

CLIMATE ALERT

Volume 7, Number 5

September-October 1994

Asian Leaders Will Meet To Hammer Out Regional Climate Change Strategy

Just six weeks before the Berlin Conference of the Parties, Asian policymakers at the ministerial and parliamentary level will gather February 17 - 19, 1995 in Manila, Philippines to develop common regional strategies to address climate change. There is need for an Asia Pacific research strategy to improve understanding of monsoons and El Ninos, tropical cyclones, flood, drought and crop risk and for development of effective regional measures to adapt to climate change and introduce technologies to limit future growth in greenhouse emissions. The Republic of the Philippines has agreed to host the Manila meeting, and President Fidel Ramos will address the summit.

Well before the signing of the Framework Convention on Climate Change in 1992, the nations of the Asia Pacific Region had begun extensive work on many of these issues at the technical level. Previous Asian Pacific Seminars included:

- January 1991, in Nagoya, convened by the Japan Environmental Agency, focused especially on issues of monitoring, scientific cooperation and assessment of impacts.

- March 1993 at the Second Asia Pacific Seminar on Climate Change in Bangkok, Thailand.

(Continued on page 6)

Berlin Conference of Parties Faces Prospect Emissions Will Exceed Goals

The initial Conference of the Parties (COP1) — the first formal review of the Rio Framework Convention on Climate Change — in Berlin, March 28 to April 7, 1995, will confront a discouraging state of affairs: virtually all OECD countries are failing to meet the target of stabilizing greenhouse gas emissions at 1990 levels by 2000 or offer more ambitious targets. Furthermore, it is likely that there will be a large future growth in emissions because of strong economic activity taking place around the world. However, there is a possibility that technical innovation may change the terms of the climate change debate.

Canada's CO₂ emissions are projected to increase by 10.6 percent from 1990 to 2000, Japan's by 3.1 percent. Australia admits it will exceed 1990 levels. Germany, which set itself a more difficult target of reducing emissions by 25-30 percent from 1987 levels by 2005, is unlikely to succeed as is Austria with a similar goal. Originally, the recession and relatively simple energy efficiency measures eased the path toward the goal of lowering emissions. But later an economic recovery that was stronger and faster than anticipated and lack of investment to encourage new developments has driven emissions up.

A study by the American Council for an Energy Efficient Economy has

reported that U.S. GHG emissions in 1993 rose slightly from 1992 and increased 2.3 percent above 1990 levels. Part of the reason may have been low oil prices which boosted consumption as well as emissions. Other contributing factors may have been lack of government funding support for the Climate Action Plan and reliance on voluntary commitments from business. Clinton officials acknowledged GHG emissions are rising and unlikely to be reduced to 1990 levels without additional action.

Developing countries, who feel the emissions problem was created by the industrial nations, have no target deadlines. Although they contributed only 25 percent of global energy sector CO₂ emissions in 1985, they may contribute nearly 50 percent by 2025. Their rate of increase of emissions is six percent per year compared to one percent in developed countries. To avoid a huge rise, nonindustrial countries must devise strategies that cost-effectively limit expected emissions. These nations have made clear that mitigation measures — funding, technology and the building of capacity — must be financed through the GEF or other channels.

The Global Environment Facility was created to provide financing to developing countries to assist them

(Continued on page 6)

GUEST COLUMN

Local Governments Play Vital Role in Reducing Energy Use

By Philip Jessup, Director, Urban CO2 Reduction Project, International Council for Local Environmental Initiatives

The national climate action plans of industrialized nations are in trouble. While the energy intensity of the industrial economies — the amount of energy consumed per unit of GDP — has been declining for many years, energy use per capita is rising almost everywhere. As population continues to grow, even at a slow rate, CO2 emissions will rise as long as fossil fuels, especially coal and petroleum, remain relatively cheap and predominant in the developed countries.



Jessup demonstrates Green Fleets Initiative commuting

Three years of extensive research on urban energy patterns conducted by 14 cities in North America and Europe participating in the Urban CO2 Reduction Project lead me and my colleague Ralph Torrie to conclude that lifestyle profoundly influences energy consumption per capita. Land use and urban form — the spatial and functional relationships among residential neighborhoods, commercial districts, and transportation infrastructure — exert especially robust influences on energy use.

