

EFFICIENCY AS A PILLAR OF MEXICO'S URBAN PLANNING

The Mexican government is tackling rapid housing sector growth while aiming to meet ambitious carbon mitigation objectives.¹ In 2004 the National Housing Commission (CONAVI) launched a sustainable housing policy to begin to reduce greenhouse gas emissions from their residential sector, which is growing at 800,000 new homes per year.² In 2008 they started the Special Program on Climate Change (2008) with energy efficiency as key component. The program set specific objectives for residential building efficiency. Energy efficiency in low-income housing is part of a broader effort to plan new housing communities for greater sustainability – including more walkable communities that are well connected with public transportation.

PATHWAY TO SCALE

The challenge is to move from a voluntary program toward a holistic building efficiency policy based on mandatory building efficiency code that state governments adopt. A building efficiency code has been designed and is in draft form but it needs to be endorsed by state governments in order to be implemented. The building codes face barriers such as limited capacity to enforce codes and regulations (e.g. almost no capacity enforce penalties for non-compliance) and a lack of coordination between federal government and state and city governments; scarcity of financial resources to scale up lending.

Mexico is currently designing a National Appropriate Mitigation Action (NAMA) for residential sector with aims to scale up existing residential building efficiency programs in order to attract additional international climate finance.

- **First steps towards scaling-up:** Government commissioned the design of four scenarios of nationally appropriate mitigation actions (NAMAs) for buildings:



Mexico has been developing sustainable, energy efficient housing policies since 2004 to help meet both development and climate objectives of the country.

Underpinning the sustainable housing policy is a unique combination of instruments that include both financial incentives and regulations, which have resulted in 20% of new houses being built more energy efficient.

“Green mortgage program” provides additional credit line for mortgages for low income home buyers that incorporate sustainable and energy efficient technologies.

“Esta es tu casa” program subsidizes housing developers who achieve minimum energy efficiency criteria for Greenfield development or refurbishments targeting low income groups.

Building codes and norms are set at the municipal level. The National Housing Commission, CONAVI, has developed a national model building code and is promoting its adoption at the municipal and state level.

Mexico is submitting a NAMA to the UNFCCC on their suite of sustainable housing policies.

Mexico is also in the earlier stages of pursuing policies that would transform the rest of the built environment.

- NAMAs would increase the penetration rates of the existing program (the goal is 800,000 houses by 2012 and current rates are <150,000 houses)
- International support for NAMAs call for the design and implementation of a system for monitoring, reporting and verification (MRV) of actions and reductions; lack of available data is still a challenge but Mexico is currently working on the design of this system and producing additional data.

ELEMENTS OF THE POLICY PATHWAY

The following sections outline what Mexico has done, how they have implemented their policies and who within the government was given the responsibility for policy design and implementation.

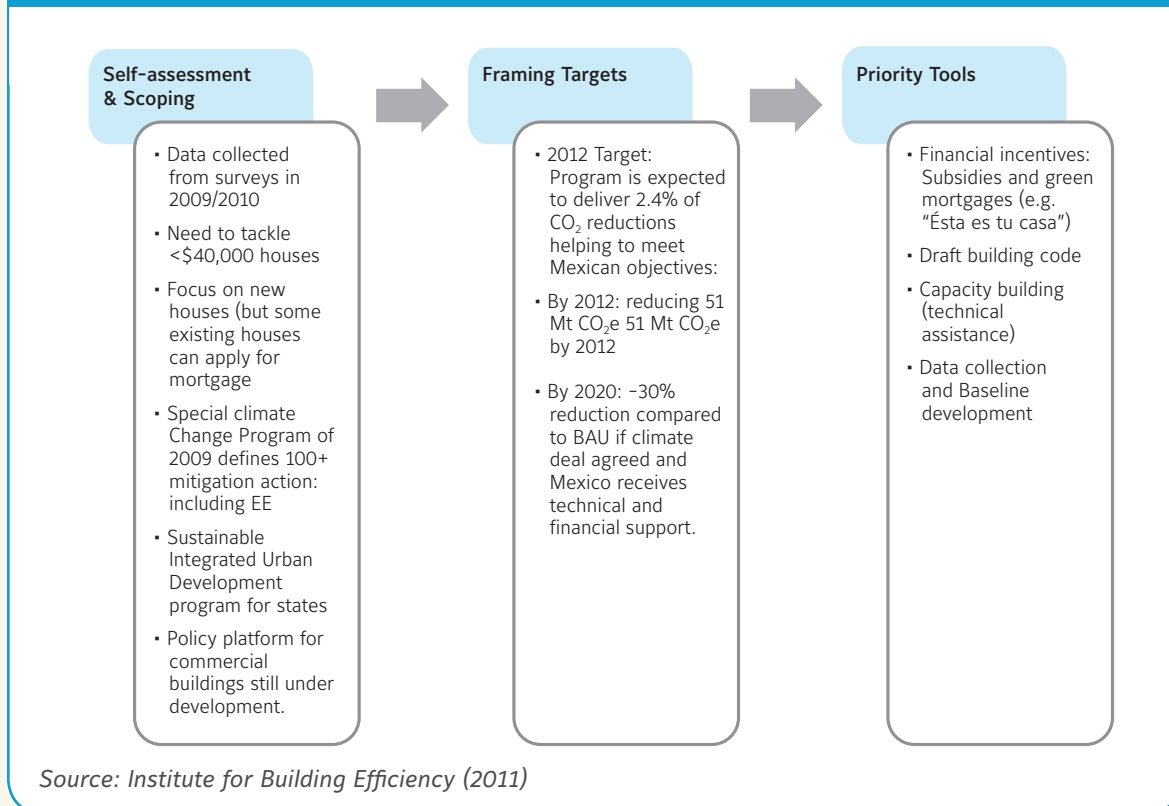
What?

