

Implementation of the New Housing NAMA in Mexico

End-of-Project Report – Findings and Learnings

NAMA Support Project
Technical Cooperation Component



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Technical Cooperation Component Project Facts

Duration	December 2013 – December 2017
Budget	EUR 4 million
Partner Ministry	Ministry for Agrarian, Territorial and Urban Development (SEDATU)
Implementing Partners	Mexican National Housing Commission (CONAVI)
NAMA Support Organisation ...	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety



Department for
Business, Energy
& Industrial Strategy



Danish Ministry
of Energy, Utilities
and Climate



Abbreviations

CO₂e	Carbon dioxide equivalent
CONAVI	Consejo Nacional de Organismos Estatales de Vivienda A.C. (National Council of Regional Housing Entities)
FC	Financial cooperation component
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GHG	Greenhouse gas
KfW	Kreditanstalt für Wiederaufbau
NAMA	Nationally appropriate mitigation action
NDC	Nationally determined contribution
SEDATU	Secretaría de Desarrollo Agrario, Territorial y Urbano (Ministry of Agrarian, Territorial and Urban Development)
SME	Small- to medium-sized enterprise
SMSD	Small- to medium-sized housing developers
TC	Technical cooperation component

The NAMA Facility

The NAMA Facility seeks to play a leading international role in funding truly transformational sector-based approaches to tackling climate change. Jointly established by the UK and Germany in 2012, and later joined in 2015 by Denmark and the European Union as additional donors, the NAMA Facility inspires ambitious climate action and helps developing countries and emerging economies deliver on their nationally determined contributions (NDCs). These NDCs comprise countries' commitments laid out under the Paris Agreement to keep temperature rises to well below two degrees Celsius.

Nationally appropriate mitigation actions (NAMAs) act as building blocks of NDC implementation, and the NAMA Facility supports partner countries in NAMA development and implementation. To date, the NAMA Facility has launched six Calls for the submission of NAMA Support Project (NSP) Outlines – or project concepts for delivering this ambitious climate mitigation action.

More information is available at www.nama-facility.org.

The Case for Mexico Housing

Developed in 2012, the Mexican National Housing Commission (CONAVI) created a first-of-its-kind housing NAMA to link energy-efficient building practices with the construction of new, low-income social housing. This housing NAMA specifically targeted new home construction, as the country's growing residential housing sector, which needs to add around 600,000 new units per year to match population growth, comprises roughly seven per cent of total greenhouse gas (GHG) emissions. Given this large scale and the equally large potential for mitigation effects, the NSP has worked to support the implementation of the country's housing NAMA, which has two main objectives:

- To extend the penetration of basic efficiency standards to the entire new housing market in Mexico; and
- To upgrade energy efficiency standards to more ambitious levels.

In order to support the implementation of this housing NAMA and its new energy efficiency guidelines, international climate finance and the Mexican government work together to effect transformational change across the country's residential construction sector. Launched in December 2013, the NSP entitled "Implementation of Housing NAMA in Mexico", in partnership with CONAVI, intended to do just that.

The NAMA Support Project

As part of the NAMA Facility's 1st Call, this NSP's overall goal has been the promotion of cost-effective and energy-efficient building concepts across the residential housing sector, with an emphasis on low-income housing. In order to meet this objective, the NSP worked along two main pathways: the technical cooperation component (TC) and financial cooperation component (FC), supported by GIZ and KfW, respectively. These two components were designed to work together, effecting transformational change by developing an enabling environment through the alignment of disparate policies and guidelines, capacitation of relevant institutions and builders and provision of financial support to spur the uptake of energy-efficient new housing – particularly for low-income families.

FC Activities

This NSP was designed with an FC that complements an existing Mexican government subsidy scheme, which supports low-income households for the purchase of new homes. In effect, the FC's support intends to offset the incremental cost of sustainable housing measures, combined with support from

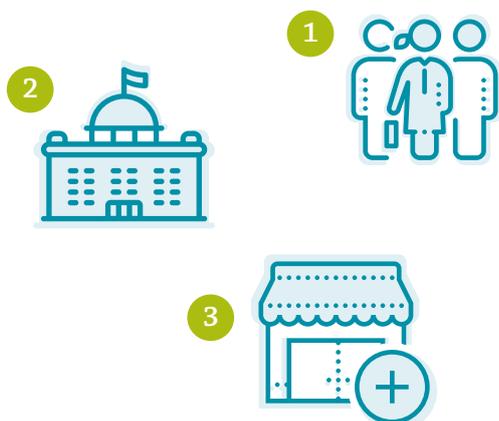
the government’s housing subsidy, to enable SME builders to construct and sell energy-efficient housing units to low-income families. The FC is scheduled to continue operating through the end of 2021.

