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GENERAL NEWS

1) TOHOKU USES NATURAL RESOURCES TO GENERATE CLEAN ENERGY

The Yomiuri Shimbun.

January 27, 2003

Internet: <http://www.yomiuri.co.jp/newse/20030127wo33.htm>

As public interest in global warming and other environmental problems grows, efforts to use natural energy are gaining momentum in the Tohoku region, with wind, snow and animal waste all being considered as energy sources. In Nikanomachi, Akita Prefecture, 15 90-meter-tall windmills stand on a gentle slope, together generating 24,750 kilowatts of electricity per hour--enough to meet the power demands of 15,000 households. According to Akio Asai, director of the wind power station, the area is a perfect place for wind power generation, as winds with an average velocity of 7.1 meters per second blow year round. The power is sold to utility companies and the business has been steadily expanding since the service started in December 2001.

Since the central government started offering subsidies in 1997 to promote wind power, an increasing number of companies have entered the wind power generation business. Windmills have been built in increasing numbers in the Tohoku region, mainly in Aomori, Akita and Iwate prefectures, where winds are strong and wind power generation is considered profitable. Even local governments in the region are entering the wind power business. The Tachikawamachi town government in Yamagata Prefecture now operates 10 power-generating windmills. The town initially erected three windmills as a tourist attraction, but in December 2001, the local government developed a plan for meeting the demands of the town's 7,000 residents with wind power alone. Thanks to the initiative, wind power is expected to account for 55 percent of the town's electricity demand in March.

Snow, which used to be a nuisance for people of the Tohoku region in winter, is now considered a boon.

The Yamatomachi town government in Fukushima Prefecture now uses the cold air generated by snow to refrigerate buckwheat. Farmers bring 300 tons of snow inside the town's warehouse in early March and send the cold air from the snow to a storage area using a fan. Using this method, the temperature of the storage area can be kept low year round. Buckwheat stored at normal temperatures becomes less palatable because amino acids, the key elements in the taste of buckwheat, are lost. The town produces 70 tons of buckwheat a year, of which 40 tons are stockpiled in the storage area and shipped out on demand. The theory that buckwheat's taste can be preserved by keeping it in cold storage has been substantiated through tasting and chemical analysis. Using snow to cool the storage area saves electricity and is friendly to the environment. The method is also used for storing rice and cherries.

The Hashimoto farm in Fujisawacho, Iwate Prefecture, has started biomass power generation by burning gas derived from the waste of its 5,500 pigs. The farm produces methane gas by fermenting 50 tons of pig waste a day, generating 200 kilowatts of electricity that is used to light pig sheds. Biomass generation is not new in Denmark and other European countries. In Japan, however, the technology is just catching on, mostly in small-scale efforts on Hokkaido farms. The Tohoku region, where dairy farming is popular, is paying increasing attention to biomass generation. In Kuzumakimachi, Iwate Prefecture, the local government is scheduled to complete its own biomass plant in March. Moves to transform wood chips discharged from timber plants into energy also are making progress. Sumitacho in the same prefecture, 90 percent of which is covered by forests, has installed a boiler in a town-operated nursery school that uses wood chip pellets as fuel. The pellets are 10 percent more expensive than kerosene, but town officials say pellet power generation results in the effective use of waste, emits fewer petroleum byproducts and is environmentally friendly.

Japan, which is poor in energy resources, has depended heavily on imported oil and other fossil fuels for its energy needs, and its massive consumption of such energy sources during its high growth period caused pollution problems in various parts of the country. The Tohoku region's nascent efforts to generate energy using its natural resources is an attempt to curb environmental pollution and contribute to preventing further global warming.

2) CLIMATE CHANGE TARGETS 'WILL BE MISSED'

The Independent

January 25, 2003

Internet: <http://news.independent.co.uk/uk/politics/story.jsp?story=372559>

The Government is likely to miss its targets on tackling climate change, according to the Prime Minister's advisers on the environment. A draft report says the Government will fail to cut carbon dioxide emissions by its target of 20 per cent by 2010 unless urgent action is taken. The Government has always insisted it will meet the target. The confidential

report, seen by The Independent, says the climate change programme will not work because the Government's figures are over-optimistic and do not take account of the increased use of coal by power stations. "On current projections, it is difficult to see how the Government's own CO2 target can be met with current policies," says the report, which is due to be published next month.

The audit was compiled by Jonathon Porritt's Sustainable Development Commission, which was set up by Tony Blair and reports to him and John Prescott, the Deputy Prime Minister. "Our results suggest that both the Government's energy-related emissions baseline is likely to be too optimistic and the policies within the climate change programme will not realise all their projected emission reductions," the report says.

A dispute has broken out between government departments on the paper's conclusions, and how to deal with it when it is published. Some spin doctors believe the Government should admit they will not meet the key target before the report is published. Senior officials in the Department of the Environment privately blame the Department of Transport for the failure on CO2 emissions. They want tougher controls on car pollution, a major factor in global warming, to be introduced in the revised transport plan. The DTI will try to get the programme back on track with the impending energy White Paper, which will announce more support for renewable energy and announce no new nuclear power stations. The report predicts that the Government will meet the Kyoto climate change target, but is likely to miss its own more ambitious target of cutting emissions by 20 per cent by 2010 or the target to have 10 per cent of electricity produced from renewable energy sources by the same date.

3) PORTUGAL'S CLIMATE GAS BURDEN GROWS HEAVIER

Edie weekly summaries

January 24, 2002

Internet: http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/6567.cfm

Portugal faces an even tougher battle to contain ballooning greenhouse gas emissions than previously realised, a revised draft climate change plan issued by the government's environment institute shows. The plan contains few proposals to reverse the trend. Based on a recalculation of available data, the institute now forecasts that emissions could be 61% over 1990 levels by 2010. Portugal is committed under the Kyoto protocol to limit the increase to 27%. Even the best case forecast is for emissions 55% higher in 2010 than in 1990. An earlier draft of the plan issued in 2001 predicted a lower increase of 52%, reports Environment Daily.

A significant contributor to the more pessimistic forecast are recalculated predictions of transport emissions. The expected increase from this sector between 1990 and 2010 is now 150%, compared with 135% in the earlier plan. Emissions from energy production are forecast to rise by between 54% and 65%. The plan describes the new figures as "worrying" but proposes few solutions. The only significant current domestic measure to combat rising transport emissions is construction of three underground train networks. Plans by the previous centre-left government to raise taxes on petrol-driven vehicles were dropped last year by the new centre-right administration. However, junior environment minister Jose Eduardo Martins said last week that "a revision of fiscal instruments is necessary" to reduce transport emissions. The government has also promised that other as yet unspecified measures will be included before ministers give their final approval, scheduled in April. Environmental NGO Quercus says that such measures should include congestion charging for urban areas and a demand management programme to rein in electricity consumption.

4) GERMAN 2002 WIND POWER MARKET UP 22 PCT

Planet Ark

January 24, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/19548/story.htm>

COPENHAGEN - The number of installed wind turbines in Germany, the world largest wind power market, rose 22 percent in 2002, German wind power association Bundesverband Windenergie (BWE) said on its website this week. In total, Germany installed wind turbines generating 3,247 megawatts last year, up from 2,659 megawatts in 2001. Accumulated wind energy capacity in Germany totalled around 12,001 megawatts by the end of 2002. Germany is by far the largest wind power market ahead of the United States and Spain. Wind energy is a fast growing power sector worldwide as countries try to bring down greenhouse gas emissions, which scientists say cause global warming. Annual sales in the German wind energy sector reached 3.5 billion euros (\$3.75 billion) in 2002, the BWE said. German privately owned wind turbine maker Enercon had 34 percent of the market, up from 28.5 percent in 2001, data showed. The market share of Denmark's Vestas (VEST.CO) - the world's biggest wind turbine maker - fell to 17.8 percent, from 19.5 percent, while GE Wind Energy (GE.N) had a slice of 13.1 percent.

German-Danish Nordex' (NDXG.F) market share fell to 8.7 percent from 10.4 percent a year ago and Danish NEG Micon's (NEG.CO) share fell to 8.3 percent from 11.4 percent in 2001. BWE said last year's rise in installed wind turbines boosted the potential share of wind power in Germany's overall electricity consumption to 4.7 percent from three percent in 2001. Nuclear and coal-fired plants still make up the giant share of Germany's annual power production of roughly 550 terawatt hours.

5) CLIMATE CHANGE ERODES INUIT KNOWLEDGE, RESEARCHES SAY

Nunatsiaq

January 24, 2003

Internet: http://www.nunatsiaq.com/news/nunavik/30124_01.html

Climate change is eroding the role Inuit elders play in their communities because it makes their traditional knowledge unreliable, elders told researchers at a workshop on global warming last week in Kangiqsujuaq. The Jan. 15 and 16 workshop was the last in a series of community meetings on climate change that Laval University researchers have conducted across Canada's Arctic since the start of 2002. The meetings were funded under Environment Canada's Northern Ecosystem Initiative and organized in partnership with Inuit Tapiriit Kanatami and regional Inuit organizations. Their aim was to gather Inuit observations of both climate change in the Arctic and the impact of these changes on public health in Northern communities. The overall message from Kangiqsujuaq, said Chris Furgal, the senior public health researcher at Laval University who headed the project, was the same in Puvirnituq and Ivujivik as it was in Nain, Labrador and Tuktoyaktuk, NWT: the Arctic climate is changing and many unforeseen aspects of Inuit life are changing with it.

"Environmental change is changing the level of tradition in communities," Furgal said in an interview this week. "In Nunavik, as in other regions, elders have expressed concern. They said, 'Part of my role in the community is no longer important....' They can no longer provide the information about whether or not it's a good day or bad day for hunting, or provide weather forecasting and also passing the information on about how to survive on the land." Naalak Nappalak, an elder from Kangiqsujuaq who participated in the workshop, confirms climate change has affected his role as village counselor. There have always been fluctuations in the weather and temperature, he said, but today's changes are without precedent. Nappalak said he is less comfortable making weather forecasts when the environment is so unpredictable. "Before we knew by looking at the sky whether there would be storms or if it would be calm," Nappalak said. "Nowadays just when you think you know how the weather will be, they can change in an instant. It's this inconsistency that is most noticeable."

The weather is only the tip of the melting iceberg. Napaluuk and Inuit elders across the country reported many other environmental changes at the ITK workshops. Biting flies and robins have migrated North and are now regularly seen in Kuujuaq. Geese once flew close enough to Ivujivik for hunters to catch but now the birds' fall migration is too far east to hunt. Nappalak himself has noticed the land that was damp when he was younger is now dry. The sun is stronger and there are heat waves, he said. The water around his community, once clear and good to drink, has become muddy and undrinkable. Then there is the ice — the gateway to seal hunting. Every year, he said, it seems to form later in the winter and break earlier in the spring. "In my community right now, the sea should have been frozen by now, but we still have some open water — that's late," he said. "It can be dangerous for hunters because if you're not careful you are in danger." Furgal is working with the elders to connect the physical phenomena of climate change with its health and societal impacts. Some connections are direct and visible. Furgal and elders can clearly see the link between unpredictable storms and an increase in accidents and deaths. Changes in ice distribution and stability have led to more hunting accidents on poor ice.

But others, like the impact climate change has had on the traditional role of elders, are surprising. Some may not even be happening yet. For example, Furgal said, the appearance of new species in the region could lead to new animal-borne diseases in the area. "One of the concerns from the Nunavik side is in hares. There have been a couple incidences of a deadly disease known as tularemia. Now the range of those hares is very much controlled by environmental conditions," Furgal said. "There's a possibility of those hares travelling farther north as the climate warms and the disease could spread to an Arctic hare population. And for tularemia we know there's been a couple of [human] deaths along the north shore of Quebec in the past 10 years." Other indirect links include a potential increase in the rate of botulism as the weather warms and a decrease in the consumption of country foods as caribou and geese migration patterns change, Furgal said. The next step of the workshops, he said, is for governmental agencies to look at the Inuit observations and develop ways to adapt to the potential repercussions. Furgal and his team of researchers will soon produce a draft summary of the workshops, which they will present to all participants. After it is approved, it will be delivered to such organizations as Environment Canada.

6) MINISTER SAYS KYOTO WON'T KILL CANADA OIL PROJECTS

Planet Ark

January 24, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/19558/story.htm>

CALGARY, Alberta - Implementation of the Kyoto climate accord will not kill investment in Canada's burgeoning oil sands industry even though one project has been put on hold, the country's energy minister said. "Although Kyoto has some impact, it does not have an impact that will cause projects to be canceled," Herb Dhaliwal, minister of natural resources, told reporters. "In fact, if you look at the announcements, projects are going ahead and I'm confident that more will be announced." Before Canada ratified the international treaty on cutting greenhouse gas emissions late last year, the oil industry had complained that uncertainty of the costs threatened oil sands development. Canada's oil-laden sands are seen as its oil industry's future as it moves to boost production to meet a growing thirst in North America for secure oil supplies. But in December, Dhaliwal promised to limit the industry's costs, capping the amount it would have to pay for cutting carbon dioxide emissions at C\$15 a tonne and setting a maximum "emissions intensity" target of 15 percent below business-as-usual levels for 2010.

Last week, TrueNorth Energy, a unit of U.S. industrial giant Koch Industries, shelved a C\$3.5 billion (\$2.2 billion) northern Alberta oil sands project, blaming rising labor and material costs, jittery capital markets and uncertainty over Kyoto. However, Suncor Energy Inc. (SU.TO), the biggest single oil sands player, has said Kyoto's impact would not be "material" and said its spending would continue. "We predicted right from day one that the cost would be anywhere around 12 to 14 (Canadian cents per barrel of synthetic crude produced from the oil sands). Some of the industries have put it a little higher at 20 to 27 cents a barrel," Dhaliwal said after announcing Ottawa would kick C\$1.66 million into industry research on clean coal technology. "I think that's manageable and they'll be able to deal with that in their costs." He downplayed Kyoto's impact on TrueNorth's Fort Hills project, for which construction was slated to start this year. The firm was unable to find a partner to share the risk. "Of course, some of these projects, they're based on many issues, not just on Kyoto," he said.

7) RENEWED ATTACK ON BLAIR OVER ENERGY POLICY

Financial Times

January 24, 2003

Internet: <http://news.ft.com/servlet/ContentServer?pagename=FT.com/StoryFT/FullStory&c>

Tony Blair has come under renewed attack for failing to put long-term climate change objectives at the heart of the government's energy policy. The Institute of Public Policy Research will claim today that the government is "way off track" in meeting its goal of cutting carbon dioxide emissions by 20 per cent by 2010. Tackling climate change should be made the primary policy goal of next month's energy white paper, it says. Meanwhile, several climate experts have written to the prime minister expressing their fears that the white paper will neglect the international dimension of climate policy.

The signatories include Sir Tom Blundell, chairman of the Royal Commission on Environmental Pollution, and Sir John Houghton, the former chairman of the United Nations-appointed panel of climate change scientists. The letter urges Mr Blair to use the white paper to show international leadership on climate change policy. A "rare window of opportunity" will be provided by the start of discussions about a post-Kyoto climate change agreement later this year, it says. The white paper should address a policy framework known as "contraction and convergence", it says, under which developed countries would cut their emissions to the level of less developed countries. This approach was recommended by the 2000 Royal Commission's energy report, which called for a 60 per cent reduction in UK carbon dioxide emissions by 2050. The IPPR report says a target of cutting emissions by 60 per cent by 2050 could be achieved while ensuring security of supply and without compromising affordability. But it says that achieving the goal of a secure and affordable transition to a low-carbon economy would require "a revolution in political commitment".

The report assesses the UK's expected need for extra generating capacity in 2020 following the closure of many ageing nuclear stations and the likely closure of coal-fired stations following the implementation of expensive environmental regulations. It argues against the construction of more nuclear stations and recommends that the white paper be used to announce a target of 25 per cent of electricity from renewable sources by 2020.

8) ENVIRONMENTALLY FRIENDLY VEHICLE CONFAB KICKS OFF

The Japan Times

January 24, 2003

Internet: <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?nb20030124a6.htm>

The first International Meeting on Environmentally Friendly Vehicles opened Thursday in Tokyo as part of global efforts to develop greener vehicles and fight air pollution and global warming. Participants gathering for the two-day conference include representatives from the United States, China and the European Union as well as three international organizations. Major topics include how to harmonize regulations on emissions and fuel efficiency, proceed with technological development for common use, give users and automakers incentives through taxes and subsidies, and provide support for developing countries.

Promising EFV candidates include fuel-cell vehicles, next-generation hybrid vehicles, electric vehicles and super-clean diesel vehicles. Japan is hoping participants will be able to come up with concrete numerical targets on fuel efficiency and emission cuts for such vehicles. A senior government official, however, said reaching a consensus may be difficult as opinions vary among representatives. Participants include Japan, Canada, Australia, South Korea, Singapore and the Asian Development Bank. Vice transport minister Gotaro Yoshimura said in an opening address that the meeting provides a good opportunity for comprehensive discussions at a time when the world faces serious climate change and air pollution problems. The meeting was initially proposed at a gathering of transport ministers a year ago.

9) RABO INTERMEDIARY IN DUTCH GREENHOUSE GAS PROJECTS

Planet Ark

January 23, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/19530/story.htm>

AMSTERDAM - Dutch cooperative Rabobank said this week it had signed an agreement with the government to become a financial intermediary for projects aimed at reducing "greenhouse gas" emissions by 10 million tonnes. Over the next two years, Rabo will close contracts in developing countries on behalf of the Dutch government for sustainable energy projects. Rabo said it was the first private financial institution to strike such a deal with the Dutch Ministry for Housing and Environmental Affairs.

Under the 1997 Kyoto Protocol, the Dutch have undertaken to cut greenhouse gas emissions by six percent with half of the decrease to be realised outside the Netherlands. Rabo said it would use its international network to trace so-called Clean Development Mechanism (CDM) projects such as wind parks, biomass powered energy plants and solar energy projects in the developing countries. Buying emission reductions in these countries would not only be beneficial to the global environment but would also boost local technological know-how and economic developments, the bank said in a statement. No financial details of Rabo's agreement with the Dutch state were disclosed.

10) MONSOON RECORDS SHOW LINK WITH GLOBAL CLIMATE

Planet Ark

January 23, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/19540/story.htm>

LONDON - Indian monsoons are a world away from cold spells in the North Atlantic but scientists said yesterday a long-term link exists between the two which is a key to understanding global climate. Researchers in India and the United States studied sediment samples from the Arabian Sea to build up a detailed record of the patterns of the Asian monsoon during the Holocene, a period of about 11,000 years from the end of the last glacial period to the present. Their record shows that weak summer monsoons coincided with cold spells thousands of miles away in the North Atlantic. "The link between North Atlantic climate and the Asian monsoon is a persistent aspect of global climate," Anil Gupta, of the Institute of Technology in Kharagpur, India, said in a report in the science journal Nature.

