



CLIMATE ALERT

A Publication of the Climate Institute | *Protecting the balance between climate and life on Earth*

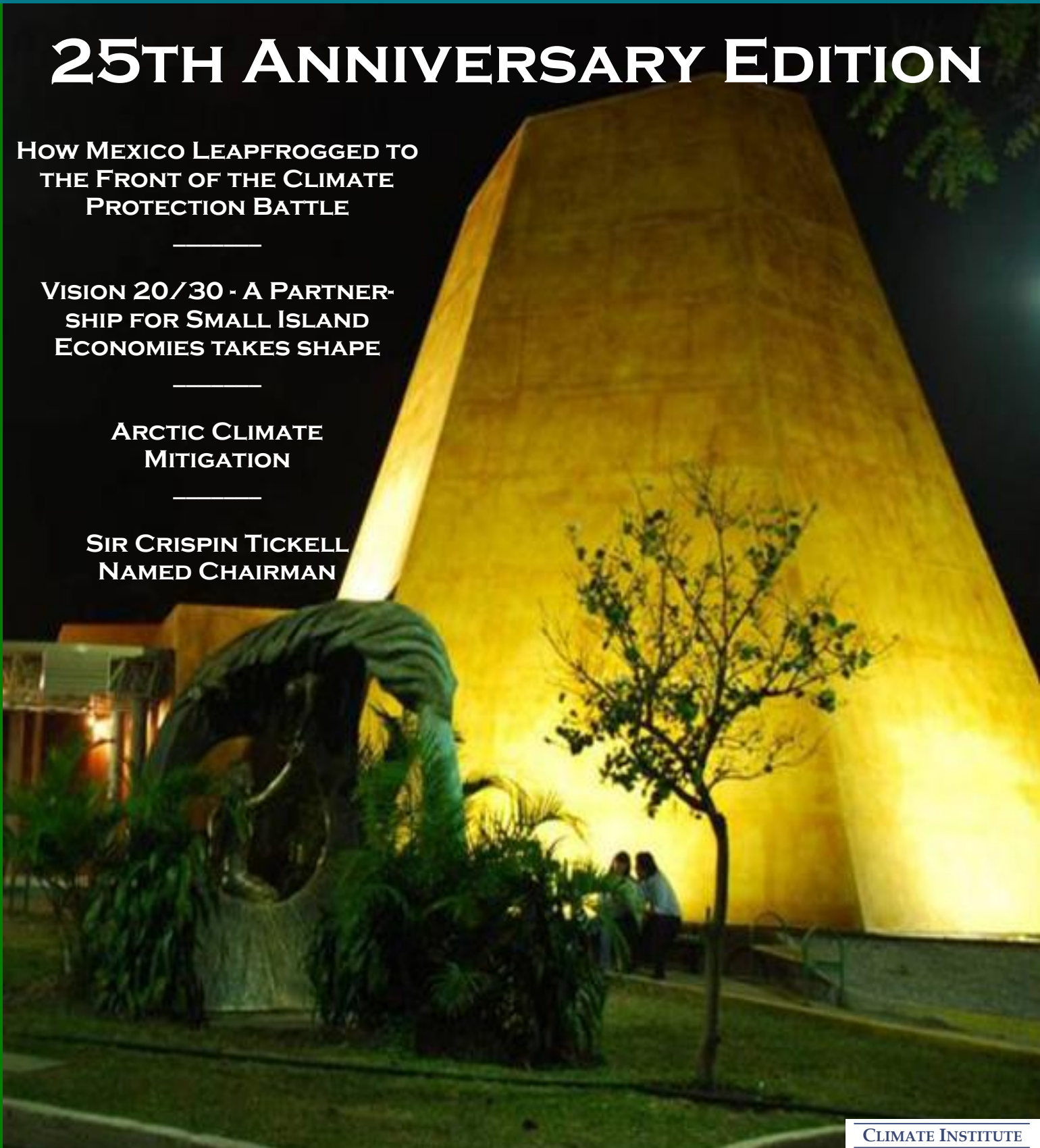
25TH ANNIVERSARY EDITION

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THE FRONT OF THE CLIMATE
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**SIR CRISPIN TICKELL
NAMED CHAIRMAN**



CLIMATE INSTITUTE

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A MESSAGE FROM THE PRESIDENT U.S. LIFE CYCLE STANDARD COULD BE GREATEST ADVANCE SINCE RIO CLIMATE TREATY



Twenty years ago the largest assemblage of world leaders in human history gathered for the Rio Earth Summit whose highlights involved the signing of a Framework Convention on Climate Change and a Convention on Biological Diversity. Some modest advances in climate protection have been registered since June 1992, among them the Kyoto Protocol that entered into force in February 2005. Although the Kyoto Protocol seemed a remarkable breakthrough with roughly three dozen nations and the European Community ultimately agreeing to some limitation on emissions of six different "Kyoto gases," it also could be viewed as a Pyrrhic victory. First, the Kyoto Protocol never had a prayer of ratification in the Senate of the US, historically the largest emitter of greenhouse gases. Second, its limited coverage meant that major developing countries such as China that a few years ago surpassed the US in annual greenhouse emissions were exempt from inclusion. Third, the lack of any enforcement teeth meant that a Kyoto party such as Canada could miss its targets by a large amount and effectively withdraw from the Kyoto orbit with economic impunity. Fourth, in what is likely the greatest Kyoto shortcoming, the treaty does not extend to emissions of black carbon and tropospheric ozone forming compounds that together are responsible for roughly forty per cent of the radiative forcing that drives climate change across the planet and for well over half of the radiative forcing behind climate change in the Arctic.

