

## TC DOCUMENT

### I. Basic Information

▪ Country/Region:	Mexico
▪ TC Name:	Technical Cooperation for the Ecocasa Program
▪ TC Number:	ME-T1336
▪ Team Leader/Members:	Gmelina Ramírez (CCS/CME), Team Leader, Claudio Alatorre (CSD/CCS) co-team Leader, Leticia Riquelme (CMF/CME), Víctor Escala (PDP/CME), Germán Zappani (FMP/CME), Juan Carlos Perez-Segnini (SGO/CME), Ophelie Chevalier (CSD/HUD), Allan Quijano (CID/CME), Rubén Perez Peña (CCS/CME), Carlos Güiza (CSD/CCS) y Juan C. Gómez (CSD/CCS)
▪ Taxonomy:	Operational Support
▪ Number of operation associated to:	ME-L1121
▪ Beneficiary:	Sociedad Hipotecaria Federal (SHF), Mexico.
▪ Executing Agency and contact name:	Inter-American Development Bank: Gmelina Ramírez Ramírez (CCS/CME)
▪ Donors Providing Funding:	Clean Technology Fund (CTF)
▪ IDB Funding Requested:	US\$400,000
▪ Local counterpart funding, if any:	N/A
▪ Disbursement period:	36 months (32 execution period)
▪ Required start date:	June 2017
▪ Types of consultants:	Firm and individual consultants
▪ Prepared by Division:	CSD/CCS
▪ Unit of Disbursement Responsibility:	CID/CME
▪ TC Included in Country Strategy:	Yes
▪ TC included in CPD:	Yes
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Development challenge: Innovation and Productivity; cross-cutting issue: climate change and environmental sustainability

### II. Description of the Associated Loan/Guarantee

- 2.1 Sustainable housing (homes with improved thermal performance, less lifecycle emission-intensive building techniques, more efficient water consumption devices, and with located strategically to reduce transportation needs) offer several benefits to their dwellers –in terms of comfort and energy savings, to urban infrastructure and to the national economy. In addition, they contribute to the mitigation of climate change. Sustainability in the housing sector is part of Mexico's strategy to reach its goal of greenhouse gas (GHG) emission reductions of 50% by 2050. Given the synergies between its development and the climate benefits it entails, sustainable housing is located at the intersection of Mexico's housing plans and its climate change policies.
- 2.2 Several initiatives within governmental housing agencies are aimed at the improvement of Mexico's housing stock sustainability. The National Housing Commission (CONAVI) coordinates the existing initiatives and seeks synergies in pressing topics such as monitoring and evaluation, training and capacity building and sustainable pilot projects.

- 2.3 The different initiatives in the housing sector in Mexico have been focused on the low and medium income markets. They revolve around the implementation of the world's first Nationally Appropriate Mitigation Action (NAMA) in the housing sector, intended to promote the construction of houses that feature improved designs. The NAMA concept is based on the whole-house approach, which focuses on the performance of the house as a whole, as opposed to focusing on specific energy efficiency and renewable energy measures.
- 2.4 In this context, Mexico's Federal Mortgage Society (SHF), with the support of the IDB and the German Development Bank KfW, launched the Ecocasa Program in 2012. For such purpose, the IDB approved US\$51.6 million in concessional loan and grant resources from the Clean Technology Fund (CTF) (loan 2896/OC-ME, 2896/OC-ME-1, 2897/TC-ME and technical cooperation ATN/TC-13620-ME). These resources were combined with US\$50 million from the IDB's ordinary capital. In addition, KfW provided an additional loan of EUR\$80 million in concessional resources from the German Government. Additional concessional resources were approved subsequently from the NAMA Facility and from the European Union's Latin American Investment Facility (LAIF) and channeled by KfW.
- 2.5 Ecocasa is currently in execution. Its general objective is to contribute to the reduction of GHG emissions in the social housing sector in Mexico. The main program activities are: (i) the provision of concessional loans to housing developers to build low carbon social housing projects; (ii) the development and implementation of simulation, rating, inspection, and monitoring procedures addressing the performance of the homes built; (iii) the development of methodologies to assess the GHG emissions resulting from water consumption, accessibility (location) and the lifecycle of the materials used to build the homes; (iv) strengthen the capacity of the housing industry and financial institutions to finance and build low-carbon homes; (v) the dissemination of knowledge regarding low-carbon housing among the public, the industry, the academia and governmental institutions at the national and local level; and (vi) the provision of inputs to support the development of public policies for low-carbon housing.
- 2.6 To determine the eligibility of housing projects to the program, SHF uses a software called the Energy Efficient Housing Design (DEEVi –for its acronym in Spanish), which is part of the Green Housing Evaluation System (SISEVIVE). DEEVi considers climate conditions, design and construction systems, materials and environmental technologies, to determine the comfort level of its inhabitants and their consumption and savings projected in energy.
- 2.7 As of 2016 the program had provided loans for US\$289.5 million for the construction of 27,921 low carbon houses in 19 states of Mexico –covering the main bioclimatic zones of the country, achieving the goal of building 27,600 Ecocasa homes three years before the objective (defined for 2019). According to the simulations, these houses are expected to reduce almost one million tons of CO<sub>2</sub>e during the forty years of their lifetime. The homes were built by 42 developers in 107 housing projects. The program has contributed with additional benefits such as coordinating efforts with relevant stakeholders in the housing sector and contributing to the mainstreaming of sustainability criteria in the housing industry. It has also provided the grounds for intermediaries to offer financial products designed in accordance with the particularities of low carbon houses.

