

FOIA MARKER

This is not a textual record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

Collection/Record Group: Clinton Presidential Records
Subgroup/Office of Origin: Council on Environmental Quality
Series/Staff Member: Kathleen (Katie) McGinty
Subseries:

OA/ID Number: 17806
FolderID:

Folder Title:
[Global Environmental Change Report] [Loose]

Stack:	Row:	Section:	Shelf:	Position:
S	61	5	4	2

TO : —

DAVID

From

— katie

—

Global Environmental Change Report

POLICY, SCIENCE AND INDUSTRY NEWS WORLDWIDE, FROM CUTTER INFORMATION CORP.

Inside This Issue



POLICY TRENDS page 3

- UK Urges Local Planners to Curb Car Use
- Interest and Conflict over US Energy Tax Intensifies
- UK Appears Isolated in Opposing EC Carbon/Energy Tax
- EC Finalizes Energy Efficiency Standards
- Report Finds Federal Subsidies Favor Energy Supply over Efficiency
- Call for Long-Term CO₂ Reduction Targets Goes Unheeded at UK Conference
- Norway's CO₂ Emissions Are Down 5%



SCIENCE UPDATE page 5

- Scientists Report Record Low Ozone in 1992
- "Twilight Effect" of Volcanic Aerosols May Increase UV-B Levels
- Satellite Data Suggest Clouds Will Enhance Warming
- Dimming Sun May Reduce Global Temperatures Slightly
- ENSO, Pinatubo Strongly Influenced Climate in 1992



INDUSTRY WATCH page 7

- Building Codes Cause Problems for CFC Alternatives in US
- EC Refrigeration Industry Lags on CFCs
- New Renewable Energy Center to Open in Washington
- US DOE Announces Public-Private Partnerships in Renewable Energy

Focus Report

Integrated Transport Planning: Applying IRP to the Transport Sector

Over the past two decades, integrated resource planning (IRP) has moved from a fringe concept to a central paradigm for electric utilities and their regulators in the US. In the process, it may have done more than any other single measure to cost-effectively lower the future growth rate of US CO₂ emissions.

Essentially, utility IRP attempts to place energy efficiency on an equal footing with new supply, requiring utilities to evaluate both supply-side and demand-side options to determine how best to meet their future energy needs. In addition, IRP generally incorporates environmental and social costs in the planning process, so that options that are financially cheap but environmentally or socially costly become less attractive. It forces utilities to move from simple least-cost planning to least-social-cost planning.

The logic and success of the IRP concept have not gone unnoticed, and many people around the world have begun to envision IRP as a model for planning in general. IRP is already being applied to a number of natural gas utilities in the US, and we've heard about proposals for its use in a variety of other services, ranging from carbon emissions offsets to telecommunications.

In perhaps the most significant and far-reaching application, a number of transportation experts and environmental groups have started to look at IRP as a paradigm for transportation planning. The analogy is easy to see: just as utility planners used to think mainly about building more power plants, transportation planners think mainly in terms of building more roads. Where IRP creates a level playing field for energy efficiency, integrated transport planning (ITP) would require planners to compare the costs of road building with the costs of public transportation, nonmotorized transport, traffic management, and other more energy-efficient options.

*Copy Cut
make &
Lars
a hand
The
very
energy
would
like to
have it
discuss
as part
plan
More
let's discuss
for the
I'd
like to know
a look*

And just as utility IRP evolved in response to crises in the electric power industry (oil price shocks, popular opposition to nuclear power, and clean air regulations), ITP is being developed in the context of the worldwide urban crises of traffic congestion and pollution.

"Right now, transport is where the utilities were 10-15 years ago," said Mia Birk of the International Institute for Energy Conservation (IIEC) in Washington, DC. "We're at the stage where everyone agrees that we need to try something different with transport. We want to take the IRP concept, which has proven to be successful for utilities, and see in what form it can be adapted."

