

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

MEXICO

CTF-IADB “ECOCASA” PROGRAM

(ME-L1121)

**FIFTH INDIVIDUAL OPERATION UNDER THE CCLIP FOR THE “DEVELOPMENT OF
EFFICIENT AND INCLUSIVE MORTGAGE MARKETS IN MEXICO”**

(ME-X1006)

LOAN PROPOSAL

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3.	Safeguard Policy Filter Report http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=36855586
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2.	National Development Plan. Pillar 4. Environmental Sustainability (Climate Change) http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=35921659
3.	National Strategy on Climate Change. Mexico. Executive Summary http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=35921670
4.	Special Program for Climate Change 2009 – 2012. Mexico http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=35921662
5.	IDB Country Strategy with Mexico. November 2010 – December 2012 (GN-2595-1) http://www.iadb.org/en/countries/mexico/country-strategy,1078.html
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13.	SHF Performance and Financial Situation http://www.shf.gob.mx/sobreshf/informacionfinanciera/InformacionFinanciera2012/Paginas/EdosFinancBasicosmarzo2012.aspx
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15.	Sustainable Housing in Mexico http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=36785280
16.	Current Housing Situation in Mexico 2011 http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=36837337

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20. CTF Technical Cooperation Activities Summary
<http://idbdocs.iadb.org/wsdocs/getDocument.aspx?Docnum=36891842>

ABBREVIATIONS

CCLIP	Conditional Credit Line for Investment Projects
CFE	<i>Comisión Federal de Electricidad</i> (Federal Electricity Commission)
CO ₂ e	Carbon dioxide equivalent
CONAPO	<i>Consejo Nacional de Población</i> (National Population Council)
CONAVI	<i>Comisión Nacional de Vivienda</i> (National Housing Commission)
CONUEE	<i>Comisión Nacional para el Uso Eficiente de la Energía</i> (National Commission for the Efficient Use of Energy)
CRE	<i>Comisión Reguladora de Energía</i> (Energy Regulatory Commission)
CS	Country Strategy
CTF	Clean Technology Fund
DUIS	<i>Desarrollos Urbanos Integrales Sustentables</i> (Integral Sustainable Urban Developments)
EA	Executing Agency
ENIGH	<i>Encuesta Nacional de Ingresos y Gastos de los Hogares</i> (National Survey of Income and Expense of Households)
EUR	Euros
FONHAPO	<i>Fondo Nacional de Habitaciones Populares</i> (National Trust Fund for Popular Housing)
FOVISSSTE	<i>Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado</i> (Housing Fund, Social Security Services Institute of Public Workers)
GCI-9	Ninth General Capital Increase
GHG	Greenhouse Gas
GoM	Government of Mexico
GPEDUIS	<i>Grupo de Promoción y Evaluación de DUIS</i> (Promotion and Evaluation Group of the DUIS)
IADB	Inter-American Development Bank
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
IFIs	Intermediary Financial Institutions
INE	<i>Instituto Nacional de Ecología</i> (National Institute of Ecology)
INFONAVIT	<i>Instituto del Fondo Nacional de la Vivienda para los Trabajadores</i> (National Housing Fund for Private Sector Workers)
KfW	The German Development Bank
kWh	Kilowatts Hour
MDB	Multilateral Development Bank
Mt	Million Tons
NAMA	Nationally Appropriate Mitigation Action
NPV	Net Present Value
OC	Ordinary Capital
PCR	Project Completion Report
PECC	<i>Programa Especial de Cambio Climático</i> (Special Climate Change Program)

PEDHSCC	<i>Programa Específico para el Desarrollo Habitacional Sustentable ante el Cambio Climático 2009-2012</i> (Specific Program for Sustainable Housing Development to combat Climate Change)
POR	Program Operational Regulations
PRONASE	<i>Programa Nacional para el Aprovechamiento Sustentable de la Energía</i> (National Program for the Sustainable Use of Energy)
REFF	Renewable Energy Financing Facility
ROE	Return on Equity
SEDESOL	<i>Secretaría de Desarrollo Social</i> (Social Development Ministry)
SEMARNAT	<i>Secretaría de Medio Ambiente y Recursos Naturales</i> (Ministry of Environment and Natural Resources)
SENER	<i>Secretaría de Energía</i> (Energy Ministry)
SHF	<i>Sociedad Hipotecaria Federal</i> (Federal Mortgage Society)
SM	<i>Salarios Mínimos</i> (minimum wages)
TC	Technical Cooperation
UNFCCC	United Nations Framework Convention on Climate Change
USD	US Dollars

PROJECT SUMMARY
MEXICO
CTF IADB ECOCASA PROGRAM (ME-L1121)
FIFTH INDIVIDUAL OPERATION UNDER THE CCLIP FOR THE “DEVELOPMENT OF EFFICIENT AND INCLUSIVE MORTGAGE MARKETS IN MEXICO” (ME-X1006)

Financial Terms and Conditions			
Borrower: Sociedad Hipotecaria Federal S.N.C.		Guarantor : United Mexican States	
Executing Agency: Sociedad Hipotecaria Federal S.N.C.			
Source	Amount (USD million)		
IADB-Clean Technology Fund Trust- Fund (CTF)	49.514	Disbursement period:	3 years
		CTF Service Charge:	0.75%
		MDB upfront fee:	0.45%
		Maturity/Grace:	20/10 years
		Currency	USD
IADB (Ordinary Capital CCLIP ME-X1006)	50.000	Flexible Financing Facility*	
		Original WAL	15.25 years
		Disbursement period:	3 years
		Rate	Libor + spread
Total	99.514	Maturity/Grace:	25/5.5 years
		IADB fees:	**
		Currency:	USD chargeable to the Ordinary Capital
IADB-CTF	1.6	Non-reimbursable Technical Cooperation ME-T1201 (Annex IV)	
Project at a Glance			
Project objective/description. The program goal is to contribute to the efforts of Mexico to reduce Green House Gas (GHG) emissions of the residential sector. This would be achieved by pursuing two specific objectives: (i) to increase the production of low-carbon housing by financing developers through SHF; and (ii) to increase the supply of mortgages for low carbon housing (as defined by CONAVI) by providing resources for Intermediary Financial Institutions (IFIs) to fund mortgage loans for non-affiliated workers (¶1.27). The concessional resources of the Clean Technology Fund (CTF), channeled through SHF, will be targeting the construction projects, as well as the proposed technical cooperation activities comprised in this operation (see Annex IV). Resources from the existing CCLIP ME-X1006 will fund SHF mortgage instruments for its target. This program is part of a multi-pronged approach to help Mexico follow a low-carbon growth path over the medium to long term. The overarching strategy of the CTF for Mexico (CTF Investment Plan) includes action in the fields of renewable energy, power generation, energy efficiency in the housing sector, among others, through the provision of loans and technical cooperation activities. The German Development Bank (KfW) is expected to commit a further EUR80 million to leverage CTF/IADB resources in this facility by year end. Finally, a grant from LAIF (EU Commission) with KfW and IADB for up to USD9 million has been provisionally approved.			
Related operations. This program is closely related to a number of TCs from the IADB-CTF Trust Fund (see Technical Cooperation Package Summary).			
Special contractual conditions. Prior to the first disbursement of the program, the Executing Agency (EA) will provide evidence, to the Bank’s satisfaction of the entry into effect of the Program Operational Regulations (POR) agreed with the Bank (¶3.2).			
Exceptions to Bank policies. No waiver is required.			
The project is in line with the country strategy: Yes [X] No []			
The project qualifies for: SEO[] PTI[] Sector [X] Geographic[] Headcount []			

(*) Under the Flexible Financing Facility (FN-655-1) the Borrower has the option to request modifications to the amortization schedule as well as currency and interest rate conversions, in all cases subject to the final amortization date and original WAL. In considering such requests, the Bank will take into account market conditions and operational and risk management considerations.

