Vivir Mejor

HOUSING NAMA SUMMARY

Gobierno Federal

SEMARNAT

GIZ/Foto: Marco Lemus

SHF Sociedad Hipotecaria Federal

INFONAVIT

CONAVI

Introduction

In an effort to demonstrate climate leadership and align sustainable development with growth priorities, the Mexican government has initiated a wide range of programs aimed at improving the energy efficiency of residential buildings, particularly in the low- and medium income markets where robust growth is expected over the coming decade. One key aspect of this strategy is the implementation of the world's first Nationally Appropriate Mitigation Action (NAMA) in the housing sector, which will increase the penetration of energy efficient appliances and building design, and permit technology up-scaling to make new homes increasingly efficient as the program develops.

The supported NAMA for sustainable housing discussed in this summary is just one part of a broader strategy to promote low-carbon urban development within the country.

What is the NAMA?

Mexico has already taken the first steps towards greening its residential sector through programs such as "Hipoteca Verde" ("Green mortgage") and "Ésta es tu casa" ("This is your house"). Both offer supplemental loans that cover the incremental cost of energy efficient appliances in new homes. Furthermore, Mexico has engaged international support through establishing programmatic CDM activities (PoA) which have channeled carbon finance towards the sustainable housing sector.

The NAMA concept now being promoted is aimed at extending and expanding the scope of these activities, increasing the overall number of energy efficient homes built and improving their emissions performance. To this end, Mexico and its partners1 have developed three performance benchmarks that can be achieved by residential building developers and home owners. In order of increasingly aggressive efficiency standards they are: EcoCasa 1, EcoCasa 2, and the Passive House.

Unlike previous activities, which have focused on promoting and measuring the impact of specific technologies, this NAMA approaches building efficiency from the "whole house approach". Under this perspective, efficiency benchmarks are set for total primary energy demand, for each building type and taking into account climatic variables. The building developers and home owners are able to employ any suite of interventions that achieve the performance standard.

Such an approach has numerous benefits, including a simple and cost effective MRV system. It also empowers stakeholders to find the most cost effective solutions as opposed to proscribing specific technologies, providing incentives to reduce the total energy demand by taking into account the interaction all of the implemented measures. Under the NAMA concept, improved design features such as efficient window design and longer overhangs can compete with technology innovations such as solar water heaters, thus avoiding the perception that the government is "picking winners". Furthermore, the tiered benchmark approach enables donors to target their support towards the specific activities that align with their development priorities and provides flexibility for regulators should they seek to increase the stringency of the program over time.

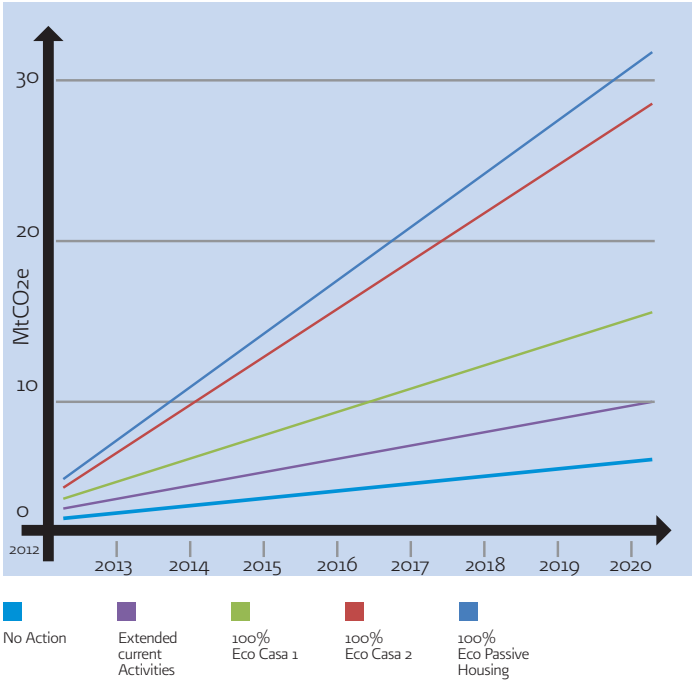
Program Potential

Taking into account demographic growth rates, Mexico will have an estimated 160 million inhabitants by 2050. It is estimated that Mexico will need to build between 800,000 and 1 million new homes per year over the coming decade to meet growing demand. Due the long life-cycle of buildings, investments made now in sustainable development will pay dividends for decades to come from both an economic and environmental perspective. This section will demonstrate both the size of the opportunity that this NAMA can address and illustrate the potential efficiency gains that can be achieved.

Size of the opportunity

Growth in the residential sector is fueled by demographic pressure as the country's population grows, as well as the increasing affluence of the less economically advantaged Mexican population. Between now and 2020, more than 7 million new housing units will be constructed contributing as many as 33 MtCO2e to the cumulative Greenhouse Gas (GHG) emissions to the country's carbon footprint.