This Kyoto flaw has several pernicious effects- reductions of black carbon and tropospheric ozone forming compounds that because of their short atmospheric residence times could yield the quickest reductions in radiative forcing and that because of their added benefits in reducing air pollution related health damage would be the easiest to develop political traction for in most countries are not able to benefit from the financial incen-

tives inherent in the Kyoto trading systems. Moreover, although methane is included as one of the six Kyoto gases, the 100 year time frame used for calculating carbon equivalencies produces only a modest incentive for reductions of this greenhouse gas whose roughly 12 year atmospheric residence time makes it possible to take a large near term bite out of radiative forcing.

The limitations of the Kyoto Treaty, together with rapid industrialization, livestock growing and emissions growth among key developing countries, and possible early signs of emissions releases from terrestrial systems as a result of warming have produced a situation much more foreboding than envisioned a little over seven years ago when the Kyoto Protocol came into force. This is true especially in the Arctic where there is evidence of acceleration of Greenland glacial melting with implications for coastal areas across the planet and of loss of summer sea ice with potential effects both on ocean circulation patterns and weather in areas well outside the Arctic. There are also some disturbing signs that the rapid warming underway in the Arctic may also be speeding release of methane previously trapped in the tundra, lake bottoms and ocean sediments. This could significantly amplify the warming directly associated with human activity.

There are a few hopeful developments, however, as national and industrial leaders gather for another major conference in Rio de Janeiro just twenty years after the historic 1992 Earth Summit. Although governments of its two Northern neighbors seem to be flagging in their climate protection actions, the Government of Mexico has enacted climate protection legislation as strong as in any OECD member nation. Most heartening, however, may be the rapid movement of the industrial and financial sector worldwide into aggressive and innovative sustainability efforts that go well past window dressing and public relations to contribute billions to corporate bottom lines. Corporate participation at this year's Rio conference will in some ways offset

the seemingly tenuous commitments of many governments.

The US environmental Life Cycle Assessment standard being developed under the auspices of the American National Standards Institute (ANSI) could prove to be most promising climate protection action since the negotiation and signing of the Framework Convention on Climate Change. Although a voluntary set of environmental accounting rules, the ANSI draft standard seeks to address many limitations of the Kyoto agreement, laying a groundwork for valuation of reductions of emissions of black carbon and tropospheric ozone forming compounds, potentially increasing incentives for reductions in emissions of methane, establishing an Arctic Regional Warming Indicator and Indicators for Ocean Acidification and Ocean Warming.

The ANSI Standard that is likely to be promulgated later this year after public comments have been addressed and responded to should accelerate the movement of the US corporate sustainability community to pioneer in integrating life cycle analysis into long term corporate planning. It also may within two to three years form the core of an ISO Life Cycle Assessment Standard. The ANSI process has earned great respect internationally and ANSI standards have shaped many of the standards of the International Standards Organization (ISO). In anticipation of the adoption of a robust and effective ANSI Standard and Arctic Regional Warming Indicator, the Climate Institute and such other environmental groups as the National Wildlife Federation, Worldwatch Institute, Southern Alliance for Clean Energy, Environmental and Energy Study Institute, and American Indian Alaska Native Climate Change Working Group, leading climate scientists and leading life cycle and forestry groups are collaborating to lay the basis for near term Arctic mitigation actions through an Arctic Climate Action Registry. Together with the adoption of the central thrust of the ANSI Standard this should provide new energies to the climate protection effort.



TAKING EVEN MORE RESPONSIBILITY FOR OUR ACTIONS AND PRODUCTS

BY MICHAEL MACCRACKEN, CLIMATE INSTITUTE CHIEF SCIENTIST

The first approach to explaining the environmental impacts of products, services, and activities was to apply a phrase such as “clean” or “green”—basically *logo-neering*. The evidence to support such claims was initially flimsy, leading to efforts to develop objective measures. Over the past few decades, the primary measures have come to be the quantities of materials and resources used or emitted as pollution, whether air pollutants, toxics, greenhouse gases (GHGs), energy or water used, etc.

In estimating contributions to climate change, the dominant measure has been the carbon footprint—the amount of CO₂ (or its equivalent for other greenhouse gases) emitted to the atmosphere. Initial accountings included only the direct contributions (e.g., the CO₂ emissions from generating the electricity used). Indirect contributions are now receiving more attention, covering, for example, emissions associated with mining or gathering the resources to produce and package a product, to transport and market it, and, in some cases, to dispose of it. Emissions associated with employees or customers being able to get to the places where they work (e.g., in a factory or university) or where products are sold (e.g., in a mall) are also starting to be counted.

Some such efforts are voluntary (e.g., EPA’s Green Star program, LEED building standards, etc.) and others supported by regulation (e.g., appliance and mileage standards). In the US, regional consortiums of states in the Northeast and West have set renewable energy portfolio standards, and EPA has recently proposed minimum standards of carbon efficiency for generation of electricity. All of these approaches are based on emissions, weighted to account for how much a particular activity contributes to climate change.

To better address the challenge of sustainability while also addressing climate change in a more comprehensive manner, more must be considered. Not only emissions are important, but also what happens as a consequence of the emissions (e.g., the number exposed to pollutants, byproducts formed in the atmosphere that affect climate).

The American National Standards Institute (ANSI), chartered in the early 20th century as the official standards organization for the United States and the US representative to the International Standards Organization (ISO), has proposed a new standard for public and private organizations to use in accounting for both emissions and impacts on receiving entities (i.e., by environment and society). Climate Institute president John Topping has chaired the climate subcommittee of the ANSI committee advancing the proposed standard, which has been out for widespread review for 60 days (concluding June 12). Assuming that recommended revisions and submitted criticisms can be promptly addressed, the standard should be adopted later this year, setting the stage for international consideration.