(**) The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors during its review of the Bank's lending charges, in accordance with the relevant policies.

I. DESCRIPTION AND RESULTS MONITORING

A. Introduction

- 1.1 Mexico has shown a strong commitment to combating climate change. Although Mexico is not mandated to limit or reduce its Green House Gas (GHG) emissions under the Kyoto Protocol, the country has firmly adopted the United Nations Framework Convention on Climate Change (UNFCCC) principle of “common but differentiated responsibilities”, and pledged to reduce its GHG emissions voluntarily. At the 14th Session of the Conference of the Parties to the UNFCCC in December 2008, Mexico announced its goal of reducing its GHG emissions to 340 Mt CO₂e (50% below 2002 levels) by 2050.¹
- 1.2 In order to fulfill this commitment the reduction of GHG emissions from the residential sector is essential. The expansion of Mexican cities over the past years has significantly increased the country’s carbon footprint.² According to estimates by the Social Development Ministry (SEDESOL), the pace of urban expansion reached—in the last 30 years—an average of 50 hectares daily.³ Housing represents no less than 60% of this growth. Unchecked and/or insufficiently planned, this expansion has created inarticulate cities and brought about increased energy demand, infrastructure deficits and inefficient transport patterns.
- 1.3 The problem is being addressed with a sense of urgency because the future is even more challenging: toward 2030, as projected by the SEDESOL and UN Habitat,⁴ there will be 20 cities of more than one million inhabitants in Mexico, which entails complex challenges for urban planning policy and economic and social development. The National Population Council (CONAPO)⁵ estimates that, as a response to this fast-paced growth, by 2030 the housing stock in Mexico will have increased by 56%, as compared to 2005 levels.
- 1.4 The residential sector currently accounts for around 16% of total energy use in the country, 11% of commercial energy use (excluding firewood), 26% of total electricity use and 3% of direct GHG emissions.⁶
- 1.5 Even though the residential sector’s share of energy use is significant, its current direct contribution to the emissions balance is relatively modest and does not explain the merit of decisive action in this particular field relative to other alternatives. Nonetheless, its importance is better explained when we account for two further considerations:

¹ Although the concept of GHG emissions involves gases other than CO₂, these other gases are included in these goals in terms of CO₂ equivalent (CO₂e) units.

² *Estado Actual de la Vivienda en México*, 2011 p. 60 (Link [Current Housing Situation in Mexico 2011](#))

³ SEDESOL. *Desarrollos Urbanos Integrales Sustentables* ([bit.ly/DUIS2011](#))

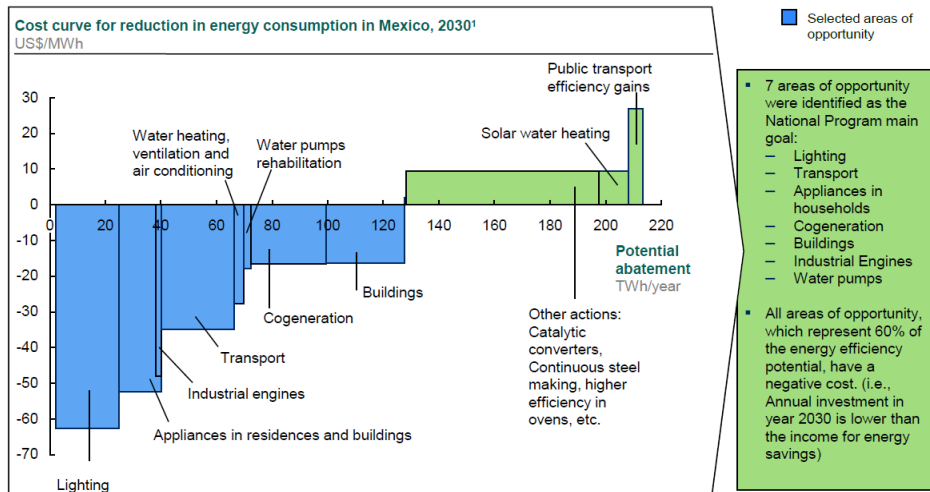
⁴ The State of Mexican Cities: ([bit.ly/IEVMex](#))

⁵ CONAPO. Statistics on Housing ([bit.ly/Ly8MNC](#))

⁶ National Energy Balance, 2008 ([bit.ly/bne2008](#)) Emission data based on the 2006 GHG inventory, and processed to include in the final energy use sectors their corresponding share of upstream emissions (energy sector emissions).

- a. **There are a series of indirect contributions of the residential sector to the GHG total emissions.** The residential sector is indirectly responsible for the energy use and GHG emissions in other sectors, such as construction, cement and steel industries, water and sanitation and transport. The latter has grown substantially during the last decades on account of inadequate architectural designs and building techniques, the use of energy and GHG emission-intensive building materials and technologies; inefficient water use, leading to increased energy use and GHG emissions in the water and sanitation sector, and locations with poor accessibility, leading to a high reliance on energy-intensive transport systems.
- b. **The saving potential of the residential sector is more cost-effective than other alternatives.** Although the National Institute of Ecology (INE) and the Secretariat of Environment and Natural Resources' (SEMARNAT) analysis of the different sectors in Mexico acknowledges that actions targeted at the residential sector represent only between 5% and 6% of the total CO₂ mitigation potential, these actions have been chosen as one of the seven areas of intervention underpinned in the National Program for the Sustainable Use of Energy (PRONASE) 2009, on account of their cost effectiveness. In fact, these 7 areas represent 60% of the total GHG savings potential by 2030 which imply investment costs that are lower than the benefits accruing from the GHG savings delivered (these actions deliver profits) (Figure 1).

Figure 1: Cost curve for reduction in energy consumption in Mexico in 2030



¹ Considering the cost curve for the reduction in Green House Effect Emissions for main fuels.

Source: McKinsey GHG abatement cost curve V 2.0, CONUEE's review

- 1.6 Therefore, when considering both direct and indirect contributions of the residential sector to GHG emissions, plus the cost-effectiveness of its abatement potential, actions taken by the Government of Mexico (GoM) in this sector are better understood.