Residents of American cities like Minneapolis, Minnesota, and Portland, Oregon, for example, use five times more energy per capita to travel than residents of Copenhagen or Helsinki. Even within a single metropolitan region such as Toronto, transportation energy varies with population density. Residents of Toronto's compact downtown neighborhoods consume much less gasoline per household than residents of surrounding suburban communities.

especially municipal governance in such areas as zoning and housing codes and transportation and infrastructure investments, exert such a profound influence on energy use locally that national governments ignore local governments at their peril. Regrettably, the national action plans developed by the industrial countries appear to ignore the vital role that local governments may play in reducing energy use over the long term. These plans, when they mention municipalities, tend to marginalize them by relegating them to minor partnerships or by marketing federal measures to them, rather than exploring steps municipalities can take to influence energy consumption over the long-term.

There are many examples of successful local initiatives, with more on the drawing board. Saarbrücken, Germany has achieved a remarkable reduction in local space heating through strong political support, good cooperation with the local

In most nations, one thing seems certain. Positive benefits of regulatory policies designed to reduce energy consumption are increasingly being offset by lifestyle trends that exert an upward influence on energy consumption per capita. A predominant factor is the growth in automobile use and travel, one result of suburban sprawl. In countries where electric appliances have not fully penetrated the market and incomes are rising, household electricity consumption is also on the rise.

Will carbon or energy taxes save the day? Maybe, if they are high enough to influence purchasing behavior. But the more effective such taxes promise to be the less likely their political approval.

Indeed, while it is tempting to attribute Canada's lower personal transportation energy — vis a vis the U.S. — to its 50% higher gasoline prices, we suspect that Canada's higher level of urbanization and excellent local public transportation systems are more responsible.

The relationship between population density and transportation energy use has been well documented by Peter Newman, Jeffrey Kenworthy and others. Our research has built on their efforts and extended the analysis of urban energy use to all sectors of the local economy.

We conclude that the factors contributing to local land use patterns,

CLIMATE ALERT

Published 6 times a year by the
Climate Institute — © Copyright 1994
ISSN 1071-3271

Sir Crispin Tickell, *Chairman*
Stephen Leatherman, *Co-Chairman*
John C. Topping, Jr., *President*
Mark Goldberg, *Publications Chairman*
Nancy C. Wilson, *Editor*
Linda Dunlee, *Reporter*

324 Fourth Street, NE
Washington, D.C. 20002
Phone: (202) 547-0104
FAX: (202) 547-0111
E-Mail: climateinst.@igc.apc.org

utility and the state government, and an injection of federal infrastructure funds early on that enabled the City to expand its district heating system. Innovation continues with energy efficiency and solar rooftop retrofits financed mostly by a consortium of local savings banks. Toronto is about to embark on a huge demonstration investment using federal and provincial job creation

funds to retrofit one percent of the institutional, commercial, residential and industrial building floorspace in the city. Public funds of \$12 million will be used to leverage an additional \$18 million in private capital for energy efficiency upgrades. Phoenix (US) has an energy efficiency revolving fund, Curitiba (Brazil) an integrated land use and transportation system, and Sapporo

(Japan) a process of recovering subway heat.

As national governments revise and refine their plans, they would do well to pay attention to the energy, imagination and effectiveness municipal leaders can bring to the task of changing lifestyle behavior locally and influencing the underlying determinants of energy use.

New Reports Express Optimism About the Promising Future of Renewable Energies

The world is on the brink of a revolution in the energy industry. With the pressure to meet the impending standards set forth in the Rio Climate Treaty compounded with the economic incentives for investment in a rapidly expanding market, the changes in the coming decades may occur more rapidly than those of the computer and information age, state Christopher Flavin and Nicholas Lenssen of Worldwatch Institute. The most drastic changes will be the switch from fossil fuels to renewable energy such as wind, solar and hydrogen.

Many analysts agree that we have already witnessed the height of the oil era. In their recently published study, *Power Surge*, Flavin and Lenssen predict a decrease in oil production and a gradual slowing in worldwide use. Fuel efficient automobiles capable of getting up to 75 miles per gallon and new refining processes which reduce pollution from traditional processing techniques will play significant roles in the transformation to more environmentally friendly sources of fuel.

