND LAW

ENS

April 9, 2003

Internet: <http://ens-news.com/ens/apr2003/2003-04-09-01.asp>

BRUSSELS, Belgium, April 9, 2003 (ENS) - Managing the demand for energy is emerging as a European strategy for meeting the targets set by the Kyoto Protocol for the reduction of greenhouse gas emissions. These emissions of carbon dioxide and other gases occur when fossil fuels such as coal, oil and natural gas are burned to produce energy. The European Commission will propose an EU law on energy demand management by the summer, according to sources. The long promised measure is intended to boost energy efficiency and help meet the EU's Kyoto Protocol commitment to reduce greenhouse gas emissions. Initial proposals by the Commission's Energy Directorate are said to envision a range of actions designed to influence energy users.

Among these will be a first ever European Union push to encourage the development of an energy services market in which services involving the use of energy are sold, rather than the energy itself. In the past, efforts to promote the provision of energy services by power companies stalled for reasons ranging from low consumer interest to poor incentives for suppliers, since electricity prices started falling as a result of liberalization. The new law, known as a directive, appears likely to endorse a "market orientated" approach that would enjoy the support of the electricity industry. "There's an underlying need and potential for cost-effective measures," an EU source said, and a growing awareness that, with energy markets liberalization now fully under way, the demand side needs to be addressed. "If we provide the right framework and incentives, the rest will probably fall into place," the source added.

The directive would set indicative targets for countries that are members of the European Union to achieve one percent annual savings in energy efficiency. Each country would then decide how to distribute this target among sectors. The Commission envisages covering all distribution sectors, from electricity and gas to district heating and transport fuel. An estimated 40 to 45 million metric tons of carbon dioxide emissions could be saved every year once the directive comes into effect, according to a study carried out for the EU's climate change program.

Controversially, the new directive aims to cover all end users, including non-energy intensive industries and transport, except for aviation and foreign shipping. "We're very keen to see the transport sector included," our source said, "since it's contributing most to the increase in greenhouse gas emissions." The public sector would have special responsibilities through additional green procurement requirements. Financial

instruments would be put in place to facilitate the buying and selling of energy services, and to support the setting up of specialist energy services companies.

47) 50 ARCTIC LAKES SHOW DRAMATIC EFFECTS OF CLIMATE WARMING; 'BELLWETHER' OF WHAT'S TO COME FARTHER SOUTH, SAY QUEEN'S RESEARCHERS

Science Daily

April 9, 2003

Internet: <http://www.sciencedaily.com/releases/2003/04/030409074851.htm>

Dramatic clues to North American climate change have been discovered by a team of Queen's University scientists in the bottom of 50 Arctic lakes. Using innovative techniques that enable them to collect historic evidence from fossilized algae in lake bottom sediment, the researchers have found signs of marked environmental changes in a variety of lakes of different depths and composition, within a 750-km region bordering the northern tree-line. The changes are a signal of things to come in the rest of North America, say the Queen's paleolimnologists. "We're seeing a significant, regional change in the ecology of these lakes over the past two centuries that is consistent with warmer conditions," says Dr. John Smol, Canada Research Chair in Environmental Change and co-head of the university's Paleocological Environmental Assessment and Research Laboratory (PEARL). Dr. Smol conducted the study with Dr. Kathleen Rühland and student Alisha Priesnitz of Queen's Biology Department.

"Because the Arctic is a very vulnerable environment and usually the first area of the continent to show signs of environmental change – often to the greatest degree – it's considered a bellwether of what will happen elsewhere," says Dr. Rühland. "These are important signals that all of us should be heeding: the lakes' sedimentary records have tracked marked and directional ecosystem changes." The Queen's study will be published this month in the international journal *Arctic, Antarctic, and Alpine Research*. To reconstruct past environmental trends, the team used fossil markers (tiny algal cells) preserved in lake sediment. Sediment cores were collected by helicopter from the 50 lakes, in an area from Yellowknife, NWT, in the Boreal forest area towards the Bering Sea in the Arctic tundra. For each lake, they compared fossilized algae preserved in the top, most recent sediment layer with those from the bottom, pre-industrial layer dating back about 200 years.

They found that the aquatic habitat of today is much different from that of pre-industrial times. More fossils of the type that live in open water environments were found in the top (most recent) layer of sediment – an indication that these lakes have less ice cover and a longer growing season that would alter important lakewater properties such as light availability and the way lakes stratify, as a result of warming. This marked a major ecological shift in the lakes that coincides with a period of increased human industrial activities and emissions in more southern regions. Earlier PEARL studies in the High Arctic tundra had indicated major changes in the different layers of fossils associated with climate warming. The new findings bring the effects of climate change closer to populated areas. "The logical extension was to see if tree-line lakes also show these dramatic changes, and this study confirms that the impact is even greater than previously documented," says Dr. Rühland. "We believe that the consequences of greenhouse gas emissions, in the form of climate change, are already having a notable impact on the Arctic environment."

As well as affecting plant and animal life in this region, melting permafrost and less ice cover are already beginning to have repercussions on human concerns such as transportation, housing, and even sovereignty issues. Last year an entire Nunavik community was relocated by the Quebec government after melting permafrost caused houses to slide from their foundations. Other researchers have found evidence that ocean ice is thinning, which could have future implications for intercontinental transportation routes.

