

CLIMATE ALERT

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Climate Institute Honors Former Costa Rican President Figueres

The Climate Institute is conferring its Global Environmental Leadership Award on former Costa Rican President Jose Maria Figueres at a dinner during an international conference, "Climate Change in the Intra-Americas: Vulnerability, Adaptation and Mitigation" on December 2 in Miami.

President Figueres, whose term lasted from 1994 to 1998, speeded his country on the road to sustainable development. He made a pledge to attempt to phase out fossil fuel in Costa Rica by the year 2010 and instituted a pioneering concept of payment for environmental benefits like watersheds and greenhouse gas absorption.

A graduate of the US Military Academy at West Point, he received his M.S. in Public Affairs from the Kennedy School of Law and Government of Harvard University. He has served in many government posts, including Minister of Agriculture and Minister of Foreign Trade. In the private sector, he has been president and financial advisor of the Sociedad Agroindustrial San Cristobal, S.A. His father, twice president of Costa Rica, helped to launch his country on a democratic path.

Previous award winners (this is the twelfth year of citations) include British Prime Minister Margaret Thatcher, US Vice President Albert Gore, Jr., and British diplomat and educator Sir Crispin Tickell.

Small Island States Confer on Ways to Convert to Green Energy

In the words of Tom Roper, who heads a project on assisting the Small Island States — in the Caribbean, the Pacific and the Indian Ocean — to become leaders in the green energy revolution, these states "contribute the least to global climate change and sea level rise but are some of the first to significantly suffer." They emit such a minute portion of the worldwide discharge into the atmosphere, there is little they can do to alleviate the greenhouse gas emissions, but they can set an example to the rest of the world by switching their own energy use to renewables, such as

solar, wind and photovoltaics. Too much of our national budgets, says **Ambassador Tuiloma Slade,**



Stan Hosie Photo
Ambassador Slade and Tom Roper in Rockefeller Foundation Board Room

Chairman of the Alliance of Small Island States (AOSIS), is spent on
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Gains At Buenos Aires Meeting Are Only Modest

After protracted sessions, the 160 nations gathered at Buenos Aires from November 2 - 14 for negotiations on the Kyoto Protocol finally reached agreement on a "plan of action" to implement the treaty by the year 2000. However, much work remains to be done on the finer points of the agreement. Negotiators agreed to set rules for monitoring the treaty by late 2000, including tough measures to guard against cheating and penalties for countries that fail to comply. They also vowed to decide within two years guidelines for market-based

programs to make it easier and cheaper for countries to cut pollution. Still to be settled are methods for transferring technology to developing nations, the particulars of emissions trading credits, and questions regarding compliance and possible penalties. The Kyoto accord binds industrialized countries to sharp reductions in greenhouse gases over the next 13 years.

Argentina and Kazakhstan became the first developing nations to agree to abide by the Kyoto Protocol. Argentina agreed to reduce its greenhouse gas

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Solving the Difficulties Raised by Climate Change Offers Tremendous Possibilities for Business in General and New England in Particular According to a Yale Conference

In the first of three regional climate meetings, the Climate Institute jointly arranged a New England Conference with the Industrial Environmental Management Program of Yale School of Forestry and Environmental Studies, April 2 and 3. With an industry focus, and entitled "Strategic Opportunities Post-Kyoto: Business and Global Climate Change," the initial day pulled together officials of firms from three sectors — insurance, power and defense.

Economics professor William Nordhaus, in a keynote speech on the science and economics of climate change, stated impacts of climate change are "highly speculative," and technology will in most cases lead to adaptation. There will be no noticeable impacts for two to five decades, he asserted.

Most of the US economy including manufacturing and construction will be invulnerable, he said. There will be a major impact on farms and agriculture and a moderate impact on water.

Disagreeing with this view of the climate threat, Stephen Leatherman said, the future is here; the earth is warming. Leatherman, who is Director of the Laboratory for Coastal Research at Florida International University, pointed to the effect of sea level rise on coastal areas. The trend is clear, he said; we know that with thermal expansion, land subsidence and melting of land-bonded ice, a 50 cm rise in the next century will affect huge populations in such places as China and Bangladesh. Venice, built on marsh lands, is at sea right now.

Shore real estate valued at \$1.5 trillion and because of erosion

will suffer a catastrophic loss in value. Insurance for natural disaster will be off the scale, a fact worrying catastrophic insurers.