The full proposed standard covers a wide range of sustainability related issues:

- Resource depletion (covering energy, water, biotic, and mineral and metal resources);
- Land use (covering biome disturbance and loss of key species);
- Regional environmental impacts of emissions (covering regional acidification, stratospheric ozone depletion, ecotoxicity, eutrophication loading, and other stresses);
- Human health impacts (covering ground level ozone, particulate matter, toxic chemical emissions, indoor inhalation toxics, ingestion toxics);
- Risks from untreated hazardous and radioactive wastes; and
- Impacts of greenhouse gas (GHG) and black carbon (BC) emissions.

While all components are important, three unique aspects of the standard’s approach to treating GHG and BC emissions merit special mention. First, the standard considers four broad categories of climate change impacts, including global climate change, Arctic climate change, ocean acidification, and ocean warming. Second, the standard provides an indication of the relative importance of emissions or other activities in contributing to climate change between now and 2050. This period is critical, being the time over which climate models project global warming since 1750 will increase

from about 0.8 to ~2°C, the level at which there is concern that dangerous, surprising, and nonlinear changes and impacts may be triggered. Third, the set of GHGs and warming influences includes both short-lived species (methane, BC, tropospheric ozone, sulfur dioxide) that affect the rate of warming over the next few decades and long-lived species (CO₂, nitrous oxide, many halocarbons) that will determine maximum warming over coming centuries. Both aspects must be addressed by policy-makers.

Web Link to Public Comment:

- www.leonardoacademy.org/services/standards/life-cycle/comment-form.html

More Info on ANSI Standard:

- <http://www.leonardoacademy.org/services/standards/life-cycle.html>

The new level-3 lifecycle analysis proposed in this standard will make available a very useful metric for identifying priorities for actions to limit emissions, especially of species contributing to warming out to 2050. The 2011 UNEP assessment on black carbon and tropospheric ozone provided many useful suggestions, and early plans and actions by nations on limiting emissions of short-lived warming agents merit praise and acceleration. The pending ANSI standard should also be useful in considering actions that both limit climate change and its impacts as well as would provide other sustainability co-benefits.

The Climate Institute has recently increased its commitment to limiting near-term warming. The proposed standard is thus of particular interest, and we want to help move it from being a merely a rigorous accounting system to being used to limit climate change in the near-term. Being especially concerned about Arctic warming, which is 2-3 times as much as the global average and already affecting weather and sea level outside the region, we are leading organization of the Arctic Climate Action Registry (ACAR) to encourage early, voluntary actions based on the ANSI standard (see page 4).

We encourage others to join us, and all to take advantage of insights from the pending standard to take aggressive, near-term actions. The time to act is now!



ARCTIC CLIMATE PROTECTION NETWORK

Arctic Climate Action Registry

Arctic amplification refers to the very real probability that Arctic regions of the globe will experience more dramatic effects from climate change than the rest of the world. As sea ice and snow cover decrease, the Arctic loses the valuable cooling and albedo effects of these climatic forcers. As the Arctic warms it has the potential to direct warming and climate trends globally, as increased fire risks and leakage from melting permafrost increase the Arctic's greenhouse gas contributions. Additionally, warming temperatures may shift the jet stream, which will impact albedo, vegetation, and weather systems. Because of the general stagnation of climate change policy, and the far-reaching effects of Arctic warming, it is imperative that the Arctic region take a stance towards combating regional emissions. The Climate Institute is in the early stages of creating an Arctic Climate Action Registry (ACAR) with the goals of raising awareness, developing best practices, and developing cost-effective, short-term solutions to warming.

To this point, carbon dioxide has been the primary concern of policymakers and volunteer mitigation, but the ACAR hopes to broaden this focus to include short-lived emissions like black carbon and tropospheric ozone. These pollutants can reduce albedo, increase greenhouse effects, and cause human health problems. They are also often easier and cheaper to mitigate than carbon dioxide, and can provide important short-term relief. As short-term climate change is relieved, we have the opportunity to pursue broader, more comprehensive mitigation and adaptation measures.

The ACAR has identified several areas in which to focus its efforts: shipping, trucking, airlines, mining, forest and grass fire mitigation, agriculture, energy, and industrial development. Several of these areas already have technology to reduce emissions, but are lacking the proper motivations and incentives. Other forms of mitigation are in the development process, and the ACAR is pursuing data collection and research in order to identify and further develop such techniques. While many of these projects may have only minor impacts, and the scope of the



ACAR Steering Committee Meeting May 2012 in Washington DC

ACAR is still in the planning stages, when taken comprehensively, the ACAR has the potential to raise awareness and produce tangible, necessary reductions in Arctic emissions. The ACAR's steering committee and team of fellows and interns are working globally to create public awareness, make connections with scientists and policymakers, and further scientific research towards the goal of slowing Arctic amplification.

Team of 21 Virtual Fellows and Interns Helps Spearhead Arctic Climate Mitigation Effort

The Arctic faces enormous consequences from climate change, many of which are already occurring. The winter season has become almost two weeks shorter, snow cover has decreased, permafrost temperature has increased, and yearly temperatures have been the highest in centuries. In addition to experiencing heightened climate change in comparison to much of the rest of the world, the Arctic has the potential to direct climate change. Large quantities of carbon and methane are stored in permafrost, and are already showing signs of leakage, and the snow cover's albedo affects solar radiation. In order to help combat these far-reaching consequences, the Climate Institute has recruited volunteer fellows and interns from all over the world to research and promote techniques and strategies for reducing radiative forcing in the Arctic and build support for a US and international Life Cycle Assessment standard that has a strong Arctic Regional Warming Indicator. Their work will sup-

port a broader initiative, under which the Climate Institute in collaboration with several institutional partners and climate experts, plans to create an Arctic Climate Action Registry and an associated Arctic Climate Protection Network.