B. Background and policy framework in Mexico

- 1.7 The general mandates on energy and efficiency are laid out in the National Development Plan 2007-2012 and further developed in the National Climate

- Change Strategy 2007, and in the Special Climate Change Program (PECC) 2009-2012. The PECC envisages actions in the field of energy efficiency and GHG reductions in the residential sector (legislation, standards and technological elements to reduce GHG emissions in new housing developments, GHG emissions models in urban areas, construction of housing units that guarantee the efficient use of energy, altogether delivering CO₂e reductions of 1.20 MtCO₂e /year as of 2012, using eco-technologies financed by green mortgages).
- 1.8 The most detailed account of the strategies and actions envisaged in terms of energy efficiency is PRONASE 2009. Its implications in terms of the housing policies are consistent also with the National Housing Program 2008-2012 and with the Special Program for Sustainable Housing Development to combat Climate Change (PEDHSCC) established by the National Housing Commission (CONAVI). There is also an array of legislation on construction and building standards and/or appliance standards.⁷
- 1.9 A number of initiatives by Mexico's government agencies engaged in housing⁸ have been aiming to improve the sustainability of Mexico's housing stock. CONAVI⁹ and the National Housing Fund for Private Sector Workers (INFONAVIT)¹⁰ started in 2007 a joint effort to foster the construction of houses with energy-efficient and water-saving technologies. INFONAVIT is currently implementing the *Hipoteca Verde* (Green Mortgage) program and CONAVI leads the *Esta es tu casa* ("This is your house") subsidy program for low-income home buyers. Both programs consist of an increase in the amount of the mortgage or the subsidy granted only in case houses have certain technology packages. Both programs have been resounding successes¹¹ and progress is still ongoing: since 2011, INFONAVIT is including the *Hipoteca Verde* requirements for all the mortgages it provides (approximately 70% of the total market), and as of 2012 CONAVI has introduced sustainability and location criteria in the eligibility for the *Esta es tu casa* subsidy program. CONAVI recently launched an "Inter-Institutional Sustainable Housing Working Group",¹² in order to coordinate the existing initiatives and find synergies in pressing topics such as monitoring and evaluation, training and capacity building and sustainable pilot projects.
- 1.10 The Federal Mortgage Society (SHF), beyond its role in the mortgage market, has become the lead agency of the Promotion and Evaluation Group of the Integral Sustainable Urban Developments (GPEDUIS). The task of the group is essentially an administrative process of quality certification. Urban development projects designed according to a comprehensive methodology are certified by the

⁷ Please refer to [New Energy Efficiency Regulations in Mexico](#).

⁸ Please refer to [Sustainable Housing in Mexico](#).

⁹ Public agency that sets the policies and programs within the housing sector, and provides housing subsidies, in order to develop market conditions for inclusive housing in Mexico.

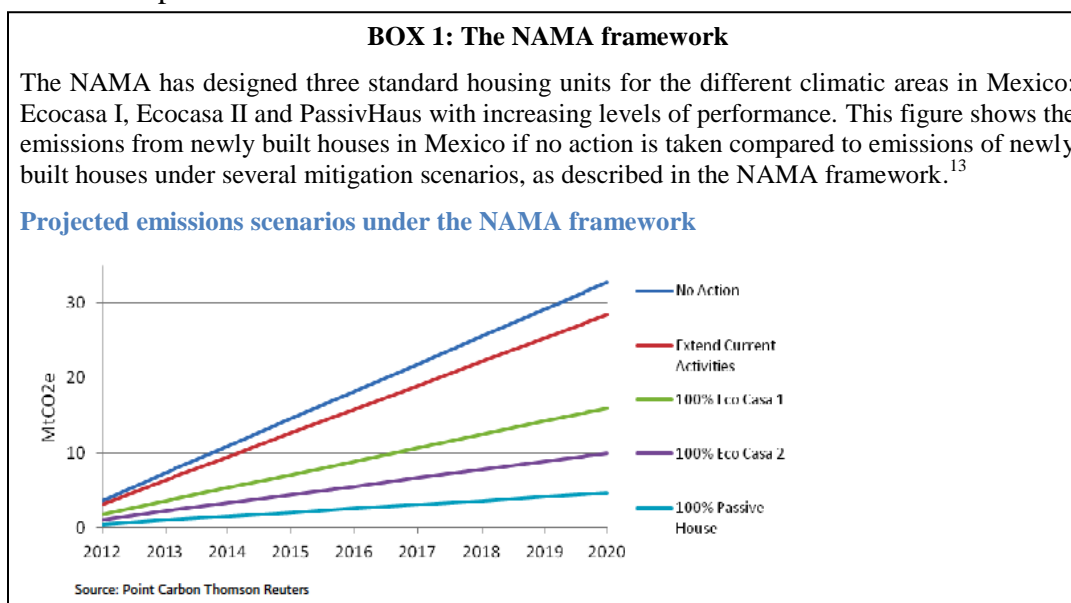
¹⁰ Public agency that provides mortgages and pensions for workers, by automatically deducting a percentage of the worker's paycheck as a form of payment. The system includes only employees in the formal private sector.

¹¹ As of 2011, CONAVI's "*Esta es tu casa*" program had provided 870,000 green subsidies, accounting for MXN 24,000 million. INFONAVIT's *Hipoteca Verde*, had provided 581,662 green mortgages (42% of which also were accompanied with subsidies), up from 105,000 provided in 2009.

¹² Please refer to [Inter-Institutional Sustainable Housing Working Group: Mapping of Actors and Projects](#)

GPEDUIS and thereby become eligible for the basket of incentives managed by each of the departments involved in the GPEDUIS. SHF will prioritize the use of program's resources in municipalities that are in the high and adequate groups. For those municipalities that score lower in the index, SHF will provide resources for training in order to reduce the gap.

- 1.11 The German Technical Cooperation Agency, as well as the Governments of Britain, Canada and Spain are among the strongest partners in these efforts and are committed to developing the sector in Mexico.
- 1.12 The leadership shown by Mexico with this wide selection of initiatives in the residential sector has resulted in the implementation of the world's first Nationally Appropriate Mitigation Action (NAMA) plan, which is intended to promote the use of energy-efficient appliances and building design for houses at a national level. The NAMA is based on the concept of "whole-house approach": it does not focus on specific energy efficiency and renewable energy measures in houses, but it oversees the overall performance of the house. This approach is more cost-effective, as a performance-based system enables housing developers to choose the most appropriate means to achieve the intended emission reductions, *vis-à-vis* a pre-established baseline.



- 1.13 Based on best international practice, the NAMA uses a standard international *ex-ante* simulation tool for the evaluation of results for a representative sample of buildings, in order to define standard housing unit types with different levels of performance of emission reductions (for further reference, see Box 1). This simulation tool is currently being adapted for the Mexican case. In parallel, and based on this adapted version of the simulation tool, INFONAVIT is developing a rating system for sustainable housing. The mentioned system will rate thermal performance, the efficiency of household devices, water usage, and urban infrastructure. Finally, SHF will work under the NAMA umbrella in this program,

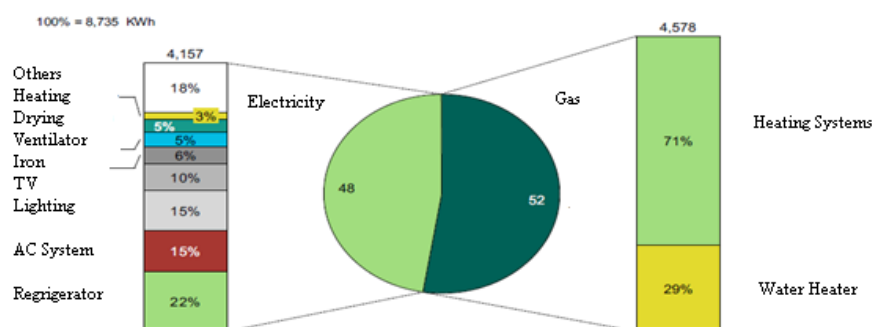
¹³ Please refer to [Supported NAMA for Sustainable Housing in Mexico](#).

in close collaboration with CONAVI, INFONAVIT and other public and private actors. It is envisioned that the proposed program will be fully compatible with this rating system structure.

C. Problem's description and intervention proposed

- 1.14 **Excessive emissions from the residential sector in Mexico.** Air conditioning, refrigeration, home appliances and electronics are the main growth areas of residential electricity demand in Mexico (Figure 2). Especially in the northern parts of the country, inexpensive and inefficient second-hand air conditioning systems imported from the US are easily available. Domestic hot water and cooking drive the demand for residential liquefied petroleum gas and natural gas, and are the main end-use factors increasing residential fuel consumption.