"Until recently, no one was reconstructing Arctic climates in this way, because the technology didn't exist," says Dr. Smol. "Now that we can, in essence, reconstruct the past through this indirect technique, we're filling in gaps in our knowledge and finding answers to many ecological and environmental questions that have great significance for the future."

48) BLAIR PUSHES PLAN TO HARNESS GREENER ENERGY

Christian Science Monitor

April 8, 2003

Internet: <http://www.csmonitor.com/2003/0408/p07s02-woeu.html>

SWAFFHAM, ENGLAND – The blades windmill merrily above the treetops, lording it over the rural skyline like some freak botanical experiment. Get closer and you can hear them humming quietly as they perform their modern-day alchemy: turning gusts of wind into electricity. The sight of a 200-foot-tall turbine in the English countryside comes as a surprise. Just 79 wind farms dot the country, providing less than 1 percent of energy needs. But that is about to change after the government signaled recently that it plans to revolutionize the energy-supply picture in Britain.

Hundreds of new wind turbines, both inland and offshore, are to be built in the coming years as part of a grand design to generate 20 percent of energy from so-called "renewable" supplies by 2020. This, it is hoped, will set Britain on the way to cutting carbon emissions far more radically than the Kyoto agreement calls for: Where Kyoto prescribed an 8 percent reduction by 2010, Blair now is aiming at a 60 percent cut by 2050 - and he wants the EU, including its newest members, to commit to the target as well. As of 2000, Scandinavian countries led Europe in the use of renewable energy. Sweden, for example, relies on "green" energy sources for 32 percent of its power.

Britain's plan has raised hopes and eyebrows in equal measure. Environmentalists have naturally welcomed it, but criticized a lack of concrete policy proposals to help bring about the shift. "It is frustrating that the government doesn't have the nerve to commit to formal targets for renewable energy and energy efficiency," says Alex Evans, a research fellow at the Institute for Public Policy Research think tank. Economists say the move will increase energy costs to the British consumer because of the expense of new technology. The government says it would cost between 0.5 and 2 percent of the GDP in 2050 to achieve the 60 percent emissions goal.

For Prime Minister Tony Blair, however, the issue is bigger: Global warming caused by fossil fuels, he argues, is part of a cycle of degradation, poverty, and bitterness that makes the world a less secure place. Tackling climate change is as important as tackling terrorism, he says, in an implicit challenge to the skeptical United States to get serious about cutting greenhouse gases. "There can be no lasting peace while there is appalling injustice and poverty," Mr. Blair said in unveiling the initiative earlier this spring. The same Kyoto pact which the US said went too far did not go far enough, Blair insisted, as he bemoaned the foot-dragging, "especially in some of the world's most powerful nations."

Energy diversity can also help Britain and the US cut dependency on foreign hydrocarbon supplies - an argument that has particular resonance at a time when the Iraq crisis has reminded Americans how reliant they are on Middle East energy resources. Britain, now a net exporter of oil and gas from the North Sea, is expected to become a net importer of gas from 2005 and of oil from 2010. "Currently the UK does only 3 percent of power generation from renewables, but we are obviously looking to increase that substantially," a government spokesman said. Though Britain has some of the biggest tides in the world, underwater wave and tidal power technology is still in its early stages. Solar power looks expensive and is also difficult to store. Hydroelectric power has little room for growth because of public opposition to new dams. Which leaves wind power. Some 1,000 turbines provide enough electricity to power 400,000 homes in Britain, one of Europe's windiest countries.

While residents of Swaffham, about 100 miles northeast of London, seem ambivalent toward the whup-whopping rotors within their earshot, critics of wind power nationwide are growing increasingly bitter, campaigning against wind farms as a blight on the countryside that will dim its traditional appeal to tourists. John Stoneman, head of the Save our Skyline lobby group, adds that the wind is an unreliable source which "has to blow at certain speeds to get [the blades] running. Then anything over 45 miles per hour and you have to shut them down because they become unstable." Alan Raymant, head of renewable energy at Powergen, a big energy supplier, says that to hit government targets, wind farm output would have to

increase 16-fold over the next seven years. That's a lot of turbines. "We don't believe you can get to those targets solely on wind," says Mr. Raymant. "Most people accept the benefits of renewable energy in a broad sense, but they don't want wind farms anywhere near their back garden." Offshore construction is increasingly being viewed as a solution, and several developments are already under way, he says, "but it is more expensive, more complex, and you have to bring the cables back to shore, which is more costly."

49) STEEL CRISIS HELPS BRITAIN BEAT TARGET ON GREENHOUSE GAS

Independent

April 8, 2003

Internet: <http://news.independent.co.uk/uk/environment/story.jsp?story=395095>

Emissions of the main greenhouse gas by British companies fell by 13.5 million tons, almost three times further than the Government's target last year. But the reductions in carbon dioxide output were principally due to falling steel production as Corus – formerly British Steel – struggled with "severe operational difficulties", ministers admitted. The Anglo-Dutch company lost £458m last year and intends to close down some of its UK steel plants. Metal manufacturing is one of the most energy-intensive industries, using thousands of times more energy than many other sectors.

Climate change itself is also partly responsible for the reduction, noted Michael Meacher, the Environment minister: "As the weather gets warmer overall, energy use [for heating] decreases, which makes it easier to meet carbon dioxide output targets." The reductions mean that Britain is far ahead of its schedule to cut carbon dioxide emissions under the Kyoto Protocol, under which industrialised countries aim to slow the warming of the world caused by rising greenhouse gas levels in the atmosphere. The Protocol, agreed in 1997, is a key element in cutting greenhouse emissions by industrialised countries – but the US, which produces 25 per cent of the world's carbon dioxide emissions, withdrew from it in early 2001. So far, 100 other countries have signed up for it, including all of the European Union and Japan.