Gupta and his colleagues took samples from the floor of the Arabian Sea because the sediment provides a consistent, continuous record of the Asian monsoon, which influences changes in the amount of microscopic organisms in the water. They identified seven different intervals of weak summer monsoon that are related to cold spells in the North Atlantic. "The significance of our results lies in demonstrating a pattern of persistent variability in the monsoon throughout the Holocene that may be linked with episodic warming/cooling of the North Atlantic," Gupta said. Rainer Zahn, of the University of Barcelona, said the study reveals both the changes in the strength of the monsoon and its impact on global climate. It is just one many factors that influence global climate, he added in a commentary in the journal. "Understanding monsoon history and past dynamics is necessary for improving our knowledge of the monsoon system and how it may respond to changing global conditions," he said.

11) AUSTRALIA TO RELEASE SOUTH OCEAN ROBOT PROBE

Planet Ark

January 23, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/19541/story.htm>

HOBART, Australia - Scientists will deploy 44 robotic floats in the roaring seas south of Australia over the next three years as part of a probe looking at future climate change, officials said yesterday. It will be the largest investment yet by Australian scientists in monitoring the engine room of global climate, the Southern Ocean's Antarctic circumpolar current, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) said in a statement. "We can for the first time observe what is happening beneath the surface of the Southern Ocean on a routine basis," said oceanographer Steve Rintoul, programme leader of the Cooperative Research Centre (CRC) programme. The waters between Australia and Antarctica are notorious for the strongest winds and largest waves on Earth, he said.

The floats will be deployed in a region that ships "tend to avoid," allowing scientists to observe "changes in the Southern Ocean affecting climate and marine life," he said. Rintoul told the Partnership for Observation of the Global Oceans conference the floats would be deployed to the edge of the Antarctic sea ice, starting in late 2003. The Australian effort joins programmes by the United States, Japan and some European nations to monitor circumpolar current and measure future climate change. The robot floats, costing A\$30,000 (\$18,000) each, drift with currents to sample the ocean to a depth of two kilometres (1.25 miles) every 10 days. Temperature and salinity profiles measured by the floats are relayed to land via satellite. Partners in Australia's CRC include the Australian Antarctic Division, University of Tasmania, CSIRO and the Bureau of Meteorology.

12) STRONG AIMS TO HELP CHINA BECOME LEADER ON ECOLOGY

Globe and Mail

January 22, 2003

Internet:

http://www.globeandmail.com/servlet/ArticleNews/PEstory/TGAM/20030122/USTRON/national/national/nationalTheNationHeadline_temp/3/3/24/

BEIJING -- When the elder statesman of global environmentalism finds an apartment in Beijing and makes an unexpected decision to commit most of his energy to Chinese projects, it's a sure sign that China is emerging as one of the world's great ecological challenges. Maurice Strong, the 73-year-old Canadian businessman who has played a crucial role in global environmental diplomacy for more than 30 years, has quietly shifted his main base of operations to the Chinese capital. It is a telling symbol of China's massive environmental crisis -- and of its potential to be a cutting-edge leader in solving those same problems.

Mr. Strong hit the world headlines this month when he was dispatched to Pyongyang as a special envoy for United Nations Secretary-General Kofi Annan in the North Korean nuclear crisis. But he had already shifted most of his work in recent months to East Asia where China is his top priority. His exact plans in China are still unclear, but they include UN projects, government lobbying, advising environmental businesses and efforts to fulfill China's ambitious promise that the 2008 Beijing Olympics will be the greenest in history.

"It is my deep conviction as to the critical importance of China in the global context that has motivated me to decide to devote most of my time and energies at this stage of my life to doing what I can to help and support it," Mr. Strong told a recent environmental conference in Beijing.

He listed a few of China's daunting problems: Its cities are among the most polluted in the world; 37 per cent of its land mass suffers from soil degradation and deforestation; it is heavily dependent on coal and other fossil fuels; its farmland is threatened by excessive use of pesticides and chemicals; and the impact of pollution is estimated to cost almost 10 per cent of its annual GDP. "How China deals with this challenge will be of immense, indeed decisive, importance to the entire world community and to its prospects of making the transition to a sustainable development pathway," Mr. Strong told the conference.

Foreign environmentalists say Mr. Strong's decision to focus on China is highly significant.

"He's always been at the cutting edge of things, and he feels that China could set an example for the rest of the world," said Earl Drake, a former Canadian ambassador to China who is now a project director at the China Council for International Co-operation on Environment and Development. "China will soon be the No. 2 economy in the world. That will put huge pressure on the environment. "But if they do it right and use the latest environmental technology, they could become a lesson for the world." Mr. Strong, who began his career as an executive at Dome Petroleum and

Power Corp., was the organizer of the first UN conference on the environment in 1972 in Stockholm. He gained renown as the head of the 1992 Earth Summit in Rio de Janeiro, which eventually produced the Kyoto Protocol. While maintaining offices in Canada and New York, he is expected to start spending more than 50 per cent of his time on Chinese projects. One of his main clients is the Beijing office of CH2M Hill, one of the world's leading environmental companies.

The Denver-based engineering firm, which has 12,000 employees around the world, helped create the Action Plan for a Green Olympics, which played a key role in Beijing's successful Olympic bid.

Mr. Strong, who has sharply criticized Washington for its refusal to ratify the Kyoto Protocol, appears to believe that Beijing could replace it as a leader in global environmentalism. "He is hoping China will take on some of the leadership that is not happening from other big countries," said Nicholas Sonntag, a Canadian who heads the Beijing office of CH2M Hill. Yet this optimism is coupled with deep fears that China might be putting too much emphasis on rapid growth at the expense of everything else. It has set an official goal of quadrupling its economy by 2020. Also, it has set a goal of getting automobiles into the hands of 20 per cent of its families by 2020. This could dramatically increase pollution levels in cities. "They're taking a big risk," Mr. Sonntag said. "They're determined to be the economic engine of the world. This is why Maurice is here -- to help them think through this."

13) LONG-LOST RECORDS CONFIRM RISING SEA LEVEL

Science Daily

January 22, 2003

Internet: <http://www.sciencedaily.com/releases/2003/01/030122072142.htm>

The discovery of 160 year old records in the archives of the Royal Society, London, has given scientists further evidence that Australian sea levels are rising. Observations taken at Tasmania's Port Arthur convict settlement 160 years ago by an amateur meteorologist have been compared with data from a modern tide gauge. "There is a rate of sea level rise of about 1mm a year, consistent with other Australian observations," says Dr David Pugh, from the UK's Southampton Oceanography Centre. "This is an important result for the Southern Hemisphere, and especially for Australia, providing a benchmark against which Australian regional sea level can be measured in 10, 50 or 100 years time," says Dr Pugh.

Working with Dr Pugh on the three year project were the University of Tasmania's Dr John Hunter, Dr Richard Coleman and Mr Chris Watson. In 1837, a rudimentary tide gauge was made by the amateur meteorologist, Thomas Lempriere and probably installed in the nearby Port Arthur settlement.

In 1841 Lempriere cut a benchmark, in the form of a broad arrow, on a vertical rock face on the Isle of the Dead, which was used as a cemetery for the Port Arthur complex. The discovery of two full years of carefully recorded measurements (1841 and 1842) of average sea level was the start of a scientific quest through early European history in Tasmania.

CSIRO oceanographer Dr Bruce Hamon, researching Lempriere's work in 1985, concluded that the surviving benchmark would not be of scientific value today. "The position of course would be different if Lempriere's original observations ever came to light," Dr Hamon wrote. In addition to discovering the 'lost' files, the project involved analysis of 19th century sea level data, and a suite of modern measurement and analysis techniques. Dr Hunter said that scientific and popular interest in possible rises of global sea level, with attendant increased risks of coastal flooding have emphasised the need for a long time series of sea level measurements. "Unfortunately, few records exist from the nineteenth century, and even fewer have well documented benchmark information against which changes can be monitored.

"At Port Arthur we have a unique series of sea level measurements. "Our research during this project has shown that the work of John Franklin, James Clark Ross and Thomas Lempriere generated a significant benchmark long before any effect of global warming was apparent. "The scientific interest at the time was the question of vertical motion or uplifting of the continents rather than changes in volume of the oceans.

"Our observations are consistent with the lower end of estimates by the Intergovernmental Panel on Climate Change and with records from Fremantle and Fort Denison," Dr Hunter said. Measurements have been taken at Fremantle for 91 years and at Fort Denison, Sydney for 82 years. The project was funded by the Southampton Oceanography Centre, CSIRO, the University of Canberra and the University of Tasmania. The results of the study have been published in the International Hydrological.

14) KYOTO PROTOCOL LINKED TO SUPPORT FOR IRAQ WAR

TimesRecordNews

January 22, 2003

Internet: http://www.trnonline.com/trn/nw_national/article/0,1891,TRN_5703_1691536,00.html

President Bush's rejection of the Kyoto Protocol, the international climate change treaty, and his failure to act decisively to reduce U.S. greenhouse gas emissions is undermining European support for war with Iraq, foreign policy experts said. The European "view is that it's grossly unfair that the United States is not a party (to the Kyoto Protocol), that our companies aren't going to be held to the same standards theirs are," said William Moomaw, a professor of international environmental policy at Tufts University and a consultant to the Netherlands on climate change. "There is an intense anger at the United States," said Moomaw, who recently returned from a trip to Europe. "There is also a linkage between climate change and other issues in the eyes of Europeans. They see the war in Iraq in very explicit terms - editorials and news coverage is all about how this is a war for the United States to keep up its wasteful habits of energy use."

Global warming isn't the only issue that has soured U.S.-European relations. The administration backed out of the International Criminal Court and rejected a host of treaties ranging from mining to missiles. All of those actions have been widely condemned in the European press and have drawn strong disapproval from the European public. But for environmentally conscious Europeans, Bush's rejection of the Kyoto Protocol - which sets country-by-country targets for greenhouse gas emissions - is particularly galling because the burning of fossil fuels in the United States is responsible for 25 percent of the world's man-made carbon dioxide. In a poll taken jointly by the Chicago Council on International Relations and the German Marshall Fund, Europeans gave the Bush administration's handling of global warming the lowest marks of any issue. Only 29 percent of Poles, 16 percent of Italians, 13 percent of Germans, 8 percent of Dutch, 7 percent of British and 6 percent of French regarded the administration's position positively. "I think it's accurate to say that the American defection from the Kyoto Protocol tops the list in terms of issues that irk Europeans," said Charles Kupchan, who was director for European affairs on the National Security Council during the first Clinton administration. "It offends the sensibilities of Europeans, who are much more concerned about recycling and keeping down fuel consumption and carbon dioxide emission" than Americans, said Kupchan, an international relations professor at Georgetown University. "They constantly complain about SUVs and American energy consumption."

British Prime Minister Tony Blair, the administration's closest ally on Iraq, cited growing anti-Americanism in a major foreign policy speech earlier this month, warning that the United States needs to be more cooperative with its allies on several key areas of international concern, including global warming.

"The problem people have with the United States - not the rabid anti-Americans, but the average middle ground - is not that, for example, they oppose them on (weapons of mass destruction) or international terrorism," Blair said. "People listen to the United States on these issues and may well agree with them; but they want the United States to listen back." Secretary of State Colin Powell, responding in a radio interview to Blair's speech, said that the United States does not see the Kyoto Protocol as an "economically viable way to go" and is merely seeking its own solution. "Those who believe in Kyoto are ratifying and bringing themselves under that protocol and we are looking for other ways to achieve this common purpose that all nations have, and that's to reduce the emissions from our industrialized and industrializing countries that create global warming," Powell said.

Bush withdrew the United States from the Kyoto Protocol in March 2001, saying that meeting the treaty's targets country-by-country would be too costly for the U.S. economy and that more scientific research is needed. Instead, the administration has launched a campaign to persuade U.S. companies to voluntarily reduce their emissions. The administration has also expanded federally funded scientific research on climate change with an aim to resolve the "uncertainties" in scientific understanding of global warming. In Europe, however, the debate over the science of climate change is essentially over and the emphasis is on finding ways to slow the rate of change and mitigate the impacts, Moomaw said.

The 15-member nations of the European Union are in the process of putting cap-and-trade systems in place that would reward countries and companies that exceed targets for reducing greenhouse gas emissions and penalize those who don't meet the targets. The European backlash against the United States over the Kyoto Protocol has created concern in Congress. Several senators raised the issue with James Mahoney, assistant secretary of commerce for oceans and atmosphere, at a hearing earlier this month on global warming legislation. "You know, the United States has a PR problem abroad with other countries because they don't think we're serious about doing something about climate change," said Sen. Bill Nelson, D-Fla. "A good bit of that impression was given by how we handled the Kyoto

proposals." "I am aware that we have a PR problem," Mahoney acknowledged. "Government has to balance many things. ... We are engaging our partner nations in any number of forums these days on these issues."

15) GREAT BARRIER REEF BADLY DAMAGED DUE TO GLOBAL WARMING

Times of India
January 21, 2003
Internet: <http://timesofindia.indiatimes.com/cms.dll/html/comp/articleshow?artid=34985439>

SYDNEY: Environmentalists have warned that the Great Barrier Reef, which suffered a great amount of bleaching last summer, may suffer damages beyond repair this year. Last summer was the worst recorded bleaching event; aerial surveys showed three-fifths of the reef's 6700 square kilometres were affected.

Ray Berkelmans, a research scientist at the Australian Institute of Marine Science in Townsville, was quoted as saying in the Sydney Morning Herald that in some parts, such as patches of the Coral Sea and inshore reefs near Bowen, up to 95 per cent of coral had died. Recovery was "poor to non-existent" in many places.

"We would be wanting things to pick up very quickly," Dr Berkelmans said. "What had been beautiful reef is now acres and acres of dead coral covered with algae." "We are going to see dramatic changes in the reef if the climate predictions are true, and I have no reason to believe they are not because everything is pointing that way. The prospects are grim, to say the least." Unusually warm water causes coral to expel the micro-algae that give it colour, resulting in bleaching. The coral may then die because the micro-algae also provides it with food. While a reef may take up to a decade to recover from bleaching, last year's event is the sixth since 1980, a high frequency that Dr Berkelmans and other experts believe is due to global warming.

16) THE CLIMATE TRUST SHARES CO2 OFFSETS WITH SEATTLE CITY LIGHT

E-wire
January 21, 2003
Internet: <http://www.ewire-news.com/wires/1FF16B20-85AD-4440-A50BC6FD6ADB6404.htm>

Portland, Ore, Jan. 21 -/E-Wire/-- The Climate Trust of Portland, Ore. today will transfer the rights of up to 52,500 metric tons of carbon dioxide (CO2) to Seattle City Light (SCL) of Seattle, WA at a cost of \$102,375 or \$1.95 per metric ton. The transaction is the largest to date under The Climate Trust's recently launched "Greenhouse Gas Offset Partnership Program" and will be consummated this afternoon with the approval of Seattle's City Council.

Under the agreement, The Climate Trust and City Light, Seattle's municipal electric utility, will share in the costs and benefits of an innovative blended cement project that will reduce CO2 emissions over the next six years. The project is part of The Climate Trust's recent \$6 million offset solicitation and acquisition effort. The project is managed by the Civil Engineering Research Foundation (CERF) based in Washington, DC and will deliver a total of 350,000 metric tons at a total cost of \$682,500. CERF's work will increase the use of low-carbon cement alternatives in concrete, commonly known as "blended" cements. The manufacturing of conventional cement is extremely CO2 intensive; one ton of cement results in approximately one ton of CO2 released into the Earth's atmosphere. Industrial byproducts that possess the same binding properties of cement can be a partial substitute for conventional cement in concrete mixes, and can reduce the amount of CO2 released by nearly one-half. Because substitutes for conventional cement are often readily available, blended cements can also bring real savings to the construction industry.

"The Climate Trust is very pleased to provide high quality CO2 offsets in support of the leadership position Seattle City Light has taken on combating global climate change," said Bill Edmonds, Board Chair of The Climate Trust. "It's a win-win for the environment and the economy," said Seattle City Light Superintendent Gary Zarker. "Waste substitutes can make a superior cement product at a low cost, conserve raw materials, and reduce greenhouse gas emissions." Blended cements are already widely used in Europe and Japan. "This project will begin to transform the U.S. construction market by creating market demand for blended cement," said Mike Burnett, executive director of The Climate Trust. "The potential to mitigate CO2 emissions from concrete production is substantial since cement production accounts for 7 percent of worldwide anthropogenic caused greenhouse gas emissions."

In SCL's first effort toward reducing greenhouse gas emissions, they will fund 15% of the total project costs through The Climate Trust's Greenhouse Gas Partnership Program. Seattle City Councilmember Heidi Willis said, "Global warming is a reality, and local governments are in the forefront of efforts to fight it." Seattle City Light is striving to become the first carbon neutral utility in the U.S. They have sustained a high level of investment in energy efficiency,

renewable energies, and are investing in greenhouse gas offsets as well. In 2001, Seattle City Light became The Climate Trust's first Greenhouse Gas Offset Acquisition Partner to jointly solicit carbon-offset proposals that directly avoid, displace, or sequester greenhouse gasses. The Climate Trust's Partnership Program is also delivering high quality offsets through investments in high quality projects to the State of Massachusetts's Energy Facility Siting Council, the Nike Corporation, Progressive Investment Management of Portland, Ore. and Green Mountain Energy of Austin, TX.

17) US, CHINA SEEK COMMON GROUND ON GLOBAL WARMING

Space Wire

January 21, 2003

Internet: <http://www.spacedaily.com/2003/030121213737.fttd4m30.html>

The United States and China have renewed their commitment to seek common approaches to climate change, despite sharply divergent views on the Kyoto Protocol which aims to cut "greenhouse" gases.

Delegations from the two sides met last week in Beijing for the third session of a working group set up by presidents George W. Bush and Jiang Zemin last February, the State Department said. "The United States and the People's Republic of China agreed today to cooperate on a broad range of climatic change science and technology activities," said a statement issued after the January 16 meeting, issued here Tuesday.

"Both sides recognized the key issue of sustainable development in addressing the issue of climate change. They also agreed that economic growth will play a key role in this regard."

Washington and Beijing are at opposite ends of debate on the Kyoto Protocol passed in 1997 designed to reduce emissions of greenhouse gases blamed for global warming to 1990 levels by 2012. The United States, the world's largest single polluter, has rejected the treaty, arguing it would badly damage its economy, and is unfair since developing nations, like China, are not required to curb emissions.