An Imperfect Model

Utility IRP methodologies cannot be simply transferred to transport planning, however. Birk noted that unlike utilities, "transport has no measurement unit, such as cost per kilowatt-hour, that you can compare between options. There is project cost, but you're not necessarily comparing projects in order to come up with a good transportation system. So there's a lack of a common denominator." Furthermore, while utility planning tends to be a rather centralized process, transportation planning is anything but. "There are decision makers at all levels," Birk said, "scattered throughout all departments." Bangkok, for example, has both a Public Works Department, which handles only roads that go in certain directions, and a Department of Public Works, which handles roads going in other directions. For ITP to work, Birk explained, "you not only need to create a planning methodology, but also an institutional structure to implement it. You have to look at both levels at once."

The needs of transportation "customers" are also more complex than those of utility customers. One of utility IRP's underlying philosophies is that electric utilities mustn't think of themselves as providing electricity, but rather electricity services.

People don't really want electricity; they want the things it can do — like powering toasters, televisions, or microwave ovens. "In transportation it's much more complicated than that," Birk said, "because the needs and desires are based on years of social norms and habits and land-use considerations and job locations. The actual goal in what people want to do with transport is not so much to get from Place A to Place B, but to achieve all of their daily needs through transportation services. It's difficult to quantify those things."

The Externality Problem

For better or for worse, utility IRP has opened a Pandora's box by attempting to incorporate environmental externalities into practical, real-world economic decision making. Assigning values to those externalities and determining how to incorporate them into the planning process have proven to be extremely controversial and difficult tasks. "In the transport field we're much further from being able to get any agreement on how to incorporate externalities," Birk observed. "But I don't see that as a barrier — if you look at the electricity comparison, nobody agrees on how to incorporate externalities in electricity either, but it's being done." Besides, she said, "we hope that [ITP] can move forward without being too hung up on incorporating prices, because that's something that trips everybody up all the time." The incorporation of environmental externalities is certainly going to help the effort to push things away from road building, but there's evidence that on a cost-per-person or cost-per-access type of calculation, most [non-road-building] options should come out ahead anyway, even without the environmental costs."

What's Happening Now?

According to Birk, ITP is still in the very early stages of development, but interest is growing rapidly. "We've pulled together a large group of people who want to work

on it," she said. "I think we'll move forward significantly in the next year or two in getting to a framework where the concept can be developed into a methodology that a city could actually apply. We've been having lots of discussions with EPA, the Department of Transportation, and the Department of Energy, as well as cities around the country, and we're working with the people who are implementing ISTEA [the 1991 Inter-Modal Surface Transport Efficiency Act] around the country, to see how we could team up with a couple of cities or NGOs [nongovernmental organizations] to apply a conceptual framework for ITP."

The US should serve as the logical testing ground for ITP, Birk said, "because there's more momentum here toward changing things, the policy framework has been altered to make it more favorable to this type of approach, and we're further ahead with technology." ISTEA now gives power to metropolitan planning organizations in the US to coordinate planning between cities and suburbs, something that no organization had jurisdiction over before. Cities like Portland, Oregon, and San Francisco, California, are revising their transportation plans to take environmental and social considerations into account. And the state of Maine recently passed a referendum requiring that all road building proposals must be compared with alternative options. All of these developments help to set the stage for the introduction of ITP in the US.

Ultimately, however, Birk hopes ITP can be used worldwide — especially in developing countries, which is her organization's normal focus. "The problems and framework are similar [between the US and developing countries]," Birk said. "We want to create a sustainable approach that many cities can use." She cautioned, however, that ITP requires a highly individual approach. "Transport more than anything else is city-specific — every city has its

own totally different systems, institutional structures, and technologies."

IIEC has just published a new report, entitled *Moving Toward Integrated Transport Planning: Energy, Environment, and Mobility in Four Asian Cities*, that details many of the features of ITP in detail. The report explores potential applications for ITP in cities in Thailand, Indonesia, India, and Pakistan, describing the current state of each city's transportation system, the associated environmental and energy issues, and options available for reducing the negative impacts of transportation growth — such as "land-use plan-

ning, switching to more-efficient forms of transport, transport system management measures, transport infrastructure measures, improving the efficiency of individual vehicles, and switching to cleaner-burning and alternative fuels." While acknowledging that the development of ITP will take time, the report calls on cities to begin the process by "drawing together the wide spectrum of options and considering them in a systematic manner; carrying out long-range social, environmental, and energy impact analyses for each option; putting in place a governmental body with broad authority to coordinate all involved

agencies and power to implement the chosen options; work with other cities around the world to create models of various options and exchange information; and begin systematic training of professionals to carry out land-use planning, emissions projecting, integrated modeling, and energy calculations."