Reviewing progress on limiting greenhouse gases that has been made through the Kyoto Protocol, Dan Esty, director of the Yale Center for Environmental Law and Policy, reported that a Yale study of the coming decades reached one conclusion — a dramatic improvement could be made through technology changes. Seconding this expectation, John Topping, president of the Climate Institute, gave the example of the laptop computer of today, with its small size and enormous power, contrasted with the Univac computer of only 50 years ago, room size and with very limited potential. Our focus should be on how to bring down the price of green technology putting its potential within reach of the two billion people who are not served by any electric grid.

The most deleterious climate impact, argued Tom Roper, former minister for Planning and Environment of Victoria, Australia, is between the two tropics — where most of the world lives. Here is a substantial opportunity, with leadership and enhanced investment in renewable energy and efficiency. The private sector can play a cost-effective role for the off grid people and especially the Small Island States.

We need a change in the political debate, said Roper. The environment community has stood outside and hurled abuse. In Australia, a Greenhouse Challenge has been mounted by industry, through voluntary action. The Australian Parliament as a leading example has decreased emissions by 40 percent in its complex and decreased electricity use by 40 percent, at a cost of \$6 million.

We should get away from command and control, Topping

added, and instead use incentives to take advantage of the huge potential market.

In the drive for green energy, Robert Stempel, former president of GM and now head of Energy Conversion Devices, recounted the accomplishments of the automotive industry, including the green battery (nickel, metal, hydride), the electric hybrid vehicles, the sun racer — using solar power to race across Australia — the fuel cell vehicle, electric scooters. The market versus the technology is a chicken and egg situation with a likelihood that the automakers will have to go overseas to build a market where the price of gas will build demand for an electric vehicle.

The three business sectors represented at the conference — defense, power and insurance — reported on potential opportunities in mitigating climate change. In the defense sector, enhancement of energy efficiency has been important, as DOD uses 73 percent of the

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

120 Maryland Avenue, NE
Washington, D.C. 20002
Phone: (202) 547-0104
FAX: (202) 547-0111
E-Mail: ncwilson@climate.org
Web: <http://www.climate.org>

energy consumed by the US government. Other mitigating steps are improved vehicle simulators, enhanced disease contingencies, climate monitoring, design of scenarios for catastrophic climate change and defense response, and improved climate simulation modeling.

Various strategies were proposed for the energy sector to find ways to make renewables competitive: carbon taxes, restructuring of the industry to give consumers more choice, demand side management, a change of tax incentives to make taxes rise instead of fall as autos get older and less efficient.

The insurance industry could work toward improving sitings so that catastrophes like Bhopal do not occur in heavily populated areas. Incentives can also be created for greater use of storm shutters and effective home inspections. Safer, more efficient energy can be encouraged when houses change hands. The industry itself can use its substantial investment resources for support of renewable energy, including R&D.

The Kyoto process is empty of policy content, said **Tom Burke** an adviser to business and formerly to the British government. The policy issues are too difficult to be solved, he declared, and cannot be enforced. Policy options which might change the situation include taxes which are very unpopular in the US.

Role of environmental drivers

Other environmental drivers of change are local air pollution (which is not climate change, but an important factor in India); traffic congestion, privatization, and deregulation.

An unknown factor in the situation will occur if nuclear energy is replaced. There will be a drive to substitute gas, which will make governments nervous.

Lewis Milford, Director of Clean Energy Group, described the major changes that are taking place in the electric power industry as the old monopoly system for power generation has ended. Where formerly there

was no innovation, the system is now ripe for a turnover. In the next 20 years, much of the generation will come from combined cycle gas, which has one-third the CO₂ emissions of coal. He foresees technological turnover at 10 times the rate of the last 20 years.

Milford outlined the Renewable Investment Fund of Massachusetts which is an effort to overcome the fact that there is no market yet for cleaner technologies. The fund will try to encourage markets and overcome barriers.

Huge Savings Possible

The tremendous inefficiency in our use and production of energy leaves a huge opportunity to capture the savings that can be made, said **Joseph Romm**, principal deputy assistant secretary, DOE. In a talk citing much evidence of the potential of emission-reducing industries, he said cogeneration has not had the attention it deserves. The advanced turbine system is 98 percent efficient and allows a huge decrease in CO₂. Wind turbines will be very competitive in three or four years, he predicted. Photovoltaics will be coming on line soon, and Romm estimated there will be a million solar power roofs by 2010, saving 500 million metric tons of carbon.