Each team of volunteers brings unique and important skills. The climate science team includes: David Eastman, an expert in land tenure and land use conversion; Ashwin Kumar, whose research is focused on sulfate aerosols and cloud feed-

back mechanisms; Fern Dowdall, who plans to focus on ocean acidification and ocean warming in relation to Arctic ecosystems; Charles Ffoulkes, who has experience with Northern and Southern Hemisphere Oscillations and will help create relationships with Dartmouth College's Institute of Arctic Studies and other institutions; Katie Sierks will help identify measures to reduce methane emissions; Julia Kelson will focus on black carbon effects on albedo; and Elizabeth Leuin, who will research sustainable agricultural practices to reduce black carbon deposition.

The Life Cycle Assessment team includes: Teodora Serafimova, who will help identify cost-effective mitigation techniques, and has helped map a route to achieve a strong ISO-LCA standard; Andrea Tkacova will assist with social media networking and developing contacts within the European community; Kerwin Wong will help gain support for a strong ISO from countries outside the European Union; Lauren Smith, with a background in climate science, will develop issues of **Climate Alert** and provide website assistance on Arctic and climate issues.

The markets team includes: Katrina Kelly, who has a background in emissions trading markets; Jillian Jordan will work on developing corporate best practices.

The Arctic Climate Protection Network team will be responsible for building public support and visibility. This team includes Linnea Roddar, Nikki Rozario, Chanelle Mayer, Molissa Udevitz, Christopher Jahnig, Maximilian Falaleyev, Alison Singer, and Graham Reeder.



CLIMATE INSTITUTE NEWS

Sir Crispin Tickell Becomes Chairman of the Climate Institute

A world leading environmentalist and highly regarded diplomat, **Sir Crispin Tickell**, in January 2012 was elected Chairman of the Climate Institute succeeding **Mark Goldberg**, who had served nearly three years in the Chairmanship. Sir Crispin's career has involved a remarkable breadth of service –



Sir Crispin Tickell receives honorary degree from UJAT

including as British Ambassador to Mexico, Permanent Representative of the United Kingdom to the United Nations, Warden of Green College, University of Oxford, President of the Royal Geographical Society, and Chancellor of the University of Kent. The Climate Institute has had Sir Crispin's participation as an active member of its Board since 1988 when he was still his nation's Permanent Representative to the UN. In September 1990 only days following his retirement from the British Diplomatic Service where his last act was marshaling a unanimous vote of the UN Security Council demanding Iraq's withdrawal from Kuwait, he assumed the Chairmanship of the Climate Institute and remained in that role until November 2002 when he was succeeded as Chairman by **William Nitze**. Sir Crispin remained an active Board Member and in his role as Chairman Emeritus of the Climate Institute was instrumental in catalyzing support in Mexico for a high altitude climate observatory, finding to his amazement on September 24, 2007 that it would be named for him. Already an environmental legend in Mexico-in 1982 he spoke on climate change at UNAM- **Sir Crispin teamed with Ro Acosta** to stimulate interest in climate protection, spurring growth of a whole network of what became known as Tickell Climate Theatres. The twelfth of these opened in October 2011 in Villahermosa, capital of the State of Tabasco, where Sir Crispin inaugurated the Casa de la Tierra, gave a lecture at

Universidad Juárez Autónoma de Tabasco and received a Doctoral Degree Honoris Causa from the Rector, **Dra. Candita Victoria Gil Jimenez**. Soon two more Tickell Network Theatres are slated to open in Mexico- in Chetumal and Oaxaca- and others seem possible in the Middle East and South Asia.

Luis Roberto Acosta Chosen as Executive Vice President of Climate Institute; Nasir Khattak as Secretary-Treasurer and Chief Operating Officer



Luis Roberto Acosta

The Board at its March 16 meeting elected two young environmental leaders to some of its top officer positions. **Luis Roberto (Ro) Acosta**, who has led the Institute's Mexico and Latin America Program for much of the past decade, was elected to serve also as Executive Vice President. Senor Acosta, even before linking with the Climate Institute was well established as an environmental trailblazer in Mexico. After receiving his undergraduate and graduate degrees at Trent University in Ontario, Canada, where he studied under **Dr. Wayne Evans**, a co-discover of the Arctic ozone hole, Senor Acosta soon after his return to Mexico arranged for UV monitors to be placed to make possible television health alerts. Subsequently through his environmental NGO, SIMA, he made Mexico City air quality data publicly accessible online. He received the Miguel Aleman Prize, Mexico's most esteemed environmental award, in 2000 in recognition of this work and in an October 2001 Special Issue of *Time Latin America* on Mexico's Leaders of the New Millennium was one of two young environmental leaders featured. Since assuming leadership of Climate Institute Programs in Mexico and Latin America, he has been the driving force behind the creation and operation of the Sir Crispin Tickell High Altitude Observatory and the creation of 14 Tickell Network Climate Theatres. This work and his extensive media and speaking appearances have created a sea change in climate awareness in Mexico, helping lay the groundwork for enactment of Mexico's climate protection legislation.

The Board elected **Nasir Khattak**, who has served at the Climate Institute since 1997,

Secretary-Treasurer. In addition to maintaining his responsibilities for coordination and expansion of the Institute's clean energy programs in island nations, South Asia and the Middle East, Nasir Khattak serves as the Institute's Chief Operating Officer with a lead in budget and long-range program planning. He earned a B.Sc. in Civil Engineering in Pakistan and an M.Sc. in Energy and Environmental Management from George Washington University. In tandem with Hon. Tom Roper he has spearheaded the Global Sustainable Energy Islands Initiative. His speech in September 2010 before the United Nations General Assembly has resulted in additional interest in and new partners joining the small islands program of the Institute.