TC Activities, Targets and Results

This NSP’s TC commenced work in December 2013 and ran through the end of 2017. During this time, in order to prepare the market for FC deployment and spur the uptake of energy-efficient low-income housing, the TC worked to address several existing barriers, which included:

- A lack of information regarding the benefits of energy-efficient housing improvements;
- Unaligned energy efficiency policies across different institutions;
- The absence of a monitoring system for energy-efficient housing; and
- SME housing developers’ limited capacities to efficiently procure components for and construct energy-efficient housing.

In order to overcome these barriers, the TC addressed three primary target groups: low-income housing beneficiaries, Mexican government institutions and SME housing developers.



Target group and action: With limited consumer knowledge of the benefits of enhanced energy efficiency measures, the NSP raised public awareness of such housing through targeted awareness campaigns and pilot projects.

Results: Over 100,000 beneficiaries were made aware of the benefits of energy-efficient green housing through brochures, videos, a website and trade fairs. This work enabled potential homeowners to understand not only the environmental benefits of sustainable housing, but also the co-benefits, such as reduced energy bills and enhanced comfort.

Target group and action: In order to help align the varied standards and disparate policies related to energy efficiency measures in the housing sector, the NSP provided technical assistance to Mexican government actors. This work targeted the alignment of existing policies and the implementation of an improved monitoring system for on-site measurements and verifications. The work and related standards were based on and adapted to three different climate zones across the country.

Results: The NSP’s work helped develop comprehensive and coherent policies and standards, creating new energy efficiency guidelines that mirror international standards. The NSP worked to embed these green housing measures developed for the NAMA by the NSP into the government’s housing subsidy scheme: new homes meeting both the income and NAMA criteria were prioritized to receive the government subsidy, bringing low-income energy-efficient housing to the top of the list. Over the course of the TC program lifetime, 43,362 energy-efficient housing units were constructed for low-income families. This work was undertaken through political process participation, norm drafting and energy efficiency standards revision. The NSP also worked to revive cooperation between different sector players. In total, 32 state building authorities and 700 individuals were provided with direct training.

Target group and action: The NSP targeted SME housing developers, which had limited experience in constructing energy-efficient homes at a scale that could make sense for low-income families. These builders lacked a range of sourcing options, and there were limited opportunities to implement any bulk procurement initiatives. The intention was to improve SME housing developers' capacities to deliver housing with advanced energy efficiency measures – while remaining as economical as possible

Results: SMEs were supported through considerable capacity-building efforts, including 250 SMEs that were trained on how to use a crucial tool for the simulation of CO2 emissions. This tool is essential for sustainable housing development, as it enables builders to simulate and thus measure the emission reductions that implemented energy efficiency measures are able to obtain – and therefore ensure adherence to the NAMA standards. 1,000 individuals across 400 firms were trained to verify adherence to energy efficiency standards. The TC developed a comprehensive vocational training curriculum for verification practices.

Lessons Learnt

Over 40,000 houses that have included the NAMA's energy efficiency guidelines have been financed through CONAVI's federal housing subsidy since 2015. These achievements show the great impact that can be generated from a national policy change with technical support and co-financing by the international climate finance community.

In general, the NAMA combined different political agendas of the Mexican Government: combating climate change, fostering the sustainable urban development and housing and improving the quality of life of low-income groups in the social housing sector. In this sense, the Mexican housing NAMA created a clear and transparent vision for the transformation of the housing sector and a suitable concept for the diverse group of involved actors and institutions.

The TC end-of-project evaluation drew some additional lessons from the intervention. An important aspect that should not be overlooked in housing projects is the relationship with the built environment – in this case, how the new housing would fit in to the surrounding urban fabric. By aligning with local urban planning efforts, new housing should be optimally designed and integrated into the local community fabric. New housing communities do not exist in isolation and should complement existing infrastructure and public services. For example, new housing should be developed while taking local public transit into account, with appropriate density levels, so that knock-on effects are not produced via the introduction of new vehicles and roads – and therefore additional emissions.

Another important point is the NSP's potential for continuation, especially when a project relies on national government contributions and support. The changing tides of politics can bring certain topics, e.g. subsidy schemes, quickly into or out of fashion. Projects relying on such potentially fickle public commitments should, from an early stage, attempt to incorporate mechanisms to cope with and adapt to any such changes that could arise.

Given the complex institutional setup associated with multiple levels of government and different housing authorities, inter-institutional cooperation between these actors can be enhanced through the creation of special bodies. The creation of the "Round Table for Sustainable Housing" by CONAVI was very beneficial for this NSP and helped streamline efficient institutional coordination. This platform was crucial during the development stage of the NAMA, as well as during the NSP's initial implementation. Its operation helped, for example, to define common criteria for the entire sector, such as the definition and adjustments of the NAMA baseline, the maintenance and realization of simulation and calculation tools for the entire sector, as well as the establishment of a sector-wide awareness campaign.

