SESSION 5D

EVALUATING PROGRAMS OF THE CITIES FOR CLIMATE PROTECTION CAMPAIGN

Moderator: Fred Sissine, Congressional Research Service

Panelists:

- Ralph Torrie, Cities for Climate Protection Campaign
- Phil Welker, Energy Office, City of Portland, Oregon
- Doug Yoder, Dept. of Environmental Resources Management, Dade County, Florida
- Barbara Bamberger, City of Chula Vista, California

Summary:

The International Council for Local Environmental Initiatives (ICLEI) created the Cities for Climate Protection Campaign (CCP) to help local governments (cities and counties) curb greenhouse gases through energy efficiency and other programs. The 1992 United Nations Conference on Environment and Development (Earth Summit) launched worldwide efforts to curb carbon dioxide (CO_2) and other greenhouse gas emissions. The International Framework Convention on Global Climate Change (FCCC) was created to implement the Earth Summit agreements. In keeping with the FCCC, most CCP local governments are using 1990 as a base year and 2010 as the target year for reducing emissions 20 percent below the 1990 baseline. This is a more aggressive goal than most national governments have adopted. In fact, national governments have attempted a less ambitious shorter-term goal of stabilizing emissions by 2000 that now appears unattainable. They are now debating whether to adopt a more ambitious longer-term goal that parallels those of CCP. This debate was the focus of the Special Meeting of the United Nations General Assembly (Earth Summit +5) held in New York from June 23 to 27, 1997. It will also be the focus of the third meeting of the Conference of Parties (COP-3) to implement the FCCC. COP-3 is scheduled to be held in Kyoto, Japan, in December 1997. ICLEI hopes to have some assessments of local governments' greenhouse gas savings in hand for its CCP World Summit in Nagoya, Japan, this November, prior to the COP-3 meeting.

Each CCP local government is implementing plans, policies, and funding strategies to enact a mix of energy measures to reduce greenhouse gas emissions. Even for the most advanced U.S. CCP programs, evaluation efforts are only in the early stages. This panel brings together CCP headquarters' staff and program managers from three local governments to discuss evaluation plans and progress in assessing energy savings and greenhouse gas emission reductions. Ralph Torrie will present some key features of the CCP project evaluation strategy such as accommodating local data sources, standardizing methods of measurement, and describing issues for monitoring progress and evaluating results. Phil Welker will present Portland's progress on achieving emission reduction goals, describe barriers to achieving goals, and discuss the plans for the first impact evaluation report in 1998. Doug Yoder will present Dade County's methods for measuring emission reductions and its two-part strategy for evaluating implementation

progress and assessing program impacts on emissions. Barbara Bamberger will present Chula Vista's climate action plan goals, action measures, and approach to evaluating effects on emissions.

Expert energy program evaluators have been invited to join the panel as discussants.

Quantification, Results Monitoring and Evaluation in the Cities for Climate Protection Campaign -- From Toronto to Kyoto, by Ralph Torrie.

In 1990, the International Council for Local Environmental Initiatives (ICLEI) began working with local governments from North America and Europe who had committed to reducing greenhouse gas emissions in their communities. From the outset (in Toronto, 1990?), this work has placed a strong emphasis on quantifying both greenhouse gas emissions and emission reduction measures. This, in turn, has required an intensive effort to develop methods that work with local data sources, that are pragmatic and feasible to implement with local government resources, and which are sensitive to the unique needs of local government policy makers. With over 170 members worldwide (including more than 45 in the United States), the Cities for Climate Protection is accumulating information and experience about the factors that determine greenhouse gas emissions in the community and about the emission reduction measures that are most effective.

Campaign members are expected to develop and implement emission reduction targets for both their in-house operations and for the community-at-large. Standardization of the methods used for quantifying emissions and monitoring results is a central feature of the CCP way of doing things, and a detailed protocol of conventions and default assumptions has been developed and is regularly updated. In addition, software tools have been developed for the CCP that support quantifying and monitoring of emissions inventories and emission reduction measures for both in-house operations and the community-at-large. The software is part of a "tool kit" of resources designed to support the development of local action plans for greenhouse gas emissions reduction. A collaborative approach is taken in all of this, and regular workshops bring both staff and elected officials from the member cities together with experts on selected topics.

This presentation reviews the methods that have been developed for quantifying and monitoring CCP emissions and emission reduction measures. It also presents some illustrative and comparative results, and identifies some key issues for implementation of local emission reduction strategies, particularly for monitoring progress and evaluating results. The presentation will also review the objectives of, and plans for, the Cities for Climate Protection World Summit. The Summit will be held this coming November in Nagoya, Japan, prior to the Kyoto Conference of Parties.

Portland's Carbon Dioxide Reduction Strategy, by Phil Welker.

In 1993, the City of Portland became the first U.S. city to adopt a local strategy to reduce carbon dioxide (CO_2) emissions, a primary greenhouse gas and cause of global warming. The goal of the strategy is to reduce CO_2 emissions throughout the Portland Metropolitan area by 20 percent below 1988 levels by 2010.

What's happened since 1993?