Figure 1: Emissions from newly built houses in Mexico and select mitigation Scenarios (MtCO2e)



Efficiency potential of the NAMA program

The German Passive House Institute (PHI) has calculated the "Whole House" energy balance, which is scalable by unit sized, based on the four climate zones of Mexico for three unit types: vertical multi-family, single family detached, and single family row house. Three primary energy target values or "standards": Eco Casa 1, Eco Casa 2 and Passive House Standard, have also been developed for each building type and climate zone.

- Eco Casa 1 represents the level of efficiency if all of the supported technologies under the current scheme, Hipoteca Verde, are adopted. This is equivalent to the level of energy efficiency achieved if 2,5cm of insulation are installed in the roof and a single wall, reflective paint, a tankless water boiler, solar water heater and an efficient A/C unit are installed.

- Eco Casa 2 represents a further level of efficiency achieved through insulating all walls, installing better windows and other highly efficient appliances.
- The Passive House Standard envisages optimization of all measures achieving the Passive House certification criteria, including extended overhangs, extensive insulation, and other design features achieving reduction of the primary energy demand.

1 The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (German Development Cooperation) has supported the development of this NAMA on behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

Figure 2: Annual emissions avoided (t CO2e) in a 40m2 house by building type and climate zone

Single & Row House	Hot & Dry Climate	Hot & Humid Climate	Temperate Climate	Semi-Cold Climate
Eco Casa 1	2.0	2.0	0.8	0.8
Eco Casa 2	2.7	3.5	0.9	0.8
Passive House	3.0	4.0	1.0	1.0
Vertical (multi-family)				
Eco Casa 1	1.7	2.0	0.9	0.8
Eco Casa 2	2.2	2.7	1.2	1.0
Passive House	2.6	4.0	1.2	1.1

Although specific technologies are referenced for descriptive purposes, home owners do not need to install all, or indeed any, of the above technologies. In order to be eligible for funding under the NAMA, these stakeholders must reach only the level of energy efficiency that these technologies represent, but may use any combination of features. What is important is the overall energy performance of the house, not the technologies used.

Figure 3: Financial packages for donor support on direct actions

Package	Financing Need (grants from donors)	Benefits	
*Packages include houses size 40m2 and 70 m2 across all building types and include Eco Casa 1, Eco Casa 2, and Passive House units.	Subsidies to Home Owners partially covering additional costs[2] (USD million)	Saved energy costs In households over 30 yrs (USD million)	tCO^2e savings over 30 yrs
Large Scale (27,000 homes)	50	337	1,711,000
Mid-Size (13,800 homes)	25	171	866,000
Small Scale (5,200 homes)	9	61	311,000
Multi-Family (14,940 apartments)	30	170	865,000
Passive House Pilot (890 homes)	6	17	87,000

Expected Results and Next Steps

The existing sustainable development programs support only a limited segment of the newly built housing market achieve efficiency levels approaching the Eco Casa 1 standard outlined above. The Mexican government is currently exploring opportunities to scale up these programs both in terms of market penetration and level of efficiency, which could result in an additional 2 million tonnes of avoided emissions per year.

In order to achieve this level of penetration and scale-up, however, additional funds are needed beyond what the Mexican government can provide. Carbon finance, international donors, and private finance all have a role to play if Mexico is to expand the scope and impact of this sustainable housing initiative. This NAMA provides a vehicle to attract and leverage additional international funding to support sustainable development within Mexico. Donors and investors interested in getting involved with this NAMA will have a number of support options to support both direct (installations) and indirect (capacity building) actions.

Financing the NAMA

For donors and investors interest in directly supporting new energy efficiency homes, a "NAMA Fund" will be set up to be the initial recipient of all donor funds, be it in the form of soft-loans or in the form of grants. Funding provided for the NAMA will address both the supply and demand side, providing bridge loans for housing developers and support for home buyers in the form of grants and supplemental mortgage finance. Potential donors may get involved by providing funds directly to home owners in form of grants or through soft-loans to developers.

Those donors wishing to provide indirect support can provide critical funding that will enable administrative and supportive actions directly to the Mexican government, or via bilateral cooperation initiatives. These include capacity building at the federal and local level, providing professional training services to regulators and verifiers, and installation and maintenance of reporting infrastructure. It is estimated that grant amount to approximately USD 15.6 million will be needed between 2012 and 2016 to fund "indirect" NAMA initiatives.

As the example packages illustrate, donors will have significant flexibility to scale the level (number of units) and type (Eco Casa 1, Eco Casa 2, and Passive House) support, as well as target their donations towards both direct and indirect measures, in a manner suited to their needs, mandate, and preferences.

For more information or to get involved in this opportunity, please contact:

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