In some instances, the complementarity and integration of the work of both the TC and FC could have been better, for example, regarding the realization of studies and workshops on the analysis and potential of eco-technologies and sustainable building materials and systems for the NAMA implementation. It is also worth mentioning that due to the time lag of the NSP's implementation (first TC and then a delayed FC), the full integration of both components was not always possible.

In addition, considering that the NAMA Facility strongly encourages private sector involvement and investment, an important lesson to keep in mind is the private sector's need for clear guidelines from the public sector, especially as it pertains to mitigation ambition under such NAMA programs. In order to ensure that the private sector adopts the developed guidelines – especially when these changes spur the need for greater capacity development or the commitment of financial resources – there should be clear procedures for specific operations and targets, as well as the avoidance of any changes during the implementation period. Any uncertainty or change of already-established rules is harmful to the attraction of investment, motivation and the medium- and long-term commitment of the private sector.

Through these efforts, the TC worked to develop an enabling environment for the FC to successfully launch, building on the results of the TC's work. Through the end of 2021, the FC will continue leveraging investment for the construction of energy-efficient low-income housing and work to kick-start a market that should, on its own, continue operating well beyond the scope of the NSP intervention.

Completed TC, Ongoing FC

The TC worked to help remove barriers preventing the development of a market for energy-efficient low-income housing. On the demand side, the TC helped boost public awareness through campaigns that highlighted the importance and benefits of energy-efficient housing. Barriers were also addressed through efforts to capacitate government institutions to create the policy framework to support an enabling environment, and SMEs were offered support to boost capacities for the construction of low-income energy-efficient housing.

Annex 1 – NSP Indicators

No	Indicator	Target	Achievement	
			TCC	FCC
M1.	Total GHG emissions reduced (tCO ₂ e)	400,000 tCO ₂ e	—	161,621 tCO ₂ e
		2.7 MtCO ₂ e (potential of NSP)	1.255 MtCO ₂ e during 40 years	—
M2.	Number of people directly benefitting from improved living conditions in relation to the supported mitigation actions	43,000	222,534	32,920
M3.	Degree to which the supported activities are likely to catalyse impact beyond the NSP (potential for scaling-up, replication and transformation)	Qualitative indicator	Transformation judged likely	
M4.	Volume of public finance mobilised	EUR 120,000,000	EUR 90,140,373	EUR 29,543,500
M5.	Volume of private finance mobilised	EUR 80,000,000	EUR 22,824,000	EUR 136,837,056

Annex 2 – NSP Actions, Targets and Achievements

No	Action Line (Output)	Indicator	Target	Achievement
P1.	Standardisation of the existing and new support mechanisms and harmonisation of the Housing NAMA criteria	Housing NAMA as public policy support framework strengthened	Alignment of the national public housing finance institutions' programmes to the NAMA	The programmes are widely aligned; some minor differences still exist
P2.	Increased capacity of medium-sized and small developers in the application of energy-efficient construction technologies for houses	Number of small and medium sized housing developers (SMSDs) capacitated	500 SMSDs	260 SMSDs plus 1,300 other sector professionals trained
P3.	Increased knowledge about energy-efficient houses and their benefits, existing and new NAMA financing support programmes (e.g. by INFONAVIT, FOVISSSTE), thus increasing the demand for energy-efficient houses	Number of potential buyers and end users informed by the ONAVIs about the benefits of sustainable housing	100,000 potential buyers and end users	More than 100,000 potential buyers and end users informed
		Number of local authorities that have been sensitised	32 states	20 states and 700 municipal authorities sensitised
P4.	Technology transfer and development of technologies in Mexico	Based on the market analysis, eco-technologies and sustainable materials with major potential for the Mexico housing sector have been prepared for large-scale implementation	5 eco-technologies	14 new and 18 adapted eco-technologies; large-scale implementation in low-cost housing initiated
P5.	Demonstration of the energy-saving and mitigation potential of innovative alternative eco-technologies and sustainable materials to consolidate the technical design of the housing NAMA	Demonstration houses implemented and monitored and potential of applied eco-technologies and sustainable materials analysed	Demonstration project implemented, monitored and applied measures analysed	2 demonstration projects implemented; monitoring and analysis still outstanding
P6.	Mexican key actors in the sector and the international community will have reliable, comparable and verified data about the mitigation of measures realised under the housing NAMA	MRV unit established for the housing sector which implements monitoring, reporting and verification of the housing NAMA	MRV unit established	MRV unit established at RUV

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