To meet Kyoto requirements, energy efficiency will have to bear the lion's share of the burden, he said. Biofuels, in fact biomass in general, show the best promise for reducing emissions by 2010. The difficulties in stabilizing concentrations are enormous, but renewables will supply half of all energy by 2040 to 2050, Romm forecast. It will be a very ambitious industry, one of the largest in the world, and a big job generator, Romm noted.

The International Fuels Cells Company is the only company

that has successfully converted hydrogen and oxygen into a stationary fuel cell power plant, said **Greg Sandelli**, New England marketing manager for IFC Co. A plant is installed in Staten Island and is now operating as about the cleanest fossil fuel generator in the world. In two million hours of operation, it has demonstrated great reliability. It can operate on propane, butane or waste methane, and with no steps from generating heat to conversion of electricity, it is three or four times more reliable than the reciprocating engines of turbines. In its niche — grid independent — it can supply continuous power, and as sustainable green power energy, it could provide all the lighting for Times Square.

The cheapest, simplest and fastest way to deal with global warming is to run our buildings more efficiently, said **Bob Sauchelli**, who is program manager of USEPA's Energy Star Buildings partnership. Companies are really committed to saving energy through improving their lighting (decreasing the heat load), giving their buildings a "tune up" by upgrading the fan systems, and in some cases have reaped 50 percent energy savings. Disney has saved \$3.5 million; Mobil and Johnson and Johnson have also won substantial savings.

Connecticut **Senator Joseph Lieberman** discussed positive actions since the Kyoto Conference by US and international businesses to develop greenhouse benign approaches. The public is ahead of the leadership, especially the political leadership, he said. There is a gathering sense that we are doing damage to the planet. The challenge is to act quickly enough when there is no clear short-term reward. If we wait, it may be too late. But there is real opportunity in the private sector and a growing realization that it is good business practice to exercise citizenship and stewardship, to become part of the solution. He suggested the more aware private sector should go to the lagging politicians and enlist their help.

Climate Change in Hudson-Delaware Region Will Require Careful Planning on Wetlands, Water Use, Emergencies and Transportation

Facing the issues of regional climate change requires a global as well as local perspective, and we should think of ourselves as global as well as national citizens, Dr. **Robert Scott** urged in opening the conference, **Confronting Climate Change in the Hudson-Delaware Region** on April 23. Part of the Fourth Mid-Atlantic Environmental Conference, the meeting was the principal Earth Day event in Bergen County, New Jersey and was held at Ramapo College.

"Climate change is a most daunting issue, and one of the most important issues facing policymakers today," said **Robert Shinn**, Commissioner of New Jersey's Department of Environmental Protection. As part of the Hudson River Delaware Bay Region, New Jersey takes climate change very seriously, Shinn said, and is especially concerned about mitigating it because of sea level rise and the possibility of higher tides. The state is following a partnership approach, trying to build a consensus among all groups affected on how to slow the increase of the rising seas.

Climate Surprises

In addition to greater climate warming and increased intensity of precipitation, there is a rise in the potential for surprises," said Dr. **Michael MacCracken** of the US Global Change Research Program. The Antarctic ozone hole, cooling of the stratosphere, change in the frequency of extreme events and shifts in ocean circulation are among the leading phenomena that may lead to bewildering effects. They could have implications for health, agriculture, forests, water resources, coastal areas, species and natural areas. In a warmer climate, for instance, soil will be drier in summer and some ecosys-

tems high in the mountains will be pushed off the top. The USGCRP has begun a series of regional global change impact workshops which will be available on the web site of EPA's Climate and Policy Assessment division.

Health Impacts

Reporting on the health implications of climate change, Dr. **Devra Davis** noted the perplexing statistic that in the US and other industrialized countries fewer boys than girls are being born compared to several decades ago, which she dubbed a "sentinel health event." She speculates on where all the young boys have gone - a "loss" of nearly 47,000 in the US and Canada over a 20-year period. She considered whether some unrecognized environmental health hazard, such as a chemical used in pesticides and other industrial products, may in some way mimic the effect of hormones which occur naturally.

She also described another serious health impact - from particulate air pollutants. In a climate policy scenario, if fossil fuel use declined by about six percent in developed countries, compared with the 1990 baseline and about 18 percent compared with a business-as-usual scenario, the resulting decline in CO2 emissions would be dramatic. There could be a decrease of 200,000 deaths a year by 2020 with many fewer lethal respiratory infections, an accomplishment equivalent to eliminating the US annual deaths in traffic injuries and HIV infections.