Mr Meacher said: "To meet the 12.5 per cent reduction that is legally binding on us under the Kyoto agreement by 2010, we need a reduction of around 35 million tons of carbon dioxide. On this track we're going to exceed it; at this rate we will be on target for a 23 per cent reduction, which is probably better than any other country in the world, although probably equal with Germany." Even if Corus is removed from the statistics, the remaining companies cut their CO₂ output by 5.2 million tons, beating their targets by nearly 1 million tons, said Mr Meacher. "Those are all real gains in energy efficiency."

As part of the scheme, in 2000 the Government signed 10-year "climate change agreements" with 44 sectors representing more than 5,000 companies operating more than 12,000 facilities. These include energy-intensive manufacturers such as steel, aluminium, cement, chemicals, and producers of paper and food and drink. But environmental groups were wary of taking the figures at face value yesterday. "We aren't sure that the Government is really getting value for money from the climate change agreements," said Roger Higman, a climate campaigner at Friends of the Earth. "It's impossible to know with the smaller sectors whether they could have made these improvements anyway."

Mr Meacher insisted that the climate change levy – a charge levelled on business consumers according to how much greenhouse gases their energy sources used – was effective and had collected more than £1bn last year. Of 12,000 individual sites covered by agreements, 10,500 (87.5 per cent) met targets and have had their climate change levy discounts renewed. Around 12 per cent of sites either did not submit data, dropped out or failed to meet targets and did not have agreements renewed. Friends of the Earth said that the levy was a more effective way of making businesses cut their polluting energy use. "Taxing the emissions and letting the businesses work it out means the Government doesn't have to know what their plans are," said Mr Higman. A number of the companies which exceeded their emissions targets have "banked" the savings in carbon dioxide, allowing them to emit more carbon dioxide than would be their target if future growth requires it.

50) TWO-YEAR GREAT LAKES STUDY CALLS FOR LOWER EMISSIONS

The Detroit News

April 8, 2003

Internet: <http://www.detnews.com/2003/business/0304/08/business-131736.htm>

SOUTHFIELD -- The Big Three automakers and power companies indirectly emerged as leading culprits in the causes behind projected temperature spikes in the Great Lakes region over the coming century, according to a two-year study released Tuesday. The report said that winter temperatures in the region could spike by up to 16 degrees Fahrenheit in the summer and 14 degrees in the winter by the end of the century. "In the next 100 years, we will have the same amount of warming as seen since the last Ice Age -- 100,000 years ago," George Kling, a biology professor at the University of Michigan and the lead author of the report, said at a news conference in this Detroit suburb.

While the finding linked auto and utility emissions as leading contributors to the warming trend, auto and power companies say they are aggressively moving ahead with fuel efficient hybrid vehicles and clean fuel technology. The Union of Concerned Scientists, in conjunction with the Ecological Society of America, put forward three broad recommendations: Reduce emissions, minimize the impact of the emissions and anticipation and plan for the change. Failure to follow through on these recommendation will be tantamount to "three strikes and you're out," said Kling.

The estimates of temperature rises were based on a business-as-usual model that assumes high emission rates and continued dependence on fossil fuels. Even at reduced emissions levels, temperatures will climb over the coming decades, resulting in flooding, droughts and lower lake levels. The report also said that the region's ecological balance and makeup could change, bringing with it the introduction of nonnative species of fish and wildlife at the expense of the indigenous population. The report notes that changing weather patterns will, by the century's end, mean that Michigan summers would resemble those currently in Arkansas and summer in Illinois would be like that of east Texas -- hot and stiflingly humid.

Of the total heat-trapping gasses produced in the Great Lakes region, transportation accounts for 23 percent, topped only by utilities at 30 percent. Putting the transportation emissions figure into broader, national perspective, studies indicate that automobiles in the United States produce 1.5 billion tons of carbon dioxide equivalent per year. Alone, that figure is higher than the total emissions from any single country, save for China, Japan, Russia and the United States, says David Friedman, a senior engineer at the Union of Concerned Scientists Clean Vehicles program.

Michigan, by virtue of being home to the Big Three auto manufacturers, can play a lead role in the efforts to curb such emissions, said Friedman. But Ford Motor Co., General Motors Corp. and DaimlerChrysler AG will have to step up to the plate to "assume their responsibility" in pushing forward with fuel cell and hybrid vehicle technology, he said. Consumers who want fuel efficient cars have a wide choice of compact and medium sized sedans. Those needing larger vehicles like minivans and SUVs have fewer options, Friedman said.

Car companies say they are working to introduce more fuel efficient vehicles. Ford will begin selling its Escape Hybrid SUV by the end of the year. Company spokeswoman Angela Coletti says it will be the first "no compromise hybrid SUV" to be introduced to the market. "Hybrid vehicles are the heart of our plan for the future," said General Motors spokesman Mike Morrissey, noting that up until 2000, hybrid vehicles "had limited appeal because customers were forced to chose between fuel economy and functionality." The company is planning on introducing a part hybrid Chevrolet Silverado in 2004 that will boost fuel efficiency for the V-8 truck by 10-15 percent. The following year, it will bring out a hybrid Saturn Vue. In all, it plans hybrid engines for 11 of its most popular models.