- 2.8 Technical cooperation [ATN/TC-13620-ME](#) utilized US\$1.6 million out of the US\$2 million in CTF grant resources approved for technical cooperation activities. The TC entails, among others, the execution of the following activities: (i) an update of the SISEVIVE Ecocasa System; (ii) the development of a model to estimate emission reductions based on the location; (iii) the integration of such model into the Unified Housing Registry platform (RUV); (iv) support to SHF in the implementation of the program; (v) carry out impact evaluation activities for one project; and (vi) internal and external capacity building.
- 2.9 The Ecocasa program has been widely accepted by developers and other ONAVIS, and has generated a series of lessons learned, as well as regulatory and institutional impacts, which must be Identified and systematized to generate further knowledge, critical to guide Mexico's Government low-carbon housing initiatives, and to exchange experiences about housing policies with other countries. In particular, it is important to further evaluate the impacts of the program (in terms of both the performance of the houses, and the institutional and policy changes), as well as to investigate the opportunities for future, more ambitious interventions.

### **III. Objectives and Justification**

- 3.1 This TC responds to the opportunity that Ecocasa represents and builds on the experience of such program. Its general objectives are to generate information to support the monitoring and evaluation of the Ecocasa Program, and systematize and disseminate knowledge and lessons learned during its implementation.
- 3.2 The operation is consistent with the Update to the Institutional Strategy (UIS) 2010-2020 (GN-2788-5) and is aligned with the development challenge of innovation and productivity, as monitoring devices will be used to measure energy consumption, GHG emissions, consumption patterns, the comfort of the inhabitants, the efficiency of the technologies and the savviness of the users, among other factors. This will provide the grounds to create a system to assess results and take measures to continually improve the monitoring methods, the technologies and the trainings. The findings, in turn, can help make positive adjustments to housing policies. The operation is also aligned with the cross-cutting theme of climate change and environmental sustainability, as the houses developed under the operation feature sustainability improvements that contribute to the reduction of relevant GHG. Additionally, the operation contributes to the Corporate Results Framework 2016-2019 (GN-2727-4) (CRF) by providing trainings for relevant officials of governmental agencies to strengthen their managerial tools, their knowledge and their skills and capacities to provide improved services for their citizens.<sup>1</sup>
- 3.3 The SHF Ecocasa Program is aligned with the IDB's Country Strategy with Mexico in two intervention areas:

#### **A. Housing, by increasing the availability of construction finance**

- 3.4 The following paragraphs provide a background regarding the IDB's activities in Mexico in this sector (in addition to Ecocasa):

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<sup>1</sup> Country Development Results Indicator N° 25 of the CRF: "Government agencies benefited by projects that strengthen technological and managerial tools to improve public service delivery".