Nasir Khattak

Carlos Diaz Leal, Nasir Khattak and Oriana Tickell de Castello elected to Board

At its May 24 Board Meeting in Washington the Institute's Board elected three new members-**Carlos Diaz Leal**, **Nasir Khattak** and



Oriana Tickell de Castello

Oriana Tickell de Castello. They join the 17 members re-elected at the Institute's March 16 meeting- **Luis Roberto Acosta**, Executive Vice President of the Institute; **Dr. Noel Brown**, President, Friends of the United Nations; **Joseph Cannon**, Founding Chief Executive Officer, Fuel Freedom Foundation; **Thomas Casten**, Chairman, Recycled Energy Development; **Dr. Robert Corell**, Chair, Arctic Climate Impact Assessment and Arctic Chair Professor, University of Tromso; **Dr. Devra Davis**, President, Environmental Health Trust; **Dr. Thomas H. Gale**, Proprietor, Eversley Farm; **Barbara Hernandez**, President, Fundacion Pedro y Elena Hernandez; **Bert Kerstetter**, Chair, Everfast, Inc.; **Dr. Stephen Leatherman**, Director, Laboratory for Coastal Research, Florida International University; **Dr. Michael MacCracken**, Chief Scientist for Climate Change Programs, Climate Institute; **John Noel**, President,



Carlos Diaz Leal



CLIMATE INSTITUTE NEWS

(Continued from page 5)

Southern Alliance for Clean Energy; **Hon. Tom Roper**; Director, Global Sustainable Energy Islands Initiative, **Margie Simon de Ortiz**, Director General, CICEANA; **Sir Crispin Tickell**, Chairman, **John C. Topping, Jr.**, President; and **Dr. Daniel Wildcat**, Professor, Haskell Indian Nations University .

The Climate Institute's three newest Board Members bring a wealth of environmental experience and talent. **Carlos Diaz Leal**, who is fluent in Spanish, Por-

voled in environmental education of youth. **Nasir Khattak**, besides his wide-ranging environmental experience is fluent in four South Asian languages and English and conversant in Portuguese.

Ro Acosta Presentation on Mexico Success, Awards and Giant Cake Highlight Institute's 25th Birthday Party

Festivities in the Institute's Washington offices the evening of May 24 following a Board Meeting earlier blended a celebration of achievements of the first quarter century with excitement over the po-

tential of the "miracle of Mexico" begun by the Tickell Network in Mexico to spread abroad and re-energize a climate protection movement caught in gridlock. In a symbol of the international nature of the event, the guests dined on delicious South Asian food and Mexican candies before the awards portion recognized some

Pacific Leaders Summit on Climate Change. **Dr. Hind Sadek** was recognized for her work in organizing the Cairo World Conference on Preparing for Climate Change, which Topping noted, laid much of the groundwork for the Rio Climate Treaty, and for leading the Middle East Ministerial Briefings carried out for the IPCC by the Climate Institute. Two more climate pioneers received awards- **Samuel Sherer** for a quarter century of service as a Senior Fellow and "inspiring countless interns" and **John C. Topping III** for his role in creating www.climate.org and in "helping make possible the Tickell Climate Theatre in Cuernavaca, Mexico."

The Institute's Executive Vice President and Director of Mexico and Latin America Programs, **Luis Roberto (Ro) Acosta**, gave a glimpse of the future the Institute sees for itself as a vehicle for large-scale climate education and empowerment of millions as environmental problem solvers. He recounted how the team he led had against all odds created the world's highest climate observatory named for a world environmental hero, **Sir Crispin Tickell**, and had leveraged national and regional pride to induce the State of Puebla to ask the Institute to build an Outreach Center, the first Tickell Network Climate Theatre in Flor del Bosque Educational Park. He showed how the combination of brilliant architecture invoking Mexican cultural themes and futuristic visualization technologies had caused states and cities across Mexico to join this network of Houses of the Earth, the climate education equivalent of a planetarium. Now less than three and a half years from the beginning of the first Tickell Observatory greenhouse measurements and the opening of the Flor del Bosque Tickell Climate Theatre, the Network has grown to encompass 14 Tickell Climate Theatres and hundreds of thousands of annual visitors. Words were inadequate to follow Ro Acosta's stunning presentation; accordingly **Nasir Khattak** signaled for a giant birthday cake in the shape of Planet Earth to be wheeled in as all sang Happy Birthday to the Climate Institute before staff, present and past, blew out the candles and the assembled multitude proceeded to devour this delicious representation of the planet.



Climate Institute's 25th Anniversary Party. From left: Linda Schade, Luis Roberto Acosta, Dra. Aurora Elena Ramos, Dr. Devra Davis, and Carlos Diaz Leal.

tuguese and French, has served as International Liaison of the Climate Institute for over five years. In this capacity he has laid the groundwork for expansion of the Climate Institute Latin America activities to Spain and other parts of Latin America besides Mexico where he has overseen the design and construction of the Tickell Observatory and 14 Tickell Network Climate Theatres. He also serves as President of the Yu -Bal Cah Conservancy that has preserved nearly 600 hectares of remaining tropical rain forest in the State of Tabasco for use as a youth environmental education park. Bilingual in Spanish and English and fluent in French, **Oriana Tickell de Castello**, is a Founding Partner of CorpX Coach SC, a Mexico City based executive coaching firm. Having earned a Bachelors Degree in Modern Iberian and Latin American Regional Studies from Kings College, London University, she has been quite in-

early climate pioneers. Founders' Awards were presented to three individuals, all original Board members when the Institute took flight in the summer of 1986- **Paul Pritchard**, the Founding Chairman, **Rafe Pomerance**, both a Founding Board Member and a catalyzer of the climate protection movement, and **Daniel E. Power III** for his service as a Founding Board Member, his leadership of the Institute's Cities Initiative and the efforts to Green the United Nations facilities in New York City. Two stalwarts of the Institute's efforts to internationalize the climate protection effort received Climate Institute Awards presented by Institute President **John C. Topping, Jr.** **Dr. Ata Qureshi** received the Bert Bolin Memorial Award for his leadership of Institute IPCC Briefings for Heads of State and Ministers in 22 nations, serving as Team Leader of Eight Asian Country Studies and as Director of the 1995 Manila Asia

THE CLIMATE INSTITUTE'S 25TH ANNIVERSARY PARTY



Highlights from Climate Institute's 25th anniversary party include Ro Acosta's presentation on the Tickell Network in Mexico, the awards ceremony, and other festivities with founders, team members from Mexico, and honored guests.