China however ratified the treaty last year, and criticised the Bush administration for rejecting the pact. The United States and Russia, which has also yet to ratify Kyoto, held similar talks in Moscow last week. Russian Deputy Foreign Minister Georgy Mamedov refused to say whether Russia would ratify the treaty, as promised by Russian leaders at the UN Earth Summit last September.

US rejection of the Kyoto Protocol has made Russia's ratification all the more essential for the protocol's supporters since the treaty can come into force only after it has been ratified by countries accounting for at least 55 percent of the world's carbon dioxide emissions in 1990. The 100 countries which have so far signed up account for 43.7 percent of carbon dioxide emissions, and Russia's 17.4 percent would push the tally over the 55 percent requirement, but Moscow has also expressed financial concerns in the past.

18) RUSSIA TO RATIFY KYOTO PROTOCOL

Pravda

January 20, 2003

Internet: <http://english.pravda.ru/main/2003/01/20/42258.html>

US Department of State: The level of consumer prices and investments in the energy field is more important than ecology. It deems that President Vladimir Putin and Prime Minister Mikhail Kasyanov promised in summer, during the Earth Summit in Johannesburg, that Russia was about to sign the Kyoto protocol that limited the level of industrial discharge in the atmosphere of the planet. The world community applauded that, the summit delegates went home, but Russia did not sign the protocol anyway. However, as Alexander Bedritsky, the chairman of the Russian Hydrometeorology Center said, Russia was about to ratify the Kyoto protocol in order to restrict and reduce the level of greenhouse effect gases emitted in the atmosphere.

The Kyoto protocol, which was passed by industrially developed countries in 1997, represents an international agreement between Europe, Japan and Canada. This document obliges the countries to restrict and reduce the level of environmental pollution. The United States thought about it for a while and refused to sign the document. Virtually, the Kyoto protocol has not come into its legal effect. Then, the whole ecologically advanced humanity hoped for Russia.

However, Russia was too preoccupied with economic reforms, the industry of the former USSR stopped working. The ecology has improved after that, although Kyoto issues did not seem to be attractive for the first group of Russian reformers. Things have changed since then. As the head of the Russian Hydrometeorology Center, Alexander Bedritsky, told reporters at a press conference, the Russian government had already made up a list of things to do in order to complete the documents for the ratification of the Kyoto protocol. Bedritsky stated that governmental experts did not find any restrictions or prohibitions for any kinds of industrial activity in the protocol. He said that it was up to every country to choose, how it was going to reduce and restrict the emission of industrial gases in the atmosphere.

Furthermore, Russia has a status of a developing country in the Kyoto protocol. This allows Russia not to restrict any emission level at all. The Russian industry currently emits a lot less gases, than it is supposed to. Pursuant to Kyoto protocol terms, Russia is supposed to stabilize the level of emission as of the year 1990. Alexander Bedritsky added that Kyoto restrictions were not going to bother Russia for a long time because of that.

Mr. Bedritsky's confidence is explained with a pragmatic calculation that was made by Russian economists. They believe that Russia is going to remain an industrially weak country for long. According to experts' estimates, Russia is not going to achieve the USSR's development level of 1990 soon. The experts of the Russian Ministry for Economic Development and Trade calculated that the preservation of the current speed of the economic development will keep the industrial emission on the level of 80% in comparison with the one in 1990. As it seems, the government was happy to learn about that. The country's budget does not stipulate any money for the development and implementation of environmental programs.

In addition to that, it is extremely hard to make Russian oligarchs buy and install those technologies. That is, probably, why Mr. Bedritsky was so optimistic and kindhearted regarding ecological problems of the Kyoto protocol: "The Kyoto protocol is an attempt to set up a tool for the solution of global problems of the humanity," Bedritsky said. He added that the execution of the protocol's obligations would not bring damage to Russia. Bedritsky's American colleague, Harlan Watson, senior US climate negotiator and a leading US State Department member, said that signing the Kyoto protocol would bring a considerable economic damage to the United States. Harlan Watson believes that the USA would lose energetic equipment investments, if it agreed to sign the protocol. In addition to that, this would raise the level of consumer prices in the country too. This situation is totally not good for the American government, since the USA experiences a lack of investments already. It is worth mentioning that Mr. Watson does not deny the fact that his country is the world's leader, when it comes to the environmental pollution – 22-23% of the global volume of industrial gases. However, the USA promised the UN that it would cut its emission by 18% during the coming ten years.

19) RUSSIA: NOT READY TO RATIFY THE KYOTO PROTOCOL FOR ECONOMIC REASONS?

Euractiv

January 20, 2003

Internet: <http://www.euractiv.com/cgi-bin/cgint.exe/?targ=1&204&OIDN=1504518&-home=home>

All eyes are on Russia, as the community of pro-Kyoto Protocol countries awaits its entry into force in 2003. Last September, during the Johannesburg Summit, Russian Prime Minister Mikhail Kasyanov announced that Russia would ratify the Kyoto Protocol on climate change "in the near future". On 15 January, experts said that Russia is not yet ready to ratify the Kyoto protocol. "The time frame now depends on how quickly the economic scenarios will be worked out", said Mr. Yakovenko, Deputy Minister of Natural Resources Maxim Yakovenko. The Kyoto Protocol needs a "double trigger" to move forward: ratification by 55 countries and at least 55% of the global emissions covered by the treaty. With Canada becoming the 100th country to ratify the agreement last month, the protocol can account for 43.7% of carbon dioxide emissions. Russia's 17.4% will be essential for achieving the required 55% limit.

Russia is set to boost revenues from the sale of its pollution quotas. As the quotas for the Kyoto protocol are based on 1990 levels and because of the post-Soviet industrial downturn, Russia could sell its excess share under the mechanism fixed by the protocol. According to Greenpeace, Russia could make \$20 billion annually from the sale of its pollution quotas, about a quarter of 2003 budget revenues. The delay also makes it more difficult for states in the protocol to take decisions and for all signatories to abide by its main aim - to reduce emissions of global warming gases by 5.2 percent below 1990 levels by 2008-2012.

20) U.S. IS PRESSURING INDUSTRIES TO CUT GREENHOUSE GASES

New York Times

January 20, 2003

Internet:

<http://www.nytimes.com/2003/01/20/politics/20CLIM.html?ex=1043902800&en=b236866ada6a7f71&ei=5062&partner=GOOGL>

In an aggressive effort to show that President Bush's voluntary climate strategy can work, senior administration officials are traveling the country collecting written promises from industries to curb emissions of gases linked to global warming. White House officials, insisting on concrete commitments measured in tons of gases, have rejected written offers from some industry groups to take nonspecific actions, several industry officials said. The administration and industry leaders plan to unveil a broad array of pledges at the White House on Feb. 6.

This is the administration's latest and most intensive effort to demonstrate that voluntarily controlling emissions can make mandatory reductions unnecessary. Mr. Bush has said such reductions will harm the economy. The effort has no teeth, officials and company representatives say, other than the growing realization in industry that without measurable success from voluntary reductions, it will become ever harder in coming years to stave off legislation requiring companies to act. Senators of both parties introduced such legislation in Congress this month, and states are acting on their own as well. The administration's intent, once all the industries' commitments are tallied, is to meet Mr. Bush's stated goal: an 18 percent reduction, by 2012, in emissions of greenhouse gases for each unit of gross domestic product. Overall emissions would continue to grow, but more slowly.

Some company officials and other opponents of regulation have criticized the administration's effort as a mandatory program disguised as a voluntary one. "This is meant to give the impression that the administration is doing something to control CO₂ emissions," said Myron Ebell, a climate policy expert at the Competitive Enterprise Institute, which promotes free markets and limited government. "The danger is that they could easily get pushed from that position into actually regulating emissions, which would be very expensive, pointless." At the same time, many scientists, environmental groups and political foes of Mr. Bush have said his target is so modest that no matter what industries do to achieve it, it will not help stem climate change. Most other industrialized countries have chosen to pursue binding reductions in emissions through the Kyoto Protocol, the climate treaty Mr. Bush rejected shortly after taking office. "Over a decade ago, the United States committed to voluntary greenhouse gas reductions, and emissions have continued to rise," said Elizabeth Cook, an expert on corporate environmental policies at the World Resources Institute. Citing an expanding body of research pointing to rising concentrations of carbon dioxide and other greenhouse gases as a cause of global warming, she and other critics said more action was needed. White House officials said the new effort was just the beginning of a protracted campaign for voluntary reductions. "We're not declaring victory here and going home," an administration official said. "It'll be an ongoing thing from here."

Many big companies, expecting that regulation of greenhouse gases is inevitable, have already moved independently to set up voluntary caps and trading schemes in which companies that aggressively cut their emissions acquire pollution credits they can sell to other companies. The list of such companies includes most of the country's biggest energy, mineral and industrial concerns, including DuPont, Motorola, Waste Management Inc. and American Electric Power, a Midwestern utility that is the largest emitter of greenhouse gases in the Western Hemisphere. The newest effort began on Thursday, with the start of the Chicago Climate Exchange, under which big manufacturers and energy companies agreed to cut emissions and trade credits with one another. As they considered the administration's initiative, industries at first resisted committing themselves to specific targets. The American Petroleum Institute, the oil industry's principal trade group, initially offered the White House a proposal for efforts on emissions, but without a specific timetable or targets. It cited the difficulty of getting all its members to agree on a single plan — and of measuring emissions from every facet of far-flung operations. That was rejected, but after several rounds of discussions with the administration, the institute — like other industry groups — agreed to emissions changes that would mesh with Mr. Bush's 2012 goal.

Oil, gas and other industries have all had significant discussions in trying to achieve the types of commitments the administration is desiring," said Robert L. Greco III, a senior manager at the institute. "Industry is committed to supporting this type of approach and is willing to step up to further the objective of the president's program." Trade groups for companies pumping oil, mining coal, making cars, synthesizing plastics, smelting metals and manufacturing microchips have been recruited and have scrambled to settle on various targets for reducing or in some cases eliminating emissions.

These include some of the most influential voices for industry in Washington, the American Chemistry Council, National Mining Association, the Alliance of Automobile Manufacturers and the Edison Electric Institute, which represents power-plant owners. Talks are still under way, and agreements could change, but some details are starting to emerge. Under the program, magnesium producers have agreed to eliminate releases of a potent heat-trapping greenhouse gas, sulfur hexafluoride, by 2010. The gas is very rare, but each molecule has 23,600 times as much heat-

trapping potential as a molecule of carbon dioxide. Chip makers have said that by 2010 they will cut emissions of perfluorocarbons, another potent warming gas, 10 percent below 1995 levels.

Among other actions, all the major oil companies have agreed to scour pipelines and oil fields for leaking methane, another powerful heat-trapping gas. Coal companies have promised to expand efforts to capture methane and other greenhouse gases escaping from mines. Individual companies are being asked to set more general goals. Under a simultaneous initiative, also to begin on Feb. 6, the Business Roundtable, which represents 140 of the country's biggest companies, is working with the White House to obtain commitments from its members to start assessing their activities and considering ways to reduce their impact on climate. Although that effort is theoretically voluntary, the Business Roundtable has already promised to deliver 100 percent of its members. Some industry officials have quietly objected to the heavy pressure to sign on. On Jan. 8, James L. Connaughton, chairman of the White House Council on Environmental Quality, addressed a private gathering of leaders of electric utilities at the Ritz Carlton in Naples, Fla. Several executives who were there said his insistence on substantive commitments prompted some of them to label the effort the "mandatory voluntary climate program."

The administration's push has intensified as criticisms of its cautious climate policies have increased, and more aggressive alternatives have been proposed. On the day Mr. Connaughton spoke in Florida, Senator John McCain, Republican of Arizona, and Senator Joseph I. Lieberman, Democrat of Connecticut, unveiled a bill that would require restrictions on emissions. California and New York are moving toward restricting greenhouse gases from vehicles. Administration officials acknowledge that they are trying to tread a fine line. They do not want to alienate voters in states like West Virginia, where the economy revolves around coal, a major source of carbon dioxide, but they do want to appease moderates, particularly women, for whom global warming is a growing concern. But in seeking that path, many experts and lobbyists for different factions said, the administration could end up satisfying no one and doing little to solve the problem.

Many people involved in the White House effort, including government officials and executives from industries, say it is unlikely to lead to improvements much beyond those already taking place as the economy shifts from old-style manufacturing and businesses grow less wasteful. And the effort, aimed mainly at manufacturing, encompasses only a small portion of America's greenhouse-gas emissions.

For example, while the auto industry is agreeing to curb gases from its assembly lines, it has not been asked — nor has it promised — to reduce gases from the tailpipes of the cars and trucks it builds. Nevertheless, Ms. Cook, at the World Resources Institute, said there was some value in finally pushing a broad array of industries to start looking for ways to reduce their impact on climate. Once they have committed to change, she said, it will be hard for them to reverse course.

21) 'CARBON SINK' FOUND SMALLER THAN THOUGHT

Washington Post

January 20, 2003

Internet: <http://washingtontimes.com/world/20030120-72351803.htm>

The world's oceans may not be as large as scientists thought for the purposes of reining in global warming. A paper published in the Jan. 10 issue of the journal *Science* suggests that climate models could be overestimating by as much as 60 percent the amount of carbon dioxide the oceans can absorb. Because the ocean is a large "carbon sink," it processes much of the carbon released into Earth's atmosphere. But if the absorption, or "uptake," of carbon dioxide is less than estimated, global climate change could be approaching a lot faster and be hotter than anticipated. Modeling the climate is a complex and difficult task. Few of the variables stand still long enough for scientists to get a clear shot. Critics point to those shifting variables to deny global warming or to argue against counteracting its effects, but mathematical models right now are the only means of prediction.

Ben McNeil, a postdoctoral research associate at Princeton University who conducted the ocean research, said, "The only way we have of looking into the future is via models, and those models need validating. Now we have a measurement of ocean uptake of carbon dioxide, and we can compare it with the models."

Based on the data he and his associates have collected, the models "are currently overestimating the ocean's ability to take up excess carbon from the atmosphere. If they are overestimating that, they are probably underestimating the levels in the atmosphere," he said. Unless the carbon is absorbed by some other portion of the biosphere, the planet's climate may heat up faster than models predict.

Rik Manninkhof, an oceanographer with the National Oceanic and Atmospheric Administration's oceanographic and meteorological laboratory in Miami, said oceans are believed to take up one-third of the human-caused carbon dioxide. "If that figure is low, the atmospheric CO2 could be higher in the future," he said. "We believe that CO2 increases temperature, so we'll get faster temperature rise." Mr. Manninkhof is quick to point out, though, that the result is not inevitable. Other factors could intervene. A warmer atmosphere could increase biological activity in the oceans — support more plankton, for instance — which could increase carbon uptake. Another part of the biosphere also could have increased uptake. "If you consider a warming scenario, the ocean's ability to take up carbon will change. You would think it would become less able," said Keith Lindsay, a scientist and climate modeler for the National Center for Atmospheric Research in Boulder, Colo.

Mr. Lindsay noted that warm water holds less carbon than cold water. "And another one of the predictions is that the ocean becomes more stratified, temperaturewise," he said. "There is less mixing. The portion that can absorb carbon is shallower because the deeper ocean becomes inaccessible to the atmosphere." However, he added, increased biological activity could absorb more carbon, then take it to the depths. "That's one pathway to export carbon to the deep ocean — sometimes referred to as the 'biological pump,'" he said. The McNeil study in Science used an analogy to examine ocean carbon uptake. The researchers looked at how well the ocean absorbs chlorofluorocarbons (CFCs), gases that for many years acted as propellants for everything from deodorants to furniture waxes. CFCs were banned because they were destroying the planet's fragile ozone layer, the first line of defense against harmful solar radiation.

One problem with measuring carbon uptake directly is that carbon dioxide exists in the ocean naturally but receives a contribution from industrial and human sources. CFCs do not exist naturally in the ocean. They were first produced in the 1940s and have entered the oceans only since then. CFCs and carbon dioxide are different, but comparison of computer models with true observations indicates the analogy works well. "We have quite a bit of confidence in the technique," Mr. McNeil said. In the past, ocean uptake of carbon dioxide was estimated using observations of how well the isotope carbon-14 was absorbed. Carbon-14, which is radioactive, was produced by atmospheric atomic bomb tests in the 1940s and 1950s. "They followed the penetration of carbon-14 into the oceans and got the original estimates," said Mr. Manninkhof at NOAA. "By some creative methods [they also have] measured the anthropogenic CO2 since the industrial revolution." Mr. Manninkhof said the McNeil study, although intelligent and important, is not definitive. "I would be a bit cautious," he said. "There are some caveats for their method."

The main caveat is the analogy. Carbon dioxide started to increase in the late 1700s with the onset of industry. It increased dramatically with the success of the era. CFCs were developed in World War II, "so by the time the CFCs had started increasing, half the CO2 was already there. So they have to make some creative assumptions about that particular time period. They also have to assume that the ocean is in a steady state. And they acknowledge that they don't get the biological component." The oceans have a large influence on climate, and climate has a large influence on the oceans, but the dynamic is poorly understood.

For example, different portions of the oceans behave differently. "One of the least understood," said Mr. Lindsay of NCAR, "is the southern ocean." That's a lot of water. Climate models contain many uncertainties but do give warnings. Critics say it makes no sense to take large economic risks based on these uncertainties but rarely point out that their economic models are no more reliable. Mr. Manninkhof said, "We're a bit skeptical about how much science drives policy, but we hope our research is taken into account."

22) EMISSION-TRADING TRIALS PLANNED

The Japan Times

January 20, 2003

Internet: <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?mn20030120b3.htm>

The Environment Ministry is planning a test trial to trade carbon dioxide emission rights in fiscal 2003, beginning April 1, ministry officials said Sunday. The ministry's plan will set emission quotas for companies but allow firms to increase their quotas by trading for emission rights with firms under quota.

The ministry plans to institute a trading market for carbon dioxide and other greenhouse gases to meet Japan's reduction target set under the 1997 Kyoto Protocol on global warming, according to the officials.

The ministry will work out trading rules and research problems during the test's first two years.

Some 30 companies interested in trading emissions will be asked to join the trial. Each company will work to achieve a self-determined target to reduce carbon dioxide emissions by the end of fiscal 2004.

Using a formula developed by the ministry, these companies will compute expected emission volumes. Estimated differences between their targets and emission volumes will be traded among the companies in the market.

Prices for trading emission rights or credits will be determined by market forces, according to the ministry.

The protocol calls for Japan and the 15-member European Union to cut greenhouse gas emissions by 6 percent and 8 percent, respectively, below their 1990 levels. These targets must be met on an average basis for the years 2008 to 2012. The protocol allows industrial nations to trade emission credits among themselves or between companies across borders. The Environment Ministry is planning to start cross-border trade after domestic trading gets into full swing.