Figure 2: Residential consumption patterns in Mexico



Source: Federal Electricity Commission (CFE), National Survey of Income and Expense of Households (ENIGH 2006), National Commission for the Efficient Use of Energy (CONUEE) Analysis

- 1.15 Residential energy consumption levels are determined by a combination of factors (weather, energy prices, the owner's income and his propensity to save or his concern with the environment). However, homes designed disregarding energy and water efficiency criteria and/or region-appropriate building materials can perform significantly below the average, as they are likely to require higher levels of consumption of energy and water. An average house, per estimations of the IADB team, consumes approximately 71kWh/m². A poorly designed house in a hot climate may use an additional 1,000 kWh per year, representing about 600 kg of CO₂ unnecessarily released into the atmosphere.¹⁴ Poor city planning and building practices result in increased expenditure in transportation and energy, but also in a loss in quality of life, as dwellers spend a considerable amount of time in transportation between the job place and home or leisure opportunities, and live in houses with very low levels of comfort.¹⁵
- 1.16 The current government initiatives have jump-started the production and marketing of environmentally friendly homes based on a limited set of eco-technologies. The approach of the current programs, while initially effective

¹⁴ Specific Program for Sustainable Housing Development to combat Climate Change. CONAVI (2008). Mexico City. P10. Please refer to [Specific Program for Sustainable Housing Development](#).

¹⁵ C2C2:Hacia Ciudades Competitivas Bajas en Carbono. Center for Sustainable Transport CTS-Embarq 2011.

in its simplicity, needs to be enhanced to promote a more ambitious agenda that includes architectural and construction techniques in line with best international practice, and provides more flexibility framed into the “whole house approach” through performance-based incentives. This is fully aligned with the government’s intentions of scaling up its current programs to take into account those issues, as presented in the NAMA.

- 1.17 The proposed program seeks to scale up the deployment of low-carbon housing by providing the financing and the incentives that will lower the costs of both developing and acquiring such houses. The program will contribute to improve the quality of the construction industry in Mexico by lifting the energy efficiency standards of newly built houses into ECOCASAs (see Box 2).¹⁶ At the same time, it will provide mortgage finance that will encourage the purchase of houses already built with a set of minimum efficiency criteria. Altogether, this will induce lower energy consumption and water usage, lower GHG emissions, relative to the current trend, complementing and giving an impulse to the government policies and initiatives in this domain. Also, it should deliver a higher level of comfort for beneficiaries.

BOX 2. What is an ECOCASA?

An ECOCASA is a housing unit that results in a reduction of a given amount of GHG emissions compared to the NAMA base case. The NAMA establishes three different levels of emission reductions, called Ecocasa1, Ecocasa2, and PassivHaus.

The NAMA base case distinguishes among the four climate zones (hot and dry, hot and humid, temperate, semi-cold) and three types of housing (single houses, row houses and apartment blocks). No insulation is considered for the base case and the electrical appliances are average to low energy efficient.

There is a menu approach to the measures that can deliver the targeted reductions. Measures might consist of a combination of: insulation in roof and walls, reflective paint, efficient gas boiler, efficient refrigerator, solar water heater, and energy saving windows, among others.

The whole house approach is envisioned to lead to an optimum solution regarding energy efficiency, comfort of the house owner and cost effectiveness, as well as to provide flexibility in the design.

- 1.18 In addition, the development of a thriving sustainable residential market in Mexico faces several other challenges, such as:
- a. **Energy subsidies.** A key factor influencing residential energy consumption is the implicit subsidy in the administered gas and electricity tariffs.¹⁷ The government is aware of the implications of the current price structure and is committed to gradually reflecting international prices in the cost of energy (please refer to [IMF Article IV 2011](#)).

¹⁶ Two financial instruments were considered for this purpose: Supply-side (bridge loans) or demand-side (mortgages). Given that the program will provide only a limited amount of resources (*vis-à-vis* the size of the market), it was considered that the demand-side approach would be ineffective in providing incentives for the developers, and that a supply-side approach would be preferable.

¹⁷ CONAVI, Semarnat. Supported NAMA for Sustainable Housing in Mexico-Mitigation Actions and Financing Packages. Mexico City, 2011. Please refer to [Link Supported NAMA for Sustainable Housing](#).

- b. **Mortgage incentives provided by INFONAVIT are only available to affiliated workers.** Non-affiliated workers, the population covered by the mortgages activity of SHF, cannot access the INFONAVIT program which has included “green criteria” on the mortgages provided since 2011(see ¶1.9). Moreover, most of the subsidy provided by CONAVI is also channeled through INFONAVIT, the largest mortgage provider in the country.¹⁸
 - c. **Low adoption rate of the official standards.** Although there are several standards in place aimed at reducing the energy consumption of buildings, enforcement is a responsibility of sub national entities, which often lack capacity and institutional structure to ensure successful implementation.¹⁹
 - d. **Lack of awareness.** Developers, home owners and the public administration are not acquainted with the benefits of sustainable housing.²⁰
 - e. **Funding and subsidies for otherwise uncompetitive technologies.** Unit cost of kWh of certain technologies is higher than the average cost in Mexico.²¹
- 1.19 Against this background, the proposed intervention is part of a broader multi-pronged approach to the problems described above, and includes:
- a. The ECOCASA Program as described in this document, where the Bank will disburse: (i) USD49.514 million of the Clean Technology Fund (CTF) resources in concessional loans, acting as an Executing Agency (EA), to finance the development of residential projects (building of ECOCASAs, as defined in Box 2) that meet CO₂e reduction goals established by the program; and (ii) USD50 million from the Bank’s Ordinary Capital (OC) existing CCLIP ME-X1006 that will fund SHF mortgage instruments (on houses that meet CONAVI criteria) for its target population, low to middle income workers not affiliated to any social security program. Consistent with the loan content of the previous operation under the conditional credit line CCLIP ME-X1006 (ME-L1103/OP-871,¶1.26), approved on July 19th by the Board of Directors,²² the OC component of this project constitutes the fifth operation under the referenced CCLIP ME-X1006, leveraging the CTF resources as per CTF requirements. The German Development Bank (KfW), with support from the German Government, is expected to provide an additional concessional loan of EUR80 million to finance the development of housing projects with the same objectives.
 - b. A Technical Cooperation (TC) package funded with USD2.0 million of CTF grant resources will be executed. This includes USD1.6 million for the TC ME-T1201 ([ECOCASA Technical Cooperation](#)), included as Annex IV in this

¹⁸ This speeds up growth in the market for sustainable housing. However, low and middle-income families paradoxically become the main drivers of this development, in strong contrast to developed economies.

¹⁹ CONAVI, Semarnat. Supported NAMA for Sustainable Housing in Mexico-Mitigation Actions and Financing Packages. Mexico City, 2011. Please refer to [Link Supported NAMA for Sustainable Housing](#).

²⁰ Idem supra.

²¹ Idem supra.

²² Approval number: 2760/OC-ME

proposal), and USD0.4 million to be developed and approved by the Bank in the future.²³ The activities of this TC will include: (i) support for developing and implementing simulation, rating, inspection, and monitoring procedures addressing the thermal performance, water usage, accessibility (location) and building material lifecycle aspects of houses; (ii) strengthening of the capacities of the housing industry and housing finance institutions, through technical studies and training opportunities; (iii) dissemination of knowledge on low-carbon housing among the public, industry, universities, and government institutions at the national and local level; and (iv) support for the development of public policies for low-carbon housing (see [Technical Cooperation Package Summary](#)).