The City of Portland, other metropolitan governments, state agencies, local utilities, private businesses and individuals have taken actions to reduce non-renewable energy use and related CO_2 emissions. These actions have had remarkable success in helping local residents, businesses and governments reduce energy use in their homes, facilities and in the way they travel. For example, from 1990 to 1995:

- Portland municipal facilities have reduced energy use by more than 15 percent, resulting in $1.2 million in annual energy cost savings.
- Regional transit ridership has increased 30 percent.
- Annual electricity peak demand by residents and businesses throughout the metropolitan region has been cut by about 80 megawatts, or 6.5 percent.

The results have been very positive. Per capita CO_2 emissions have decreased by about three percent, from 18.3 tons in 1990 to 17.8 tons in 1995. If we continue with current practices, emissions are projected to decline to 16.4 tons per capita by 2010, a ten percent reduction from the 1990 level.

While the reduced CO_2 emissions per capita indicate a very hopeful trend, total CO_2 emissions for the metropolitan area actually increased by 7.6 percent from 1990 to 1995. The primary cause for this increase is Portland's rapidly increasing population, which grew ten percent from 1990 through 1995. However, two other sources have contributed significantly to the problem:

1. The successful closing of Oregon's only nuclear powerplant, Trojan, led to increased use of natural gas and coal to substitute for its nuclear power production. In 1990, only 28 percent of the electricity provided by Portland General Electric was obtained from fossil fuels (including purchased power). However, in 1995, substitution for the loss of Trojan's power caused the share of fossil-fueled electricity to reach 50 percent, nearly double that of 1990. This has added substantially to total CO_2 emission levels.

2. Despite a very successful transit program, people are on average driving more miles per year.

Portland used the ICLEI greenhouse gas model to calculate its 1996 estimate of metropolitan region CO_2 emissions. However, our use of this model was unique in that we computer our own regional CO_2 coefficient for electricity use, to account for the changing structure of utility fuel use following Trojan's closing. Also, Portland has adapted the model to produce greater detail and change the forecasting process. The first impact evaluation is due in 1998, and it will be used to continue the process of refining our estimates to more precisely reflect local circumstances.

Evaluating Dade County's Climate Protection Program, by Doug Yoder.

In 1993, the Dade County Commission adopted a plan to reduce locally generated greenhouse gas emissions by 20% below 1988 levels in the year 2005. This plan includes 35 different recommendations related to transportation, solid waste, urban design, and the production and use of electricity. It was developed as part of a project sponsored by ICLEI, in which several North American and European urban areas collaborated on a planning process. The initial baseline of emissions was calculated by using a computer program developed in Europe (the TEMPS model) and by developing estimates based upon resource use and emission factors, for example, gasoline

fuel use and CO_2 emissions per gallon of gasoline. Total emissions of 23 million tons of CO_2 per year were estimated using these tools.

Evaluation of the program has followed two tracks. In one track, the Commission instructed that an annual report on the plan's implementation progress be prepared and submitted to it. This report tracks progress made on each of the plan's recommendations in terms of a subjective estimate of degree of completion. It also notes additional related activities that contribute to the goal but were not specifically included in the original plan. Various measures that have been implemented in the past year, such as re-lamping a building and adding public transit capacity, easily lend themselves to emission reduction estimates. For these measures, quantitative estimates are included in the report. The other track of the evaluation plan is to calculate actual emissions on five-year intervals. The first such calculation since the plan was adopted is about to begin. This will again be an exercise in estimates. A simplified spreadsheet model developed by ICLEI is likely to be used for this purpose after calibrating the model with 1988 baseline data for comparative purposes.

A key purpose of having and regularly reporting on progress with a climate change plan is to keep the issue before decisionmakers. It is important to know how effective various approaches are in the real world of applications, but it is equally important to maintain the issue on the public agenda at a time when so many other short term issues tend to predominate local government attention. In the end the weather itself, which everyone experiences, may be among the most important evaluative tools. While it may be too early to say that any individual weather event has been caused by global warming, for South Floridians who remember Hurricane Andrew there is special significance in the hurricane season forecast and the factors which may explain the recent increases in storm activity. The critical element in the implementation of a climate protection plan is the belief by people that what they do will make a difference, even though that difference on an individual level is hard to measure.

Chula Vista's Climate Change Action Plan: Process, Problems, and Implementation, by Barbara Bamberger.

The City of Chula Vista has developed a comprehensive Climate Change Action Plan as part of the Cities for Climate Protection Campaign. Chula Vista started with a list of 300 potential action measures, which was cut to 90 for implementation. Twenty of the 90 measures are now being implemented and are the focus of efforts to reduce CO_2 emissions by 20 percent by the year 2010.

Chula Vista's presentation will focus on the process, problems and resulting implementation of the plan, to date. It will also address the political benefits of implementing such a plan in the context of the CCP, and with the support of an international consortium of cities behind the effort. The presentation will discuss issues regarding implementation of the specific policy measures: those that have been easy and those that have been difficult to implement. It will also provide recommendations necessary for this voluntary effort to succeed.

Chula Vista expects to conduct impact evaluations at least once every five years, which it will use to monitor CO_2 reduction progress, fine tune the action measures, and revise and update the CO_2 plan. For some implementation measures, a working group that combines public and private sector representatives will implement measures and further define the related evaluation techniques. This is especially true for transportation and building measures, which involve

engineering, building, and transit officials from a variety of agencies. Land use measures will be evaluated by using the regional San Diego Association of Governments' Land Use Distribution Models and comparing actual improved land use density, pedestrian, and transit measures against traditional land use patterns and their CO_2 generation and savings.