Earlier this month, the ministry, in conjunction with Mie Prefecture, started experiments on emission trading among companies in the central Japan prefecture. Emission trading has already been conducted in Britain and Denmark. The EU is planning to start trading within its borders in 2005.

23) GLOBAL WARMING MAY TURN DEADLY ROUTE THROUGH ICE INTO PLAIN SAILING

The Guardian

January 20, 2003

Internet: <http://www.guardian.co.uk/climatechange/story/0,12374,878287,00.html>

The North-west Passage, for centuries a forbidding and deadly challenge to explorers and adventurers, is being so transformed by global warming that it may change the face of international transport.

Scientists predict that it may be free of ice within 50 years, opening it to cruise vessels, tankers and warships. It is already being nicknamed "Panama Canal North". US naval officers have circulated a report arguing the case for a new type of ice-strengthened warship to patrol Arctic waters, according to the Los Angeles Times. This summer the Canadian navy sent ships north of the Arctic Circle for the first time since the cold war ended.

While the global temperature has risen 1F (about 0.6C) in the past century, the Arctic temperature has risen 3-4F (1.7-2.2C). This has already had a dramatic effect on the landscape and if it continues at the current pace it may have even greater consequences. "The image of the Arctic was always one of an ice-locked, forbidden spot," James Delgado, director of the Vancouver Maritime Museum and the author of *Across the Top of the World: The Quest for the Northwest Passage*, told the Los Angeles Times. "If we as a species have wrought this change it's humbling, given its history as such a terror-filled place." In summer long stretches of the North-west Passage are free of ice, making the voyage relatively simple.

Its attraction is that it would reduce the voyage from Europe to Asia by up to 5,000 miles and provide an inviting new route for "adventure tours."

Tourists have already begun to appear. A sailing boat from New Zealand recently traversed the route successfully. "It's something no one would have dreamed up for our lifetime," said Lawson Brigham, deputy director of the US Arctic Research Commission and former captain of the US coastguard icebreaker *Polar Sea*, which made the passage in 1994. Green lobbyists point to a threat to indigenous peoples. "Climate change upsets the dynamics of marine and coastal ecosystems and native cultures that depend on them," Greenpeace said in a 1998 report, *Answers from the Ice Edge*.

"The consequences of global warming are affecting the subsistence way of life of Alaska's Native people now... Climate-caused changes in subsistence ways of life may be the greatest threat to the continued existence of indigenous cultures."

Its study of the effect of climate change on life in the Bering and Chukchi Seas found that native peoples had been warning of the changes for years without being taken seriously.

If the North-west Passage is opened commercially it will have a significant effect on these small communities. The Canadian Inuit territory Nunavut has just over 25,000 people in 1.9m sq km (750,000 sq miles). A transport boom would have an unpredictable effect on them. "It's not just about transport, it's about the whole development of the Arctic frontier," said Lynn Rosentrater, a climate change officer for the WWF in Norway. "It's going to happen, so we need to plan for it." Development of the passage would lead to maritime problems between the US and Canadian governments. Other regions are watching their way of life being changed dramatically by the effects of global warming. Alaska is examining the effect on the people on the edge of the Arctic Circle.

They have seen lakes dry up, the treeline move, and subsequent alterations in the pattern of hunting. Scientists in Fairbanks, Alaska, have seen changes in the forest system and the tundra. The global warming issue was given new urgency when President Bush said after taking office that he would not accept the Kyoto protocol setting out national targets for reducing the 1990 greenhouse gas emissions globally by 5.2% by 2008-12. The US environmental protection agency accepts that there will be changes. "Rising global temperatures are expected to raise sea level, and change precipitation and other local climate conditions," its website says. "Changing regional climate could alter forests, crop yields, and water supplies. It could also affect human health, animals, and many types of ecosystems. "Deserts may expand into existing rangelands, and features of some of our national parks may be permanently altered

24) UK EMISSIONS MARKET STAYS SMALL AS DEMAND WANES

Planet Ark

January 20, 2003

Internet: <http://www.planetark.org/dailynewsstory.cfm/newsid/19487/story.htm>

LONDON - The voluntary UK carbon emissions market has seen only six million pounds (\$9.71 million) of trade since its start in April last year, industry sources said. Volume traded has reached 1.2 million tonnes of carbon dioxide equivalent, though most trades are still small parcels of under 1,000 tonnes, brokers said.

The trading scheme enables companies that cut greenhouse gas emissions above government-agreed targets to sell credits to those unable to meet the reductions. Thirty-four companies directly entered the scheme, though only 12 of these have been actively trading, with energy major Shell (RD.AS) (SHEL.L) the main player.

Another 6,000 companies are expected to enter trading as they risk losing a tax rebate on energy use if they miss their reduction target, under the Climate Change Levy scheme, with the emissions verification period finishing in mid-February. After a price spike up to 12.50 pounds (\$20.23) per tonne in October as companies rushed to buy credits to ensure meeting targets, prices have fallen back to around 4.50 pounds (\$7.28) as demand has waned, brokers said. "There's not much on the buy side, as Climate Change Levy companies haven't come to the table so far in the way we thought they would," said John Molloy of brokers TFS. The drive to cut greenhouse gas emissions, blamed for global warming, comes as part of commitments to the U.N. Kyoto Protocol. European Union environment ministers agreed last month to create the world's first mandatory international trading system in the EU from 2005, which analysts said could be worth up to eight billion euros by 2007. The U.S. pulled out of the deal, although a group of companies in Chicago announced last week a voluntary four-year pilot trading scheme.

25) RUSSIAN-AMERICAN GROUP ON CLIMATE CHANGE TO MEET IN MOSCOW, APRIL 2003

Rosbalt

January 19, 2003

Internet: <http://www.rosbaltnews.com/2003/01/19/61048.html>

MOSCOW, January 19. The first meeting of the Russian-American intergovernmental workgroup looking into climatic changes will take place in Moscow, in April 2003. This is according to Alexander Bedritsky, the head of Russia's Federal Service for Meteorology and Environmental Monitoring. Mr. Bedritsky said that, over the past decade, Russia and the US had accumulated positive experiences jointly resolving problems connected to the Earth's changing climate. The joint workgroup and intergovernmental dialogue were established to continue this work, exchanging information, preparing official meetings of the UN framework Convention and other forums concerning climatic changes. The two countries agree to support research into the problem.

26) CHINA-US WORKING GROUP ON CLIMATE CHANGE ENDS

Peoples Daily

January 17, 2003

Internet: http://english.peopledaily.com.cn/200301/17/eng20030117_110280.shtml

China and the United States Thursday agreed to cooperate on a broad range of climate change science and technology activities at the end of the third meeting of the China-US Working Group. The three-day meeting of the working group was conducted under the February 2002 agreement between Chinese President Jiang Zemin and US President George W. Bush to undertake consultations to explore common ground and areas for cooperation on climate change.

According to sources with the meeting, both sides recognized the importance of sustainable development in addressing the issue of climate change and the key role of economic growth in this regard.

The two sides identified 10 areas for cooperative research and analysis: non-CO₂ gases, economic/environmental modeling, integrated assessment of potential consequences of climate change, adaptation strategies, hydrogen and fuel cell technology, carbon capture and sequestration, observation/measurement, institutional partnerships, energy/environment project follow-up to the World Summit on Sustainable Development, and existing clean energy protocols/annexes. The two sides further agreed to continue policy exchange and to review results of joint project cooperation. The fourth meeting of the working group will take place in the United States in May 2003.

27) TOKYO EYES RUSSIAN EMISSIONS RIGHTS

The Asahi Shimbun

January 17, 2003

Internet: <http://www.asahi.com/english/business/K2003011700208.html>

To help Japan meet its internationally agreed commitment to cut global-warming gas emissions, the government will seek to obtain emission credits from Russia, government officials said. The two governments will soon enter into negotiations on the deal, which is based on the Japan-Russia Action Plan signed in Moscow last Friday by Prime Minister Junichiro Koizumi and Russian President Vladimir Putin. The action plan calls for bilateral cooperation to cut emissions of greenhouse gases. According to officials of the Ministry of Economy, Trade and Industry, the two nations aim to take advantage of a so-called joint implementation rule laid out in the 1997 Kyoto Protocol, in which an advanced nation can obtain more credits by cooperating in emissions-cutting projects in another advanced nation.

Russia has many opportunities for such projects, mainly in upgrading thermal power plants, the officials said. Japan intends to assist Russia in turning coal-burning plants into ones that use natural gas. Such projects will also improve fuel efficiency at the plants, the officials said. Japan has been negotiating a deal to obtain emissions credits from Russia since 2001, but talks have yet to bear fruit. The fresh round of negotiations will begin this weekend when a department chief from Japan's Natural Resources and Energy Agency visits Russian Energy Ministry officials. Japan last summer signed an agreement with Kazakhstan to obtain the central Asian country's credits for emitting 60,000 tons a year of gas through an upgrade of a power plant.

28) FRANCE CONSIDERS SEQUESTERING CARBON IN FARMLANDS

ENS

January 17, 2003

Internet: <http://ens-news.com/ens/jan2003/2003-01-17-02.asp>

PARIS, France, January 17, 2003 (ENS) - French Environment Minister Roselyne Bachelot says that carbon sequestration in agricultural lands could be used as part of a national program to cut greenhouse gas emissions. The announcement followed release of an official report concluding that up to two percent of French carbon dioxide emissions could be stored underground, helping France meet its Kyoto Protocol commitment to maintain emissions below 1990 levels.

In its report for the Ministry for Ecology and Sustainable Development, France's National Institute of the Agronomic Research (INRA) suggests that between one and five million metric tons of carbon annually could be stored in the ground over the next 20 years. The Kyoto Protocol, which could come into effect in 2003, requires that France reduce its emission of six greenhouse gases, including carbon dioxide, by eight percent compared to a 1990 within the first five year commitment period 2008 to 2012. This method of carbon sequestration could make a key contribution to France's climate change strategy, as it was by no means certain that the country would be able to meet its Kyoto target, INRA said.

By synthesizing organic matter from CO₂ which they take from the atmosphere, plants can store carbon in organic form, INRA explained in a statement Wednesday. A significant fraction of this biomass and these residues is then incorporated into the ground where it is subjected to various transformations and degradations. So, while the organic storage of carbon in the ground is always temporary, INRA said it can play an important part in France's climate strategy. "These carbon stocks in the grounds are significant," INRA said. "On a planetary scale, they represent some 1,500 billion tons, that is to say twice as much as carbon stocks in the atmosphere. Even a tiny increase in storage in the ground could thus play a significant role in the limitation of the net flow greenhouse gases into the atmosphere."

Still, INRA warned of major uncertainties over the success of the carbon sequestration technology. As well as requiring major changes in current land use and agricultural practices, it does not offer a long term solution to dealing with increasing greenhouse gas emissions, the agency said. In November 2002, the nongovernmental organization Rac-F, claimed that the measures in place under France's existing climate strategy correspond to "less than 10 percent of the emission cuts required." Similar uncertainty over the French strategy was voiced last year by the national climate change commission. Launched at the start of 2000, France's strategy was based on a comprehensive energy tax that has since been dropped. A review of the strategy will form part of a work program aimed at developing a broad five year sustainable development strategy by this spring, said Prime Minister Jean-Pierre Raffarin.

29) LOCAL FIRM WILL HELP EUROPEAN FIRMS CASH IN ON KYOTO TREATY

New Mexico Business Weekly

January 17, 2003

Internet: <http://www.bizjournals.com/albuquerque/stories/2003/01/20/story7.html>

In the coming years, slashing your company's greenhouse gas emissions could translate to cold, hard cash. Environmental regulations stipulated by the 1997 Kyoto Treaty will create valuable new assets for companies operating in the European Union. The treaty, which has not been signed by the United States, sets reduction targets for greenhouse gas emissions - which some believe contribute to global warming - and companies that reach those targets by slashing emissions will get credits from the treaty's governing body that can be traded like stocks on several emerging markets.

A two-year-old Albuquerque firm, Annex I Corp., is one of a handful of companies developing the emissions-tracking database programs those markets will require. Alan Reed, president of Annex I Corp., estimates nearly 100,000 European companies will be brought under the new regulations as the first phase of emissions target dates goes into effect, opening up a vast market for its Veregister software. Veregister is one of several products produced by New Mexico tech firms that local retiree and former French bank executive Michel Messeca took with him during a Fall visit to a network of businesspeople in Europe

Reed says Messeca helped get Veregister in front of officials at the Caisse De Depots, a branch of the French government devoted to sustainable development and implementing the Kyoto Treaty in France.

As the E.U. phases in the Kyoto Treaty, which it ratified in June 2002, companies will be required to maintain detailed emissions data and regularly provide it to the United Nations, which will govern adherence to the treaty. The market system will allow companies that haven't reached mandated emissions levels to purchase credits from those that have, much like purchasing stock in a company. "Essentially, it's the ability to trade the improvements they make in emissions - those reductions are now marketable," Reed says.

The United Kingdom initiated an emissions trading market in April 2002, and Denmark operates a similar market. The E.U. recently embarked on developing an emissions market for all of its 25 member countries.

Annex I, which employs about seven people, has a strategic alliance with German testing and certification giant TÜV Rheinland, the first firm tapped by the U.N. to provide certification of emissions reductions. "They are working globally to do the engineering, we are the partners to provide the data management," Reed says. Drawn up during a December 1997 meeting of developed nations concerned about global climate change, the Kyoto Treaty was dealt a severe blow by President George W. Bush's declaration in March 2001 that the U.S. would never sign it. But nearly 180 nations, including Japan, have since signed a scaled down version.

Bush has pushed for more voluntary greenhouse gas reductions in the U.S., and a commodities market, similar to the European ones, formed by 30 large companies including Dupont and Ford, the Chicago Climate Exchange, opened early this year. "We're very well connected with the U.S. situation as well," Reed says. Reed, a professor emeritus at the University of New Mexico's Anderson Schools of Management, has been developing the software for about five years. Annex I takes its name from the first round of 38 industrialized nations that will be governed by the U.N. as part of the treaty. It also provides emissions database consulting, and is developing a Web site that companies can use to store emissions data. Reed says the company has seen sales "in the low six figures," but is poised to do \$1 to \$2 million per year as emissions-trading exchanges here and abroad gain users. Reed sees a strong future for the business of trading "carbon." "New Mexico is an energy state," he says. "We can produce petroleum, natural gas and coal, and at the same time wind and solar energy. There can also be an industry here that deals with how the global climate change services can be provided."

30) MINISTRY TO TEST SYSTEM FOR TRADING EMISSIONS

Yomiuri Shimbun

January 17, 2003

Internet: <http://www.yomiuri.co.jp/newse/20030117wo31.htm>

The Environment Ministry will start testing a system to trade greenhouse gas emissions among companies in April, according to ministry officials. Under the Kyoto Protocol, which was adopted in 1997, industrialized nations are required to reduce emissions of carbon dioxide and other greenhouse gases by certain targeted amounts. The protocol allows trading of greenhouse gas emissions among countries so that the market mechanism effectively works for the reduction of emissions. The ministry plans to create a market for such trading, maybe by 2005. But since detailed guidelines have yet to be drawn up, the ministry intends to test a system for two years from fiscal 2003 and then draw up guidelines based on the testing, the sources said.

The protocol is expected to come into effect by the end of the year, when Russia ratifies it. Under the pact, Japan has a target of cutting greenhouse gas emissions by 6 percent below 1990 levels by 2012. However, the nation is seen as unlikely to achieve the target as efforts to reduce emissions have been largely left up to the voluntary efforts of companies. Emissions trading allows countries and companies that may otherwise be unable to achieve targeted reductions to buy emission rights from those with surplus emission allowances. The system has been introduced in a number of countries for domestic trading.

In Denmark, such a market was established in 2001, although participants are limited to power generation companies. The British government launched a market in March in which companies that sign an agreement with the government are allowed to participate. The European Union has announced that it will create a Europe-wide market by 2005. Under the Japanese scheme to be tested, companies will be required to set voluntary targets for reductions after calculating the amount of greenhouse gases emitted from their plant and office facilities. They will then undergo inspections by an outside organization, after which they can commence emissions trading. Virtual transactions will take place via computer, the sources said

31) IRELAND'S BILL TO CURB CLIMATE CHANGE COULD TOP EUR1 BILLION

Edie weekly summaries

January 17, 2003

Internet: http://www.edie.net/gf.cfm?L=left_frame.html&R=http://www.edie.net/news/Archive/6517.cfm

The Irish government has revealed that the cost of complying with the Kyoto protocol's targets to reduce greenhouse gas emissions will be a quarter of a billion euros per year, reports the Press Association.

Environment minister Martin Cullen said that Ireland would face an annual bill of €260 million over five years to reduce the country's emissions to below 1990 levels. But he warned the alternative would be a €1.2 billion fine within a decade. Cullen said the charge to the individual would be low if the cost was spread across every sector, but added that Ireland was currently 23% above 1990 emissions level and heading for 37%, meaning that a carbon tax would only go part way to meeting Kyoto targets. "The average in Europe per person of carbon dioxide produced is about 10lb; in Ireland it is 17.7lb, so we have a very serious problem," he said. A spokesperson for the Irish Department of Environment told edie that ministers had yet to finalise the figures.

32) RENEWABLE ENERGY POLICY NOTE IN BUDGET SESSION

Financial Express (India)

January 17, 2003

Internet: http://www.financialexpress.com/fe_full_story.php?content_id=26210

Coimbatore, January 17: A uniform, national policy note on renewable energy, after crossing several hurdles, is scheduled to come up in Parliament during the budget session to be passed into an Act. At present, the Union government can issue only guidelines and recommendations to the state governments. The Act would enable the Centre issue mandatory orders, the Union minister of state for non-conventional energy sources M Kannappan said here on Friday. "Different states are having diverse policies which undergo frequent changes confusing the investors and users of renewable energy. The new Act will be an answer to this problem and enable the country to achieve its goal of 10,000 mw renewable energy capacity by 2012", he said. Mr Ajai Vikram Singh, secretary, MNES, said the Electricity Bill, covering the renewable energy sector also, has been studied in detail by the Standing Committee on Power and it

has submitted a report. After consultation within the government the Bill would go to Parliament during the budget session to be passed into an Act, he said. "There are several proposals very sympathetic to the renewable energy sector. They were endorsed by the standing committee also". He hoped Parliament also would be kind to the sector. Mr Singh said MNES has been pleading for a liberal taxation structure for the renewable energy sector.