As a cleaner alternative to coal and oil, natural gas is likely to serve as the necessary bridge to non-polluting hydrogen fuel, leading Worldwatch to believe its use will increase sharply in the coming years. High efficiency gas technologies such as fuel cells may soon allow small businesses and homeowners to generate electricity.

Currently generating enough energy to meet the residential needs of both San Francisco and Washington D.C., wind offers the most cost efficient source in the market. The Union of Concerned Scientists, a non-profit organization focusing on energy policy, estimates that all U.S. needs could be met through wind exploitation in just three states — North and South Dakota and Texas. The American Wind Energy Association predicts that by the year 2010, 20% of U.S. needs will be met by this source.

Technological advancements such as higher towers and larger diameter turbines have increased efficiency in the wind industry by more than 30% in the past decade, reducing the cost of generation from 25 or 30 cents per kilowatt hour to 4 or 5 cents. Continuous improvements could enable prices to fall even further to 2 or 3 cents, well below most fossil fuel prices.

The U.S. could exceed its demand for electricity by devoting just 1% of its land to solar energy production, according to the Union of Concerned Scientists. Although technology is improving rapidly, solar energy is still too costly to be used as a broad-based power source.

However, because both wind and solar energy require large quantities of land, there is currently a great deal of public opposition to solar-thermal plants and wind farms.

Flavin and Lenssen believe this is not likely to change without some initiating forces: 1) environmental pressure, 2) technological revolution and 3) policy push.

The U.S. government will inevitably play a critical role in the energy revolution. *Power Surge* noted four major adjustments necessary to begin these changes:

- Reducing fossil fuel subsidies
- Revamping research and development spending to focus on energy technology advancement
- Accelerating investment through government purchases to allow companies to increase production
- Assisting developing countries in directing international aid toward technological energy advancements

By directing their resources toward the development of renewable energy sources which would not require the construction of large transmission networks, developing countries have tremendous opportunities to bypass the technology of industrialized nations and emerge as the leaders in energy technology.

***Power Surge: Guide To The Coming Energy Revolution* is available from: Worldwatch Institute 1776 Massachusetts Ave., N.W., Washington, D.C. 20036-1904 USA. Phone: (202) 452-1999, FAX: (202) 296-7365

Workshop Looks at Relation Between Natural Disasters and Insurance Payments

Damage from three main classes of natural disasters—floods, tropical storms and drought—is rising much more rapidly than from earthquakes, reported Jim



James McCulloch

Bruce at a workshop on, "Improving Responses to Atmospheric Extremes: the Role of Insurance and Compensation," held in Toronto on October 3 and 4. Some scientists have explained the increased damage from earthquakes over the past 30 years as mainly due to increased population and investment in infrastructure. Because the increased costs from climate-related disasters are much greater than for earthquakes, Bruce suggested that they also must show an increased frequency of these natural hazards themselves. Bruce is Chair of the U.N.'s International Scientific and Technical Committee for the International Decade for Natural Disaster Reduction. He said the finding of greater frequency fits well with the predictions of the latest climate models, supporting the thesis that climate is changing.

Specific vulnerabilities to particular hazards depend on a number of factors—age, gender, ethnic background, state of health, socio-economic status, location, and time of day, week, and year, according to Laurie Pearce of the British Columbia Ministry of Social Services, speaking on the social impacts of natural disasters. Pearce proposed scientific and economic definitions for all concerned with responding to natural disasters to overcome problems caused by different vocabularies.

Farmers could use many strategies to adapt to the impacts of atmospheric extremes on agriculture, Barry Smit, chair of the Socio-Economic Impact Committee of the Canadian Climate Program, pointed out. But govern-

ment programs inhibit adaptation by the agricultural community. The New Zealand Government decided to stop all "bailouts" of those with inadequate insurance coverage. This issue stirred lively workshop debate. Participants agreed that existing disaster-assistance programs should be carefully reviewed in view of the attitude, "If the government will bail me out, why should I change what I am now doing?" There was consensus, however, that there will always be a great need to protect those who cannot, as contrasted to those who will not, take personal action.

Alan Davenport, an expert on the design of wind-sensitive structures, stated that inadequate building codes, poor code enforcement and insufficient training by the building trades have all contributed significantly to a marked increase in damage to construction over the past few years. However, he noted that a number of buildings in Jamaica which showed only minor damage after Hurricane Gilbert were paid for by a Canadian construction company that had taken special pains to ensure that the tradesmen were well trained and construction quality met or exceeded codes.