- c. Finally, some USD9 million from the LAIF (EU Commission) will complement the current proposal. These funds, which as of submission of this document had been provisionally approved, will subsidize the construction of additional houses with the highest energy efficiency standards (PassivHaus Standard), as defined in the NAMA.
- 1.20 With regard to the scope of the intervention, around 27,600 homes over the implementation period (up to 7 years), the program is significant enough to spear head the next generation of low-carbon housing in Mexico. Considering demand for new housing at 0.6 million annually, the program's eventual effectiveness relies on its demonstration power and on its transformational impact, especially through the collaboration and participation of the main agencies involved in sustainable housing in Mexico (CONAVI/SHF/ INFONAVIT/ SEMARNAT).²⁴

D. The role of SHF: long-lasting relationship with the IADB

- 1.21 SHF is a National Credit Corporation which operates as a second tier bank with the mandate²⁵ to develop the primary and secondary markets for mortgage financing, with a predominantly social orientation. SHF's corporate strategy aims to develop housing markets in Mexico, primarily through: (i) the promotion of greater efficiency and the strengthening of the housing market; (ii) the promotion of access to credit and housing solutions; (iii) the promotion of an adequate supply of housing; and (iv) the provision of liquidity to the instruments of housing finance and infrastructure finance at prices that reflect their risk.
- 1.22 In order to cater for the unattended sectors, SHF has among its 2012 goals: to support the revival of lending to developers, to continue providing financial solutions for non-affiliated workers and to continue introducing microcredit and self-production products. As part of their annual plan, the SHF also expects to provide first-loss guarantees and credit insurance to housing, with around 40% of these operations covered for unaffiliated buyers.

²³ An additional USD0.265 million for preparatory and initial activities of the program (ME-T1202) has already been approved by the CTF Trust-Fund Committee on May 2011.

²⁴ It is important to recall that public policy is the main driver of housing in Mexico (86% of mortgages in 2011 were granted by the public housing institutes INFONAVIT and FOVISSTE). A demand driven approach to the introduction of low-carbon housing in Mexico would be utterly ineffective.

²⁵ Please refer to excerpts from the SHF Statutes in Link [SHF's Organic Law](#).

- 1.23 Although this intervention will be the first involving a clear objective of emission reductions in the residential sector in Mexico, the Bank has cooperated intensively with SHF over the years, contributing to the GoM's goal of a more inclusive and efficient mortgage industry. In particular, the first three operations (2067/OC-ME, 2173/OC-ME, 2262/OC-ME) under the CCLIP,²⁶ amounting to USD1.5 billion, provided an important and timely support to the sector through SHF, supporting its countercyclical role in the aftermath of the financial and economic crisis of 2008-2009.²⁷ In terms of TC actions, the Bank financed the improvements in the Public Registries and, with resources from the Spanish Fund, the evaluation and supervision of the Integral Sustainable Urban Developments (DUIS).
- 1.24 The SHF has full sovereign guarantee on the obligations undertaken until January 2014, as recorded by the second transitory article of its founding Law, but uses market mechanisms to set prices and its management is geared for a Return on Equity (ROE) and guided by private sector discipline. Despite the deterioration in the mortgage industry in recent years, as of March 2012, the company had a ROE of 6.37% and an index of capital (ICAP) of 14.11% (13.43% on March 2011) (see [SHF Performance and Financial Situation](#)).

E. The role of the Bank and the strategic alignment of the program

- 1.25 In the context of this particular program, the Bank plays several important roles: (i) IADB will be channeling international funds for climate change mitigation into Mexico; (ii) insofar as CTF resources are combined with IADB/CCLIP resources, the Bank is also contributing to scaling up the impact sought by the international donor community; (iii) the Bank is transferring best practice and helping develop capacity and awareness on these issues; and (iv) the Bank is a leading player among a group of international donors and national agencies concerned with sustainable housing. Finally, IADB's involvement with the CTF Investment Plan in Mexico goes beyond this program. It started in the very design of the investment plan and it includes cooperation in various fields, in a multi-pronged approach in collaboration with IBRD and IFC.
- 1.26 The Mexican strategy on climate change was incorporated into the IADB Country Strategy (CS) with Mexico 2010-2012 (GN-2595-1). It features in its results matrix and among its strategic objectives. The proposed program contributes to the objective of "volume of annual reductions in GHG emissions through

²⁶ Please refer to documents [ME-L1063](#), [ME-L1065](#), and [ME-L1079](#) for details on these previous loans.

²⁷ The resources of the three programs were used to finance: (i) 11,349 long-term mortgages for USD189 million; (ii) 2,700 bridge loans, totaling USD376 million; (iii) 21 real estate projects and 3,351 credits in the new program Rent to Own for a total of USD96.6 million; (iv) USD46.8 million for microcredit; and (v) USD787.4 million investment in MBS and other IFRH's. Regarding the beneficiaries of the program, the allocation of resources has been focused on the target population of the SHF, hence: (i) their average income was 7 minimum wages (SM), including individuals with income from 2 SM, with a modal of between 3 and 4 SM; (ii) 91% of the borrowers of the Rent to Own do not belong to groups of employees and / or individuals earning less than 10 SM; and (iii) 40% were women. Regarding the secondary market support, the Bank's resources contributed to the secondary market liquidity by rediscounting of MBS purchases by SHF.

programs to fund low-carbon projects”.²⁸ It also is consistent with the lending target in support of climate change initiatives of the IADB’s GCI-9. In addition, its outcomes also are deeply linked to another CS area of intervention, namely the “increase housing sector access to financing”, as they contribute to the availability of both mortgage loans and construction financing.

F. Objective of the program and key results indicators

- 1.27 The program goal is to contribute to the efforts of Mexico to reduce GHG emissions of the residential sector. This would be achieved by pursuing two specific objectives: (i) to increase the production of low-carbon housing by financing developers through SHF; and (ii) to increase the supply of mortgages for low carbon housing (as defined by CONAVI) by providing resources for Intermediary Financial Institutions (IFIs) to fund mortgage loans for non-affiliated workers.
- 1.28 The expected outcomes in connection with the specific objectives are: (i) an effective fall in the amount of water, gas and electricity consumed in the houses built and financed as well as the corresponding reduction in the expenses on the utilities and the average amount of GHG emissions averted per home; and (ii) an increase in the level of comfort attained by the beneficiaries on account of the characteristics of the new homes, in terms of temperature range inside the houses within comfort standards (for further reference see [Results Matrix](#) and/or [Monitoring and Evaluation Plan](#)).
- 1.29 The primary impact of the program will be through its contribution to the overall reduction in GHG emissions from the residential sector at a national level. Two caveats: (i) on top of the GHG emissions abated by the program, the project is expected to deliver a transformational effect in the residential sector through the deployment of new building and construction standards and a performance-based policy that should demonstrate to developers, citizens and banks alike the advantages of the new housing model in terms of energy savings; and (ii) over the period of reinvestment of the funds (see Section II.A below) the Bank, with the help of the proposed TC package, will seek to introduce and to measure water saving, location and building material criteria that will further enhance the impact of the program. The Monitoring and Evaluation Plan will address the measurement of the results, with the support of the proposed TC Package.
- 1.30 The [Results Matrix](#) outlines the indicators and the means to verify the accomplishment of the program’s targets. Using conservative estimates, the program is expected to produce around 27,600 houses built and another 1,700 financed, in the first seven years. Based on the time span considered, the CTF/KfW funds are expected to deliver the construction of, at least, one additional wave of houses amounting to half the first wave (13,800 houses), totalizing 43,100 houses built and purchased. With these, the total resources invested would deliver energy savings of around 2.4 million MWh and emissions reductions of 1.7 million metric tons of CO_{2e}, accumulated over 40 years, period