Addressing the 26th national renewable energy convention of the Solar Energy Society of India and International conference on 'New millennium - alternative energy for sustainable development', organised by the Solar Society of India, New Delhi and PSG College of Technology, Coimbatore, Mr Kannappan said during the Tenth Plan the renewable energy sector has an allocation of Rs 4000 crore. "We have a target of 3100 mw of power generation capacity and the electrification of 5000 villages. Of the new capacity, 1500 mw will be based on wind, 600 mw on small hydro and 750 mw on biomass sources including co-generation in sugar mills", he said. The minister said the Kyoto protocol has created a favourable climate for mobilising international support for renewable energy development. The Clean Development Mechanism (CDM) was one of the avenues through which financial resources can be raised. Six projects in the areas of wind power and biomass power have been shortlisted under the carbon emission reduction certification (CERUPT) tender floated by the government of Netherlands for meeting a portion of their emission reduction targets. He said MNES would support any effort for foreign investments in manufacturing and power generation projects.

Mr Kannappan said India has been supporting renewable energy projects in other developing countries. Assistance was extended for the installation of solar photovoltaic systems in Cuba, Senegal, Namibia, Syria and Oman. Approval has been accorded for similar projects in Myanmar and Nepal, he added. During the Tenth 80 mw solar cells and modules would be exported to various countries, the minister said.

33) SHAREHOLDERS ASK UTILITIES FOR DATA ON CUTTING EMISSIONS

Dow Jones Newswires

January 17, 2003

Internet: <http://sg.biz.yahoo.com/030117/15/36kwq.html>

NEW YORK (Dow Jones)--Several investor groups said Thursday they have asked what they determined are five of the most polluting electric companies in the U.S. to estimate their costs of complying with more stringent regulations for power plant emissions. The groups represent shareholders of American Electric Power Co. (AEP), Southern Co. (SO), Cinergy Corp. (CIN), Xcel Energy Inc. (XEL) and TXU Corp. (TXU). The companies are the largest privately-owned emitters of carbon dioxide in the U.S., the groups said. The Connecticut State Treasurer, the Presbyterian Church USA and the Coalition for Environmentally Responsible Economies laid out their request for information in identical shareholder resolutions they filed with the companies. All shareholders will vote on the proposals at the companies' annual meetings this spring.

The resolution calls for the companies to disclose by August 2003 the costs and benefits of substantially reducing emissions and the risks of moving slowly to cut pollutants. The information is necessary to help shareholders make informed investment decisions, the fund managers said. No federal regulations currently regulate power plant emissions but it is only a matter of time until some are passed, the groups said. They pointed to the widespread ratification by other countries of the Kyoto Protocol, which calls for reduced greenhouse emissions, and legislation introduced last week in the U.S. Senate to cap and trade emissions as examples of the growing momentum toward improving air quality.

The five energy companies defended their commitments to reducing the amount of pollutants their plants produce, citing recent equipment upgrades and investments in wind technology. Some said their carbon dioxide emissions, when measured relative to the total amount of megawatts they produce, is actually relatively low. For example, AEP, the largest generating company in the U.S., said its generators rank 65th on the list of polluting plants in terms of carbon dioxide produced per megawatt-hour. TXU said it is 57th on that list, and Xcel said it is 39th. Shareholder resolutions are rarely adopted by management, but they can put pressure on companies. More than 20% of Exxon Mobil Corp. (XOM) shareholders voted in favor last May of a resolution calling for the company to outline its plans for promoting renewable energy and including alternative energy sources in its fuel mix. Six months later, the company announced plans to contribute \$100 million to a global energy project at Stanford University.

34) GREENHOUSE GASES RISE TO EXCHANGE-TRADED STATUS

Reuters

January 16, 2003

Internet: http://www.forbes.com/home_europe/newswire/2003/01/16/rtr850380.html

CHICAGO (Reuters) - The greenhouse gases that companies pump into the atmosphere will soon go the way of soybeans and pork bellies -- the right to pollute the air is about to become a tradeable commodity. Officials from the Chicago Climate Exchange announced on Thursday its Internet-based market for greenhouse gases, such as methane and carbon dioxide, will begin trading in the spring of this year. The four-year pilot program aims to reduce greenhouse gas emissions by 50 million to 60 million tons by 2006.

CCX currently has 14 members, ranging from the City of Chicago to Ohio-based American Electric Power, the largest carbon dioxide emitter in the United States. Exchange officials are hopeful they will attract more members and will be able to extend the pilot program beyond 2006. Currently, U.S. companies are not required to cap their emissions of greenhouse gases, released by burning fossil fuels. Greenhouse gases are thought by many scientists to cause global warming by trapping the sun's heat in the atmosphere.

Most industrial nations, with the notable exception of the United States -- the world's largest polluter -- have ratified the so-called Kyoto Protocol, penned in 1997. It requires signatories to reduce gas emissions below 1990 levels by 2012. Buyers and sellers on CCX will commit to a 4 percent mandatory reduction of their emissions based on 1998-2001 levels. The plan allows companies that cut emissions more than they initially pledged to sell credits to firms unable to meet required reductions. Companies trading on CCX also can earn credits for emission reductions programs, such as reforestation projects.

35) WAKING UP TO WARMING

International Herald Tribune

January 16, 2003

Internet: <http://www.ihf.com/articles/83422.html>

Given the Bush administration's inert approach to global warming, the best hope for getting a start on the problem this year lies with the Senate. The prospect that something will actually happen there improved greatly last week with the introduction of a bipartisan bill bearing the signatures of two marquee sponsors, Joseph Lieberman of Connecticut and John McCain of Arizona. The bill provides an economy-wide approach to cutting emissions of greenhouse gases, mainly carbon dioxide, that threaten to disrupt the earth's climate in environmentally destructive ways. It would require industrial sources to scale back emissions and would establish a market-based system of emissions trading, modeled on the successful 1990 acid rain program, to encourage innovation and help polluting industries meet their targets at the lowest possible cost.

These targets are more modest than America's obligations under the Kyoto Protocol, the agreement on climate change signed by the Clinton administration in 1997 and rejected as too costly by President George W. Bush. Kyoto has since been ratified by about 100 countries. But, given the administration's hostility, even the most aggressive environmentalists in America would be happy just to establish clear goals and provide incentives for all the big polluters to begin getting a grip on their emissions. The McCain-Lieberman initiative is a good place to start. There are other measures on Capitol Hill that address global warming, including a strong bill sponsored by Senator James Jeffords of Vermont that would also impose new limits on other major pollutants that cause smog and acid rain. But these bills are aimed almost exclusively at the electric utilities, whereas McCain-Lieberman is widespread in its application. It also enjoys the support of the major advocacy groups on this issue, as well as that of dozens of progressive companies like Alcoa and British Petroleum that are making emissions reductions in advance of what they are certain will eventually be mandatory targets.

The bill's strongest feature may be its authorship. Lieberman supported Kyoto and is committed to aggressive action. McCain is a relatively new ally to the cause, and an indispensable one. As the new chairman of the Senate Commerce Committee, where he commands a majority of like-minded Democrats and moderate Republicans, he has an excellent chance of bringing a useful bill to the Senate floor. The same cannot be said of the Jeffords and other bills, which are lodged in the Environment and Public Works Committee, a panel now led by the archconservative James Inhofe of Oklahoma. Although it is hard to predict how this will play out, there has clearly been a major attitudinal change, even among Republicans, since 1997, when the Senate approved a resolution expressing doubts about the direction the Kyoto talks were then taking. Many legislators are deeply troubled by reports of shrinking glaciers, dying coral reefs and other ecological changes linked to warming. And many of these same lawmakers - not least Robert Byrd of West Virginia, a co-sponsor of the 1997 resolution - have lost patience with Bush's let's-wait-for-more-research stance. The time for the McCain-Lieberman approach may well be at hand.

36) GRASS-ROOTS GREENERY

The Economist

January 16, 2003

Internet: http://www.economist.com/world/na/displayStory.cfm?story_id=1538758

IS AMERICA ready to tackle climate change? An absurd question, you might think. After all, George Bush pulled out of the UN's Kyoto Protocol on climate change a couple of years ago, to much international disapproval. He then unveiled a weak domestic climate plan in which the targets for reducing the growth in emissions of greenhouse gases (GHGs) were purely voluntary. Yet initiatives are now under way outside the White House that may undermine Mr Bush's approach. The noisiest challenge comes from two Bush enemies: John McCain, his foe in the Republican primaries in 2000, and Joe Lieberman, who is now running for the Democratic nomination in 2004. The two senators have sponsored a bill—the American Investments for Reduction of Emissions Act—that would impose, for the first time, a federal restriction on emissions of GHGs. Under the plan, emissions from various sectors of the economy would need to decline to their 2000 levels by 2010, and further still by 2016. Market-friendly tactics such as emissions trading would be encouraged in order to get there.

The administration is already saying it will not budge. That is a pity, for many of Mr Bush's business allies would probably support the plan's approach. In fact, many big industrial firms, including even some coal-fired utilities, are now demanding domestic regulation of carbon dioxide (CO₂) emissions. It is not that they have suddenly turned green. They are convinced CO₂ rules will come and want them to be written by a business-friendly president. A number of big polluters, natural denizens of the Bush camp, have pledged to change their ways, voluntarily. Alcoa, the aluminium giant, vows to reduce its GHG emissions by a quarter below 1990 levels by 2010. DuPont, the world's biggest chemicals company, is aiming for a whopping two-thirds cut below 1990 levels within a decade. Even Exxon Mobil, the bête noire of climate crusaders, has recently softened its rhetoric and pledged \$100m to Stanford University to investigate climate science.

The most aggressive compulsory moves to tackle GHGs are probably taking place at state level. A dozen states, including oil-rich Texas, have introduced measures to boost the share of renewable energy used locally. Some mid-western states are promoting techniques to help farmers store carbon underground; financiers are developing exchanges to trade it as a commodity. New Hampshire and Massachusetts have just started regulating CO₂ emissions from power plants.

The biggest bombshell of all comes from California, which recently passed a law that would regulate emissions of CO₂ from cars, starting in 2009. That measure, if it holds up in court, would flatly contradict Mr Bush's voluntarist approach. To the dismay of the car industry, the Republican governor of New York state, George Pataki, declared last week that he intended to regulate the GHGs cars produce. These local initiatives are promising. Yet a proper federal framework and a mandatory cap on emissions would strengthen them greatly. And, since this is a world problem, local and voluntary initiatives cannot readily be globally co-ordinated or negotiated. Even the governors of New York and California cannot enter into international climate treaties: they must bow to the president. And he's not budging.

37) EL NINO MAY BE NEARING END, BUT WITH STING IN TAIL

Reuters

January 16, 2002

Internet: http://story.news.yahoo.com/news?tmpl=story&u=/nm/20030117/sc_nm/environment_elnino_dc_1

GENEVA (Reuters) - El Nino, which has brought drought and storms to many parts of the world since last May, has more bad weather in store for tropical Pacific areas before starting to fade around mid-year, scientists said on Friday. Their research, collected by the U.N.'s World Meteorological Organization (WMO), confirmed that the phenomenon, a large-scale oceanic warming, has wreaked less havoc than during its last incarnation in 1997-8, when it caused \$34 billion of damage. Described as a "moderate event," the current El Nino has coincided with climate anomalies including droughts in Australia and southern Africa and higher temperatures across Asia.

Now approaching its "mature stages," it has warmed sea surface temperatures across much of the central equatorial Pacific by 1.5 to two degrees Celsius above normal, a trend seen continuing for several months, according to a WMO statement. The WMO said it was set to continue in the early months of 2003. "It is then likely that during March-June, there will be a slow decay of this warmth, corresponding to a gradual decay of El Nino," it said. While historically it would be unusual for El Nino to continue throughout 2003, it was still too early for reliable predictions, it added. "Although weaker than the 1997-98 event, which featured sea-surface temperatures three to four degrees Celsius above

normal, this is a moderate El Nino event and its impacts are already apparent," WMO said. Recent weather consistent with a continuing El Nino event included dry conditions over Indonesia and large tracts of Australia and rainy weather in the southeastern United States, southern Brazil, Uruguay and northern Argentina.

No two El Nino events, taken from the Spanish for "Little Boy," are identical, according to scientists. But a distinguishing feature this time has been "unusual warmth in the far western tropical Pacific and eastern Indian Ocean" since November, a pattern which could become a factor in the climate of this region in coming months, they said. "The warming in the tropical Pacific is not expected to reach levels that were experienced in 1997-98. Nonetheless, severe consequences in some regions are to be expected." At least 15 people, including nine members of a family swept away by floodwaters, were killed in Fiji after Tropical Cyclone Ami tore through the South Pacific nation early this week, according to officials and survivors on Thursday. A report this week by the World Wide Fund for Nature Australia and two meteorologists said that to some extent the El Nino could be blamed for the heat and dryness, but the key villains were global warming and pollution. Climate scientists in New Zealand have also said that the moderate El Nino, which has brought lower-than-normal rainfall to the country's key farm areas, was likely to last until May.

38) NEW PLAYERS ON GLOBAL WARMING

New York Times

January 15, 2003

Internet:

<http://www.nytimes.com/2003/01/15/opinion/15WED1.html?ex=1043298000&en=989b7d5eff3e4269&ei=5062&partner=GOOGLE>

Given the Bush administration's inert approach to global warming, the best hope for getting a start on the problem this year lies with the Senate. The prospect that something will actually happen there improved greatly this week with the introduction of a bipartisan bill bearing the signatures of two marquee sponsors, Joseph Lieberman of Connecticut and John McCain of Arizona. The bill provides an economywide approach to cutting emissions of greenhouse gases, mainly carbon dioxide, that threaten to disrupt the earth's climate in environmentally destructive ways. It would require industrial sources to scale back emissions and would also establish a market-based system of emissions trading, modeled on the successful 1990 acid rain program, to encourage innovation and help polluting industries meet their targets at the lowest possible cost.

These targets are more modest than America's obligations under the Kyoto Protocol, the agreement on climate change signed by the Clinton administration in 1997 and rejected as too costly by President Bush. Kyoto has since been ratified by about 100 countries.

But given the administration's hostility, even the most aggressive environmentalists in this country would be happy just to establish clear goals and provide incentives for all the big polluters to begin getting a grip on their emissions. The McCain-Lieberman initiative is a good place to start. There are other measures on Capitol Hill that address global warming, including a strong bill sponsored by Senator James Jeffords of Vermont that would also impose new limits on other major pollutants that cause smog and acid rain. But these bills are aimed almost exclusively at the electric utilities, whereas McCain-Lieberman is widespread in its application. It also enjoys the support of the major advocacy groups on this issue, as well as that of dozens of progressive companies like Alcoa and British Petroleum that are making emissions reductions in advance of what they are certain will eventually be mandatory targets.

The bill's strongest feature, however, may be its authorship. Mr. Lieberman supported Kyoto and is committed to aggressive action. Mr. McCain is a relatively new ally to the cause, and an indispensable one. As the new chairman of the Senate Commerce Committee, where he commands a majority of like-minded Democrats and moderate Republicans, he has an excellent chance of bringing a useful bill to the Senate floor. The same cannot be said of the other bills like Mr. Jeffords's, which are lodged in the Environment and Public Works Committee, a panel now led by the archconservative James Inhofe of Oklahoma.

Though it's hard to predict how this will play out, there has clearly been a major attitudinal change, even among Republicans, since 1997, when the Senate approved a resolution expressing doubts about the direction the Kyoto talks were then taking. Many legislators are deeply troubled by reports of shrinking glaciers, dying coral reefs and other ecological changes linked to warming. And many of these same lawmakers — not least Robert Byrd of West Virginia, a co-sponsor of the 1997 resolution — have lost patience with Mr. Bush's let's-wait-for-more-research stance. The time for the McCain-Lieberman approach may well be at hand.

39) HUMAN ACTIONS BLAMED FOR WORST AUSTRALIAN DROUGHT

ENS

January 15, 2003

Internet: <http://ens-news.com/ens/jan2003/2003-01-15-02.asp>

SYDNEY, Australia, January 15, 2003 (ENS) - Human-induced global warming was a key factor in the severity of the 2002 drought in Australia, the worst in the country's history, according to a report issued Tuesday by WWF Australia. The report is part of an effort by Australian environmental organizations to convince the Liberal Government of John Howard to reverse its policy and sign the Kyoto climate protocol.

Higher temperatures and drier conditions have created greater bushfire danger than previous droughts, the report warns. Drought severity has increased in the Murray Darling Basin, where 40 percent of Australia's agricultural produce is grown. It has cost some A\$8.1 billion in lost farm production, and taxpayer funded drought assistance to farmers could exceed A\$500 million.

The report, "Global Warming Contributes to Australia's Worst Drought," compares the 2002 drought with the four other major droughts in the country since 1950 and has found higher temperatures caused a marked increase in evaporation rates from soil, watercourses and vegetation. "The higher temperatures experienced throughout Australia last year are part of a national warming trend over the past 50 years which cannot be explained by natural climate variability alone," said Professor David Karoly, formerly professor of Meteorology at Monash University. Karoly coauthored the report with Dr. James Risbey from Monash University's School of Mathematical Sciences, and Anna Reynolds, WWF Australia's Climate Change Campaign manager.

In 2002 Australia recorded its highest ever average March-November daytime maximum temperature. The temperature across the country was 1.6°C higher than the long term average and 0.8°C higher than the previous record. The Murray Darling Basin experienced average maximum temperatures more than 1.2°C higher than in any previous drought since 1950. "Most of this warming is likely due to the increase in greenhouse gases in the atmosphere from human activity such as burning fossil fuels for electricity and transport and from landclearing," said Karoly. The actual trend in Australian temperature since 1950 now matches the climate model studies of how temperatures respond to increased greenhouse gases in the atmosphere. Karoly believes this is the first drought in Australia where the impact of human-induced global warming can be clearly observed.

Dr. Risbey said that although the 2002 drought was related to natural climate variations associated with El Niño, last year's higher temperatures could not be attributed solely to this factor. "While higher temperatures are expected during El Niño triggered droughts," Risbey said, "the 2002 drought temperatures are extraordinary when compared to the four major droughts since 1950, with average maximum temperatures more than 1°C higher than these other droughts." Reynolds says global warming is affecting the livelihoods of rural Australians. The report contains new data on evaporation rates, and says low rainfall and higher evaporation has adversely impacted agricultural productivity with lower crop production leading to lower export earnings for farmers. WWF is urging Prime Minister Howard to sign the Kyoto climate protocol to prevent more economic and environmental devastation. Australia would be permitted to limit its greenhouse gas emissions to an eight percent increase in the 2008 to 2012 period. The Howard government has chosen to follow the United States away from the protocol and towards technological and market based ways to dealing with global warming. "We can slow global warming, keep temperature increases to the lower end of the scale and reduce the severity of future droughts," said Reynolds. "The Kyoto Protocol is the first international agreement with targets for reducing greenhouse gas emissions and slowing global warming - it is in our national interest to ratify the treaty," she said.