Local Impacts

With climate change there will be an increase in climate variability and the rate of change will be accelerated. We will be upset, declared **Steven Hamberg** of Brown University. Biodiversity will

be decreased, infrastructure planning will be risky and difficult and, in an uncertain environment, water planning would be very tough.

In the Hudson-Delaware region, there would be more intense precipitation, leading to more erosion, he said. At the same time, more frequent summer droughts would lead to hotter days; in general the ecological effects would not be positive. Warmer water would threaten trout. The sap production of sugar maples would fall. Major changes in ecosystems because of highly fragmented land use would bring more stress.

Possible Role for Automakers

The big issue in the post-Kyoto world is leadership, said **Noel Brown**, president, Friends of the UN. Perhaps we need a new approach; we need other actors who will make a difference. Possible candidates are the insurance and financial industries who are beginning to take action. The automotive sector should be brought to the table; they have made some impressive innovations: a Toyota hybrid which runs on both electricity and gas, the Honda smart car whose air quality from the tail pipe is better than the air being taken in. Brown proposed an automotive summit to explore what inducements are needed to give us green cars..

He reported that energy breakthroughs by the National Renewable Energy Laboratory in Denver has made it possible to deliver a combination of wind and photovoltaic energy at 5 cents a kWh. We have the opportunity to provide leadership and assistance to the Small Island States and need to think about how gaps in their budgets can be bridged, as they do not have the mechanisms for taking action without our help.

Espen Ronneberg, Minister Counselor for the Marshall Islands, representing the Small Island States, pointed out that cultures and societies — some of them in existence for 2,000 years — are being undermined by overconsumption in the developed world. Technical assistance is needed to help these nations adapt.

Three panels met in the afternoon of the conference to discuss local and regional impacts on the Hudson-Delaware region and possible responses.

A panel on **Natural and Managed Ecosystems** suggested special attention to the loss of wetlands, the vulnerability of water use and the possible effects of a habitat crash and land subsidence. It urged development of grass roots consensus on the value of natural systems and also elucidation of region-wide guidelines for regional ecosystem management and regional transportation planning.

It recommended digestion of lessons learned from adaptive management (which it takes a big storm to crystallize), more advance planning, and development of coastal mitigation policies.

According to a **panel on Emergency Response and Planning**: while the insurance industry will be adversely affected by climate change, there is no interest in the domestic insurance community in taking action, reported **Peter Colket** of the American Reinsurance Company. Property and liability insurance, especially with sea level rise and flooding may make insurance unavailable for some events. The biggest risk is from hurricanes. The industry does have great potential to educate the public: on how to reduce loss, on considering the suitability of sites, on keeping buildings out of harm's way, on discouraging new construction in low-lying areas and on being very careful about the question of rebuilding after loss. The industry could also sponsor research on building materials and

techniques that will stand up to winds, flood and earthquakes, work carried on by the Institute for Property Loss Safety.

Other hazards include flooding which occurs in every local river basin. People can be moved out of harm's way, possibly through a buyout. Other proposals include stopping development in the Highlands and spending \$30 - \$40 million on urban land acquisition. Additional protection of wetlands to take care of sewage overflow in the lower Passaic River was also recommended.

At a panel on **Energy, Transportation and Community Planning**, **David Bardin**, attorney for a Washington, DC law firm, said central planning is dead and it is important to anticipate what will happen and get details right on how to handle the problems each local area faces. Regional climate change poses a serious challenge to community and regional sustainability and demands that minimizing greenhouse emissions and other pollutants be considered in future growth and replacement of infrastructure and building stock.

Joanna Underwood of **INFORM, Inc.**, in discussing transportation systems that are resilient and meet with human needs, described creative use of auto fleets and delivery systems such as UPS.

Following the final plenary session a reception was held to celebrate the success of the nearby Sterling Forest effort in which 11,000 acres of forest land has been acquired by New York, New Jersey and various land trusts.

After the conference, President Scott presided over a public forum on climate change whose panelists included former New Jersey Governor James Florio, Dr. Devra Davis, and Anthony Cortese, head of Natural Step.



Small Island States

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importing of heavy oil for diesel generation of electricity which does not work towards a solution of the emissions problem.