For more information, contact Mia Birk or Chris Zegras at the International Institute for Energy Conservation, 750 First Street NE, Suite 940, Washington, DC 20002, USA. Tel: +1 202 842 3388; Fax: +1 202 842 1565.



Policy Trends

UK Urges Local Planners to Curb Car Use

The UK government has acknowledged the need to make the reduction of private car use one of the objectives of land-use planning, telling local authorities to reject developments that generate more traffic — such as out-of-town shopping centers.

In the future, all major development proposals must be assessed in terms of their potential to reduce the need to travel. Planners are expected to promote walking, cycling, and the use of public transport systems, and to encourage freight to go by rail or waterways rather than by road.

The government's "greening" of the planning system is buttressed by a newly published research report, *Reducing Transport Emissions Through Planning*. Jointly commissioned by the UK Departments of Transport and the Environment, the report says the UK could cut its CO₂ emissions by up to 15% over the next 25 years by curbing road traffic and improving the development of public transport systems. Without any changes in transport and planning policies, the report estimates, an increase in road traffic could lead

to a 60%-120% increase in CO₂ emissions by 2025.

Reducing Transport Emissions Through Planning is available from Her Majesty's Stationery Office, 49 High Holborn, London WC1V 6HB, UK. Tel: +44 71 873 9090; Fax: +44 71 873 8200.

Interest and Conflict over US Energy Tax Intensifies

With his energy tax proposal under fire, US President Clinton in recent weeks has acceded to calls for additional exemptions in the hopes that he can thereby secure enough support to pass it through Congress. In so doing, Clinton is walking a fine line. Exemptions may gain the support of specific legislators and their constituents, but can erode the support of others. Daniel Lashof, of the Natural Resources Defense Council (NRDC), told *GECK*'s sister publication, *Energy, Economics and Climate Change*, that "there is a point beyond which we would say this tax is so riddled with loopholes and exemptions that we cannot in good faith support it." At the time, Lashof indicated that the proposal had not yet reached that point, partly

because the NRDC and others were "opposing all exemptions as hard as we can."

The latest round of exemptions began when the Clinton administration sent a specific legislative proposal to Congress on 30 April. The proposal stated in legal terms many exemptions and other changes the administration had already announced in general language on 1 April (see *GECK*, 9 April 1993). But it did contain a few new additions. For example, while the administration had said earlier that "coal used in the production of synthetic natural gas" would be exempted, the legislative proposal added that coal used to produce "any other synthetic fuel specified in regulations prescribed by the Secretary [of Energy]" also would be exempt.

The proposal was delivered to the House of Representatives. Once in its hands, the activity surrounding the tax intensified. Although the proposal still had not emerged from the House Ways and Means Committee when we went to press, it was clear that additional exemptions and other changes would be made before

the committee completed its work and sent the bill to the full house for a vote. Among the changes expected were provisions that bring the collection points for the tax even closer to the final energy user, and which would ease the tax burden on aluminum producers and others.

To some important groups, amendments were insufficient; they instead called for the measure's defeat. Among the most recent additions to the growing list of opponents were the US Chamber of Commerce and the Affordable Energy Alliance, a coalition of companies and business organizations.

If the tax passes despite the opposition, it will have little direct and near-term impact on US CO₂ emissions. However, the tax collection system that it requires could be used in the future to impose heavier taxes and reduce CO₂ emissions by greater amounts. Even more important in the short term, imposing the tax will make it more difficult for members of the EC to further delay approval and implementation of the proposed EC carbon/energy tax.

A US tax also will put pressure on the Japanese to follow suit. As Masahisa Aoki, chairman of the Japanese House of Representatives Special Committee on Global Environmental Issues, said on 11 May at the *Second US-Japan Seminar on the Global Environment* in Washington, DC, if the US "does adopt a new energy tax, it will affect us in Japan; there is no question."