HOW MEXICO LEAPFROGGED TO THE FRONT OF THE CLIMATE PROTECTION BATTLE

April 19 by a unanimous 78 -0 vote the Senate of Mexico approved a sweeping Climate Change Act, which was signed into law by President Felipe Calderon on World Environment Day, June 5, 2012. Having also been approved by a 128-10 margin in Mexico's House of Representatives, the General Law on Climate Change manifests a cross party support that has amazed environmentalists in the US and Canada where they have struggled to get their national governments to act with some urgency to address climate change. The unanimous vote of the Mexican Senate was particularly poignant for US environmentalists as much weaker climate legislation has not been able to marshal enough votes even to come to a vote in the US Senate. In Canada not only was the national government withdrawing from the Kyoto Protocol where its efforts at complying had been half hearted, it was also slashing staffing of climate programs throughout the government. How can we explain this contrast between Mexico and its two richer neighbors to the north? Certainly not because of a great difference in recent climatic events! Mexico has had an unusual incidence of floods in some states but so have some US states. Border areas of Northern Mexico have experienced searing droughts but so have a number of border states in the US Southwest.

The contrast instead may be due more to how a relative handful of Mexican environmentalists seized an opportunity to leverage national and cultural pride to create a groundswell of support for strong climate action equivalent to the fervor of the US in 1970 in the Earth Day movement that resulted in strong clean air and clean water legislation and moved President Nixon to create the Environmental Protection Agency. Some of these environmental threats a generation and a half ago, like visibly foul air and rivers and lakes aflame, were more obvious than invisible greenhouse gases but it is also true that there was a surge of grassroots

activism that cut across the political spectrum. Although there are undoubtedly a number of factors that enabled Mexico to leapfrog past its two Northern neighbors in both public awareness of climate change and policymaker response to it, significant credit goes to a few Mexican



Casa de la Tierra Climate Theatre in Metepec, Mexico

visionaries who saw how national pride in having the world's highest greenhouse monitoring station could be combined with inspiring architecture evoking ancient cultural traditions and with space age visualization and projection technology to catalyze rapid development of what is known as the Tickell Climate Network. Now consisting of the Sir Crispin Tickell High Altitude Climate Observatory 15,000 feet above sea level atop Sierra Negra in the State of Puebla, and 12 Tickell Network Climate Theatres, also called Houses of the Earth, this network has stimulated a sea change in public interest in climate protection with all major political parties in Mexico scrambling to carry the climate protection banner.

A half dozen prominent Mexican environmentalists and scientists were especially pivotal in the creation of the Tickell Network. The driving force behind the effort has been a young Mexican scientist, Luis Roberto Acosta, who in the 1990s arranged for placement of UV monitors to provide televised health alerts

and later for public access online to Mexico City's air quality monitoring data. All this was carried out by SIMA that Senor Acosta founded in collaboration with two other prominent Mexican environmentalists-Carlos Diaz Leal, President of the Yucalca Environmental Conservancy and one quite experienced in design and construction oversight, and Dra. Aurora Elena Ramos, a successful businesswoman whose philanthropy had been crucial in making Mexico City air quality data accessible online.

The SIMA Team, who were now functioning both as a partner of the Climate Institute and as its Mexico and Latin America Program Office, then began to recruit additional members to their climate protection team. These included Barbara Hernandez, President of the Pedro and Elena Hernandez Foundation, Mexico's leading philanthropy in historical restoration and biodiversity preservation; Margie Simon de Ortiz, Director General of CECEANA, Mexico's leading group promoting environmental awareness among youth; and Michel Rosengaus, long-time leader of Mexico's meteorological programs.

Also Senor Acosta recruited as a key ally Dr. Alexander (Sandy) MacDonald, Director of NOAA's Earth System Research Laboratory (ESRL) based in Boulder, Colorado. ESRL serves as the hub of the Global Climate Observing System of the World Meteorological Organization and gathers and validates data from the more than two dozen greenhouse monitoring stations spanning the globe. A polymath, Sandy MacDonald is not only one of the world's leading climate monitoring scientists, he is the inventor of the Science On a Sphere (SOS) visualization and projection system now installed in over eighty museums and other sites around the world. Sandy MacDonald has worked closely with Ro Acosta as the young Mexican scientist has worked to blend the Tickell Observatory with a network of public outreach centers that blend striking architectural design with the riveting SOS projection system.



CREATION OF THE WORLD'S HIGHEST CLIMATE OBSERVATORY

The Climate Institute has a long history of involvement in climate protection issues in Mexico starting when Sir Crispin Tickell in March 1991 led the Climate Institute team to Los Pinos to brief President Salinas. Beginning in 1999 the Climate Institute resumed active involve-



Mexico Observatory Team of Carlos Diaz Leal, Dra. Aurora Elena Ramos, Sir Crispin Tickell, Barbara Hernandez, and Luis Roberto Acosta

ment in Mexico when Institute President John Topping was recruited by the World Bank to serve on a High Level Expert Team advising the Government of Mexico City on its 10-year air quality plan. The World Bank, Government of Mexico City and US Environmental Protection, seeing the merits of the Climate Institute's arguments for coordinated

strategies for climate and air quality protection, agreed to support a North American Symposium on Coordinated Strategies for Climate and Air Quality Protection organized by the Climate Institute in September 1999 at El Colegio de Mexico in Mexico City. The immediate effect of

the Climate and Air Quality Symposium was to encourage Mexico City to pioneer in attempting in its 2000-2010 air quality plan to integrate greenhouse reduction considerations. Perhaps a more consequential result from the standpoint of the climate protection effort in Mexico was to introduce Luis Roberto Acosta, Carlos Diaz Leal and Dra. Aurora Elena Ramos, principals in SIMA, the NGO that made Mexico City air quality and UV data accessible online, to Climate Institute President John Topping and to Sir Crispin Tickell, then Climate Institute Chairman.