²⁸ In accordance with the CS, the areas to which eligible projects must relate include housing.

of time considered as a conservative lifetime for the homes. The Net Present Value (NPV) of the program is USD46.95 million, based on the quantification of the following benefits: (i) the annual flow of metric tons of CO₂ averted (GHG emissions reduced), valued at market price; (ii) the annual reduction in energy (electricity and gas) consumption of the home owners/occupiers, valued as savings on subsidy expenditures for the government and savings on energy bills for the individuals; (iii) the annual reduction in water consumption of the home owners/occupiers, valued as savings on their water bills; and (iv) the difference in terms of wealth derived from the increased value of the real estate assets (for further detail see [Economic Analysis](#)).

II. FINANCING STRUCTURE AND MAIN RISKS

A. Components, terms, characteristics and eligibility of projects

2.1 The financing/cost structure, per output and per year, is distributed as follows:

Component	Year 1 (USD million)	Year 2 (USD million)	Total (USD million)	Source
Component I: Loans for developers Output 1: ECO CASA Houses built with funds from the program (accumulated)	49.514		49.514	IADB-Clean Technology Fund Trust-Fund
Component II: Loans for IFIs Output 2: Green Mortgages financed with funds from the program (accumulated)	25	25	50	IADB (Ordinary Capital CCLIP ME-X1006)
Total	74.514	25	99.514	

2.2 **Component I: Loans for developers (USD49.514 million).** SHF will use the concessional resources of the CTF to provide bridge loans to developers. The program is geared towards low-and middle-income housing (income between 5 and 12 times the minimum wage). Prices of the houses built will range from MXN200,000 to MXN600,000. Since the maturity of construction loans in Mexico is normally 2-3 years, over an implementation period of up to 7 years SHF will reinvest the proceeds of the sub loans (interest, principal, and pre-payments) in eligible projects.

2.3 In order to accelerate investment and to generate a greater initial market impact, participation in the program will be open to developers invited by SHF, who will apply its standard processes and by-laws to select them. SHF will allocate resources per project also following the institution's own standard procedures. In future phases of the program, participation will be open to all developers and the hereby proposed TC package will help build capacity for those who require it.

2.4 SHF will select an initial set of projects that deliver at least 12 kg CO₂e per m² and year or 20% reduction in the expected GHG emissions associated with energy consumption of the houses relative to the baseline, whichever is lower. SHF will establish the eligibility of projects: (i) using *ex-ante* estimates produced with the INFONAVIT simulation tool or (ii) using calculations produced by a consultant to be hired at the expense of developers. The consultant will follow the guidelines of NAMA and its hiring will be subject to the Bank's and SHF approval.

- 2.5 The project team will review the eligibility of projects selected by SHF. Initially the program will only consider emission reductions related to thermal performance. Thereafter, as part of the TC package, studies will be carried out to quantify emissions reductions from water savings, better location and from the use of materials with lower life-cycle emissions. These studies will help recalibrate the eligibility targets during the implementation phase. These targets will be an integral part of the Program Operational Regulations (POR) and might only be revised by mutual agreement between IADB and SHF.
- 2.6 The terms and rates applicable to CTF financing are contained in the [CTF Financing Products and Terms](#) (20 years maturity, 10 years grace period and a 0.75% rate of charge). The IADB fee will consist of an upfront payment equal to 0.45% of the amount of the loan, payable by the borrower to the IADB to cover costs of origination, design, preparation, implementation and disbursement, monitoring and evaluation of the program financed by the CTF.
- 2.7 The grant element implicit in the CTF terms acts as a subsidy to compensate developers for the building standard modifications, hence guaranteeing the ECOCASAS are competitively priced. In order to maximize the pass-through of the grant element in CTF resources, SHF will minimize financial intermediation and transaction costs. The contract will establish a mechanism to determine the terms at which CTF resources are passed to the developer so as to ensure an appropriate transfer of the subsidy element to the final beneficiaries. SHF may channel the loans to developers directly, through a single high-rated financial intermediary or through a trust fund. SHF will provide IADB with the necessary information on the pass-through of the CTF terms on to the end borrower.
- 2.8 Disbursements from the Bank to SHF will follow standard Bank procedures and will be in accordance with the conditions laid out in the contract. A special treatment will be established in the contract with regard to advanced CTF resources on account of the concessional element involved.
- 2.9 **Component II: Loans for IFIs (USD50 million).** This component, financed with OC resources, will work following the practice of previous similar loans with SHF (2067/OC-ME, 2173/OC-ME, and 2262/OC-ME).²⁹ As previously referred to in the content of the fourth operation under the referenced CCLIP (ME-L1103/OP-871, ¶1.26), approved by the Board on July 19th, this component constitutes the fifth individual operation under CCLIP ME-X1006.³⁰ SHF will facilitate to eligible IFIs the financing of mortgages³¹ for the purchasing of houses that meet the CONAVI criteria for *Hipoteca Verde* (see ¶1.9). IFIs will have to meet the overall requirements by SHF, who will apply its standard processes and bylaws to select them. The project team will be timely and sufficiently informed. There are no limits on the number of IFIs to be selected.

²⁹ Please refer to documents [ME-L1063](#), [ME-L1065](#), and [ME-L1079](#) for details on these previous loans.

³⁰ The disbursement of the previous operation under the CCLIP (ME-L1103) has taken place, and guarantees compliance with policy requirement over minimum funds committed or disbursed (75%/50%), as established in document PR-211 (GN-2246-1, paragraph 1.16 iv).

³¹ With the Bank's no objection these resources could exceptionally be used to provide loans to developers, only in case CTF resources were not made available or demand for mortgage loans was insufficient.

- 2.10 **Terms, rates and costs for the end borrower.** SHF will determine the financing terms to their client IFIs, by applying a spread to IADB terms (particular IFI risk spread plus SHF operating costs). Financing terms and conditions for the end borrower (sub loans) will be established at the discretion of each participant IFI. SHF will provide IADB with the pricing information on the pass through of the IADB terms on to the end borrower. Disbursements from the Bank to SHF will proceed following standard Bank procedures and in accordance with the conditions laid out in the contract.

B. Risks to the program

- 2.11 Among the specific factors studied in the risk profile of the program the possibility of a significant departure from current policies and/or inadequate regulation having a negative impact over the results of the program is perhaps the most distinct, particularly in connection with the impending change in government. In broad terms, the project team has a positive view with regard to these risks because of the government's international commitments, the savings potential, and the importance of low-carbon housing from an environmental but also from an economic point of view. All presidential candidates have emphasized the importance of energy efficiency and climate change mitigation.
- 2.12 **Environmental and social risks.** The operation is classified under policy directive B.13 of the Environment and Safeguards Compliance Policy (Document GN-2208-20; Manual OP-703), given that it is a flexible lending instrument. Low carbon housing projects are considered climate friendly due to their contribution to long-term GHG emissions reductions. However, projects can have adverse environmental and social impacts. These will vary based on the specifics of the projects. SHF has experience in the Bank's approach and will assess the environmental and social risk and specific mitigation measures on a project by project basis, in accordance with IADB policies. See [Environmental and Social Management Report \(ESMR\)](#) for additional information.
- 2.13 **Fiduciary risks.** Based on the Bank's recent institutional capacity evaluation on SHF's structure and processes and based on their experience in executing recent operations, the fiduciary analysis concludes that SHF's systems are adequate and reliable. The fiduciary management system of the federal entities is in fact solid and thoroughly regulated, in terms of both financial and acquisitions matters, with strong internal controls and with external controls by independent audit firms designated by *Secretaría de la Función Pública*, the *Auditoría Superior de la Federación* (ASF), the *Comisión Nacional de Bancos y Valores* and others. This program will use national financial systems. The complete analysis of fiduciary topics can be reviewed in [Fiduciary Agreements and Requirements](#).