DaimlerChrysler is gearing up for a similar offering in a "mild hybrid" Dodge Ram pickup that incorporates an electric motor and a diesel engine. This combination should boost efficiency by up to 15 percent. All three companies note that the main impediment to the hybrid program has been consumer receptiveness.

"We have to make sure that we have something that's a compelling business plan," said DaimlerChrysler spokesman Colin Quinnell, noting that sales of hybrid vehicles so far have accounted for very little of overall car sales. Stumbling blocks for new technology such as hydrogen cells for cars are essentially developing an adequate infrastructure for the production, distribution and storage of the energy.

These efforts are being headed by companies like General Electric, which is a founding partner in a 10-year, \$250 million Stanford University study to identify commercially viable technologies fostering the development of a global energy system that produces lower greenhouse gas emissions. The projects main areas of research are: advanced transportation, carbon sequestration, capture and storage, and energy infrastructure. The report released Tuesday calls for emissions-curbing legislation such as the Clean Smokestacks Act that was introduced this year in Congress.

That bill aims at reducing power plant emissions and, if implemented, would cut carbon dioxide emissions by 25 percent, bringing them in line with 1990 levels. The study's author, Kling, and his colleagues from various Midwestern and Canadian universities, said that other measures that must be introduced include emissions caps and trading, improving soil management on farmlands and limiting urban sprawl. "The cost of inaction is far greater than the cost of action," Kling said.

See Also:

Union of Concerned Scientists, <http://www.ucsusa.org>

51) RENEWABLE ENERGY POLICY NEED OF THE HOUR'

Financial Express

April 7, 2003

Internet: http://www.financialexpress.com/fe_full_story.php?content_id=31765

After the IT revolution that has taken India to the forefront in the global arena, it is now the turn of environmental technologies (ET), especially the renewable energy (RE) sector, to take India ahead of others in the international market. The country has all the necessary endowments like technical resources, skilled manpower and financial capability with several institutions ready to fund RE projects to achieve this goal, says Mr Rakesh Bakshi, managing director of Vestas RRB India Ltd. "But what we need very badly is a national, uniform policy that will push the sector forward in the right direction," he told.

"This need has been recognised by the Central government and the Prime Minister. Spadeworks have already been completed and a draft policy is ready. But it is being held up in the corridors of power in inter-ministerial and inter-departmental 'deliberations'," he said. Prime Minister Atal Bihari Vajpayee had announced in July 2000 that by 2012 India will have RE capacity of 10,000 MW with the major share from wind. The plan was to add 1,000 MW every year. "But the way things are moving with a little over 200 MW annual capacity addition we are no where near that target," he said. "India has an identified potential of 45,000 MW of wind power. We have to make RE application a national movement and national priority. Investment in RE will spur job growth in rural areas," Mr Bakshi said.

The private sector has made almost 95 per cent of the investment of about Rs 8,000 crore in wind power. It is their rightful demand to get a uniform, national policy, he said adding that the industry is not seeking any concessions but a policy to grow. On the issue of level playing field, Mr Bakshi said "for permitting market forces to enter and for allowing level playing field we need a minimum threshold capacity of 10,000 MW. We need numbers. With just over 1,700 MW nobody can speak of level playing field. Set the trajectory right for the industry to grow then it will create its own competitiveness," Mr Bakshi said.

52) EU CARBON TRADE MARKET SEEN WORTH BILLIONS OF EUROS

Planet Ark

April 7, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/20390/story.htm>

LONDON - The European Union carbon emissions trading market could be worth as much as 1.8 billion euros a year by 2012 as countries drive to cut their greenhouse gas emissions, a report said. The EU will launch the world's first international greenhouse gas trading scheme in 2005 as part of efforts to fight global warming. The scheme will cap the amount of carbon dioxide (CO₂) that big factories and power stations can emit from 2005 and allow them to trade emissions rights with other firms in the 15-nation bloc. "The overall costs of emission reduction will come down substantially when companies are provided with the opportunity to trade allowances, instead of having to rely solely on in-house reduction options," said Rolf de Vos, editor of the report.

Emissions trading is key to the EU's drive to cut greenhouse gases to eight percent below 1990 levels by 2012, required under the United Nations' Kyoto Protocol on global warming. The report, "Corporate Carbon Strategies Outlook to 2012" published by Reuters Business Insight, bases its estimate of the annual value of the market on CO₂ prices of around five euros a tonne in 2005, rising to more than 20 euros a tonne in 2012. It estimates the emissions market could be as large as 90 million tonnes a year. Prices and volumes could be higher if early links are established by the Japanese and Canadian carbon trading markets and if a carbon derivatives market is established, said the reports.

However, it warns prices and volumes could be lower if companies invest mainly in in-house pollution reduction rather than in emissions trading. Some trading has already taken place on a Europe-wide level. In February, Shell (RD.AS) (SHELL) and Dutch firm Nuon carried out the first forward trade under the EU scheme. Both firms have plants which will be subject to emissions caps.

53) REPORT FINDS NSW, VIC BIGGEST GREENHOUSE GAS POLLUTERS

ABC News

April 6, 2003

Internet: http://www.abc.net.au/science/news/scitech/SciTechRepublish_825850.htm

New South Wales and Victoria are the country's biggest greenhouse gas polluters, according to a report released today. The study by Dr Mark Diesendorf, and commissioned by the World Wide Fund for Nature, finds that coal-fired power stations produce a third of the nation's greenhouse emissions. Most are located in the two south-eastern states.