UK Appears Isolated in Opposing EC Carbon/Energy Tax

Depending on whom you listen to, the prospects for a carbon/energy tax in the EC grew either brighter or dimmer on 23 April when environment and energy ministers of all EC countries except Britain agreed that the tax should be adopted.

Proponents of the tax believe that with 11 countries now in favor of

the proposal, it is only a matter of time before the UK bows to the pressure. But there is no guarantee that this will happen. Skeptics emphasize that the tax proposal must be approved by all 12 member states, and it only takes one opposing country to sink it.

British officials said that "several" countries at the meeting were unwilling to commit themselves to the tax. That may be true, but it is not reflected in the meeting's official report, which represents the conclusions of Denmark (the current EC president). The report states pointedly that "a decision on [a fiscal] instrument at the Community level should be reached as soon as possible, and 11 delegations agree on the need for a positive decision."

While Greece, Ireland, Portugal, and Spain for the first time expressed clear support for the tax, they made their endorsement conditional on the receipt of special treatment (most likely a delay in the introduction of the tax) due to their relatively low CO₂ emissions.

The carbon/energy tax proposal will come up for discussion again next month, at a 7 June meeting of EC finance ministers. Although they are not expected to make any final decisions, the finance ministers' conclusions will give a good indication of the tax proposal's chances.

Environment ministers from all of Europe and their counterparts from the US and Canada, meanwhile, called for "timely decisions to introduce as soon as possible taxation that leads to an effective limitation in CO₂ emissions" at the second pan-European conference of environment ministers in Lucerne, Switzerland, on 28-30 April. The host country did not succeed, however, in pushing for binding decisions to develop and introduce a European energy tax within a certain time frame and to set up a cleanup fund for Central and Eastern Europe from the proceeds of such a tax.

EC Finalizes Energy Efficiency Standards

Mandatory EC standards for boosting the energy efficiency of refrigerators and freezers, under discussion for more than two years already, are being finalized by the European Commission and may be submitted by the summer for government approval. The Commission, the EC's executive, is also considering taking an initiative to improve the energy efficiency of office equipment similar to the US EPA's voluntary Energy Star program for computers and printers, a Commission official told *GECCR's* sister publication *Environment Watch: Western Europe*. Fridges and freezers have been singled out for priority action because they are the single biggest energy users in the home.

The draft EC legislation would require manufacturers to achieve an energy efficiency improvement averaging around 10% by January 1997, with a second step — for which standards will be set nearer the time — to follow three or four years later. The proposal will complement an EC-wide energy use labeling system that will take effect next year for seven groups of household appliances. The Commission official said technical changes to fridges and freezers will be necessary in some cases as CFCs in cooling systems are replaced by substitutes. These changes will offer an opportunity to manufacturers to redesign their products for greater energy efficiency.

Report Finds Federal Subsidies Favor Energy Supply over Efficiency

A "damaging" pattern of federal energy subsidies that has favored energy supply resources over energy efficiency (by a 35-to-1 ratio in 1989) "continues to waste taxpayer dollars and contribute to environmental pollution" in the US, according to a new report from the Washington, DC-based Alliance to Save Energy.

Federal Energy Subsidies: Energy, Environmental and Fiscal Impacts provides high and low estimates for overall federal subsidies to the energy sector in 1989. The high estimate, US \$36 billion, reflects the value of each subsidy at market rates. The low estimate of \$20 billion reflects the government's cost of providing the subsidies. According to the Alliance, the difference can be accounted for both by the government's lower cost of borrowing funds and by different methods of calculating subsidy levels. The high estimate would drop by \$3.5 billion if today's energy statutes were in place in 1989.

According to the report, 58% (\$21 billion) of all subsidies directly promotes the use of fossil fuels, while 30% (\$11 billion) is earmarked for nuclear energy. End-use energy efficiency receives only 3% (\$983 million), and emerging renewable sources account for only 2% (\$900 million). The report terms the subsidies "environmentally perverse" even within the fossil fuel category. Relatively clean natural gas receives the lowest (\$4 billion) of the subsidies that promote fossil fuel use.

The report is available for \$20 per copy from: The Alliance to Save Energy, 1725 K Street NW, Suite 509, Washington, DC 20006-1401, USA. Tel: +1 202 857 0666; Fax: +1 202 331 9588.

