



## Commission for Environmental Cooperation

### Improving Conditions for Green Building Construction in North America Workshop: ENERGY STAR Portfolio Manager in Mexico

24-25 March 2014

930 Carling Avenue, C.E.F., 3 Observatory Crescent, Ottawa, ON

#### Participants

**Jorge Gutiérrez and Jesús Bernal**, *Instituto Nacional de Ecología y Cambio Climático* ([INECC](#))

**Leonel Díaz Pichardo**, *Comisión Nacional para el Uso Eficiente de la Energía* ([CONUEE](#))

**Salvador Rodríguez and Héctor Juárez Mondragón**, *Deutsche Gesellschaft für Internationale Zusammenarbeit* ([GIZ](#))

**Mike Zatz and Alexandra Sullivan**, US Environmental Protection Agency ([USEPA](#))

**Phil Jago, Michel Gauvin and Sadettin Yilmaz**, Natural Resources Canada ([NRCan](#))

**Benjamin Teitelbaum and Catherine Hallmich**, Commission for Environmental Cooperation ([CEC](#))



#### Meeting Summary

The objective of this workshop was to support efforts by the Mexican Government in introducing the ENERGY STAR Portfolio Manager (ESPM) or a similar program to assess energy use performance of buildings in Mexico. This activity is part of the CEC's 2013-2014 Operational Plan and is a continuation of past capacity building efforts between the CEC and various Mexican departments and agencies. Participants in this workshop included representatives from CONUEE, INECC, GIZ, USEPA, the CEC and NRCan, and took place at the NRCan offices in Ottawa, Ontario.

Each agency opened the meeting by providing a status update of their respective national program. Most of the meeting focused on discussing the opportunities and challenges related to developing the means, methodology and tools required for the introduction of the ESPM, or similar program, in Mexico. Discussion items, by theme, are listed below:

#### Efforts in Mexico

- The INECC and CONUEE are now collaborating to collect specific data on buildings for use in the benchmarking model, based on work initiated by CONUEE. Although the database currently includes government office buildings only, the goal is to expand the database to hospitals, schools, banks, hotels and other private owners building sectors.



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- Pilot projects have been conducted in the tourism sector (as part of the Nationally Appropriate Mitigation Actions, [NAMAs](#)) and in the medical services sector (planned in 2014-2015).
- The GIZ is providing support to strengthen the benchmarking methodology, improve data availability and collection, and create the web portal for all building sectors. The current goal is to make reporting mandatory for all government buildings in Mexico and all buildings in Mexico City. One challenge will be to overcome data gathering and availability limitation.
- Major challenges at the moment are to create incentives to building owners and managers to increase participation, increase private sector involvement, and increase financial support for the program.

#### Program Participation

- Data availability and participation on reporting can be increased if several agencies collaborate together. In Canada, for example, NRCan signed a Memorandum of Understanding with Statistics Canada to introduce additional questions into existing national surveys. In the US, initial data was available in survey data from the Department of Energy. Assessing if other federal agencies would be interested in using the survey data can increase chances for funding. In Mexico, RUV, the National Housing Registry for new constructions and INEGI, Mexico's National Institute of Statistics and Geography, could be potential collaborators.
- The web portal can offer useful sharing features to several user types: a company, a consultant on energy efficiency and associations. Software and hardware for web maintenance, licensing, programming and customer support generate important costs that need to be considered in the program's budget.
- Suggestions to increase participation in the program:

#### *Partners and promotion*

- ✓ Partner with relevant associations to disseminate the program, share the surveys, give out participation awards, create training programs, etc.
- ✓ Involve municipalities to identify opportunities for increasing participation and create an administrator position to provide guidance and resources to building owners and managers on energy use and technical training.
- ✓ Offer training programs to building managers, operators and owners, possibly through associations, on the energy efficiency benchmarking program.

#### *Survey*

- ✓ Send an announcement to relevant associations that a survey or data request is on its way before sending out the survey and scheduling a follow-up in-person or phone meeting.



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- ✓ Provide enough time to complete the survey (E.g., 6-12 months).
- ✓ Share results with participants by publishing a summary report and a compilation of energy efficiency best practices tailored to the building sector.
- ✓ Propose consultations with the CONUEE based on the participant's results.
- ✓ Publish participant's names to increase recognition.