Representatives of the insurance and reinsurance industries described the role they are playing in encouraging the adoption and enforcement of building codes, important factors in keeping insurance costs down. However, government tax regulations, make it expensive for insurers and reinsurers to build up contingency reserves for future catastrophes, escalating industry and client costs.

In a session on atmospheric hazards in Canada, followed by a discussion of the critical role of the sampling period in estimating natural disas-

ter severity, Bill Hogg of the Climate Research Group of Environment Canada told of 100-year floods occurring several times in a decade in Germany. Adding just two years to the sample period altered estimates enough to explain the occurrences.

Speakers from federal and provincial departments providing natural disaster made two major points:

- Some programs help industry, municipalities and citizens to avoid damage, for instance, by a mapping program that identifies flood prone areas. Since it is impossible to insure new properties in risk-prone areas, the full financial risk is borne by those who ignore the information.
- To avoid competition with private insurers, government programs will not provide relief for any property damage insured or insurable at a reasonable cost.

About 90 individuals attended the workshop whose prime organizer and sponsor was the Environmental Adaptation Research Group of Environment Canada. Co-sponsors included the Climate Institute, Emergency Planning Canada, Agriculture Canada, The Insurers' Advisory Organization (1989) Inc., and the Reinsurance Research Council. Conceived as a contribution to the International Decade for Natural Disaster Reduction, the workshop had the full support of the Canadian National Committee for IDNDR. The Direction generale de la securite civile (Government of Quebec) assisted with organizing tasks.

(The Workshop Proceedings — papers, discussion transcripts, and reports of working groups — are being edited by James McCulloch, and will be published by the Climate Institute, supported by other sponsors. Tentatively, the document will be available in early 1995. For further information, contact James McCulloch, FAX (905) 508-7699, TEL (905) 737-2064.)

Climate News Around the World

Drylands Agreement Signed

The Convention on Desertification, backed by some developing nations since the 1970s, was signed by about 100 countries in Paris on October 14. The convention will come into force after 50 ratifications.

Overgrazing, excessive planting, poor irrigation and deforestation resulting from growing populations have put stress on the world's arid and semi arid lands, especially Africa where as much as 75 percent of the land is considered degraded. A quarter of the world's land, home to 900 million people, falls into the arid and semi arid category.

A firm commitment to partnership among nations to promote an effective response to dryland degradation, the new agreement obligates governments to an approach involving local communities and NGOs to ensure that traditional knowledge and local practices will be used. A strong resolution recommended urgent action in Africa, a priority given at the Rio Summit, and called for cooperation between African nations, developed countries, regional organizations, NGOs and local populations. A detailed regional annex for Africa was agreed to, including firm financial obligations. Less detailed annexes covered Asia, Latin America and the Caribbean, and the northern Mediterranean (Spain, Portugal and Greece). The agreement also calls for the transfer of technology and exchange of information to monitor the extent of land degradation.

The convention establishes a "global mechanism" to coordinate projects that protect and rehabilitate lands and to find support for such initiatives. Governments are urged to explore the possibility of new funding through the Global Environment Facility which has till now

refused to consider desertification as a global problem eligible for facility funding. Developing countries had hoped a new global trust fund would be established. Although the industrialized nations pledged little new money, they agreed that action is needed to prevent mass migration from exhausted lands which would require costly emergency aid. The United Nations estimates that \$10-\$20 billion will be needed annually over 20 years to pay for rehabilitating land and to stem loss in fertility. The United States is expected to make an initial pledge of \$500 million and other countries have committed funds for further exploratory studies.

A report prepared by UNEP and WMO concludes that the effect of global warming on low rainfall areas could be a progressive decline in biomass, reducing the world land capacity to store carbon and nitrogen. (There is some disagreement among scientists about whether deserts are expanding and if so whether the main influence is lack of rain or human activity.)

Next meeting of the Intergovernmental Negotiating Committee on Desertification is in January 1995.

El Nino May Be Back

Atmospheric and oceanic trends indicate another El Niño may be developing, the National Oceanic and Atmospheric Administration announced in mid-October. El Niño (actually El Niño/Southern Oscillation or ENSO) events affect global temperatures, and they generally increase the concentration of CO₂ in the atmosphere.