Call for Long-Term CO₂ Reduction Targets Goes Unheeded at UK Conference

At a 7 May conference on the UK national program for reducing CO₂

emissions, the British government appeared unwilling to respond to a broad consensus among industry, environmentalists, and public sector representatives that the UK needed higher and longer-term reduction targets as well as tougher regulations and stronger fiscal incentives to cut greenhouse gas emissions.

Under the UN Framework Convention on Climate Change, Britain must stabilize its CO₂ emissions at 1990 levels (160 metric tons of carbon, or MtC) by 2000. At their current rate of increase, emissions would be around 10 MtC above that target. But even if the stabilization target can be met, forecasts suggest that without tougher and longer-term targets, emissions will inevitably continue to increase after the end of the decade. According to some estimates, they could rise by as much as 40% by 2020, with the largest increase coming from transport.

The British government recently proposed a number of fiscal measures designed to help meet the stabilization target — including the introduction of a value-added tax on household energy use (see *GECR*, 26 March 1993.) It also plans to tighten building regulations to improve the energy efficiency of new buildings (see *GECR*, 26 February 1993) and has formed an Energy Saving Trust that is now expected to achieve household energy savings of as much as 3.5 MtC this decade, compared with an original target of 1.6 MtC.

But the government continues to focus on short-term policies and "voluntary action taken without

government intervention." This approach is questioned even by the UK Advisory Committee on Business and the Environment, which brings together business and government and which will soon publish its own recommendations on CO₂ reduction.

Friends of the Earth (London, UK), meanwhile, called for a number of measures, largely aimed at reducing energy waste, that the group claims could result in emissions reductions of around 25-30 MtC by 2000 — almost three times the current target.

Norway's CO₂ Emissions Are Down 5%

Norway's CO₂ emissions in 1992 were 5% below their 1989 level, according to the Norwegian environment ministry. Hovard Toresen of the ministry told *GECR* that the reduction was partly due to a series of mild winters, an economic recession, and high precipitation levels that led to the greater use of cheap hydroelectric power. In addition, Toresen said, the reduction is partly due to the government's introduction in 1991 of a "relatively high tax" on CO₂ emissions.

Norway has pledged to stabilize its CO₂ emissions at 1989 levels by the year 2000, and it's off to a good start. "That doesn't mean that we don't expect a pressure for increased emissions in the years to come," Toresen said, "but for this first three-year period there has been a reduction." Toresen noted that the government believes additional measures will be needed to meet the stabilization target.



Science Update

Scientists Report Record Low Ozone in 1992

Last year, global average ozone fell to the lowest values ever recorded by the satellite-based Total Ozone Mapping Spectrometer, according to

a report in the 23 April issue of *Science* (vol. 260, pp. 523-526). Ozone levels in 1992 were 3%-4% below the average values measured during the previous 12 years and

2%-3% below the lowest values recorded during that period.

The low values have continued through the early months of 1993 (see *GECR*, 12 March, 26 March,

please begin to keep a file on good/bad actors internationally. Let's decide

and 9 April 1993), although some scientists believe ozone levels may recover somewhat over the next year as sulfate aerosols from the 1991 eruption of Mt. Pinatubo fall out of the stratosphere.

Pinatubo is thought to be partly to blame for the record-low ozone last year, although the effect was not as strong as originally predicted. Because of this, according to an accompanying article by *Science* reporter Richard Kerr, some researchers now doubt whether sulfate aerosols play as strong a role in stratospheric chemistry as previously thought. Rather than facilitating chemical ozone depletion, they say, the aerosols may instead cause changes in atmospheric circulation, altering the wind patterns that transport ozone around the Earth. The stratospheric heating caused by the aerosols may also directly reduce the rate of ozone formation.

"Twilight Effect" of Volcanic Aerosols May Increase UV-B Levels

Under normal conditions, the maximum amount of UV radiation that reaches the Earth's surface under the Antarctic ozone hole is lower than the highest levels recorded in the tropics. But this may change when volcanic aerosols are present, according to a report in the 20 April *Journal of Geophysical Research* (vol. 948, no. D4, pp. 7,251-7,253).