III. IMPLEMENTATION AND MANAGEMENT PLAN

- 3.1 The borrower and EA for the program will be SHF, S.N.C., with the United Mexican States serving as guarantor. SHF will execute the program under its current organizational structure. SHF will be the EA of the TC package, in coordination with the Bank. The provisions governing program execution,

- financial intermediaries' participation, and eligibility of individual loans will be established in the POR agreed by the Bank and SHF, in accordance with SHF and Bank standards and policies, Mexican laws, and practices in Mexico's financial industry.
- 3.2 Neither procurement actions nor consulting services are contemplated in this program. Eventually, end borrowers may use procurement processes according to market practice and acceptable to the IADB, according to Appendix IV of the Bank's Procurement Policy.
- 3.3 The CTF/IADB resources of USD99.514 million are to be fully disbursed within 3 years running from the effective date of the loan agreement. The IADB will disburse ordinary capital resources via reimbursements or advances and in the currency requested by SHF, according to standard practice and contractual requirements. As a condition prior to the first disbursement of the program, the EA will provide evidence, to the Bank's satisfaction of the entry into effect of the ROP agreed with the Bank.
- 3.4 **Monitoring Reports.** The program will be monitored through semiannual reports prepared by the EA, and presented to the Bank within 60 days after the close of each six-month period, measuring progress against the indicators in the Results Matrix and on the fulfillment of the eligibility criteria (see [Monitoring and Evaluation Plan](#)).
- 3.5 **Evaluation.** The borrower and the Bank will conduct a midterm evaluation within 24 months from the date of the first disbursement of financing or once 50% of the loan has been committed, whichever occurs first. The evaluation will assess progress in accomplishing program objectives and outcomes based on the Results Matrix in order to identify any corrective action required. The borrower will provide the information necessary for the Bank to conduct a Project Completion Report (PCR). Periodical monitoring meetings are also scheduled. The measurement of energy and water consumption over a period of time will allow us to check and determine the GHG emissions that will be averted during the life of the project, a calculation that is contingent on a number of assumptions but that should give us a reasonably accurate measure of the overall impact. The savings in the spending on water, gas and electricity of the families will also be measured (see [Monitoring and Evaluation Plan](#)).
- 3.6 **Information.** SHF will compile and maintain all information, indicators and parameters, including all documentation required to prepare the PCR and any *ex-post* assessment the Bank or CTF may wish to conduct.

**TECHNICAL COOPERATION FOR THE
CTF-IDB ECOCASA PROGRAM
(ME-L1121)**

ME-T1201

CERTIFICATION

I hereby certify that this operation was approved for financing under the Clean Technology Fund (CTF), through a communication dated September 13, 2012 and signed by M. Guadalupe Calderón (ORP/GCM). Also, I certify that resources from the Clean Technology Fund (CTF) are available for up to US\$1,600,000, per commitment of funds by the CTF Trustee dated August 24, 2012, in order to finance the activities described and budgeted in this document. This certification reserves resources 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. I also certified that resources from the Clean Technology Fund (CTF) are available for up to US\$49,514,000 for the loan ME-L1121, per commitment of funds by the CTF Trustee dated August 24, 2012 the commitments 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, for which the Fund is not at risk.

Original Signed

Sonia M. Rivera
Chief a.i.

Grants and Co-Financing Management Unit
ORP/GCM

09/14/2012

Date

Development Effectiveness Matrix				
Summary				
I. Strategic Alignment				
1. IDB Strategic Development Objectives		Aligned		
Lending Program	i) Lending for poverty reduction and equity enhancement, and ii) Lending to support climate change initiatives, renewable energy and environmental sustainability.			
Regional Development Goals	i) Stabilization of CO2 equivalent emissions (metric tons per habitant), and ii) Countries with planning capacity in mitigation and adaptation of climate change.			
Bank Output Contribution (as defined in Results Framework of IDB-9)	i) Number of households with new or upgraded dwellings, ii) National frameworks for climate change mitigation supported, and iii) Climate change pilot projects in agriculture, energy, health, water and sanitation, transport, and housing.			
2. Country Strategy Development Objectives		Aligned		
Country Strategy Results Matrix	GN-2595-1	Contributes to the following objectives: i) Reducing GHG emissions, ii) Greater availability of mortgage loans, and iii) Increased availability of construction financing.		
Country Program Results Matrix	GN-2661-4	The intervention is included in the 2012 Country Program Document.		
Relevance of this project to country development challenges (If not aligned to country strategy or country program)				
II. Development Outcomes - Evaluability		Highly Evaluable	Weight	Maximum Score
		7.7		10
3. Evidence-based Assessment & Solution		7.8	25%	10
4. Ex ante Economic Analysis		7.0	25%	10
5. Monitoring and Evaluation		5.9	25%	10
6. Risks & Mitigation Monitoring Matrix		10.0	25%	10
Overall risks rate = magnitude of risks*likelihood		Low		
Environmental & social risk classification		B.13		
III. IDB's Role - Additionality				
The project relies on the use of country systems (VPC/PDP criteria)		Yes	Financial management: Budget, Treasury, Accounting and Reporting, External controls, and Internal audit.	
The project uses another country system different from the ones above for implementing the program				
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:				
Gender Equality				
Labor				
Environment		Yes	Reductions in GHG through energy cost savings represents a benefit to families living in the houses constructed as part of the project.	
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project		Yes	The technical cooperations ME-T1127 y ME-T1183 involved studies regarding integrated and sustainable urban development. ME-T1201 y ME-T1202 were set out to undertake studies on the execution, monitoring and evaluation of the project.	
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan.				

The POD presents the problems to be addressed by the project as well as the factors causing them. However, the magnitudes of the problems are not provided. It is not clear that the proposed interventions will reduce GHG emissions. The residential sector only accounts for 3% of direct GHG emissions. In the POD it is acknowledged that this is a modest figure, however, it indicates that the factors that generate greater emissions are the inputs used by the residential sector such as construction, cement, steel, water, and sanitation. If these are the factors generating greater GHG emissions it is not clear why the project does not include interventions to reduce the emissions of these factors instead of focusing solely on the provision of ECOCASAS. The results matrix has vertical logic. It has impacts, outcomes and outputs indicators. The impact, outcome and output indicators are SMART and include sources of information.

The project was analyzed using a cost-benefit analysis. The economic benefits are clearly spelled out and the costs reflect real resource costs to the economy. The costs do not reflect real resources costs to the economy. Firstly, the cost flow utilizes the financial costs of the project and reflects the amortization period of each loan. It does not reflect the actual resources to be used by the project. Second, no adjustments have been made to convert the financial costs to economic costs (ie. exclusion of transfer payments, and adjustments to the costs of labor, and tradable and non-tradable goods). The assumptions are spelled out. A sensitivity analysis was performed but some key assumptions were not included on it, this is the case with the substitution of standard homes for ECOCASAS.