The abnormally warm water developing in the tropical Pacific is similar to conditions which also occurred in September 1991 and 1992 and

were followed by ENSOs in early 1992 and early 1993. One of the longest periods of continuous warm conditions in the last 100 years occurred from 1992 through 1993. Nearly normal conditions returned briefly in early 1994, but now warm episode conditions have gradually redeveloped. Predictions are that they will continue into early 1995.

Scientists have made major advances in research on the processes which determine year-to-year variability in the global climate system in the last decade. They now feel, "the potential exists to predict ENSO events and associated climate variability more than a year in advance," according to a symposium held by the World Bank and NOAA on October 19.

"The social and economic implications of this increased understanding," the statement continues, "have begun to emerge as glimpses at a truly extraordinary opportunity. Variability within the natural climate system is historically perhaps the single most fundamental environmental factor affecting the course of human development... When temperatures and precipitation patterns depart significantly from historical means, the results, if unanticipated, can be catastrophic." Global implications include extreme drought such as that in southern Africa in 1992, severe deluges like those producing the great Mississippi flood and the 1972/73 collapse of the Peruvian anchovy fisheries.

At the October 19 conference, Dr. James Baker, undersecretary for oceans and atmosphere, and J. Michael Hall, director of global programs at NOAA, discussed the possibility of setting up a new world agency to forecast climate a year in advance to help avoid the effects of drought and flood.

Climate Institute News

Two new members, one from India and one from the Philippines, have been named to the Climate Institute Advisory Board.

Dr. R. K. Pachauri

Director of the Tata Energy Research Institute in New Delhi, Dr. R. K. Pachauri, served as team leader of the India Country Study under the eight-country Asian Development Bank Project, coordinated by the Climate Institute and completed in August 1994. He holds two Ph. D.s, one in economics and one in industrial engineering, both earned at North Carolina State University. Pachauri has been a visiting fellow at the World Bank, a visiting professor at West Virginia University, a member of the senior faculty of the Administrative Staff College of India in Hyderabad and an assistant professor at North Carolina State University. He is currently President of the Solar Energy Society of India and of the Asian Energy Institute. He is a member of the World Energy Council

and served on the Advisory Board on Energy of the Government of India from 1983-89; the Board reported directly to the Prime Minister. He is also a member of the National Environmental Council under the Chairmanship of the Prime Minister of India.

Sen. H.T. Alvarez

A key organizer of the Asian Pacific Climate Change Conference in Manila next February, co-sponsored by the Climate Institute (See page 1, this issue), Senator



Sen. H.T. Alvarez

Heherson T. Alvarez has also been chosen as a member of the Institute Advisory Board. Senator Alvarez is Chairman of the Committee on Environment of the Philippine Senate and has introduced a great many pieces of legislation on environmental affairs. He proposed a law creating a Department of Energy which enunciates a national

policy of self-sufficiency and enhanced productivity, while maintaining concern for the environment and low-cost energy sources. He headed the Philippine Delegation to the conference on saving the ozone layer and was author of the resolution urging ratification of the resulting amendments. He also wrote the resolution urging ratification of the UN Framework Convention on Climate Change. A member of the Senate Committee on Agrarian Reform, he introduced legislation providing for a Forestry Code and regulation of logging operations as well as a national program for the planting of one billion trees in the next 5 years.

He received Masters degrees in Economics and Public Administration from Harvard University and is a Founding Chairman of the Philippine Earth Savers Movement, actively involved in environmental awareness and education programs especially among youth and indigenous peoples.

MEMBERSHIP

____ Please enroll me as a member of the Climate Institute: \$95, includes subscription to *Climate Alert*, 6 issues a year.

PUBLICATIONS ORDER FORM

Our printed copies of *Coping with Climate Change* are exhausted. Due to popular demand, we now have reproduced, spiral bound copies.

____ Please send me ____ copy/copies of *Coping With Climate Change*, Proceedings of the Second North American Conference on Preparing for Climate Change, December 6-8, 1988, Washington, D.C. Cost: \$42 includes postage and handling.

NOW AVAILABLE:

____ Please send me ____ copy/copies of *Global Change and Cities*, Proceedings of the International Conference on Cities and Global Change, Toronto, Canada, June 12-14, 1991. Cost: \$35, including postage and handling.