At a symposium at the Rockefeller Foundation in New York on October 3, the Climate Institute launched a Greening Initiative, supported by Counterpart International (an international development organization), to assist the Small Island States to transform their energy systems to non-fossil fuel energy. The emphasis of the initiative is on practical solutions and a sense of self-reliance to inspire other nations to take similar actions, "a case of the small leading the large," said Roper.

The **Symposium on Sustainable Energy Options for Small Island States**, the first of a series of events, part of the broad Greening Initiative, drew about 65 officials and energy experts from the Small Island States and from funding agencies as well as representatives from collaborating energy organizations of the US, Europe, Australia and New Zealand and the private sector. Senior Island diplomats and officials, representatives of the major donor nations, the private sector and NGO's, and energy and finance experts also attended.

Building on the tenets of the 1994 Barbados "Program of Action for the Sustainable Development of Small Island Developing States," various speakers suggested examples of practical steps to make the Islands self-sustaining in energy.

• **Stan Hosie** of Counterpart International pointed out that a country such as Kiribati, stretching over a vast expanse of water with an area greater than the US but containing a population of only 70,000, has problems supplying energy to outlying rural peoples

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Small Island States

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and villages. The abundant sunshine falling on the Island States offers opportunities for renewable energy such as biomass, solar/thermal, photovoltaic, solar heaters, and wind turbines. Besides the technology, there should be a focus on retraining and support personnel to service the technology for rural populations.

- **Rene Karottki** of Denmark told of the Danish Energy Decisions plan to establish a renewable energy island within 10 years as a global example.

- **Robert Freling** of the Solar Electric Light fund cited a photovoltaic electricity project in Suzuki, a village in the Solomon Islands, whose lighting had previously come only from kerosene lamps.

- **Michael Gucovsky**, special Adviser to the Administrator, UNDP, suggested feed stocks available in most Small Island States offered practical biomass energy. A pilot project in China is gasifying residues. Sugar cane bagasse could power mills in Barbados, Cuba and Guatemala.

- **Chris Flavin** of Worldwatch Institute discussed the long-term potential of various forms of ocean energy and also called attention to the huge investment of automakers in fuel cells which may become a renewable energy option long before ocean energy is available.

- **Hugh Harris** of Jamaica Public Service Company described a 25-hotel pilot project geared toward solar water heating for the whole hotel sector. He also discussed how his company had built strong participation in a demand side management program.

- **Suresh Raj**, South Pacific Regional Environment Programme, detailed the potential market for renewables: institutional, household, miscellaneous commercial and high income domestic users.

- **John Boyce** of Ecoenergy

Caribbean, Barbados, told of successful programs such as Green House Accreditation for Hotels through the Caribbean Association for Sustainable Tourism. Income tax deductions can provide incentives to raise the number of domestic solar hot water heaters.

- **Thomas Johansson** of UNDP related the contributions his organization could make to sustainable energy in the Island States by building technological and institutional capacity, supporting work on a regulatory legislative framework, and encouraging leapfrogging over obsolete technology.

- **Mike Allen** of E & Co. described a revolving fund in which his company has provided relatively small investments to high risk projects that, coming at a crucial time, led to the next stage of investment in 36 projects in Viet Nam, Guatemala, Panama, Nepal and Bolivia.

- **Robert Dixon**, US Country Studies Program, has worked with AOSIS and other countries in developing national action plans, training engineers and scientists. His program has encouraged voluntary partnerships for JI. The Climate Technology Initiative under OECD has launched voluntary greenhouse mitigation technology in many developing countries and has abetted information sharing by e-mail.

- **David Hales** of USAID urged AOSIS countries to pool projects to lower transaction costs under the Clean Development Mechanism and emissions trading.

- **Alan March**, AusAID, pointed to the need for donor prior consultation with stakeholders, especially at the community level.

- **Jostein Leiro** of Norway's Permanent Mission to the UN, told of JI projects: with Mexico on light bulbs, with Poland on gas conversion, with Costa Rica and Sri Lanka on fossil fuel/biomass exchange, with Africa on charcoal technologies and photovoltaic cook stoves, with China on a cogeneration project.

- **Nicky McDonald** of New Zealand's Mission to the UN, spoke of training Pacific Island officials, for such things as meteorological services, in trying to increase the small pool of trained people.

- **Fathulla Jameel**, Foreign Minister of Maldives, remarked that Small Island States need financing mechanisms to help them switch to renewable energy, especially for large-scale commercial use.

A number of countries, e.g. Tuvalu and Kiribati, are on the verge of becoming sustainable in energy and may provide the first success stories.