Dr Diesendorf says government incentives could help reduce emission levels. "With the political will and the will of the electricity generators it would be possible to reduce greenhouse gas emissions quite significantly from these power stations." "As far as the generators go, they can burn more natural gas and crop residues and they can invest more in wind power, which some of them are actually doing." Dr Diesendorf says coal is a dying industry and by far the nation's worst offender on global warming. "The coal industry's losing thousands of jobs all the time as a result of automation and falling prices." "It's quite clear now that there is really no employment future in coal or in coal-fired electricity." "At the same time, thousands of new jobs are being created overseas in new industries like wind power," Dr Diesendorf said.

54) GLOBAL WARMING COULD TRIGGER MORE GLOBAL WARMING – VIA THE SEA

Eddie weekly summaries

April 4, 2003

Internet: http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/6846.cfm

US scientists have identified a link between methane eruptions from the sea floor and climate change. Warmer waters could trigger the release of deep sea methane, which could potentially escape into the atmosphere, adding to global warming. Scientists at the Woods Hole Oceanographic Institution (WHOI) have discovered historical evidence suggesting methane gas erupted from the seabed during rapid climate warming. In a study published in the latest issue of *Science*, Kai-Uwe Hinrichs and colleagues link the behaviour of the methane reservoirs to the global carbon cycle, an indicator of global warming and cooling. Fossils from methane-consuming bacteria found in Californian sediments deposited during the last glacial period, 70,000 to 12,000 years ago, suggest that large amounts of methane were repeatedly released from the seafloor during warmer weather.

Methane hydrate reservoirs under the seabed have been recommended as a potential source of energy (see related story). Current estimates suggest there are about 10,000 billion tonnes of methane stored beneath the ocean and on continents. Global warming could increase bottom water temperatures that would then trigger the release of methane hydrate into shallow waters. If even a small portion of the stored methane were to escape into the atmosphere, the resulting greenhouse warming would be catastrophic, warns the team. “We have a very poor understanding of the biogeochemical mechanisms that control production, destruction, and accumulation of methane in sediments underlying the ocean,” says Hinrichs. “We need to understand the big picture of what drives methane and the carbon cycle and the actual impact of methane emissions from hydrates on climate.”

EDITORIALS

55) METHANE AND CLIMATE CHANGE

The Economist
April 17, 2003

Internet: http://www.economist.com/science/displayStory.cfm?story_id=1714858

RESEARCHERS have known for a long time that a mixture of water and a gas such as methane can, in the right circumstances, form an ice-like substance called a clathrate, or gas hydrate, at temperatures above normal freezing point. Ice has an open molecular structure (this is why water, unlike most liquids, expands when it freezes, and thus bursts pipes in the winter). Add a bit of pressure and that openness will accommodate gas molecules. These, in turn, lend support to ice crystals that would otherwise melt. Pressure is one of the things that the bottom of the sea is famous for. So, if you add a source of methane, conditions there are often ideal for the formation of clathrates. But clathrates are hard to study. Once dredged up, they quickly melt, and the gas is released. This is awkward, for they may hold the key to the climatic shifts that took place at the end of the last ice age. And this may, in turn, illuminate the way that the climate works today.

THE ENVIRONMENT

James Kennett and Mark Maslin outline their research. See also the joint meeting of the American Geological Union, the European Geological Society and the European Union of Geosciences. The discussion on clathrates and the end of the ice age was one of the topics at a joint meeting of the American Geological Union, the European Geological Society and the European Union of Geosciences which has just been held in Nice. It revolves around the cause of a large release of methane into the atmosphere at the end of the last ice age. This is known to have happened because it has left traces in air-bubbles trapped in ancient ice. Methane is a greenhouse gas—and a far more powerful one than carbon dioxide. It is reasonable to think that a big methane release and the end of an ice age might be more than coincidental. Where this methane came from matters because, at the moment, something between 2 trillion and 8 trillion tonnes of methane is thought to be locked up in under-sea clathrates. If it suddenly “burped” up, the Earth could be in for a torrid time.

OCEANIC GAS PAINS

There are two schools of thought about the origins of the methane released at the end of the ice age. One, championed by James Kennett, a paleo-oceanographer from the University of California, Santa Barbara, is that it was indeed released from clathrates. The argument goes like this. Suppose the oceans warm up a bit, as they regularly do as part of natural climate cycles. A significant amount of methane hydrate could suddenly find itself outside its stability zone and thus separate into water molecules and methane gas. The gas would soon find its way into the atmosphere, where it would add to the greenhouse effect and cause the temperature to rise. That, in turn, would cause further methane release. In other words, there would be positive feedback that could end up dumping a lot of methane into the atmosphere. On this view of things, the methane at the bottom of the ocean is something to worry about.

It is a neat idea. However, there is an equally persuasive argument that runs counter to it. This is that a warming atmosphere will melt ice at the poles. That will raise the sea level, increasing the pressure at the bottom and thus stabilising clathrates there—in other words, there will be negative feedback. But if that is true, then the methane spike at the end of the ice age must have been caused by something else. Mark Maslin of the Environmental Change Research Centre at University College, London, believes that the spike was caused mainly by emissions from tropical wetlands and peat bogs that formed as the ice retreated. Since an increase in peat coverage is not on the list of environmental changes going on at the moment, another spike is unlikely to come from that quarter. Dr Maslin, moreover, thinks he can prove he is right—or, at least, that he can show that the methane spike was not caused principally by the oceans burping. This is because methane from clathrates and methane from peat are slightly different.