- Mexico decided to focus initially on improving the energy efficiency of new homes valued under \$40,000.
- Mexico set a broad target to reduce their emissions 30% below business as usual by 2020 if the climate deal is agreed to and they receive technical and financial support. They then set a specific target for the efficient housing program as well.
- Mexico selected a complementary set of policies to transform their low income housing sector. The set of policies align the interests of each key stakeholder with energy efficiency
 - the new home owner now has access to finance for energy efficiency and saves money every month on their energy bill, the home builder makes a greater profit by building energy efficient homes.
- **“Efficient housing and green mortgages”** provides additional credit line for mortgages for low income home buyers who purchase homes that incorporate sustainable and energy efficient technologies.³ The credit line is available for low-income housing, valued <\$40,000. The National Housing Commission (CONAVI) developed it with the National Workers Housing Fund (INFONAVIT), and by 2012, it is expected to help meet the CO2 reductions targets set in climate policy.
 - Penetration rate: 20% for new houses (120,000 houses in 2010). Forecast by 2020 (216,000 houses); 37% of eligible new houses.
- **“Esta es tu casa”** program in which subsidies are given to housing developers who achieve minimum energy efficiency criteria for Greenfield development or refurbishments targeting low income groups. This means that developers can get a market premium for houses that are green and qualify for a “green mortgage”. Most low-income houses are now built to be compliant. Home buyers save more on energy bills than the increase in the monthly payment on their home. The programs also involve capacity building and technical assistance.
- **Utility efficiency programs** – the Ministry of Energy manages the state owned utility. They run programs to change out incandescent light bulbs for CFL’s and to give people new energy efficient refrigerators, with on-bill repayment for the refrigerators. The

electricity in Mexico is subsidized, so any efficiency gains in the system save the state-owned utility money.⁴

- **Sectoral metrics and tracking progress:** Energy surveys were conducted in 2009-2010 and the government and biggest developers plan to jointly estimate the CO₂ from the Mexican supply chain. No in-depth system for assessing progress is in place yet.