The nation's largest conservation group agrees. The Australian Conservation Foundation (ACF) issued a statement today urging the Howard government to reconsider its Kyoto Protocol policy. "Australia and the United States are now the only developed countries refusing to join Kyoto - and both countries are big contributors to climate change, with huge greenhouse pollution problems," the ACF said. "If the Howard Government is serious about addressing climate change and protecting Australia's natural resources, agricultural industries and economy, it would ratify the Kyoto Protocol immediately," said the ACF. "With water already such a problem, Australia can't afford to ignore climate change."

Australia is the world's driest continent. The report means that Australia's already stressed rivers will have less water in the coming decades. The biggest drops in rainfall are expected in spring, particularly over eastern Australia. Mean flows in the Murray-Darling river system are predicted to be reduced by 30 percent by 2050, which would undo current repair efforts. the ACF said. In late December, the Howard Government sponsored a national conference in Canberra

on climate change. Some 150 business and community leaders, government officials and scientists looked at the possible impacts of climate change on Australians and adaptation strategies. They acknowledged that climate change "could potentially affect Australia's water supply, agricultural production, flooding and stormwater management, coastal erosion, biodiversity, increases in pest species and diseases, insurance cover and premiums and tourism."

Environment Minister Dr. David Kemp said, "Adaptation to the impacts of climate change will require an understanding of projected effects on regions within Australia, sectors of economy and society. It is imperative that Australia be prepared and have a plan of action on ways to respond to climate change impacts and adaptation." As part of what the Howard Government is calling the Government-Business Climate Change Dialogue, five business working groups were formed and are currently examining greenhouse gas response options with regard to energy and resources, energy intensive manufacturing, transport and transport infrastructure, agriculture and land management and cross-sectoral issues.

These groups will provide advice to the federal government in March 2003 on issues and options that will guide the development of a long term greenhouse strategy for Australia. This advice will be the focus of a Government-Business Roundtable in April or May. Prime Minister John Howard touched on this issue in his New Year message. "The separate but related environmental challenges of water and salinity must be high on the national agenda in 2003 and beyond," the Prime Minister said.

40) ROMANIA MOST ATTRACTIVE COUNTRY FOR JOINT PROJECTS TO COMBAT CLIMATE CHANGE

Euractive

January 15, 2003

Internet: <http://www.euractiv.com/cgi-bin/cgint.exe/2954085-466?targ=1&204&OIDN=1504502&-home=home>

Romania gets top position in a study on most attractive Eastern-European countries for Joint Implementation (JI) projects under the Kyoto protocol. The Kyoto Protocol established a Joint Implementation (JI) mechanism whereby Annex I Parties of the Protocol can receive emissions reduction units when they help to finance projects that reduce net emissions in another Annex I Party country. A study undertaken by Point Carbon and Vertis Environmental Finance ranks economies in transition of Central and Eastern Europe according to their attractiveness as hosts for JI projects to combat climate change. The study looked at different indicators such as the potential size of the JI market, the political and institutional environment, the investment climate and past experiences in the countries. In the ranking of the study, Romania gets number one position. The country's well-established institutional framework and a large and varied project pipeline, as well as clear government support for JI, compensate for Romania's risky investment climate, says the report. Poland lands on second place with plentiful project opportunities in both renewable energy and energy efficiency and a good investment climate. Wavering political commitment to JI, despite a well-structured institutional approach, has limited Poland's engagement in JI so far.

41) 1M CLIMATE CHANGE EXERCISE DRAWS FIRE

NZ Herald

January 15, 2003

Internet: <http://www.nzherald.co.nz/storydisplay.cfm?storyID=3051343&thesection=news&thesubsection=general>

The Government has allocated nearly a million dollars for a public information campaign this year about climate change. The National Party yesterday called the campaign an expensive propaganda exercise designed to justify ratification of the Kyoto Protocol. The protocol commits New Zealand to reducing emissions of six key greenhouse gases to 1990 levels between 2008 and 2012. It aims to cut greenhouse gases worldwide to reduce the potentially catastrophic effects of long-term climate change. National MP David Carter has released replies to written parliamentary questions in which Pete Hodgson, the minister in charge of climate change strategy, said \$914,000 had been set aside for public education programmes.

Mr Carter said he thought most of the money would go to the Climate Defence Network, which he described as a little known, privately organised group closely associated with promoting the protocol. "New Zealanders will be on the receiving end of an expensive propaganda campaign using taxpayer money to sell Government initiatives," he said.

42) RENEWABLE ENERGY PLAN LOOKS TO WIND, SEAWATER, FUEL CELLS

The Japan Times

January 14, 2003

Internet: <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?nm20030114a6.htm>

The Environment Ministry will begin developing a system in the next year to extract hydrogen from seawater to power fuel cells in hopes of creating a fully renewable energy supply, ministry officials said.

The ministry said it is looking forward to creating "energy that can really be renewable" if hydrogen can be produced using the natural energy of wind power. It is hoped the system will extract hydrogen from seawater through electrolysis using wind-generated electricity, the officials said. Construction of wind-power plants has become common in Europe and Japan in recent years, but a facility where hydrogen is extracted to power fuel cells "has no practical precedent, even worldwide," according to the ministry.

A power station will be built on a large floating structure in the sea where winds are relatively strong. The research project will try to develop an efficient way to extract hydrogen from seawater and transport it to land. Fuel cells generate electricity through chemical reactions of hydrogen and oxygen, emitting only water as a byproduct and not carbon dioxide, which is believed to be a cause of global warming. The cells have already been put to practical use in some automobiles. However, the current supply of hydrogen depends on fossil fuels, including methane, which is believed to be 10 times more potent as a global warming threat than carbon dioxide, and natural gas and gasoline, which emit carbon dioxide. The ministry's budget request for fiscal 2003 includes 100 million yen for research expenses on the project at the National Institute for Environmental Studies, the officials said. Emissions of carbon dioxide in Japan in fiscal 2000 were 10 percent higher than in 1990, the base year in the Kyoto Protocol, which aims to reduce greenhouse-gas emissions. The ministry said it is important to develop technologies that lower such emissions. It is also urging people in Japan to conserve energy.

43) EXPERT: BUSINESS SHOULDN'T IGNORE GLOBAL WARMING

Boston Herald

January 14, 2003

Internet: http://www2.bostonherald.com/news/local_regional/warm01142003.htm

A top executive from the world's second-largest reinsurance company warned yesterday that U.S. businesses face catastrophic losses from ignoring increasingly more devastating storms caused by global warming. "In Europe, it's a foregone conclusion that climate change will have an impact," Christopher Walker, a managing director of risk solutions at Swiss Re told researchers and press at Tufts University in Medford. "In the U.S.," Walker said, "it's been see no evil, hear no evil." Walker said a United Nations-backed report issued last fall should be a wake-up call to corporate America. That report, by the UN Environment Programme, said worldwide economic losses due to natural disasters appear to be doubling every 10 years, and next decade will reach \$150 billion a year.

Walker's company, Swiss Re, is a Zurich-based conglomerate that insures insurance companies for life, health, property and casualty claims. Swiss Re and other reinsurance companies issue the policies based on calculated financial risks from so-called 100-year events, such as 1992's Hurricane Andrew that devastated South Florida and left \$30 billion in damages. Many scientists believe the burning of fossil fuels, such as coal and oil, is a major cause of global warming. That phenomenon, they believe, is triggering major climate changes, leading to rising oceans, floods, drought, hurricanes and other natural disasters.

Walker was among more than a dozen panelists in a daylong conference at Tufts University on the business, political and health impacts from global warming. "Over the years, insurers have done a tremendous job in the area of mitigating potential losses, but much more work needs to be done," said Eugene Lecomte, former president of the U.S. Insurance Institute for Property Loss Reduction. Lecomte said that even in the wake of Hurricane Andrew, where rules were changed to require stronger buildings, stories abound of builders shunning off those rules. "Here in the U.S., the population is either unaware or skeptical, or they're just saying it's not happening," said Walker. "It's reflected in the U.S. financial industry." Walker said Swiss Re is trying to encourage banks to back alternative energy ventures, such as wind farms, to reduce reliance on fossil fuels and ease global warming.

A proposal to build the nation's first offshore windmill farm off Cape Cod has drawn bitter opposition from groups who say the 40-story windmills will wreak havoc on the area's fishing, navigation and tourism.

But Walker said windfarms are commonplace in Europe and many developed countries. A number of speakers at yesterday's conference also criticized the Bush administration's rejection of the Kyoto Protocol.

The international treaty, signed by all other developed countries including Canada last month, would mandate the reduction of carbon dioxide and other gases pumped out by factories, cars and other sources that are thought to trap heat in the atmosphere, creating global warming. Bush said the agreement would cost the U.S. economy \$400 billion and millions of jobs. Instead, Bush's alternate plan offers voluntary incentives for industries to reduce emissions. A key member of the oil industry at the conference yesterday said the industry backed Bush's approach because the Kyoto plan could be a nightmare to enforce

44) BLAIR REASSURES GAYOOM OF BRITISH COMMITMENT TO FIGHT GLOBAL WARMING, SEA LEVEL RISE

Haveeru Daily (Mauritius)

January 14, 2003

Internet: http://www.haveeru.com.mv/english/news_show.phtml?id=996&search=&find=

MALE, Jan 14 (HNS) – President Maumoon Abdul Gayoom has received a letter from British Prime Minister Tony Blair about international action against global warming and sea level rise, the President's Office said Monday. Blair was responding to a letter from Gayoom following the British PM's call for universal ratification of the Kyoto Protocol during the World Summit on Sustainable Development held in Johannesburg last year.

Highlighting the threat posed to the survival of Maldives by environmental degradation, particularly by global warming and sea level rise, President Gayoom, in his letter to Blair, had stressed the vital importance for the future safety of Maldives and its people of the early entry in to force of the Kyoto Protocol and achieving a meaningful reduction in the emission of greenhouse gases. Blair replied by saying that the United Kingdom had already made a good start by reducing greenhouse gas emissions by 13 percent below 1990 levels, and said that the UK would continue to make progress in that regard. He further said that success at global level would only come from concerted international action, and that there was significant common ground between small island developing states and the UK that should be explored in that global endeavour.

45) GOVT PLANNING PUBLIC INFORMATION CAMPAIGN ON CLIMATE CHANGE

Stuff

January 14, 2003

Internet: <http://www.stuff.co.nz/stuff/0.2106.2191228a7693.00.html>

The Government has allocated nearly a million dollars for a public information campaign this year about climate change, cabinet minister Pete Hodgson has confirmed. The National Party said today it would be an expensive propaganda exercise designed to justify ratification of the Kyoto Protocol. Prime Minister Helen Clark ratified the protocol in December, ignoring a barrage of criticism from opposition parties and the business sector. The international agreement commits New Zealand to reducing emissions of six key greenhouse gases to 1990 levels between 2008 and 2012. Drafted in 1997, it aims to cut greenhouse gases worldwide to reduce the potentially catastrophic effects of long-term climate change.

National MP David Carter released replies to written parliamentary questions in which Mr Hodgson, the minister in charge of climate change strategy, said \$914,000 had been set aside for public education programmes. Mr Hodgson said the Climate Defence Network (CDN) had approached the Government's climate change team about putting a programme together. There had also been discussions about the possible involvement of the business sector. Mr Carter said he thought most of the money would go to the CDN, which he described as a little known, privately organised group closely associated with promoting the protocol. He said he believed that one of Mr Hodgson's former advisers, Gary Taylor, had links with the CDN. Shortly before Miss Clark ratified the protocol, Business NZ's environment adviser Peter Whitehouse was reported as saying the CDN was an "extremist" group which had no realisation of the economic consequences. "New Zealanders will be on the receiving end of an expensive propaganda campaign using taxpayer money to sell government initiatives," Mr Carter said. National strongly opposed ratification of the protocol, arguing it would impose costs on businesses and damage New Zealand's international competitiveness. Business NZ and Federated Farmers also opposed it, for the same reasons.

46) MINISTRY PUSHING HOME POWER-SAVING UNIT

The Japan Times

January 13, 2003

Internet: <http://www.japantimes.co.jp/cgi-bin/getarticle.pl5?mn20030113a6.htm>

The Environment Ministry has decided to provide funding from April for the promotion of an electrical energy-saving mechanism for homes. The junction-box device is about the size of a laptop computer and is equipped to regulate electrical power at 100 volts. The project is part of Japan's efforts to fight global warming by reducing emissions from homes and offices, according to ministry officials.

Implementation of such mechanisms is targeted for fiscal 2003, beginning April 1.

The ministry's move is in response to the 1997 Kyoto Protocol, which requires industrialized countries to slash greenhouse-gas emissions from 1990 levels by an average of 5.2 percent between 2008 and 2012. Japan, which ratified the international accord on global warming in June 2002, is required to cut 6 percent.

To finance the project, the ministry plans to submit a 300 million yen budget to the 150-day regular Diet session convening Jan. 20, they said. According to the officials, central and prefectural governments will shoulder two-thirds of the cost -- amounting to some 150,000 yen. They expect around 6,000 households to have the new system installed in the initial fiscal year. Electrical power for household use is set at 100 volts, but it varies from 98 to 107 volts depending on supply and demand. The nationwide average is 103 volts.

Some major businesses have already put such a device into use as part of cost-cutting measures. NTT Data Corp. will begin sales of the household devices from spring. The officials said lowering the voltage by 3 volts will reduce energy consumption by 6 percent. For homes paying about 110,000 yen per year for electricity, the new mechanism is estimated to reduce electricity costs by around 6,600 yen. A 1 percent reduction in greenhouse gas emissions in the government, civilian and business sectors would be realized, according to the officials, if the new equipment were installed in all homes in Japan. For the civilian sector alone, they hoping to decrease such emissions by 10 percent compared with 1990 levels. According to the officials, the role of the civilian sector is vital to achieving the country's targets stipulated in the protocol. But they said there is a limit to relying on the goodwill of individuals to use electricity more economically.

Also, local governments are studying the creation of guidelines for such power-saving equipment amid concerns that some manufacturers might sell inferior products

47) EARTH, AIR, FIRE AND WATER

Independent

January 13, 2003

Internet: <http://news.independent.co.uk/world/environment/story.jsp?story=368359>

In many parts of the developing world, there is a headlong rush towards industrialisation and economic growth. This is bringing a new type of environmental threat in the form of aggravated atmospheric pollution. Among the worst pollutants are fine particles, or "aerosols", which many climate scientists are now linking with extreme weather patterns that have led to severe floods and droughts in countries such as China.

It is clear that global warming can be worsened by an increase in carbon dioxide emissions, but now there is a new culprit. Black carbon – known to most of us as soot – produced by burning wood, animal dung, and diesel fuel, could be at least partly to blame for last year's devastating floods in the south of China, and drought in the north.

Along with other airborne pollutants, black carbon may also be responsible for the drought affecting parts of Africa such as Ethiopia, according to a study carried out by Nasa and Columbia University. "The contribution of black carbon to global warming may be substantial, perhaps second only to that of carbon dioxide," says Professor William Chameides, from the School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta. China has experienced increasingly severe dust storms recently, which have been attributed to overgrazing, overfarming and deforestation. Plumes of dust laced with toxic contaminants emanating from China have travelled so far in the atmosphere that they have even been detected in the United States. The loss of China's forests has not only led to dust clouds, it is also thought to be responsible for the worst droughts in north China and southern summer floods since AD950. As a result, the government is proposing to spend \$12bn (£8bn) replanting the forests.

However, Dr Subari Menon from Nasa's Goddard Institute for Space Studies, along with colleagues from Columbia University's Center for Climate Systems Research, suggests that atmospheric aerosols – fine particles composed of sulphates, nitrates, mineral dust, sea salt and black carbon could be responsible. Black carbon is particularly worrying, says Dr Menon. It is mainly produced by burning wood, which, as well as contributing to deforestation, is estimated to

cause about three million deaths a year from acute respiratory infections brought on by high levels of pollution within homes using wood-burning stoves with inadequate ventilation.

From a climate point of view, black carbon is a particularly difficult problem because it absorbs sunlight, thus heating the air and contributing to global warming. In some specific areas, though, including parts of China and India, black carbon may also have the opposite effect. Here, black carbon can cause cooling. The carbon absorbs sunlight but other aerosols, such as sulphates, which are a by-product of industrialisation, reflect this concentrated heat back into the atmosphere.

Dr Menon and her team created a computer model to predict the effect of aerosols on climate change using data on aerosol levels compiled from Chinese meteorological stations. Dr Menon felt that carbon particles played the greatest role in climate change. "The absorbing properties of black carbon are responsible for changing wind speeds, circulation, clouds, and causing floods and droughts over China," she says. The warmer atmosphere due to the absorption of sunlight by black-carbon particles makes air rise upwards; the air forms clouds, which will eventually bring rain to the region. In regions where carbon and sulphur combine to create cooler conditions, air sinks and cannot form clouds, hence there is a shortage of rain.

"In our simulations, the increased rain was over southern China, which has the largest area of industrial pollution and has had floods in recent decades, and the decreased rain was over the northern parts, which have had droughts," says Dr Menon, whose results have been verified to some extent by recent meteorological data.

China is not the only country to have experienced freakish weather conditions: parts of North Africa, from Senegal to Ethiopia, have also suffered from devastating droughts and, indeed, Ethiopia continues to suffer. Dr Leon Rotstayn, from the Commonwealth Scientific and Industrial Research Organisation's (CSIRO's) Atmospheric Research Centre in Victoria, Australia, believes these droughts are also caused by aerosols, the by-product of industrial pollution from Western nations. Last August, Dr Rotstayn's research, published in the *Journal of Climate*, showed that aerosols, principally sulphates, could have contributed to the worst droughts in Africa. Aerosols are concentrated in the northern hemisphere, and act as seeding nuclei around which clouds condense in smaller droplets than normal. This makes the clouds brighter and last longer, so they reflect more sunlight into space for longer, cooling the Earth's surface.

This means that the tropical rain belt, which migrates northwards and southwards with the seasonal movement of the sun, is weakened in the northern hemisphere and does not move as far north. The main impact of the weaker rain belt is in the Sahel. Since the Sixties, this region of northern Africa, bordering the Sahara, has suffered from devastating droughts. Rainfall was between 20 and 49 per cent lower than in the first half of the 20th century, causing widespread famine and death. Further support for Dr Rotstayn's predictions comes from a reduction in the severity of the Sahelian drought during the 1990s, which coincided with stricter control of emissions in Europe and North America and thus lower levels of atmospheric pollutants. However, not everyone is convinced by Dr Rotstayn's theory. Since the publication of a seminal paper on climate change in 1986, the consensus has been that the temperature of the Atlantic Ocean has the greatest effect on African climate. If the south Atlantic is warm and the north Atlantic is cool, conditions in the Sahel will be dry. If these conditions are reversed, the Sahel will receive an increase in rainfall.