SIMA soon after that began to function as the Climate Institute's principal partner in Mexico. Within about three years it revised its priorities to focus on the creation of a climate observatory much like that at Mauna Loa in Hawaii. The SIMA team obtained the necessary approvals from the World Meteorological Organiza-



Sir Crispin Tickell High Altitude Observatory

tion and US National Oceanic and Atmospheric Administration (NOAA) that compiles and validates the greenhouse data to locate a climate observatory in Mexico at roughly 19° N latitude - much the same latitude as Mauna Loa. After first considering a high altitude site within the State of Veracruz, Senor Acosta and his team then received an invitation from Mexico's National Institute of Astrophysics, Optics and Electronics (INAOE) to situate the climate observatory in the High Altitude Science Cluster near INAOE's powerful radio telescope atop Sierra Negra within the Pico de Orizaba National Park. Barbara Hernandez, President of the Pedro and Elena Hernandez Foundation, indicated that her foundation would provide funding for design and construction of the observatory. Much to his surprise Sir Crispin Tickell, who had done much to champion the need for a high altitude observatory, learned on September 24, 2007 just before delivering the Miguel Aleman Lecture at the Miguel Aleman Foundation, that the high altitude observatory would be named in his honor. Greenhouse measurements have been taken on a weekly basis since January 2009 at the observatory site atop Sierra Negra and sent to NOAA's Earth System Research Laboratory in Boulder, Colorado, for validation and inclusion in global greenhouse totals.

LINDA SCHADE SPEAKS AT SENATE OF MEXICO ON BLACK CARBON REDUCTION



As part of our Black Carbon Reduction Program, **Linda Schade** continues to raise awareness and encourage action on the opportunity Short-Lived Climate Forcers provide to reduce global warming. In February, 2012 she made a nationally visible presentation to the Mexican Senate on Short Lived Forcers to an audience of 100 including Senators, state legislators and mayors as well as major media. She gave similar presentations in the Mexican States of Aguascalientes and Guanajuato to audiences of 400

and 200 respectively including state and local policymaker, media and the members of the public. She found significant interest among legislators in policies and projects that would result in emission reductions of black carbon, methane and tropospheric ozone forming compounds.



DEVELOPMENT OF THE TICKELL NETWORK

The fact that the Tickell Observatory was in the State of Puebla caused Francisco Castillo Montemayor, Puebla's Secretary for Natural Resources and Environment, to suggest creation of a Tickell Observatory Climate Education and Outreach Centre within Flor de Bosque, a 1600 acre educational park. Senor Acosta and his team then combined NOAA's Science On a Sphere projection technology with stunning traditional Mexican architectural design. The Tickell Theatre in Flor del Bosque opened in February 2009.

Since the opening of the Tickell Theatre in Flor del Bosque an average of nearly 10,000 people each month have witnessed multimedia Climate Change Briefings there. Eleven other Tickell Network Theatres have been created in Mexico, each with an eye catching building design. They are in the Mexico City Museum of Natural History; Cuernavaca in the State of Morelos; Veracruz; Acapulco and Chilpancingo in the State of Guerrero; Morelia in the State of Michoacan; Metepec, Atlocumulco, Texcoco and Valle de Bravo in the state of Mexico; and Villahermosa in the State of Tabasco.

Public interest is great. When Governor Enrique Pena Nieto dedicated the Tickell Theatre in Metepec in February 2011 he spoke to a crowd of about 7,000.

Two more Tickell Network Climate Theatres are scheduled to open elsewhere in Mexico later in 2012, respectively in Chetumal, capital of the State of Quintana Roo, and Oaxaca, capital of the State of Oaxaca, and others in Mexico seem likely in 2013 and beyond. It is possible by the end of 2012 that the Tickell Network Climate Theatres, the climate education equivalent of a planetarium, will be approaching a million visitors annually, with each visitor receiving a multimedia presentation roughly 40 minutes in length. The remarkable success of the Tickell Network Theatres in Mexico has stimulated interest in extending this model elsewhere in Latin America, Europe, the Middle East, Southeast Asia, and South Asia.



Tickell Theatre in Flor del Bosque Educational Park



Dr. Alexander MacDonald, Director of NOAA ESRL, and Sir Crispin Tickell at Flor del Bosque in Puebla, Mexico

DEVELOPING CONTENT FOR USE IN CLIMATE THEATRES, WWW.CLIMATE.ORG AND SOCIAL NETWORKS



Center for Environmental Leadership Training (CELT) Meeting

To complement the Tickell Climate Theatres and to reach many who are not near such theatres the Climate Institute is working through its educational arm, the Center for Environmental Leadership Training (CELT) in Hanover, NH, to gather, develop and test problem solving tools, educational games and short summaries of climate innovations in Spanish, English and Chinese and ultimately French and Portuguese as well. Although CELT is in its infancy and is today a virtual center drawing largely on talents of undergraduates and graduate students at Dartmouth College, it seeks to develop problem solving games and educational tools that can be used both within climate theatres within the Tickell Network and much more broadly- on the internet and on social networking sites.

The vision of the Tickell Network and CELT is to combine large-scale public education on climate change with tools that could empower millions to become problem solvers and innovators on climate, energy and environmental challenges using smart phones, laptops, desktops and other devices.