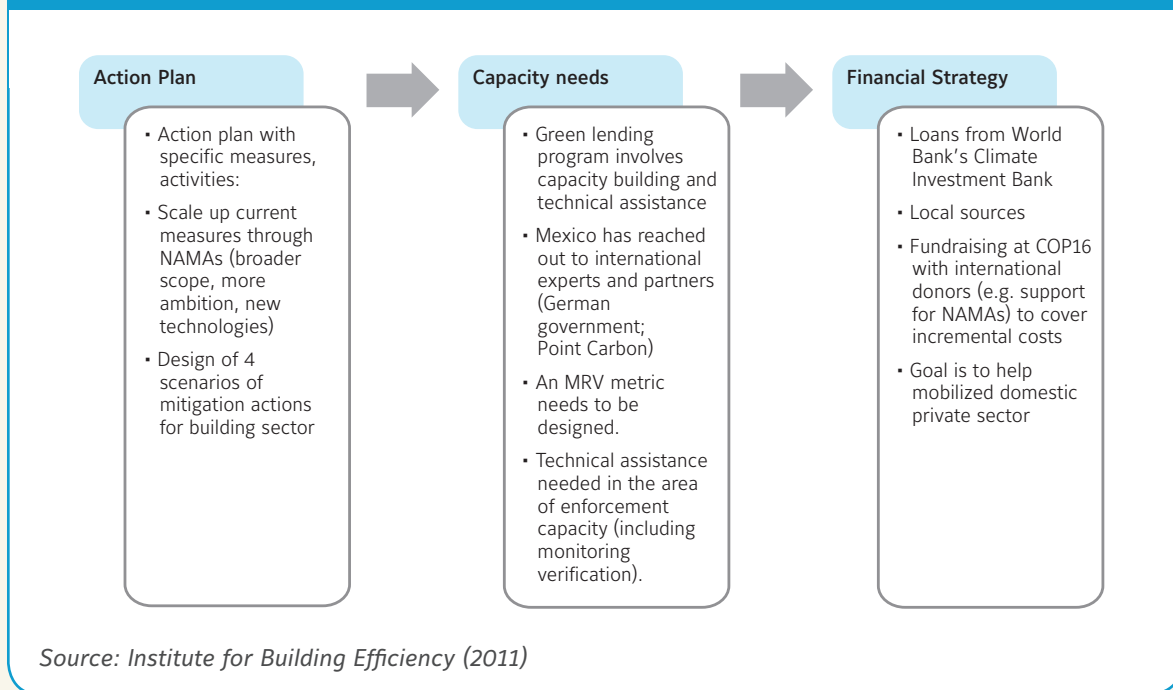
Figure 1.
What?



How?

- Mexico has a detailed action plan that takes the program from inception to scale. Leveraging funding from NAMAs is a key part of their plan to go to scale.
- Mexico built the technical capacity in the market that is needed to make the green lending program a success.
- Mexico financed the policy development of their energy efficient housing program initially through the World Bank and other donors. The actual energy efficiency improvements in houses are financed through the National Workers Housing Fund (INFONAVIT).

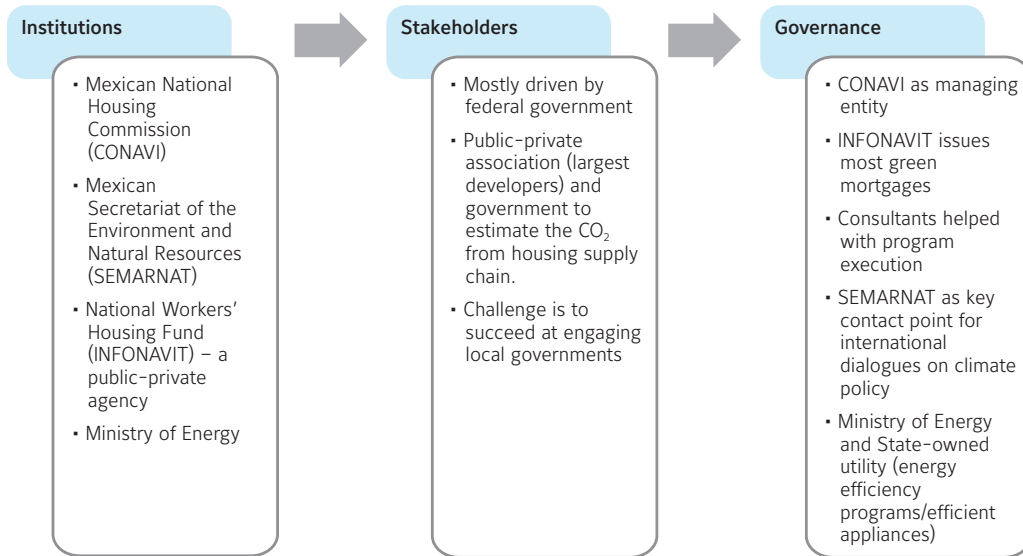
Figure 2.
How?



Who?

