Best Practice: Comprehensive Climate Change Plan

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CITY: MEXICO CITY **POLICY AREA: CLIMATE CHANGE; ENVIRONMENT**

BEST PRACTICE

In 2008, Mexico City launched its Climate Action Program (CAP), a comprehensive inter-agency policy approach to address climate change and reduce the City's greenhouse gas emissions over a five year period. Since then, Mexico City has assumed national and international leadership in the fight against global warming. In less than four years, evident and accelerated progress has been achieved in the reduction of Greenhouse Gases (GHG), and the City is now in the process to have a fully operational, comprehensive program of adaptation to climate change.

ISSUE

Climate change is one of the major challenges facing the world today. According to the Intergovernmental Panel on Climate Change (IPCC), the "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air temperatures, widespread melting of snow and ice, and rising global, average sea level," (IPCC, 2007). The effects of climate change have been felt in Mexico City with intensification of seasonal rains, the elevation of average annual temperatures and the increased frequency of widespread, high-impact weather phenomena.

Mexico City, due to its large population size (8.72 million people) and economic activity, is a major contributor to the emission of greenhouse gases. Approximately 88% of all greenhouse gas emissions in Mexico City are attributed to energy consumption in the form of fossil fuels and electricity used in transportation, industry, trade, housing or services. Mexico City can greatly improve the quality of life for its citizens by implementing the Climate Action Program (CAP) to reduce greenhouse gases across a broad spectrum of issues.

GOALS AND OBJECTIVES

The overall goals of the Climate Action Program (CAP) is to 1) integrate, coordinate and encourage public actions in the capital city to diminish environmental, social and economic risks stemming from climate change; and 2) to promote the welfare of the population through the reduction and capture of greenhouse gas emissions. The City has articulated seven objectives to achieve these goals as follows:

- To influence the behavioral patterns, habits and attitudes of Mexico City's population so that it will contribute to the mitigation of climate change and enact adaptation measures
- To attract investment and financing for greenhouse gas emission mitigation projects aimed at overcoming obstacles to the implementation of adopted measures
- To promote technological innovation related to combating climate change
- To position Mexico City and its government as leaders in national and international efforts to mitigate greenhouse gas emissions in the context of the commitments assumed by Mexico in the United Nations Framework Convention on Climate Change
- To set out guidelines for public policies in the mitigation of and adaptation to climate change in Mexico and to generate a multiplier effect in the country and the world
- To reduce carbon dioxide (CO_2) equivalent emissions by seven million tons during the 2008-2012 period
- To initiate an integrated program for adaptation to climate change in Mexico City and have it fully functional by 2012

IMPLEMENTATION

The planning process began in July 2007 with the City's request for technical assistance from international organizations, such as the World Bank. In September 2007, Mexico City government agencies, civic organizations, private companies, academics and independent consultants met for the first time to discuss how the City could take action to reduce its vulnerability and adapt to climate change. This three day meeting brought together 300 experts and 12 city agencies around six discussion

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issues: water, energy, transportation, solid waste, adaptation and communication. Several meetings were held following this initial discussion, including a public participation process in which citizens commented and provided suggestions that were incorporated into the Program.

The final CAP proposed 26 greenhouse gas mitigation actions that, if implemented over a five year period, will reduce the CO_2 emissions by 4.4 million tons a year, or 12% of the annual greenhouse gas emissions in Mexico City. The program proposes actions in five key areas to reduce CO_2 emissions: energy, transportation, water, waste and adaptation. Environmental education and communication actions are also proposed.

The CAP 2008-2012 represents the set of actions that Mexico City's Government has decided to use openly and decisively to address global warming. Since its publication in June 2008 to date, this program has been a priority for the definition of policies that lead to the reduction of GHG emissions and to adaptation to climate change effects.

COST

As of 2012, the cost for the CAP is estimated to be $56 billion pesos budgeted or invested ($4.4 billion USD) over five years. The cost by category is as follows:

Energy: $2 billion pesos ($160 million USD)
Water: $8.3 billion pesos ($654 million USD)
Transportation: $31.9 billion pesos ($2.5 billion USD)
Waste: $13.8 billion pesos ($1.1billion USD)

RESULTS AND EVALUATION

Results of this effort since 2008 include:

- 745 government-supported housing units have been constructed featuring 1,042 m^2 of solar energy collecting roofs. As a result, GHG have been reduced by 441 tons.
- Strict regulations require that businesses employing more than 51 individuals must incorporate solar-powered water heating systems for the provision of at least 30% of their annual energy consumption.
- Ecobici public bicycle system has been a resounding success, offering public hired bicycles for short hauls and intermodal transportation. The system incorporates 1,200 bicycles, 90 stations and more than 35,000 registered users for a total of 2,286,766 trips since its implementation.
- Metrobus Rapid Transit System (BRT) has replaced obsolete mid-to-low-capacity buses for high-capacity cutting edge technology models. A new 17 km line was inaugurated featuring 54 new articulated bus vehicles and an initial demand of 120,000 riders daily. The fourth BRT corridor will be completed in 2012.
- 1,632 obsolete and inefficient taxis have been replaced via a program that provides financial support to drivers, motivating voluntary participation.
- The "Lázaro Cárdenas Zero-Emissions Corridor" renovated dedicated-lane trolley-bus infrastructure and added established stops. The 36.6 km corridor serves 39 neighborhoods and 87,000 passengers daily. Its 120 electric trolleybuses reduce emissions by 8,280 metric tons of CO_2 equivalent.
- The "Eje 2-2A Sur Zero-Emissions Corridor" features 30 trolleybuses along a 19 km corridor serving 30,000 passengers daily. It reduced CO_2 equivalent emissions by 3,376 tons in 2011.