A phenomenon called the thermohaline circulation is known to control the sea's temperature. This circulation is driven by differences in density and temperature within the ocean. "The thermohaline is basically the boss," says Dr Richard Washington, a specialist in African climatic conditions from the Department of Geography at Oxford University. "It carries the equivalent heat of half a million coal-powered stations. The top two metres of ocean contain more heat than the overlying atmosphere."

As a result, Dr Washington does not believe aerosols can do more than alter the details of any climate change. "The Sahelian drought may be due to a combination of natural variability and atmospheric aerosol," he says. Dr Washington points out that climate models are only as good as the data fed into them, and we do not as yet have accurate figures for the amount of aerosols in the atmosphere. Dr Rotstayn's and Dr Menon's studies are just two examples of an increasing number of scientific papers that highlight the current changes in climate conditions in a world whose atmosphere does not respect political boundaries. One thing is clear: as a whole, the planet is warming, and aerosols are clearly implicated in the process at least to some significant extent.

Companies in the developed world are adapting better and cleaner technology, leading to reduced industrial emissions into the atmosphere, in the hope of mitigating some of the effects on the global climate. But will the new threat posed by aerosol emissions in the developing world make a nonsense of these measures?

"If our theory about the Sahel drought is correct, then it is a good-news story of a sort, because it suggests that the worst of the droughts may be over for now," says Dr Rotstajn. "On the other hand, we are learning that aerosol pollution in general can have severe effects on rainfall, and we may see a lot more of the floods and droughts that have been experienced in China and other parts of Asia." It seems that as fast as we tackle problems in one part of the world, others crop up elsewhere.

48) RISE IN GREENHOUSE GAS EMISSIONS

The Star

January 13, 2003

Internet: <http://thestar.com.my/news/story.asp?file=/2003/1/13/nation/ccgreen&sec=nation>

PETALING JAYA: Malaysia needs to cut down on greenhouse gas emissions to ensure sustainable development, said the Centre for Environment, Technology and Development Malaysia. Its executive director Gurmit Singh said the emissions increased from 3.8 tonnes per capita in 1994 to 5.7 tonnes in 1998.

"This is not normal and the rate of increase is too high. It means there is an inefficient use of energy for development in this country," he said at the Meteorological Services Department here. He said that in 1994, Malaysia emitted 144 million tonnes of greenhouse gases of which 68.7 million tonnes were absorbed by trees.

Although by international standards, industrialised nations had values three to five times higher, Malaysia should not be complacent, he added. "Among Asean countries, our emission value is the third highest after Brunei and Singapore and we are doing little to bring it down," he said. Gurmit Singh said a draft Malaysian Climate Change Action Plan prepared by the Malaysian Climate Change Group to stabilise the country's emission of greenhouse gasses had been submitted to the Science, Technology and Environment Ministry. The draft, among other things, recommends creating more awareness among government departments on climate change, a study on its impact and to decrease the transportation sector's growth in greenhouse emissions.

49) SLOVAKIA SIGNS GREENHOUSE EMISSIONS CONTRACT AS WORLD PREPARES FOR KYOTO PROTOCOL, HOT AIR FOR SALE IN PIONEER DEAL

The Slovak Spectator

January 13, 2002

Internet: http://www.slovakspectator.sk/clanok.asp?vyd=2003001&rub=spect_busin&cl=11535

THE SLOVAK government has approved a trade of greenhouse gas emissions in what is being called the first such deal under the Kyoto Protocol on climate change and an indicator of what could become a huge market when EU-wide emissions trading begins in 2005. The trade, which took place in mid-December, saw credits for the equivalent of 200,000 tonnes of CO₂ emissions go to the Sumitomo Corporation of Japan from the Slovak heating producer Menert. While the official price for the package was not released, experts estimate the deal is worth around 5 euro per ton, or 1 million euro altogether. "If you were looking through a window to the true future of the greenhouse gas emissions markets, this trade is it," said Andrew Ertel, head of Evolution Markets, the New York-based energy and environmental broker that arranged the deal.

Although the Kyoto Protocol suffered a blow with its rejection by the US - the world's largest emitter of greenhouse gasses - its recent ratification by New Zealand and Canada and its expected ratification by Russia early this year will give the treaty the required backing for it to come into effect. All EU member and accession states have already ratified the treaty, agreeing to cut emissions of six gasses thought to be a cause of global climate change to 8 per cent below 1990 levels across the union by 2012. However, different states will have different reductions targets based on local economies. To limit costs and spread the reductions across Europe, the EU Council of Environment Ministers in early December approved a proposed directive for a 'cap and trade' scheme, which would require member states to limit greenhouse gas emissions according to the Kyoto guidelines, but allow for the free trade of surplus emissions in the form of credits.

The directive will cover more than 5,000 industrial installations across Europe, accounting for over 40 per cent of the EU's CO₂ emissions.

The idea of an environmental exchange is not new - a sulphur exchange was successfully piloted 10 years ago in the US to combat acid rain and both Denmark and Britain have greenhouse gas exchanges. But the EU plan will set up the first international bourse for emissions credits in 2005. While participation in emissions capping and trading is optional for now, by 2008, parties to the protocol will be obliged to maintain emission reduction targets. According to the plan,

individual countries are given Assigned Amount Unit (AAU) allowances for emissions equal to each country's Kyoto target. Individual governments can then distribute AAUs through local companies, sell them to other companies or countries, or bank them for future use. "AAUs represent the gold standard in tradable greenhouse gas emissions commodities. Since AAUs are allocated directly to governments, it makes them the ultimate low-risk global commodity for greenhouse gas reductions," said Ertel.

While the Menert-Sumitomo deal may be the first of its kind, at least one emissions-trading consultancy sees a future boom as EU accession states in central and eastern Europe sit on large surpluses of allowable gas levels while heavily industrialised EU states seek cost-effective ways to meet reduction requirements.

"Greenhouse gas emissions in the eight accession countries in central and eastern Europe have decreased sharply over the past decade. As a result, these countries currently have a surplus of about 335 million tonnes of CO₂ equivalent emissions," said Atle Christiansen, head analyst at Point Carbon, a Norwegian emissions trading consultancy. "We expect to see a gradually increasing market from about 1 billion euro in 2005 up to a possible 8 billion euro in 2007," he said. According to Menert's Daniel Domanovský, the Sumitomo sale has been over a year in the making and should be seen as a great step forward.

"This is the first deal that has been closed in the framework of international emissions trading, which is one of the three flexibility mechanisms of the Kyoto Protocol," said Domanovský.

Other flexibility mechanisms include the Clean Development Mechanism and the Joint Initiative programmes, under which countries can earn emissions credits by developing and financing green energy projects in different countries. Slovakia is already involved in one joint initiative with the Dutch government that will bring the latter credits for 550,000 tons of CO₂ emissions in return for reducing methane discharge from Slovak municipal landfills. Methane (CH₄) is produced naturally from the decomposition of organic matter, but it is considered to have much more potential to damage the global climate than CO₂.

According to Slovak Environment Minister László Miklós, emissions reductions activities by Menert made the Sumitomo trade possible, and proceeds from the sale will be used to fund further environmentally friendly energy projects. "By tapping the international carbon market, this innovative transaction allows us to pursue green investments and to create additional jobs. "The Slovak Republic is home to many low-cost greenhouse gas reduction opportunities, such as increasing energy efficiency and switching to cleaner fuels," said Miklós. "The earlier we can start reducing emissions domestically, the bigger the environmental benefit," he said.

50) NEW REPORT SHOWS GLOBAL WARMING LINK TO AUSTRALIA'S WORST DROUGHT

WWF

January 13, 2003

Internet: http://panda.org/news_facts/newsroom/press_releases/news.cfm?uNewsID=5344

Sydney, Australia: A new scientific report released today by WWF and leading meteorologists shows that human-induced global warming was a key factor in the severity of the 2002 drought in Australia. The report, *Global Warming Contributes to Australia's Worst Drought*, compares the 2002 drought with the four other major droughts in the country since 1950 and has found higher temperatures caused a marked increase in evaporation rates from soil, watercourses and vegetation. The report warns that higher temperatures and drier conditions have created greater bushfire danger than previous droughts. Drought severity also has increased in the Murray Darling Basin, which produces 40 percent of Australia's agricultural produce.

The report states that in 2002 Australia recorded its highest-ever average March-November daytime maximum temperature, with the temperature across Australia 1.6°C higher than the long term average and 0.8°C higher than the previous record. The Murray Darling Basin experienced average maximum temperatures more than 1.2°C higher than in any previous drought since 1950.

"The higher temperatures experienced throughout Australia last year are part of a national warming trend over the past 50 years which cannot be explained by natural climate variability alone," said Professor David Karoly, formerly Professor of Meteorology at Monash University, who co-authored the report with Dr James Risbey from Monash University's School of Mathematical Sciences, and Anna Reynolds, WWF Australia's Climate Change Campaign manager. "Most of this warming is likely due to the increase in greenhouse gases in the atmosphere from human activity such as burning fossil fuels for electricity and transport and from landclearing."

According to Professor Karoly, the actual trend in Australian temperature since 1950 is now matching the climate model studies of how temperatures respond to increased greenhouse gases in the atmosphere. He believes that this is the first drought in Australia where the impact of human-induced global warming can be clearly observed. Dr James Risbey said that although the 2002 drought was related to natural climate variations associated with El Niño, the higher temperatures could not be attributed solely to this factor: "While higher temperatures are expected during El Niño triggered droughts, the 2002 drought temperatures are extraordinary when compared to the four major droughts since 1950, with average maximum temperatures more than 1°C higher than these other droughts."

The report contains new data on evaporation rates and says low rainfall and higher evaporation has adversely impacted on agricultural productivity with lower crop production leading to lower export earnings for farmers. According to Anna Reynold, global warming is a reality that is affecting the livelihoods of rural Australians. WWF is urging Prime Minister Howard to act to prevent further economic and environmental devastation. "We can slow global warming, keep temperature increases to the lower end of the scale and reduce the severity of future droughts. The Kyoto Protocol is the first international agreement with targets for reducing greenhouse gas emissions and slowing global warming – it is in our national interest to ratify the treaty," she said.

51) BID TO REDUCE GREENHOUSE GASES 'IS FOLLY'

The Observer

January 12, 2003

Internet: http://www.observer.co.uk/uk_news/story/0.6903.873108.00.html

A scheme to dump iron in the sea to help cut global warming could prove catastrophic, reports Robin McKie. Plans to pump vast quantities of iron into oceans in a bid to reduce carbon dioxide levels in the atmosphere could trigger a global ecological disaster, scientists warn. They say that a project backed by US businessmen and researchers to seed the seas with iron could lead to the uncontrollable spread of toxic algae and the release of gases that could damage Earth's fragile ozone layer. Professor Sallie Chisholm, a marine biologist at Massachusetts Institute of Technology, told The Observer: 'It would be folly on a global scale.' She was backed by Prof Andrew Watson, of East Anglia University: 'It is not just that this project may be dangerous, it is also unethical,' he said. 'What right has one group or country to use the world's oceans to resolve its domestic problems?'

The scheme is based on the discovery that tiny amounts of iron - around one part per billion - are critical in stimulating phytoplankton growth in seas. As such plankton absorbs carbon dioxide, proponents argue that increased iron and plankton levels would lead to the removal of carbon dioxide from the atmosphere, thus helping to slow down global warming. In many parts of the world, iron in seawater is virtually non-existent - and plankton levels correspondingly low. As a result, several groups of US entrepreneurs have begun experiments aimed at correcting this problem: by pumping tonnes of soluble iron compounds into sea areas.

For example, Planktos, backed by the rock star Neil Young, who provided his yacht Ragland free of charge, has completed trials off Hawaii. Tonnes of iron compounds were dumped overboard and the growth of plankton measured. Results have encouraged Planktos - which is funded by donations from US energy companies - and other groups, such as GreenSea Ventures, to consider selling their services.

They hope to charge the US government around \$10 for each tonne of carbon that they remove from the atmosphere by pumping iron sulphate solutions into the sea. This would then allow America to reduce the carbon emission cutbacks that it will have to make when it signs the Kyoto agreement on global warming.

In other words, by interfering with the world's oceans, the US will be able to maintain its high output of industrial gases. 'There is no law or international agreement that prevents us from doing this,' said Dr Lee Rice, of GreenSea Venture. 'It is perfectly legal.' Rice envisages tracts of sea being seeded with soluble iron compounds. Plankton would bloom and then die, sinking to the seabed, carrying with them the carbon dioxide they had absorbed. 'We would only do our seeding episodically - say for 30-day periods - so as not to trigger other undue environmental side effects. Then we would measure how much plankton growth we have stimulated and calculate how much carbon dioxide will have been absorbed. We will then charge for our services.'

But this concept was derided by Chisholm. 'You can certainly measure how much plankton growth you have stimulated - but that will not tell you how much carbon will have sunk to the seabed. Much of it could simply be released back into the atmosphere.' But if Planktos and GreenSea make money, other groups would be encouraged to carry out similar projects. Vast portions of ocean could be seeded, with dire environmental consequences, as was revealed by biologists from the Moss Landing Marine Laboratories, in California. They reported that iron-fertilised plankton

blooms also produce emissions of methyl bromide which damages the ozone layer, and isoprene - a gas that actually increases the greenhouse effect.

The trouble, say critics, is that studies by Planktos and GreenSea are not sophisticated enough to pick up the environmental implications of their projects. As a result, major programmes could be well under way before it was realised that an ecological disaster had been triggered. 'These companies are gaining momentum at an extraordinary rate. So, yes, we do have a lot to be concerned about,' Chisholm said. Or as an editorial in Nature warned last week: 'Politicians seem to have been deaf to warnings, leaving organisations like Planktos and GreenSea to pursue their experiments in climate engineering.'

52) COUNTRIES OF THE BARENTS SEA REGION CONFIRM THEIR ADHERENCE TO KYOTO PROTOCOL

Pravda

January 11, 2003

Internet: <http://english.pravda.ru/diplomatic/2003/01/11/41906.html>

Heads of government of member countries of the Council of the Barents Sea/Euroarctic region at their meeting on Saturday confirmed their adherence to the Kyoto protocol on the reduction of greenhouse gas emissions. According to the information confirmed to journalists by Swedish Prime Minister Goran Persson, Russia's position in this connection was of special importance. Persson stressed that "without Russia's participation the Kyoto Protocol would hardly have survived." The head of the Swedish government reported that at the Council's meeting they had considered the whole spectrum of matters of cooperation between countries of the region. In particular, the parties noted the necessity to intensify the struggle against organized criminality, smuggling, illegal migration. They pointed out to the necessity to have more close cooperation between services reacting to emergency situations. Probably in 2004-2005 these services of the Council member countries will hold joint exercises in Norway.

Heads of government also voiced the necessity to enhance the role of the organization in Europe in general. According to Persson, three member countries of the Barents Sea Council and of the European Union will promote in the European Union the understanding of the fact that the Barents sea region is one of the richest regions in the world and was particularly in need of investments. The Swedish Prime Minister stated that "it was necessary to put some pressure on the European Union for it to realise its obligations to facilitate priority development of the region."

53) EMISSIONS THAT WEIGH HEAVILY ON INDUSTRY

The Times

January 11, 2003

Internet: <http://www.timesonline.co.uk/article/0,,630-538873,00.html>

It has been nearly six years since Britain joined 38 other industrialised countries in signing up to the Kyoto Protocol on reducing global greenhouse gases. Kyoto, a UN initiative, committed a large part of the world — as of January 3, 84 countries have signed and 102 have ratified or acceded to the protocol — to reducing global emissions by an average 5.2 per cent over 20 years compared with 1990 levels. Many scientists, however, believe that cuts of between 60 and 80 per cent are necessary for a serious assault on global warming and climate change. But in the less than perfect political world, Kyoto was at least a start; for the first time, the world was forced to focus on the environmental impacts of industry and power supply.

Since that ground-breaking agreement in Japan, the Kyoto Protocol has unfortunately begun to unravel, some would say fatally. Two years ago President Bush unilaterally pulled the US out of the protocol. The exit of the world's biggest economy, and a huge pollutant, was a devastating blow to Kyoto's aspirations and to the morale of the other signatories. Then, a few months ago, came Australia. Although far smaller than the US, Australia's absence is nevertheless still very important because of the proliferation of heavy industry. Both countries said that implementing Kyoto would damage the competitiveness of their industries.

Although Canada recently added a crumb of comfort by finally endorsing the agreement, it is now estimated that Kyoto will produce a cut in emissions of only 1 to 2 per cent by 2010 — less than half its modest goal.

The European Union maintains a pledge of a 5 per cent reduction and Britain is committed to double that promise, saying that it will reduce gases by 10 per cent. The UK's comparative generosity springs largely from the belief that it could comfortably meet 5 per cent because of the switch of many power producers and consumers to natural gas.

But where now for Kyoto? Scientists urge rapid new agreements, giving warning of devastating and irreversible climate change that could trigger the break-up of the western Antarctic ice sheet and result in a huge rise in sea levels.

The successor to Kyoto must also be agreed soon because it is intended to be in place in five years. Along with the fraught international difficulties caused by Kyoto, Britain's method of implementing the protocol has also been painful for business. The UK's way of reducing emissions has come with one of the most controversial and heavily revised business taxes — the climate change levy.

The levy, which came into force last spring, was devised by the Treasury to encourage a reduction in energy use. The Government decided to target industry and business for the tax in part because they are large consumers, but also because it recognised that a tax on individual consumers would be politically unacceptable.

Although business could not have been expected to be delighted about a new tax, the reaction to the climate change levy was as though it were a business mini poll tax. Based on energy use, rather than actual emissions, the levy penalises the clean, big energy user as much as the smokestack. As first planned, the levy offered very few exemptions or incentives, but it underwent a serious review after heavy pressure from business and the Department of Trade and Industry. The tax was then designed to allow partial exemptions — of up to 80 per cent of the charge for some industries — if companies sign up to specific energy reduction targets. The categories of companies able to win exemptions is based on classifications in legislation covering integrated pollution prevention and control. On odd occasions, most notably with horticulturists, companies outside this classification have been able to negotiate exemptions on the ground of facing tough international competition.

The use of pollution legislation categories to determine exemptions has delivered big gains for the smokestacks while clean fuel users have been forced to pay the levy at full or nearly full rate.