#### *Incentives*

- ✓ Create incentives for building owners and managers to increase energy efficiency, such as contracts with utility companies (ESCOs) or by encouraging companies to give bonuses to the employees based on yearly performance reviews that incorporate energy efficiency performance.
- ✓ Create voluntary inter-city competitions or campaigns on energy efficiency performance, using the benchmarking tool. Over time, make data reporting mandatory (E.g. New York City).

#### **Data**

- Gathering information about the building stock before conducting a survey on energy efficiency is important, and therefore should be the first step.
- The ESPM programs in Canada and the US do not differentiate between public and private buildings
- ESPM measures energy consumption using a whole-system approach, looking at the delivery volume and energy source, assessed over a 12-month period. The outdoor temperature and humidity is an important measure of energy efficiency, rather than the system's capacity (for heating or cooling).
- A robust dataset is preferred to a large one, and must be verified and audited. For example, the USEPA creates a figure that shows the range in predicted energy use vs. the range in measured energy use to assess if the predictions obtained from the model are within the real-life range.
- The Mexican model presented during the meeting was similar to the one used by Canada and the US. Each team provided feedback on ways to assess the impact of each variable in the model (by isolating each variable), test various models (E.g., the USEPA tested over a hundred models) and apply a ratio based on the concept of energy source (which can be applied regionally).
- The survey can be improved by consulting utility companies and identify with them data availability, requirements and needs.

#### **User feedback**

- According to Canada and the US, the program will benefit from starting small and growing incrementally, based on user feedback. In the US, for example, the ESPM program was launched in 2000 for offices and schools, and based its



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development on user feedback to prioritize feature preferences and budget allocation. For the US, it was advantageous to show success in one or two sectors before expanding to other sectors.

- Currently, the USEPA offers training sessions, user experience testing and surveys to gather user feedback.
- Mexico should consider doing market testing and research to find out if Mexicans are familiar with the name “ENERGY STAR”. One option is to link the program with the LEED certification, as already done in the US. The Mexican Green Building Council should be involved.

#### **Policy**

- In Mexico, energy efficiency of the built environment and its impact on climate change should reach a high-level priority for the government and result in adequate funding to carry out data collection required for the introduction of the ESPM or a similar program in Mexico.
- The CONUEE and INECC can increase support from appropriate agencies if they highlight the benefits of energy efficiency in Mexico and identify specific data requirements for monitoring and quantifying building performance that other agencies can help gather.
- The CEC can support this initiative by reinforcing trilateral cooperation.



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#### Conclusions and next steps

- The INECC, along with CONUEE, will focus their efforts on 1) promoting the program with the public to show the benefits it can achieve, 2) working to increase legal and institutional support, 3) ensuring sufficient financial resources for information collection and 4) developing and maintaining the program and the web portal. They are considering including water efficiency also, using the source energy concept (suggested).
- The CONUEE will review the application of the tool to various building sectors and will carry out technical analyses, as recommended by the group during this meeting and future collaboration.
- The GIZ will continue in its supportive role and suggests reaching out to: national governmental sustainability programs such as the APF (Public Administration Program), as well as municipal-level programs; to discuss with RUV (National Housing Registry) if the web portal could be hosted at their IT platform (where the program *Hipoteca Verde* is currently registered), in order to facilitate access to the energy efficiency benchmarking system to the building industry; to INEGI, for their support in data surveys; and to existing meteorological tools and programs (E.g., NOAA's Satellite and Information Service) to improve real-time weather data for heating degree days and cooling degree days measurements.
- The USEPA recommends that Mexico defines next steps based on its priorities. Next steps includes: focusing on developing the excel form vs. online form, or focusing on a small group of building sectors vs. several sectors. These priorities will depend on financial or human resources, timelines, etc. The USEPA suggests testing the program step by step and with caution when reporting on non-governmental buildings. The USEPA is willing to provide information on their current partners working in Mexico.
- The CEC will provide a shared ftp site (using Sharepoint) to this team and will create a short meeting summary that may be used by Mexican agencies to reach out to other groups for support.
- NRCan will look into the details of their Memorandum of Understanding with Mexico and an upcoming webinar.