UV-B naturally declines as one moves toward the poles, because sunlight arrives at a lower angle and must pass through more of the atmosphere (encountering more UV-absorbing ozone in the process) before reaching the surface. But according to Roger Davies of McGill University (Montreal, Quebec, Canada), when volcanic aerosols are present, they scatter "a significant amount" of the sunlight straight down. Because this scattered radiation travels through the ozone layer at a steeper angle than is normal for high latitudes, less of it gets absorbed and more of

it reaches the Earth. Davies refers to this as the "twilight effect," because the difference between downward-scattered radiation and unscattered direct radiation is greatest at sunrise or sunset.

When volcanic aerosols are present above the ozone layer over Antarctica and there's an ozone hole, UV radiation in the lower 25% of the UV-B scale (below 290 nanometers) can actually exceed maximum tropical levels, Davies reports.

GECR wonders whether this scattering effect might have anything to do with the recent flurry of anecdotal reports from southern South America linking unusual sunburns and skin lesions in humans (and temporary blindness in livestock and rabbits) to the thinning ozone layer. Ozone measurements from the region do show a decline, but apparently not nearly enough of a decline to account for such severe effects. But the heavy aerosol load contributed by the recent eruptions of Mt. Pinatubo and the Hudson volcano in the Chilean Andes may have caused larger increases in UV-B than one would predict by examining ozone trends alone.

Satellite Data Suggest Clouds Will Enhance Warming

Clouds may exert a "strongly positive" feedback on greenhouse warming, according to a new analysis of international satellite data on cloud cover and temperature.

The study, by George Tselioudis of Columbia University and William Rossow of the NASA Goddard Institute for Space Studies (both in New York City), found that in most cases the data showed low clouds becoming optically thinner and high clouds becoming optically thicker as temperatures warmed. Low clouds have an overall cooling effect on climate, reflecting more heat back out to space than they trap from below. High cirrus clouds, on the other

hand, have an overall warming effect. Any effect that would make low clouds less reflective or high clouds more dense would lead to a warmer climate — and in this case, warmer temperatures appear to do both.

The effect on high clouds is most dramatic when temperatures warm from initially cold conditions; when temperatures are warm to begin with, the clouds' optical thickness grows more slowly.

Tselioudis and Rossow will present their findings at the American Geophysical Union's 1993 spring meeting, to be held in Baltimore, Maryland, from 24-28 May.

Dimming Sun May Reduce Global Temperatures Slightly

Solar irradiance is expected to decline by 1.4 watts per square meter over the 1990-1997 period, according to Robert B. Lee III of the NASA Langley Research Center (Hampton, Virginia), causing global atmospheric temperature to decline "a few tenths of a degree" below the 1989-1990 value by 1997.

According to Lee, solar irradiance declined by 1.7 watts per square meter between 1979 and 1986, and increased by 1.4 watts per square meter between 1986 and 1989. Lee's findings and predictions are based on satellite data from the Earth Radiation Budget Satellite, the Solar Maximum Mission, and Nimbus 7. He will report on his research at the 1993 spring meeting of the American Geophysical Union in Baltimore, Maryland, from 24-28 May.

ENSO, Pinatubo Strongly Influenced Climate in 1992

The El Niño-Southern Oscillation (ENSO) and the sulfate aerosol cloud from Mt. Pinatubo had "major impacts" on climate in the Northern Hemisphere, according to an annual global climate assessment by the US National Oceanic and Atmospheric Administration.

Temperature and precipitation anomalies around the world were linked to ENSO, the researchers said, with southeastern Africa experiencing its worst drought in 100 years and lighter-than-normal monsoons in India and Australia. In the US, ENSO was responsible for ending California's seven-year drought.

ENSO's influence led to warm temperatures in Asia, western Canada, and the US early in 1992, while cooler temperatures (presumably caused by Pinatubo's aerosol cloud) prevailed after April. In the end, 1992 was the eighth warmest year in the global land surface temperature record since 1951.

For a copy of the *Global Climate Assessment 1992*, write to the Climate Analysis Center, W/NMC 5, 5200 Auth Road, Washington, DC 20233, USA.