- 3.5 In 2001, the loan 1298/OC-ME for US\$505 million was approved to promote the expansion of the housing sector activities through the Fund for the Bank Financing and Operation of Housing (Fondo de Operación y Financiamiento Bancario a la Vivienda). In 2003 this loan was transferred to SHF to continue the execution until its completion in December 2010. The goal of the program was to facilitate the access of people in the lower income and informal sectors to the mortgage market. It also included a technical assistance component to support the modernization of public records for properties in five states, which validated nearly 4 million registry entries.
- 3.6 At the end of 2008 the IDB approved a program to support the Housing Sector in Mexico, which aimed at: (i) the provision of US\$2,500 million through a Conditional Credit Line for Investment Operations to SHF to support business development in Mexico; (ii) enabling INFONAVIT's Mezzanine Finance Facility, a support line to purchase low-income mortgage-backed bonds (RMBS); and (iii) providing support to a series of technical cooperation activities, including the monitoring and evaluation of integrated sustainable urban development.
- 3.7 Moreover, there is wide experience in the Bank working in the intersection between housing and urban development, through loans and technical cooperations. For example, in 2015, the loan 3607/OC-ME for US\$200 million was approved to help improve habitability in areas with social and urban infrastructure gaps by expanding access to such infrastructure and promoting social development in safe spaces. Also, it is worth mentioning the loan ME-L1266 for US\$400 million, currently under implementation, with the Secretariat of Agrarian, Territorial and Urban Development (SEDATU by its acronym in Spanish), which objective is to institutionally strengthen and support the urban reform in Mexico. Through the ME-T1356, the Bank has supported the GoM in the implementation of the General Law on Human Settlements, Land Management, and Urban Development (LGAHOTDU), and with the ME-T1304 project, the Bank is supporting SEDATU in its process of designing the new Infrastructure Program.

**B. Climate change, by strengthening federal and sub-national institutional capacities to implement climate change mitigation programs and reducing GHG emissions**

- 3.8 The Government of Mexico is integrating the institutional framework stipulated by the General Climate Change Law, which was established in 2012. In 2013, the Inter-Ministerial Commission on Climate Change and the Climate Change Council were introduced, as well as the new National Institute of Ecology and Climate Change, the National Strategy on Climate Change, Vision 10-20-40. Also, the Special Climate Change Program 2014-2018 was designed and implemented. In 2014, the National Climate Change Fund and the National System on Climate Change were installed.
- 3.9 Mexico's Nationally Determined Contribution<sup>2</sup> (NDC) states a commitment to reduce unconditionally 25% of its GHG and Black Carbon emissions (under a business as usual scenario) for the year 2030. This commitment implies a reduction of 22% of

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<sup>2</sup> An NDC is a term used under the United Nations Framework Convention on Climate Change. It makes reference to the actions that more than 190 countries voluntarily committed themselves to, to reduce their emissions of greenhouse gases in the context of the Paris Agreement –reached at the 2015 United Nations Climate Change Conference (COP-21).

GHG and a reduction of 51% of Black Carbon. The 25% reduction commitment expressed above could increase up to a 40% in a conditional manner, subject to a global agreement addressing important topics including international carbon price, carbon border adjustments, technical cooperation, access to low-cost financial resources and technology transfer, all at a scale commensurate to the challenge of global climate change. Within the same conditions, GHG reductions could increase up to 36%, and Black Carbon reductions to 70% in 2030.

#### **IV. Description of Activities/Components and Budget**

- 4.1 **Component 1. Design and implementation of the monitoring and evaluation tools and improvement of the simulation (US\$55,000).** This component will monitor the results in terms of energy consumption and GHG emissions on a representative sample of 1,200 homes, covering the different bioclimatic areas.
- 4.2 This monitoring plan entails the installation of monitoring devices, as well as carrying out interviews in selected pilots and control groups to reliably obtain data regarding gas and electricity consumption in 1,200 houses, over a two-year period.
- 4.3 The [results](#) of the monitoring and evaluation activities of the Ecocasa Program, carried out with the previous TC, will be assessed and will constitute the basis for future monitoring programs on the sustainable housing sector in Mexico. This assessment will enhance the program by reviewing the suitability of the simulation model to predict comfort and energy reduction results, as well as the appropriateness of the building supervision procedures.
- 4.4 **Component 2. Knowledge management and training (US\$264,000).** This component will support the following activities related to capacity building, knowledge sharing and awareness raising:
  - a. Events and Training Courses. SHF will be in charge of conducting the trainings and workshops to foster knowledge exchange and share best practices regarding sustainable housing, to national housing organizations (ONAVIS for its acronym in Spanish), financial institutions, and relevant stakeholders, with the support of the IDB.
  - b. A study about the state of the art of zero emissions housing units in Mexico. This study involves the analysis and diagnosis of the legal, technological, social and financial feasibility aspects.
  - c. A study on the lessons learned and the institutional and regulatory impacts of Ecocasa. This study seeks to determine and disseminate the success factors of the program, opportunities for improvement, as well as potential ways to replicate the positive results. This study should systematize the products generated with the support of the IDB, as well as describe how the lessons learned, the institutional and regulatory impacts of the program, as well as the products of the consultancies are, or will be translated into concrete recommendations to the program, as well as a video will be prepared and published.
  - d. A study on innovative GHG mitigation and adaptation opportunities and technology deployment schemes including renewable energy, retrofitting and resilient infrastructure. This study seeks to know the current state of the general conditions in Mexico, for the implementation of renewable energies and actions

for the reconditioning of existing housing (retrofit), directed towards the optimization of energy efficiency and thermal comfort in housing.