CLIMATE INSTITUTE AND PARTNERS ANNOUNCE THE LAUNCH OF VISION 20/30: VISION FOR INDEPENDENCE OF SMALL ISLANDS FROM FOSSIL ENERGY

Since its inception in 2000, the Global Sustainable Energy Islands Initiative (GSEII) has been nurturing energy independence and sustainability in Small Island Developing States (SIDS). GSEII is a consortium of NGOs and multilateral institutions coordinated by the Climate Institute in partnership with the United Nations Industrial Development Organization (UNIDO), the UN Foundation, Organization of American States and others. In the first decade of its existence, GSEII successfully aided the implementation of several renewable energy and energy efficiency projects. In addition to specific projects, GSEII has worked with several island nations to develop National Energy Plans and Sustainable Energy Policies. This work has all been made possible with the enthusiastic cooperation of SIDS and various partners, especially the Organization of American States.

At the Special Session of the UN General Assembly on Small Island States in 2010, the Climate Institute presented an ambitious vision in front of the international community and pleaded for a concerted effort to help develop and implement an ambitious plan that transforms the over three dozen small island nations into successful examples of sustainable energy islands, with independence from imported fossil fuel. Later at the Climate Change Conference in Durban in December 2011, COP17, the Climate Institute announced the VISION 20/30 initiative as an expansion of GSEII, in partnership with UNIDO at the platform of United Nations Secretary-General's *Sustainable Energy for All* initiative. The UN initiative seeks to achieve meeting three inter linked global targets by 2030: universal access to modern energy services; doubling energy efficiency; and doubling the share of renewable energy in world's energy supply.

The VISION 20/30 initiative, which continues the GSEII approach and seeks to scale up the international efforts and

support for small island economies. Carbon War Room, which is an NGO based in Washington and founded by Sir Richard Branson, also joined this initiative and will be playing a key role in mobilizing private sector to help turn the commercial opportunities available in the island economies into sustainable energy solutions.

VISION 20/30 focuses on three areas: 1) It encourages and promotes leadership by island economies and raises support for the more ambitious island nations so they are able to achieve their energy



Nasir Khattak speaks to Special Session on Small Island Developing States of the UN General Assembly

transformation goals. 2) invites and mobilizes the private sector and finance community to play a more active role and invest in the commercial opportunities, 3) calls for increased coordination and collaboration among the existing implementing agencies, such as UN agencies, regional organizations and NGOs that are working in the energy sector in the Small Island Developing States.

Several small island nations have already set for themselves the target date of 2020 to achieve carbon neutrality, zero energy or other aggressive sustainable energy goals. Some of the islands at the forefront are the Maldives, Samoa, Cook Islands, Tonga, Vanuatu, Marshall Islands, St. Lucia, Dominica, Grenada, St. Kitts & Nevis, Barbados, St. Vincent & the Grenadines, Antigua and Barbuda, Bahamas and Cape Verde. Independence from fossil fuel imports and energy diversification by utilizing renewable resources

and energy efficiency technologies is a goal that not only the island state leaders but the general public on these islands can also easily relate to. There is a need for scaling up the existing efforts and help promote this cause at national, regional and global level.

VISION 20/30 is consistent with the UN SE4ALL initiative. It is a coordination mechanism, and information sharing platform, a campaign and a movement that hopes to engage all sectors of the global community and organize them around a simple but ambitious mission. Climate

Institute invites additional partners who may share this vision and can help achieve the goal of achieving energy independence (to the extent feasible) by participating islands by 2020, and for all the Small Island Developing States by 2030, that is within the time frame set by the Secretary General's Sustainable Energy for All initiative.

Such a program would not only bring about self-sufficiency in energy for Island Economies but would also have wider positive impacts such as reduction in poverty and creation of work opportunities. The 25% or more of the foreign exchange spent on importing fuel in many of these islands could be diverted to economic development and other priorities such as adaptation to climate change. In addition, these Island Economies could become the models for others to follow. Successful models of sustainable energy islands across different regions of the world will also help spure a global clean energy revolution.

Climate Institute, in close collaboration with the Carbon War Room and other partners will be launching Vision 20/30 at the Rio+20 United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil, on June 20th. This event will feature announcements by island economy leaders and commitments by the implementing partner organizations, and private sector representatives. It is expected that this initiative would identify many mini-partnerships around some key pilot projects in participating islands.

CLIMATE INSTITUTE



Founded in 1986, the Climate Institute was the first non-profit organization established primarily to address climate change issues. Working with an extensive network of experts, the Institute has served as a bridge between the scientific community and policy-makers and has become a respected facilitator of dialogue to move the world toward more effective cooperation on climate change responses.

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The Climate Institute's mission is to ...

CATALYZE innovative and practical policy solutions toward climate stabilization and educate the general public of the gravity of climate change impacts.

ENHANCE the resilience of humanity and natural systems to respond to global climate change impacts especially among vulnerable groups (e.g. Native American tribes and Small Islands).

WORK internationally as a bridge between policy-makers, scientists and environmental institutions.



Climate Institute's 25th Anniversary Party and Awards Ceremony

Awards were presented to founding members and other Climate Institute staff during the 25th Anniversary party. The photos above show Climate Institute president John Topping, Jr. and the following award recipients:

1st Row: Paul Pritchard, Ata Qureshi, Daniel Power, and Hind Sadek
Second Row: Rafe Pomerance, Samuel Sherer, and John Topping III

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Lauren Smith, Editor-in-Chief
Alison Singer, Assistant Editor

Cover image: Tickell Climate Theatre at Parque Ecológico San Miguel Acapantzingo in Cuernavaca, Mexico

Editor's note: For all citations and references, see the electronic version of this newsletter at www.climate.org