Industry Watch

Building Codes Cause Problems for CFC Alternatives in US

Local building codes in the US are delaying efforts to convert or install new CFC-free chillers and supermarket display cases, industry officials say. In Chicago, Illinois, according to Ed Dooley of the Air-Conditioning and Refrigeration Institute (ARI), contractors must apply for a specific exemption from the city's building and fire code of-fice each time they want to use non-CFC refrigerants. Existing codes were established while CFCs were still plentiful, and so contain no provisions for using alternative fluorocarbons.

Last year, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) adopted a revised standard for refrigerant equipment installation procedures that includes safety procedures for equipment using HFC-134a and HCFC-123 (see *GECR*, 10 July 1992). Many local building codes refer to the ASHRAE standard, but apparently the existence of a revised standard is not enough for local authorities. "They need the language to be written out in a model code," Dooley told *GECR*. "Until model code language is available, [the industry] will continue to have to jump through these bureaucratic hurdles."

To identify the extent of this problem and to develop strategies to ad-

dress it, ARI, ASHRAE, the US EPA, and the Council of American Building Officials will hold a seminar next month on how building codes affect the installation of equipment using non-CFC refrigerants. Scheduled for 15 June in Arlington, Virginia, the seminar is open to local officials, chiller and commercial refrigeration manufacturers, state and local building code officials, building owners and managers, construction and contractor groups, refrigerant makers, and testing laboratories.

For more information on the seminar, contact Phil Squair, ARI, 4301 North Fairfax Drive, Suite 425, Arlington, VA 22203, USA. Tel: +1 703 524 8800; Fax: +1 703 528-3816

EC Refrigeration Industry Lags on CFCs

European refrigeration and air conditioning manufacturers have been slow to switch from CFCs, according to a 3 May report in *European Chemical News*. CFC consumption by the EC refrigeration industry last year remained at 104% of the 1986 level, unchanged from its consumption in 1991.

CFCs are being reduced more quickly in other sectors, such as solvents, foams, and aerosols, and total CFC consumption in the EC fell to 43% of the 1986 level in 1992, down from 51% in 1991.

CFCs will be phased out in the EC by 1 January 1995, and consumption

will be capped at 15% of the 1986 level by 31 December 1993. According to *European Chemical News*, this means the refrigeration industry will need to cut its CFC consumption "by around 50% this year" in order to meet the EC's requirements.

Fiona Weir of Friends of the Earth (London, UK) believes the industry has moved slowly to switch from CFCs for two main reasons: first, an attitude of "complacency" that developed in some countries (especially Britain) after the EC achieved large CFC reductions by banning their use in aerosols; and second, "the industry thought that because of the importance of refrigeration, they somehow were very unlikely to be faced with such sudden scenarios." "I think lots of people in the industry did not expect the phaseout dates to go forward so quickly," Weir said.

New Renewable Energy Center to Open in Washington

The Center for Renewable Energy and Sustainable Technology (CREST), a new museum, educational resource center, and training facility, will be housed in a retro-fitted former bomb shelter and war veterans museum near Capitol Hill in Washington, DC.

The facility, dedicated on Earth Day (22 April) in Washington, will be open to the public in early 1994, and

will provide interactive exhibits for the general public and offer training courses for designers, engineers, and energy professionals from other countries. The building is being retrofitted with a photovoltaic lighting system, solar hot-water heating, and energy-efficient equipment throughout. The facility is being funded by both federal and private sources.

For more information, contact the Center for Renewable Energy and Sustainable Technology, c/o the Solar Energy Research and Education Foundation, Suite 805, 777 North Capitol Street NE, Washington, DC 20002, USA. Tel: +1 202 408 0660; Fax: +1 202 408 8536.

US DOE Announces Public-Private Partnerships in Renewable Energy

In late April, the US Department of Energy (DOE) announced a series of four public-private partnerships designed to advance the commercialization of renewable energy technologies. According to Secretary of Energy Hazel O'Leary, these collaborative efforts are "representative of the department's changing priorities." DOE's most recent budget request includes a 30% increase for research and development in renewable energy technologies.

One partnership involves a cooperative agreement between DOE and a consortium led by Southern California Edison Company to develop the world's most advanced central-receiver solar thermal power plant, "Solar Two" (see *GECR*, 23 April 1993). Another is a partnership to determine the feasibility of turning sugarcane residue and other biomass into energy.