- 4.5 **Component 3. Program management (US\$81,000).** This component entails hiring a consultant to carry out the supervision and coordination activities of the program. This program requires a strong coordination between SHF and IDB, particularly regarding its management, which is aimed at ensuring an adequate appropriation of the information generated, as well as a constant coordination between the National Housing Agencies (ONAVIs), KfW, the German Corporation for International Cooperation (GIZ) and other relevant stakeholders. In order to achieve the goals defined in Components 1 and 2 above, this component will support the activities related to the implementation of the program, such as the technical review of the deliverables, and the retrieval of inputs from SHF and other stakeholders.

Indicative Budget

Component	IDB/Fund	Counterpart	Total
Design and Implementation of the monitoring and evaluation tool	55,000	0	55,000
Knowledge Management and Training	264,000	0	264,000
Program management	81,000	0	81,000
<b>Total</b>	<b>400,000</b>	<b>0</b>	<b>400,000</b>

## V. Executing Agency and Execution Structure

- 5.1 Considering the innovative nature of the Ecocasa Program, and the relevance of achieving successful results that will contribute to the Climate Change national agenda, specific climate change expertise was deemed needed to guide the execution of this TC. The Climate Change Division in Mexico (CCS/CME) will oversee the execution of the operation, in coordination with the Federal Mortgage Society (SHF).
- 5.2 At the request of SHF, the Bank will select and hire the consultants for program implementation. SHF and IDB will coordinate the supervision of consultant's contracts.
- 5.3 At the request of SHF, the Bank will select and hire the required consulting services to implement the program per the procurement plan. All contracts and procurement of goods will be carried out in accordance with the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1) and the Operational Guidelines for the Selection and Contracting of Consulting Firms in Bank-executed Operational work (OP-1155-4) and Regulations for Complementary Workforce (AM-650) with the provisions of Technical Cooperation Agreement, the Procurement Plan and the indicative budget.
- 5.4 All products, reports and documents resulting from the development of the activities that are the subject of this contract will be owned by the IDB, unless otherwise agreed with the consulting firm. Any publication or dissemination of information in connection with the work carried out under this contract shall be subject to IDB policies related to the subject.

## **VI. Major Issues**

- 6.1 As the project contents are highly technical, there is a risk of obtaining inputs and results of a quality that does not meet the expectations. To mitigate these risks, peer reviewers will be assigned to each of the products involving technical studies. The objective of the studies and the implementation of the simple monitoring plan is to strengthen the effectiveness of the program to ensure a seamless implementation.
- 6.2 There are no social or environmental impacts likely to arise from the activities financed by the present TC. On the contrary, the products are expected to generate the basis for reduced GHG emissions in low-income housing.

## **VII. Exceptions to Bank policy**

- 7.1 There are no exceptions to the Bank policies regarding this operation.

## **VIII. Environmental and Social Strategy**

- 8.1 Per the Environment and Safeguards Compliance Policy of the IDB (OP-703), the operation has been classified as 'Category C' (see the [Safeguards Screening Form](#) and the [Safeguards Policy Filter](#)).

## **IX. Required Annexes**

- Annex I: [Letter of Request](#)
- Annex II: [Results Matrix](#)
- Annex III: [Terms of Reference](#)
- Annex IV: [Procurement Plan](#)

TECHNICAL COOPERATION FOR THE ECOCASA PROGRAM

ME-T1336

CERTIFICATION

I hereby certify that this operation was approved for financing under the **Clean Technology Fund (CTF)** through a communication dated May 7, 2017 and signed by Goritza Ninova (ORP/GCM). Also, I certify that resources from said fund are available for up to **US\$400,000** in order to finance the activities described and budgeted in this document. This certification reserves resource for the referenced project for a period of six (6) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, represent a risk that will not be absorbed by the Fund.

**Original Signed**

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Sonia M. Rivera

Chief

Grants and Co-Financing Management Unit  
ORP/GCM

**07/11/2017**

\_\_\_\_\_  
Date

Approved:

**Original Signed**

\_\_\_\_\_  
Amal Lee Amin

Division Chief

Climate Change and Sustainable Development Sector  
CSD/CCS

**07/13/2017**

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Date