A molecule of methane consists of four hydrogen atoms and one carbon atom. Carbon comes in several isotopic varieties, with different weights. Most of it is an isotope known as carbon-12 (^{12}C), but there is always a smattering of a heavier isotope, ^{13}C , mixed in. Because ^{13}C is heavier, organisms tend to absorb it less readily than they do ^{12}C . This means that carbon which comes from a plant, or a swamp-dwelling bacterium that is digesting that plant, will have less ^{13}C in it than did the carbon in the atmosphere from which the plant drew its sustenance. However, methane from undersea hydrates has an even bigger ^{13}C deficit than that from surface bacteria. This is because it has been generated by bugs called archaeobacteria. Since this “deep biosphere” is such an inhospitable environment, these archaeobacteria need to be even more discriminating in their choice of carbon isotopes than organisms at the surface. So looking at the amount of ^{13}C in bubbles formed at the end of the ice age should help to resolve the issue of where the methane came from.

THE WOODS AND THE TREES

Unfortunately, things are not quite that straightforward. For the end of the ice age also saw a vast expansion in the amount of vegetation. Dr Maslin's computer models of the expansion of life on earth as the glaciers receded suggest that about a trillion tonnes of extra carbon was sucked out of the atmosphere to help to manufacture all those extra leaves, stalks and trunks. Because of plants' distaste for ^{13}C , this would slightly increase the concentration of that variety of carbon left in the atmosphere. The same air bubbles which show all that extra methane at the end of the last ice age do indeed show an increase in the ^{13}C concentration. But it is too small by half. On the basis of that increase alone, an estimate of only 500 billion tonnes of extra carbon going into plants would be much closer to the mark.

Dr Maslin now thinks his mistake was not to include methane escaping from hydrates. A significant release of hydrate methane, low in ^{13}C , would counteract the increase in ^{13}C concentration caused by the greening of the world. In Dr Maslin's carbon budget, such a release “hid” a lot of the world's new forests from view. One up, it would appear, to Dr Kennett. However, when the calculation is done in detail, the amount of hydrate-derived methane needed to balance the isotopic equations is only 100 billion tonnes. That is far less than the actual increase of methane in the atmosphere in the period in question. The rest, Dr Maslin concludes, cannot have come from hydrates. Instead, it must have been produced by swamps, marshes and bogs. Perhaps, therefore, the negative feedback model is dominant. But the debate is not over yet. Dr Kennett, perfectly reasonably, asks where the geological evidence is for all those extra swamps. On the basis

of Dr Maslin's analysis, though, there is reason to hope that the oceans will not burp too loudly in the near future.

56) ATMOSPHERIC PRESSURE

The Economist

April 17, 2003

Internet: <http://www.economist.com>

Why some environmental agreements work and others don't.

WHY did the Montreal Protocol succeed and the Kyoto Protocol fail? Both were environmental treaties negotiated over perceived threats to the atmosphere. In Montreal, the threat came mainly from the harm that chlorofluorocarbons (CFCs) do to the ozone layer; in Kyoto, from gases such as carbon dioxide that many scientists say are changing the climate. Both treaties thus tried to tackle problems that potentially affect every country, and are caused by activities that occur in every country. Both were negotiated against a background of scientific uncertainty. The science of ozone depletion was uncertain when the Montreal Protocol was negotiated in 1987; the uncertainties surrounding the science of climate change are huge.

However, the Montreal Protocol seems to have been a success. Only a handful of countries have not signed (they include Afghanistan and Iraq, which have had other preoccupations). The build-up of ozone-depleting chemicals in the atmosphere peaked in 1994 and is now falling. The ozone layer is now on track to recover, and the concentration of ozone in the stratosphere should be back to its pre-1980 level by mid-century.

The Kyoto treaty, though consciously modelled on Montreal, has been a shambles. It has been ratified by almost 100 countries—but mainly those for which the treaty specifies no ceiling on emissions of carbon dioxide. By contrast, the world's biggest emitter of the gas, the United States, has refused to sign—not surprisingly, given that doing so would now require a reduction in emissions of 30-35% from its business-as-usual level by 2008-12. No government could have made such a promise. The world output of carbon dioxide shows every sign of busting the Kyoto targets and continuing to do so for some time to come.

WHAT'S IN IT FOR US?

A new book by Scott Barrett, professor of environmental economics at Johns Hopkins University, argues that the different fortunes of these two treaties shed light on why some international agreements work and others fail. Such treaties, he argues, work only if they are self-enforcing. Every country wants to avoid paying to protect the environment. But each also recognises that, if every country took this approach, the overall result would be worse. So each country—in a successful treaty—prefers to bridle its behaviour than to accept the consequences if everyone goes it alone. There are many more environmental treaties than ever before: only four of the 225 currently in force were adopted by 1945. So it is important to make them work.

Because a treaty is made between sovereign nations, it needs to include incentives to persuade countries to alter their behaviour. These take various forms. Mr Barrett points to one of the oldest environmental agreements, the North Pacific Fur Seal Treaty, as an example of how to get it right. The treaty, among the four main seal-hunting countries, was introduced in 1911 and reversed a rapid decline in the population of fur seals caused by over-hunting. It did so by banning hunting at sea, where they were common property and therefore over-exploited: seals could then be killed only on the territory of individual governments, which acquired an interest in protecting them. That created an overall gain (more seals), which could be distributed to leave all countries better off, and therefore with an incentive to stick to their agreement.