Jointly funded by DOE and the US state of Hawaii, with contributions from industry, the project includes the construction of a biomass gasifier facility on the island of Maui. The first phase of the project will cost US \$9.2 million.

In a third project, DOE, the Edison Electric Institute, and the American Public Power Association will provide technical assistance to utility companies that intend to develop solar water heating programs for their customers. The fourth initiative is a \$40-million five-year program to develop solar cells that also serve as building components. DOE expects the program — dubbed Building Opportunities in the US for Photovoltaics (PV:BONUS) — to result in the "widespread use of solar cells in homes and businesses." DOE has selected five proposals for negotiation.

For more information, contact Larry Hart, US Department of Energy, Office of the Press Secretary, Washington, DC 20585, USA. Tel: +1 202 586 5806.

HOTLINE: In our most recent (Spring 1993) Meeting Planner, *GECR* listed a symposium on Greenhouse Gas Emissions and Mitigation Research, to be held from 18-20 August in Washington, DC. Readers should note that this listing was an accidental reprint of a meeting held in 1992. The symposium *will not take place this year ...*

GECR has heard that the revised US National Action Plan for Global Climate Change will project somewhat lower emissions reductions from the EPA's "green" programs (meaning that other measures will be needed to make up the difference) ... Russia's environment minister has said that his country will impose a carbon tax this year ... The Royal Institute of International Affairs has just published three books of interest to *GECR* readers: *The Earth Summit Agreements: A Guide and Assessment*; *Environmental Profiles of European Business*; and *Climate Change Policy in the European Community: Report of a Workshop*. For more information, contact the Energy and Environmental Program, Royal Institute of International Affairs, Chatham House, 10 St. James's Square, London SW1Y

4LE, UK. Tel: +44 71 957 5711; Fax: +44 71 957 5710.

Contact the *GECR* Hotline for more information on any news item in this issue. We're here to answer your questions or direct you to the people who can. Tel: +1 802 463 9417; Fax: +1 802 463 9418. Eco-Net/GreenNet/Web/Pegasus/Alter-nex: en!gecr; Comlink (Germany): gecr%igc.org@apc.zer; Bitnet: gecr%igc.org@stanford; Internet: gecr@igc.org.

EDITOR: BRADFORD J. HURLEY

Publisher: Karen Fine Coburn

Contributing Editors:

Tony Carritt, Dagmar S. Etkin, Stephanie Gehlen, Jeff Stoub, Amy M. Stolls, Kate Victory

Correspondents:

Jane Gassko, Tom Gray, Nick Sundt, Yulin Yang

Meeting Planner Editor: Lorell Gifford

Document Listing Editor: Jeff Welch

Production Editor: Karen K. Pasley

List Mgr.: Doreen Evans

Subscription Mgr.: Karen Kurr

Editorial Office: Global Environmental Change Report, 31 Gage Street, Bellows Falls, VT 05101-1616, USA. Tel: +1 802 463 9417, Fax: +1 802 463 9418.

Global Environmental Change Report is published twice monthly by Cutter Information Corp., 37 Broadway, Arlington, MA 02174-5539, USA. Tel: +1 617 641 5118 or, in North America, +1 800 964 5118; Fax: +1 617 648 1950 or, in North America, +1 800 888 1816; Telex: 650 100 9891.

Subscriptions: \$447 per year; \$547 outside North America. University subscription rate: \$247 per year; \$287 outside North America. ISSN 1049-9083.

Unauthorized reproduction in any form, including photocopying, faxing, and image scanning, is against the law. Copyright © 1993 by Cutter Information Corp. All rights reserved. Authorization to photocopy for noncommercial internal or personal use is granted by Cutter Information Corp., provided that the fee of \$2.50 per page is paid directly to Copyright Clearance Center, 27 Congress Street, Salem, MA 01970, USA; +1 508 744 3350. The fee code is: 1049-9083/93 \$0 + \$2.50.

GECR is available electronically, online, on NewsNet[®] and Predicasts[®]. For access information, call NewsNet at +1 215 527 8030 or Predicasts at +1 216 795 3000.