Lobby groups have kept up the pressure to alter this and the issue was driven hard by British Energy, the nuclear generator, when it teetered on the brink of administration. However, the Government has so far been reluctant to allow further major concessions for fear of setting a precedent that could open the floodgates to further claims. The quid pro quo for the tax, which is supposed to be revenue neutral, is a 0.3 per cent reduction in national insurance contributions. However, that favours companies with a large number of employees, especially service sector businesses. The Engineering Employers' Federation calculates that the levy has cost manufacturing alone £143 million while some service industries have profited from the implementation. By the time international leaders meet to draw up the next Kyoto agreement, the UK is likely to face even greater pressure from industry, especially those companies that are competing head-to-head with US and Australian businesses.

54) CHINA SIGNS AGREEMENTS WITH CANADA

People's Daily

January 10, 2003

Internet: http://english.peopledaily.com.cn/200301/10/eng20030110_109860.shtml

China and Canada yesterday signed memorandums on four projects and a letter of intent on co-operation in the field of climate change. Lu Fuyuan, vice-minister at China's Ministry of Foreign Trade and Economic Co-operation, and visiting Canadian Minister for International Co-operation Susan Whelan signed the documents in Beijing Thursday. The four projects concern the adaptation of small farmers to the global market, the reform of China's prosecutor system, roads in western China and primary education capacity in western China. China and Canada started to co-operate in development in 1982. They have agreed 91 projects involving 600 million Canadian dollars (US\$410 million).

The projects cover areas such as agriculture, forestry, energy, transportation, education, telecommunications, environmental protection, human-resources development and poverty relief. Some 58 of the projects have been finished. China and Canada are negotiating revisions to the Country Development Programming Framework, signed in 1994, and are expected to finish that work this year, said Chinese ministry officials. Balanced development, environmental continuity and civil affairs will be the focus of Sino-Canadian development co-operation, they said. Whelan arrived in China yesterday and will leave on Sunday. It is her first visit to China and she is scheduled to meet Chinese ministers and commissioners of agriculture, justice, the environment and foreign trade and economic co-operation. She will also visit development projects in Beijing as well as in Xi'an in Northwest China's Shaanxi Province.

55) MABUDAFHASI JOINS WORLD LEADERS TO DISCUSS EL NINO

SA Government

January 10, 2002

Internet: http://www.environment.gov.za/NewsMedia/MedStat/2003jan10/weather_100120031.html

THURSDAY, 10 JANUARY 2003: The Deputy Minister of Environmental Affairs and Tourism, Ms Rejoice Mabudafhasi, attended the first ever stakeholders meeting of the International Research Centre on El Nino (Ciifen) in Guayaquil, Ecuador on 9 and 10 January 2003. According to Mabudafhasi the establishment of this Research Centre should place us in a position where we can come up with better policies and strategies that would reduce the impact of El Nino on our people. Both Minister Heinz Moeller of the Ministry of Foreign Affairs of Ecuador and Professor Obasi, the Secretary General of the World Meteorological Organization hosted this meeting, which coincided with the inauguration of the International Research Centre on the El Nino.

During her address at this meeting Mabudafhasi encouraged the culture of working together, particularly between governments, WMO, civil society and the International community, and indicated that all these sectors of society should share the responsibility of creating a safer world for all the peoples of this world. Mabudafhasi also pointed out that it was imperative for our country, South Africa, to engage itself in issues that are of such great importance together with the whole world, in its endeavors to ponder means of achieving better ways to deal with challenges posed by El Nino to the entire Global community. She congratulated the government of Ecuador and WMO for the establishment of this International Research Centre on El Nino, which she indicated is certainly a step in the right direction towards an integrated and collective approach for addressing the challenges posed by El Nino. "The natural disasters experienced entrench more poverty to people who are already vulnerable to such disasters. It is thus a priority to capacitate our people with the necessary knowledge and skills to understand such phenomena and how to respond to minimize its impact", said Mabudafhasi.

She further mentioned that whilst donations from other countries are received to deal with El Nino and La Nina our priority should be to educate and capacitate our people on how to respond to its challenges. This will save many lives and is more sustainable. Mabudafhasi also indicated that this Centre is important to all the people of the world, therefore it needs commitment, dedication and support from politicians, decision makers, academia, private and public sector and NGO's. This Centre will be measured by its outputs and the contributions it will make towards the minimization of the impact of El Nino. When the future generations look back upon the XXI century, they will recognize the starting point of a new stage in our history, during which we assumed the responsibility to find better ways through collective action to reduce the impact of El Nino on all the nations and peoples of this world. On behalf of the South African Government Mabudafhasi gave full support to the Centre

56) DEFENCE EXCEEDS GREENHOUSE GAS REDUCTION TARGET

Australian Government

January 10, 2003

Internet: <http://www.scoop.co.nz/mason/stories/WO0301/S00034.htm>

Australian Parliamentary Secretary to the Minister for Defence, Fran Bailey, today congratulated Defence for reducing greenhouse gas emissions for the second year since signing up to the Greenhouse Challenge Cooperative Agreement in March 2001. In its second report submitted to the Australian Greenhouse Office, Defence reported a reduction of 34,974 tonnes of greenhouse gas emissions against emissions reported for the 2000-2001 reduction target. "I congratulate Defence for performing consistently well against the reduction targets set under the Greenhouse Challenge Cooperative Agreement," Fran Bailey said. "Through the Defence Energy Efficiency Program, Defence has been able to consistently improve its energy efficiency, thereby reducing greenhouse gas emissions and the impact of Defence operations on the environment. "At the same time it has sustained vital Defence capability. "The results demonstrate the considerable effort and commitment being made to improve behaviour and management practices in energy consumption throughout Defence. "Defence has performed extremely well to improve its energy efficiency. If this trend continues I am confident that we will achieve the targets set for June 2004 when the Agreement expires and a new agreement is negotiated," Fran Bailey said.

The Defence Energy Efficiency Program was established in October 2000 to address the Government's objective of reducing the environmental impact of Government operations through improved energy efficiency and associated greenhouse gas emissions. Defence accounts for nearly 50 per cent of total Commonwealth energy usage and this program is a key vehicle for Defence to implement the Government's policy on reducing greenhouse gas emissions.

The Defence Energy Efficiency Program is focused on improving the energy efficiency of Defence's top 43 highest energy consuming sites, which are responsible for 80 per cent of the Department's total annual energy consumption. A public statement on the report will be available on the Australian Greenhouse Office web site in 2003. More information on the Greenhouse Challenge and the Greenhouse Challenge Cooperative Agreement is available at <http://www.greenhouse.gov.au/challenge/index.html>.

EDITORIALS/OPINIONS

57) CLIMATE CHANGE SPELLS DISASTER FOR AFRICAN AGRICULTURE - UNLESS WE ADAPT

All Africa

January 23, 2003

Internet: <http://allafrica.com/stories/200301230608.html>

In the next 50 years, the world's population is expected to increase from six billion to nine billion. At the same time the planet they must survive on is under pressure; the number of people living in poverty is increasing, health crises like HIV/Aids are worsening, forests are being depleted, cultivable land is over-crowded. On top of such existing problems, must be laid the irrefutable fact of climate change, a factor likely to impact heavily on human survival. For many the problems of food and water security loom largest among the planet's many seemingly intractable problems. Among them is Dr Mahendra Shah is a leading economic analyst based at the International Institute for Applied Systems Analysis in Austria. Born and brought up in Kenya, he has worked for several international bodies, including the UN and the World Bank, in roles ranging from delivery of urgent emergency relief to longer term, in-depth economic planning. Last year, Shah co-authored a report entitled "Climate Change and Agricultural Vulnerability," prepared for the World Summit on Sustainable Development in Johannesburg, in August 2002. The 160-page report reviews data for all the world's countries and predicts the impact of climate change on agriculture using various models to project forward eighty years. Akwe Amosu asked him how Africa's food production was likely to fare.

You believe that climate change will have dramatic consequences for African agriculture. What are they? Sub-Saharan African countries are vulnerable economically, socially and environmentally as things stand. Most of their populations are in agriculture. They rely on agricultural exports; they are at the mercy of the world trade market. Given this vulnerability, on top comes climate change. There are five major models of climate prediction. Now if you look at any of the climate change models, we find that Africa suffers in the sense of extreme temperatures well as extreme precipitation. To take one example, climate change in 2080 will result in the arid area in Africa increasing by some 10 percent; 180 million people live in this zone at the moment, and the livelihood of the future populations in this zone will be threatened. At the moment sub-Saharan Africa has 200 million under-nourished people. With strong and rich economies, you can cope with climate change. But even if economic growth is high, in the case of sub-Saharan Africa, progress will be slow because of the tropical resource base, an environment where climate change impacts will be substantial, and in a demographic situation where the population in this region is projected to increase substantially in the 21st century. There is great concern, especially for countries such as Mozambique and South Africa, which will substantially lose agricultural potential due to climate change. In the case of South Africa, as much a half. On the other hand, countries such as Kenya and Uganda are winners, in the sense that they will be able to benefit from increased production potential. So we have something like fourteen countries that gain production and fourteen countries that lose. The problem is that the fourteen countries that lose carry the mass of the population in sub-Saharan Africa. And this is very worrying.

What sort of time scale are we talking about here?

Our study analyses in annual increments from the year 2000 to 2080. I think the interesting point to look at is 2020 because of the global targets for halving poverty by 2015. In the case of sub-Saharan Africa, no matter what level of economic growth (as high as over 4% per capita annually as projected by one of the IPCC future world scenarios), even the highest economic growth you can imagine will not affect the number of the under-nourished.

Let us just take one country so that we can really get a picture of what this might mean for a population. Take Mozambique, one of the "losers" in your survey. Tell us what's going to happen to Mozambique in the next fifty years if the present trends of climate change continue.

Well first, Mozambique has a population of 18 million and in the next fifty years it will rise to twenty-eight million. Mozambique has \$100 per capita GDP at the moment. It has been affected by drought and floods every alternate season and will potentially lose 25 percent of its food production on currently cultivated land.

The irony is that Mozambique has not itself contributed to climate change because it only produces 0.1 tons [of carbon dioxide emissions] a year, compared to the developing countries' average of two tons and an OECD average of 11 tons. Mozambique is rich in land resources and if the water can be tapped it will be rich in water resources. But at the moment it's at the mercy of flood controls from the neighbouring countries and of course. This country has the potential. It needs to work with other developing countries to find technology that is relevant to the Mozambique situation and really make a sustained effort, because you cannot run or take shortcuts.

In other words, they have to try and adapt immediately, from here on.

Absolutely. They have to adapt.

Isn't it very difficult to make these projections? I mean there are so many factors to be taken into account. How reliable is your data?

Well, first of all, this information comprises of two parts. The agro-ecological potential, which tells you the production potential in your particular country; that is based on six to seven hundred person-years of scientific work. Secondly, we have integrated this data into a world trade economy framework -there's not been any ecological-economic integrated study at all in the world which has carried through a study on a level platform. For example, the Unites States has done a detailed study of the U.S. using the best data. And they use the same general circulation models of climate change that we have used for all the countries for this survey. If you have a level platform, it enables you to compare who wins and who loses on a level playing ground. And that's extremely important. So the results of this study are available for each country. What needs to happen is that each individual country needs to ask for the methodology and the database and then use their own detailed data to analyse what are the options for them

From what you've been saying, although the millennium goal is to halve poverty by 2015 with all the associated problems that poverty implies, you are saying that that's unachievable, regardless of what happens.

It's unachievable, regardless of the levels of economic growth in the next two decades. What we need are specific targeted programs, not for relief aid all the time, but to give the vulnerable people the means to build their livelihoods sustainably. So all programs need to identify in each country the vulnerable populations and the options. So it needs to be a really absolutely targeted approach to the under-nourished.

But knowing what you know about levels of growth in African economies, and knowing also about the difficulties about mobilising resources and getting coherent responses to poverty and hunger problems, what's your gut feeling about whether we could address the problems, even with that targeted approach?

I think the present situation is worrying. Climate change will make it more difficult and really it is essential that we take an in-depth look at the technology that is necessary. For example, supplementary education needs to be pushed, because there are water-scarce areas; we need to look at the semi-arid areas, the livestock situation. Sub-Saharan Africa because of its link with the world market and the need for exports cannot do it alone. It needs partners. But at the same time we need the political commitment, the commitment to agriculture. If you go to Nairobi, if you to Lagos or you come to Pretoria, the weakest lobby in the political arena is the agricultural lobby. They have no voice. And women farmers who represent well-over half, have no voice at all. We need to give respect to agriculture. It reminds me on the day of India's independence, when the first Prime Minister Nehru said "everything can wait, except agriculture." We need to recognize this because if you look at the currently developed countries they've developed with agriculture as a foundation. We have little else. Let us build our economies on agriculture and give it the respect it deserves.

But from what you say, this isn't a problem that can successfully be addressed with a gradual, 'slow and steady' approach. There's not much time. When you mention technology, what does bio-technology offer Africa in this situation?

I think the first thing that needs to happen is that developing countries need to recognize the importance of climate change adaptation. This is not on the international agenda yet and it is the developing countries that must see the urgency in putting it on the agenda. Then mitigation - the Kyoto protocol - is important. But it must be complemented by adaptation.

When you say mitigation, you mean the attempts by countries, particularly the OECD countries to bring their emissions down?

Well, all the countries of the world need to bring their emissions down. But remember the climate change of the next fifty years is already here. What we need to do is to bring emissions down so we can reduce the risk of climate change in the second half of the 21st century. But at the same time, adaptation is not on the international agenda. If it's put on the agenda, one of the key things which will be required will be agricultural research and the question of relevant, safe

biotechnology in Africa is important. But the question is, who is going to develop it? Major international corporations do not have an interest in this, as it is technology for the poor.. And it's the governments within Africa that need to combine their efforts and see which area of biotechnology needs to be looked at in the first phase. At the same time it is not just biotechnology. We need to use the best of agricultural science, including traditional knowledge. So it's a long and sustained effort, it will take us twenty to thirty years to come up with the first new crop varieties that can adapt to climate change. If we do not wake up now, thirty years hence it will be too late.

A PDF version of the report, "Climate Change and Agricultural Vulnerability" can be viewed at <http://www.iiasa.ac.at/Research/LUC/JB-Report.pdf>

58) LET'S NOW GET SERIOUS ABOUT WARMING by Claude Martin

International Herald Tribune
January 23, 2003 Internet: <http://www.ihf.com/articles/84238.html>

The writer is director-general of WWF International in Gland, Switzerland.

DAVOS, Switzerland The dominant local issue in this Swiss ski resort is not the annual meeting of the World Economic Forum that starts this Thursday. It is the freakish weather - spring-like temperatures that extended into the first days of January, with no snow below 2,000 meters. Few people living in Europe's lower-lying ski resorts need any convincing that their economy is being seriously affected by climate change. But the economic and social impact of global warming extends well beyond the Alps.

In recent weeks Germany has been hit by serious flooding while parts of the Solomon Islands in the South Pacific were devastated by a particularly violent tropical storm. Southern and eastern Africa are in the grip of drought, leaving millions at risk of starvation. Australia is in the midst of one of its worst droughts on record, leading to lower crop production and export earnings. The exceptionally hot, dry weather has exacerbated bush fires. Hundreds of homes in the Canberra area were reduced to ashes last weekend.

Many scientists say such extremes in weather are linked to global warming and the burning of fossil fuels. Political and business leaders meeting in Davos have an opportunity to tackle this challenging but solvable problem. There are some encouraging signs. Despite the Bush administration's reluctance to accept the evidence on global warming, other countries are moving ahead and taking measures to reduce greenhouse gas emissions. The Kyoto climate treaty needs only ratification by Russia to enter into force. Last month the European Union introduced a sound framework for emissions trading. Last week in the United States, two influential senators introduced legislation to set up a national emissions trading system. Some U.S. states are taking action to reduce the amount of carbon dioxide released into the atmosphere. Companies, too, are taking action. Often it is not just the Kyoto treaty that drives the agenda. Reducing emissions means reducing energy costs and avoiding potential future liabilities. Some insurance firms are looking at the carbon portfolio of companies when deciding whether or not to invest.

Last week shareholders at five of the largest U.S. power utilities filed global warming resolutions that would force the companies to disclose publicly the economic risks of the air pollutants, including carbon dioxide, that they emit. Emissions must be cut dramatically if the world is to stay well below the rise in temperature that could have devastating ecological and economic consequences. We must accelerate the switch from coal and oil to clean, carbon-neutral power. Such a shift will bring new jobs and growth. It is time for visionary, responsible management of the global climate. Davos should be the launching pad for such an effort. If anyone at the meeting forgets why, he or she need only look out the window.

59) WHERE TO DO JI?

Point Carbon
Internet: http://www.pointcarbon.com/article_view.php?id=2056

In a ranking of potential host countries for Joint Implementation (JI) projects done by Point Carbon and Vertis Environmental Finance, Romania gets the top spot. Its well-established institutional framework and a large and varied project pipeline, as well as clear government support for JI, compensate for Romania's risky investment climate. The study - a joint effort of Point Carbon and Vertis Environmental Finance (for more information on the latter, see below) - study ranks economies in transition (EITs) of Central and Eastern Europe according to their attractiveness as JI hosts. The total score was calculated on the basis of the score along four (weighted) indicators:

- **Project Pipeline:** What is the potential size of the JI market? What quality of projects can we expect in areas such as renewable energy and energy efficiency given the country's natural characteristics and carbon intensity (emissions per economic output)?
- **Political & Institutional Environment:** Has there been established a regulatory framework for approving JI projects? What is the general attitude at the governmental level to JI? Have governmental decision-makers been supportive or obstructive to JI-like projects recently?
- **Investment Climate:** Is the general investment climate stable and investor-friendly? How sophisticated are capital and service markets? Is there a high level of Foreign Direct Investments (FDI) to the country?
- **Project Experiences:** Has the country been able to attract AIJ and JI investors? How many projects have been implemented? What are the current trends when it comes to investor interest and development of new projects?

Apart from Romania, Poland also scores well, with plentiful project opportunities in both renewable energy and energy efficiency and a good investment climate. Wavering political commitment to JI, despite a well-structured institutional approach, has limited Poland's engagement in JI so far.

Slovakia is also close to the top of our list despite a limited project track record to date. Hungary and the Czech Republic end up with a lower total score, much because the government has been wavering in their support for JI, in the latter gradually shifting focus towards emissions trading - which is still some years away.

Russia and Ukraine are in the bottom half of the list. Despite an enormous potential for projects and political interest in somehow monetising expected Kyoto surpluses, investors should await the establishment of new institutions that will follow a Russian ratification of the Kyoto Protocol. The current organisations responsible for approving JI projects in Russia are rather unsupportive; indeed, their operations are often counter-productive and add considerable risks for investors. The Baltic States (Estonia, Latvia, and Lithuania) are promising but small JI markets, while Croatia and Slovenia lag behind in both project potential and preparedness.