Such successes are hard to replicate. If the gains from co-operation are great, there is a big incentive to be a free rider: to take the gains without paying the cost. But in that situation, with large gains, punishing free riders is harder, because the co-operating countries usually suffer too. With the Montreal Protocol, as with the fur-seal treaty, participants have largely complied. Why? Partly, because it contained an enforcement mechanism, unlike most environmental treaties. The penalties included trade sanctions against products

containing or (more controversially) made by using CFCs. More important, the costs of implementing the protocol were relatively low and the benefits from complying—such as the avoidance of skin cancers and cataracts—were huge. To secure these benefits, rich countries needed the co-operation of many poorer countries. So the treaty included a fund to help to pay for the cost of switching to CFC-free technologies. Such side-payments help to spread the benefits and reduce the costs.

And Kyoto? Here, argues Mr Barrett, the balance between costs and benefits is much less promising. Some countries may gain from climate change: agriculture in Canada and Russia (two big producers of fossil fuels) may benefit, even if farming in tropical countries suffers. For the United States, the benefits of reducing carbon-dioxide emissions would be much smaller than the harm done by doubling the concentration of the gas in the atmosphere. The harsh truth, says Mr Barrett, “is that ozone depletion may be the more serious environmental problem...Ozone depletion kills people. Current studies do not show climate change to be as deadly.” And the costs of climate mitigation are far higher than those of giving up CFCs. “The economics of ozone and climate policy are really very different.”

The alternative, he suggests, might be a technology-based approach, mandating standards that move the world away from dependence on carbon-based fuels. Such a policy would start from asking what kind of behaviour could be enforced, rather than, like Kyoto, incorporating enforcement as an afterthought. Mr Barrett may be right. But more probably, there can be no workable treaty on climate change, at least with the present state of knowledge. Unless gains are clearly seen to exceed costs, the world will choose to adapt, not agree.

57) CONFERENCE ON CLIMATE CHANGE AND TOURISM HELD SUCCESSFULLY IN DJERBA MADRID

World Tourism Organization

April 15, 2003

Internet: <http://www.world-tourism.org/sustainable/climate/press.htm>

The First International Conference on Climate Change and Tourism was held successfully in Djerba, Tunisia, from 9 to 11 April 2003. More than 150 participants from 42 countries and six international organizations gathered at this event that was convened by the World Tourism Organization (WTO), upon the kind invitation of the Government of Tunisia.

The 26 presentations delivered by experts of UN, public and private sector, NGO and academic institutions presented a wealth of knowledge on the specific interrelations of climate change and tourism. The Conference especially focused on climate change related impacts on water resources, at coastal and island destinations, as well as mountain areas. A specific session was also dedicated to policy and mitigation issues. As a mayor result of the Conference, the Djerba Declaration on Climate Change and Tourism was prepared through consultation with the participants. The Declaration recognizes that climate change impacts are already occurring at some tourism destinations and the effects are expected to spread in the future and, consequently, there is a need for adaptation and mitigation measures, among others. It includes a series of recommendations for international organizations, government and private sector agencies for collaborative actions at the international, national and local destination levels.

"The Djerba Conference fulfilled perfectly its main purposes: bringing together officials, researchers, experts and operators involved in the two major fields of climate change and tourism, raising awareness on the specific interrelations, and proposing some areas of cooperation for further actions." - said Mr. Francesco Frangialli, WTO Secretary-General. "WTO will follow up activities at various levels; among the first steps, we plan to create a clearinghouse mechanism to disseminate research results and know-how on this subject internationally"-he added.

See Also:

World Tourism Organization: <http://www.world-tourism.org/sustainable/climate/brochure.htm>

58) A U.S. PLAN FOR GREENHOUSE GASES, WITHOUT THE U.S.

New York Times

April 11, 2003

Internet: <http://www.iht.com/articles/92887.html>

LONDON During negotiations over the Kyoto Protocol, the United States preached the importance of market solutions to reduce greenhouse gas emissions. Few countries listened. Now, with the Americans no longer at the table, the former free-market opposition has taken over the pulpit. In December, Canada became the 99th nation to ratify the plan to reduce greenhouse gases. And the heart of the treaty is an emissions-trading plan that closely resembles what the United States originally proposed.

"When Bush pulled out in the cavalier way he did, he galvanized everyone around the world to make it work," said David Doniger, who was a Kyoto treaty negotiator under President Bill Clinton and is now policy director of the Climate Center at the Natural Resources Defense Council. "The system is made in America, and the Americans aren't part of it." Other countries see opportunity in the U.S. retreat. "Now that the Americans are out, Europe can dominate the emissions trading market," said Steve Drummond, managing director of a greenhouse gas brokerage in London called CO2e.com. "It entitles the Europeans to write the rules for global trading." And Europe has indeed been busy writing. Britain introduced the world's first organized trading system two years ago. Denmark has begun a smaller plan, and in December the European Union issued plans to begin full-scale trading in 2005. With the Kyoto accord shaping a multibillion-dollar commodities exchange, companies are already trading emissions reductions, which are expected to become increasingly valuable as other companies enter the market.