____ Please send me ____ copy/copies of *Report of the International Workshop on Framework Convention and Associated Protocols: A Nongovernmental Perspective*, February 2-4, 1990, Washington, D.C. Cost: \$10, includes postage and handling.

____ Please send me ____ copy/copies of *The Arctic and Global Change*, October 25-27, 1989, Ottawa, Ontario, Canada. Cost: \$25 plus \$2 for postage and handling.

____ Please send me ____ copy/copies of the *Proceedings* of the North American Conference on Forestry Responses to Climate Change, May 15-17, 1990, Washington, D.C. \$35 postpaid.

____ Please send me ____ set/sets of greenhouse effect slides. Approximately 40 slides with accompanying talking points script. Cost: \$85 plus \$10 shipping and handling.

Circle language(s) you wish to order: English, Spanish, Turkish, Indonesian, Arabic, French, Chinese, Russian, Portuguese

CONTRIBUTIONS

____ I am making a tax deductible contribution of \$ _____ to support the Institute **TOTAL AMOUNT ENCLOSED:** \$ _____

Make checks payable to *Climate Institute* and send to Climate Institute, 324 Fourth Street, NE, Washington, D.C. 20002

Name _____	_____	_____	_____	_____
Last	First	Middle Initial		
Address _____	_____	_____	_____	_____
Street	City	State	Zip Code	Country
Phone _____	_____	_____	_____	_____
Business	Home	FAX Number (if available)		

Briefings in Kentucky

Dr. Robert Watson, Associate Director of the White House Office of Science and Technology Policy, made a whirlwind trip through Louisville and Jefferson County in Kentucky in early October, briefing city leaders on global warming and the goals of the U.S. Climate Change Action Plan. The trip, part of the Climate Institute's Cities Program designed to increase local attention to greenhouse emissions issues, was arranged by Dan Power, the Institute's Vice President for North America.

Watson met with Mayor Jerry Abrahamson, Deputy Mayor Joan Riehm and the three County Commissioners and their staffs to discuss steps which the Louisville City and Jefferson County governments can take to lower greenhouse emissions. Power offered a range of free technical services he is prepared to make available to both governments in the coming year.

Watson was luncheon speaker at the LaGrange Rotary Club, was interviewed for a public radio environmental program, Down to Earth, and spoke at a University of Louisville forum, hosted by Dr. Steve Henry and the University's Institute for the Environment and Sustainable Development.

Pakistan Tour with Sec'y O'Leary

Energy Secretary Hazel O'Leary led a team of more than 80 business men and officials on a 5-day mission to Pakistan in September to promote sustainable development in energy, environment and trade.

Meeting with Prime Minister Benazir Bhutto in Islamabad, O'Leary applauded her and her government for structuring an attractive investment climate in the electric power generation and fuel production sectors. Work-shops, private meetings and a two-

day Energy Conference in Lahore brought U.S. delegates and Pakistani experts together to explore cooperation in electricity, oil and natural gas, coal, renewables, rural development, energy conservation and environment. The U.S. and Pakistan signed contracts for almost \$4 billion dollars of U.S. investment in Pakistan, including 16 new private sector agreements and three statements of intent.

Dr. Ata Qureshi, Director of the Institute's Office of Global Environment Programs and a former member of the Pakistani Forestry Ministry, accompanied O'Leary while she was in Pakistan.



Prime Minister Bhutto, Secretary O'Leary and Dr. Qureshi chat at Prime Minister's residence

Climate Institute

324 Fourth Street, NE
Washington, DC 20002

Address correction requested

The Climate Institute is a private nonprofit organization formed to advance public understanding of climate change including the greenhouse effect and of strategies to avert stratospheric ozone depletion.

Mr. Gabriel M. Serenyi
4605 Hampshire Street
Boulder CO 80301

Non-Profit Org.
U.S. Postage Paid
Washington, D.C.
Permit # 2303

38
ATTEMPTED, NOT KNOWN
NO MAIL RECEPTACLE
NO SUCH NUMBER
REFUSED
VACANT
TEMPORARILY AWAY
DATE 1-21-95 ROUTE # 105
CARRIER

POSTAGE DUE 32

Removed
2/8/95
#CW