In one of the panel discussions it was emphasized that donors need to invest in the prevention instead of repair of disasters.

"I think there is a lot more we can do among ourselves in the management of our coastal zones and resources," said Ambassador Slade. "Clearly we need a great deal of assistance... [But] if the Small Island State themselves make it a success ... then there is a potential for tackling the problems in other parts of the world — many, many other parts of the world."

In the Next Issue

A report on a Climate Institute workshop, "Immediate Steps to Facilitate Green Energy Development," held November 7 in Buenos Aires and an account of a press conference November 11 with Ambassador Slade releasing a report on sustainable energy for Island States will appear in the next issue of **Climate Alert**. The report is available on the Institute web site, www.climate.org.

Climate Institute News

The Climate Institute has a large advisory board of distinguished experts from around the world who can be called on for help on Institute projects, with over 40 members from nearly 20 countries. Advisory Board members have assisted on briefing projects and helped with conferences.

Recently the Institute added the three new members listed below:

John Ashton



John Ashton

As a diplomat with a background in science, John Ashton has long been interested in issues requiring communication between the worlds of science and international policy. In September 1997 he began a fellowship at Green College, Oxford to develop a cross-disciplinary understanding of climate and man's impact on it, with the aim of producing a written work on climate change and international relations. He has now returned to the Foreign and Commonwealth Office (FCO) in London where he is Head of its Environment, Science, and Energy Department.

With fluency in the Chinese language, he served as Science Officer in the British Embassy in Beijing and then became Head of the China Section at the FCO. After a period as Deputy Head of the Political Section in the British Embassy in Rome he became deputy political adviser to Governor Chris Patten in Hong Kong.

Christiana Figueres

Christiana Figueres is the founder and executive director of the Center for Sustainable Development in the Americas. Since founding the CSDA in 1994, Christiana has been very active in global environmental activities relating to Latin America. She is supporting cooperative efforts for citizens of Guatemala, Honduras, El Salvador, Panama, Nicaragua Chile and Bolivia to develop the capacity to mitigate climate change. She is also overseeing the creation of a multimillion dollar environmental fund for the Central American region. She was formerly director of the Latin American and Caribbean Region for the US Export Council and senior counsel at the Hawthorn Group. She has over 20 years experience in the

Costa Rican government, UNDP, and as an independent consultant in organizational development.

Daniel Esty

Daniel C. Esty is a professor of environmental law and policy at the Yale School of Forestry and Environmental Studies and the Yale Law School. He is also Director of the Yale Center for Environmental Law and Policy.



Dan Esty

Before moving to Yale Dan held many positions in Washington. He was a senior fellow at the Institute for International Economics, and held a number of positions in the USEPA including special assistant to EPA Administrator William Reilly. While he was at EPA he negotiated a number of international agreements including the 1990 Amendments to the Montreal Protocol, the 1992 Climate Change Convention, and the environmental provisions of NAFTA.

His most recent book is titled, **Thinking Ecologically: the Next Generation of Environmental Policy**



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Buenos Aires Meeting

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emissions below 1990 levels by 2012 and said it will invest nearly \$2 billion in cleaner electricity generation.

Kazakhstan, an oil-rich nation, will attempt to cut emissions through initiatives such as capturing methane from coal mines and promotion of hydroelectric power. Both nations are expected to set their emissions reduction targets formally next year. Their action is in contrast to the stance of the Group of 77 developing nations and oil-producing states which have maintained they will not agree to emissions cuts before 2012.

On November 12 at the very end of the Buenos Aires conference, the US signed the Kyoto Protocol, joining about 60 others who have already signed. The US signed the treaty at the UN in New York, well before the March 1999 deadline.

Supporters said it reaffirmed the US commitment to work with the other nations gathered in Argentina to address the challenge of climate change. Some environmentalists were disappointed in the lack of new commitments to reduce emissions at home. Opponents, many of whom question the reality of global warming, had hoped the US would not sign unless developing countries agreed to larger emission reductions. They also argued that the treaty would punish US industries and cripple the economy by raising energy prices.

The signing is an initial step toward ratifica-

tion. The treaty will come into force 90 days after two conditions are met: 55 countries have ratified and ratifiers include countries producing 55 percent or more of 1990 industrial country emissions.



Ambassador Slade and Tom Roper at press conference in Buenos Aires

Climate Institute

120 Maryland Avenue, NE
Washington, DC 20002

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