The idea behind what are called cap-and-trade arrangements is to issue a limited number of pollution permits and then allow companies to buy and sell them. Whoever can reduce emissions cheaply can sell unused permits to others, making creative ideas for pollution reduction a profit opportunity. As overall reductions are realized, governments can slowly reduce the number of outstanding permits to keep both the price of permits and interest in further reductions high. It is hard to quantify the benefit or loss to U.S. businesses for not being part of the global market. Certainly, heavy polluters are better off because they do not have to buy pollution permits or invest in new technology. Companies that could achieve low-cost reductions, however, cannot realize the profits by making those reductions, and the market infrastructure of brokers and trading experience is developing abroad.

U.S. multinational corporations are also forced to put in place two ways of accounting for carbon dioxide emissions, one for emissions inside the United States and one for emissions in nations that signed on to Kyoto. And with various proposals before Congress to regulate greenhouse gas emissions, companies contemplating equipment upgrades in their U.S. plants are unsure what kind of regulatory environment they face. So far, regulation is strictly self-imposed. Trading at the Chicago Climate Exchange, a market based on voluntary compliance, is set to begin in June. The exchange's chairman and chief executive, Richard Sandor, said that even voluntary markets could allow the United States to be competitive internationally. "This will squarely put the U.S. in a very good position to lead efforts in developing market-based solutions to environmental problems," Sandor said. "Carbon is only the beginning."

59) DECLARE WAR ON GLOBAL WARMING by Michael Oppenheimer

International Herald Tribune

April 8, 2003

Internet: <http://www.iht.com/articles/92395.html>

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PRINCETON, New Jersey With his rejection of the Kyoto Protocol on climate change in 2001, President George W. Bush inadvertently caused an upheaval in international relations. Environmental issues had been long regarded as the poor stepchild of the foreign policy arena. But as recent remarks by Prime Minister Tony Blair of Britain and the United Nations arms inspector Hans Blix made clear, the global warming issue, and particularly America's handling of it, has become a central geopolitical concern.

Speaking at a delicate moment in the Iraq crisis, Blair contrasted the current situation with "issues that affect us over time. They are just as devastating in their potential impact" as weapons of mass destruction and terrorism, "some more so, but they require reflection and strategy geared to the long-term, often straddling many years and many governments. Within this category are the issues of global poverty, relations between the Muslim world and the West, environmental degradation, most particularly climate change."

Challenging U.S. claims that the Kyoto Protocol is too costly, Blair declared that "it is clear Kyoto is not radical enough" and committed Britain to cutting its emissions of global warming gases by 60 percent by 2050. This goes far beyond the Kyoto Protocol's 5 percent reduction mandated for developed countries by 2012. Recently, Blix chimed in by commenting, "I'm more worried about global warming than I am about any major military conflict."

Blair's speech served the obvious need to buttress his standing with a British public that is disturbed over his unwavering support of America's Iraq policy. By opposing the United States and laying claim to leadership of the dozens of countries that are working to bring the Kyoto Protocol into force, Blair clearly intended to counteract the charge that he is subservient to Bush. That an environmental issue could be deployed in this way is itself notable. Blair's remarks serve a broader purpose, however. They are a reminder of how severely the U.S. rejection of the Kyoto Protocol and other accords has distorted its relations with erstwhile allies, preparing the ground for rancor over Iraq by depleting a decades-old stock of trans-Atlantic goodwill.

Blair's statement that "the world is in danger of polarizing around two different agendas" serves as a warning to Bush that his emphasis on near-term security concerns attends to just half the equation of human well-being. Global stability depends equally on the United States stepping up to the plate on global warming and other long-term issues. For environmentalists who have pressed the foreign policy establishment for 20 years to take their concerns seriously, this welcome juxtaposition of global environment and international security brings along a touch of irony. In 1989, Prime Minister Margaret Thatcher of Britain underwent a conversion experience on the environment, and called for an international treaty on climate change. Three years later, her leadership was an important factor in convincing a reluctant President George H.W. Bush to sign the UN Framework Convention on Climate Change, the parent document of the Kyoto Protocol. The U.S. Senate ratified that agreement a few months later.

The Cold War had ended, and the environment seemed about to get its turn on the international agenda because matters considered weightier by the foreign policy establishment had been cleared off the table. To some, it was the "end of history" but unfortunately, not the beginning of continuing attention to global warming and related issues by high-level officials in the United States. One reason the Kyoto Protocol fell afoul of the U.S. government, and one reason the Bush administration fell afoul of Europe in its hamhanded rejection of the protocol, was a failure in Washington to understand the emerging importance of the climate issue to international relations now, as well as to global stability in the future.

The situation could worsen. The Kyoto Protocol appears likely to come into force this year if, as expected, Russia ratifies it. As Europe, Japan and others implement cuts in emissions, the question of how to treat the United States, should it continue to abstain, could point in nasty directions, such as trade sanctions on products like cars, airplanes and computers whose manufacture causes emissions of global warming gases. Earlier, sanctions would have been out of the question. If the current trans-Atlantic alienation persists, one cannot exclude the possibility that Europe eventually will turn to such an approach.

The threat of global warming, first raised in 1896, has outlived many foreign policy crises. Our failure to deal with it is starting to bear a bitter harvest not only in rising seas and intensified rainstorms, but also in disruption of long-standing alliances, and interference with other foreign policy objectives. It is well past

time for U.S. leaders to put the climate problem at the center of America's domestic and international agendas.