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- High capacity, energy-efficient buses have replaced 325 low-capacity, polluting, unsafe and obsolete mini-buses, these reduced 752 metric tons of CO_2 equivalent.
- The city has begun operating hybrid and natural gas buses in public transportation systems and has received its first electric automobiles, which will be fueled at Latin America's first photovoltaic charging stations. 100 electric vehicles are to be in operation by 2012.
- Mexico City's Climate Change Observatory provides real-time information on weather phenomena and greenhouse gases that contribute to world climate change. The Observatory's Chapultepec Park location has received 214,918 visitors.
- The City's Virtual Climate Change Center (VCCC) provides expert data and technical assistance to government agencies and has devised climate change scenarios for the City corresponding to 2020 and 2050. The VCCC receives technical and other support from the Mexico City Institute for Science and Technology and the National Autonomous University of Mexico's Atmospheric Science Center.
- The City's Central Mexico Heirloom Corn Protection Program promotes agricultural species diversity, particularly in corn, amaranth and prickly pear cactus, as well as supporting ongoing agrosystem adaptations.
- City program in support of ecological services conservation in community ecological reserves involve 13,521 hectares of natural areas within the city, benefitting 16 agricultural nuclei that are the areas' stewards. Sixteen community brigades have been formed to strengthen protection/conservation efforts and increase community participation.
- "Reverdece tu Ciudad" urban reforestation program is the largest green space rescue program in the City's history. To date, 213 citizen committees have planted 232,748 trees, shrubs, groundcover and ornamental plants, helping mitigate local flooding and reduce the urban "heat island" phenomenon.

In the period between 2008 and June 2011, the greatest emphasis of GHG reduction policies has been reflected in the transportation sector, where emissions were reduced by 4,851,783 Ton CO_2-eq. The energy sector reports a total reduction of 183,425 Ton CO_2-eq while water management contributed a reduction of 1,804 Ton CO_2-eq. In addition, a reduction of 127,175 Ton CO_2-eq has been reported by waste management and 607,846 Ton CO_2-eq by reforestation activities.

TIMELINE

2001 Dr. Mario Molina, the Mexican Nobel Prize winning chemist, spoke at several conferences in Mexico about developing air quality improvement programs.

2002 The World Resources Institute and the City of Mexico established the Center for Sustainable Transport for Mexico City to find solutions to transportation problems.

2002 The Metropolitan Environmental Commission announced Proaire III, the 2002-2010 Valley of Mexico Metropolitan Area Air Quality Improvement Program. Proaire III is an extensive blueprint to spend $12 billion to improve the air quality of the Mexico City Metropolitan Area (MCMA) over the next eight years.

2004 Program GHG Mexico established, offering technical assistance to Mexican companies to develop corporative inventories Green House Gases (GHG).

2005 The emissions reported in the corporative inventories ascended to 89 million tons of CO_2 which represents 32% of the total of the industrial emissions from the National Inventory of GHG.

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2008 To promote the development of transportation, energy and environmental projects under Mexico's National Infrastructure Program (NIP) and the United States Trade and Development Agency sponsored a conference to highlight key opportunities for U.S.-Mexican partnerships.

2008 Mexico City designed a Climate Action Program 2008-2012 (Programa de Acción Climática de la Ciudad de México), presented by the Mayor in June 2008. The Program proposes a total of 44 initiatives for 26 GHG mitigation actions, 12 adaptation measures and 6 education and communication actions. The Climate Action Program aims to reduce seven million tons of CO_2 from 2008-2012.

2009 Mexico City's government presented a Progress Report 2009 at Climate Action Program 2008-2012.

2009 Mexico City's Mayor was elected as new Chair of the World Mayors Council on Climate Change in December 2009 in Copenhagen.

2010 Mexico City hosts the World Mayors Summit on Climate (WMSC) in November where 138 cities representing 47 countries sign on to the Global Cities Covenant on Climate, or Mexico City Pact.

2011 CAP policies allowed for the greatest emphasis of GHG reduction policies in the transportation sector.

2012 Mexico City's goal is to have reduced carbon emissions by 7 million tons.

TRANSFERABILITY

The process that Mexico City employed to create a comprehensive Climate Action Program can be transferable to any city. Involving multiple public agencies, as well as the private sector, academia and the public are essential to ensuring widespread support for the plan.

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