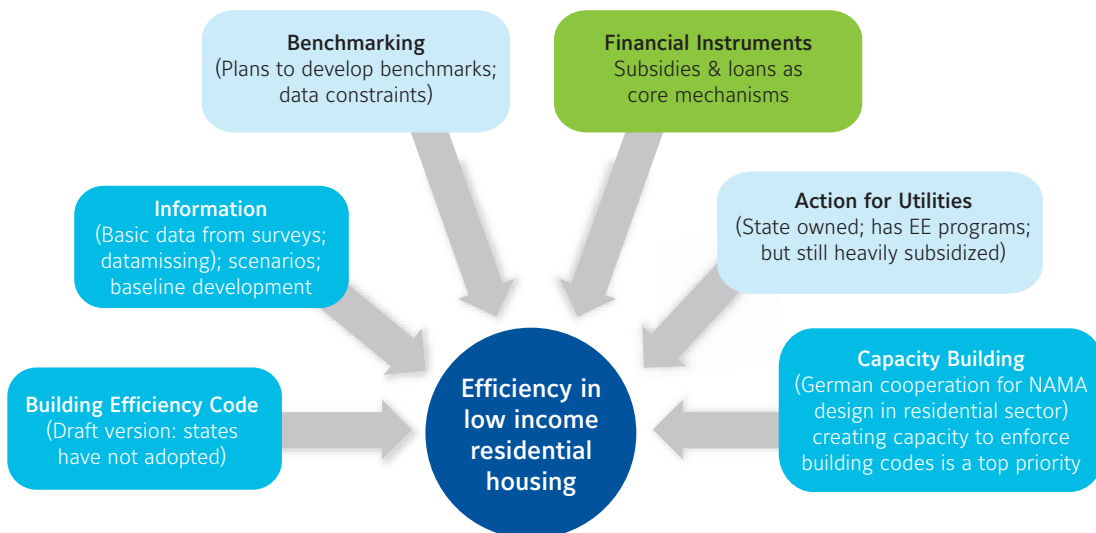
- A number of key Mexican institutions worked together to make the energy efficient housing program a success. The Mexican Secretary of the Environment and Natural Resources (SEMARNAT) helped set broad goals and get the program started. The Mexican National Housing Commission (CONAVI) was created to provide regulatory guidance to the housing sector. The public-private agency, the National Workers Housing Fund (INFONAVIT) handles all low-income mortgages in Mexico, and make the energy efficiency mortgage a standard part of their offering. The Ministry of Energy played a supporting role by running utility energy efficiency programs through the state owned utility.
- The program was driven forward by the federal government, but they involved key stakeholders from the housing sector along the way. For example, today they are working with a number of major stakeholders from the private sector to help develop an estimate of CO₂ from the housing supply chain.
- The key Mexican institutions together have created a complementary governance structure.

Figure 3.
Who?



Source: Institute for Building Efficiency (2011)

Figure 4.
Mexico's Approach



Source: Institute for Building Efficiency (2011)

SUMMARY

Mexico has been a pioneer in the design of a balanced approach to transforming the market for building efficiency combining incentives and regulation—"carrots and sticks"—and engaging key stakeholders in the life-cycle of the buildings.

REFERENCES AND RESOURCES

1. Ministry of the Environment (SEMARNAT) website. 2011. <http://www.cambioclimatico.gob.mx/index.php/es/comunicados/648-vivienda-sustentable-oportunidad-para-mitigar-cambio-climatico.html>
2. Ministry of Housing (CONAVI) website. 2011. <http://www.conavi.gob.mx/programas-estrategicos/tu-casa>
3. National Workers Housing Fund (INFONAVIT) website. 2011. <http://portal.infonavit.org.mx/wps/portal/TRABAJADORES/CreditodelInfonavit/Consideraciones/VS>
4. Ministry of Energy website. 2011. http://www.energia.gob.mx/pse/apoyos_002.html
<http://www.luzsustentable.gob.mx/paginas/mecanica.php>

Point Carbon. "Supported NAMA Design Concept for Energy Efficiency Measures in the Mexican Residential Building Sector" 2010. http://www.perspectives.cc/home/groups/7/Publications/NAMA_Design_Mexico_Working_Paper.pdf

The Institute for Building Efficiency is an initiative of Johnson Controls providing information and analysis of technologies, policies, and practices for efficient, high performance buildings and smart energy systems around the world. The Institute leverages the company's 125 years of global experience providing energy efficient solutions for buildings to support and complement the efforts of nonprofit organizations and industry associations. The Institute focuses on practical solutions that are innovative, cost-effective and scalable.

If you are interested in contacting the authors, or engaging with the Institute for Building Efficiency, please email us at: InstituteforBE@jci.com.

institute
for **building**
efficiency
an initiative of Johnson Controls