The project has a monitoring and evaluation plan that follows the Bank's guidelines. The operation will be evaluated using a reflexive methodology. There are also intentions to undertake an impact evaluation of the program. This evaluation will be designed and implemented by a consulting firm hired under TC ME-T1201. Finally, the risk matrix presents the project's risks which are rated for magnitude and probability. Mitigation measures are presented for each risk as well as indicators to monitor its implementation.

Results Matrix

Objectives of the Program:	Contribute to the efforts of Mexico to reduce greenhouse gases emission related to the housing sector
Specific Objectives of the Program	<ol style="list-style-type: none"> 1. To increase the production of low-carbon housing by financing housing developers through SHF 2. To increase the supply of mortgages for low carbon housing by providing resources for IFIs to fund mortgage loans for non-affiliated workers

Indicators	Unit	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Target	Description
PRODUCTS										
1. ECOCASA ¹ Houses built with funds from the Program (accumulated) ²	Number	0	4,200	11,500	11,500	22,200	22,200	27,600	27,600	Source of information: SHF report/data on the developers' portfolio.
2. Green ³ Mortgages financed with funds from the program (accumulated)	Number	0	1,700	1,700	1,700	1,700	1,700	1,700	1,700	Source of information: SHF report/data about the mortgage portfolio of the FIs
Indicators	Unit	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Target	Description
RESULTS										
1. Electricity consumption per house financed or built (kWh/m ²) (as a % of the baseline)	%	100	79	73	73	68	68	66	66	<p>The indicator measures the percentage of electricity consumption in financed houses relative to the standard houses (baseline):</p> <p>% = avg kWh/m² in financed houses ÷ avg kWh/m² in baseline houses</p>

¹ ECOCASA is a building that complies with the eligibility criteria established in the Program.

² Including the houses financed by KfW's contribution to the Program

³ As defined by CONAVI's sustainability criteria

										<p>Baseline = 71 kWh/m² year</p> <p>Source of information for kWh/m² per house financed or built: utility bills from financed houses.</p> <p>Source of information for baseline kWh/m²: estimations from IDB tool by the IDB team (CCS, ENE, CMF) with information from the NAMA, INFONAVIT and CONAVI.</p>
2. Water consumption per house financed or built (l)(as a % of the baseline)	%	100	65	65	65	65	65		65	<p>The indicator measures the percentage of water consumption in financed houses relative to the standard houses (baseline):</p> <p>% = avg l in financed houses ÷ avg l in baseline houses</p> <p>Baseline = 203 l/person.day</p> <p>Source of information for l/person.day per house financed or built: utility bills from financed houses.</p> <p>Source of information for baseline l/person.day: estimations from INFONAVIT's Hipoteca Verde.</p>
3. Electricity expenditures per participating family ⁴ (\$US/year/per house)(as a % of the baseline)	%	100	79	73	73	68	68	66	66	<p>The indicator measures the percentage of expenditures in electricity per beneficiary household relative to the average household (baseline):</p> <p>% = avg US\$ in beneficiary households ÷ avg US\$ in baseline households</p>

										<p>Baseline = \$US 305/year</p> <p>Source of information for \$US/year per beneficiary household: utility bills from financed houses.</p> <p>Source of information for baseline \$US/year: estimations from IDB tool by the IDB's team (CCS, ENE, CMF) with information from CONAVI, INFONAVIT and the NAMA and the current electricity market price.</p>
4. CO ₂ emissions (tons CO ₂ /m ²) per house per year financed or built (as a % of the baseline)	%	100	81	77	77	72	72	70	70	<p>The indicator measures the percentage of CO₂ emissions from financed houses relative to the standard houses (baseline):</p> <p>$\% = \text{avg CO}_2/\text{m}^2 \text{ from financed houses} \div \text{avg CO}_2/\text{m}^2 \text{ from baseline houses}$</p> <p>Baseline = 55 kg CO₂/m²</p> <p>Source of information for kg CO₂/m² per house financed or built: calculations made with standard conversion factor for CO₂ emissions based on consumptions gathered from utility bills (see previous indicators).</p> <p>Source of information for baseline CO₂/m²: Per calculations from IDB tool by the IDB team (CCS, ENE, CMF) with information from CFE, CONUEE, the NAMA, INFONAVIT, CONAVI and SHF.</p>
5. CO ₂ emissions reductions due to the Program ⁵ (total)	Tons CO ₂	0	111,000	335,000	335,000	747,000	747,000	1,000,000	1,000,000	<p>Source of information: calculations made with standard conversion factor for CO₂ emissions based on consumptions gathered from utility</p>

⁵ Taking into account the projected reductions during the whole lifecycle of the houses (40 years)

										bills (see previous indicators).
6. Level of comfort of SHF's beneficiaries	Percentage of days in the year (365 days) where temperatures measured inside the ECOCASAS are within a range (low-comfort of high comfort as defined by NAMA)	95% of the days the temperatures measures inside the houses are within the LOW-comfort range (18-28 °C)	95% of the days the temperatures are within the HIGH-comfort range (20-25°C)	95% of the days the temperatures are within the HIGH-comfort range (20-25°C)	95% of the days the temperatures are within the HIGH-comfort range (20-25°C)	95% of the days the temperatures are within the HIGH-comfort range (20-25°C)	95% of the days the temperatures are within the HIGH-comfort range (20-25°C)		95% of the days the temperatures are within the HIGH-comfort range (20-25°C)	Source of information: measurements on temperatures at the inside and outside walls in the financed houses.
Indicators	Unit	Baseline	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Target	Description
IMPACTS OF THE PROGRAM										
1. Cumulative GHG emission reductions in the Housing sector in Mexico per year	Million tons CO ₂ /year	0.0	0.6	0.9	1.2	1.5	1.8	1.8	1.8	<p>GHG emissions refer to CO₂ equivalent emissions.</p> <p>Source of information: INE/SEMARNAT database</p> <p>Target is based on IDB's team estimations from Mexico's PECC and CONUEE</p>

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country: Mexico

Project Number: ME-L1121

Project name: SHF – CTF-IADB – “ECOCASA” Program, financed with CTF and OC resources (under conditional credit line for investment projects ME-X1006)

Executing agency: Sociedad Hipotecaria Federal, S.N.C. (SHF)

Fiduciary team: Gloria Coronel and Víctor Hugo Escala (FMP/CME)

I. EXECUTIVE SUMMARY

- 1.1 Sociedad Hipotecaria Federal, S.N.C. (SHF), created in 2001, is a second-tier financial institution that operates through financial intermediaries to promote the development of the primary and secondary housing finance markets by furnishing guarantees for the construction and improvement of housing, preferably low-income housing; for improvement of housing-related productive capacity and technological development; and for lending related to the facilities for housing complexes. For more details, visit the website: www.shf.gob.mx.
- 1.2 This is the fifth operation with SHF and the first cofinanced with resources of the Clean Technology Fund (CTF) (US\$50 million from each source) for the construction and sale of “ECOCASAs” to support the reduction of greenhouse gas (GHG) emissions. SHF will also receive financing from KfW, and the grant proposal is in preparation.

II. FIDUCIARY CONTEXT OF THE EXECUTING AGENCY

- 2.1 The program will be executed under a decentralized global credit arrangement between SHF and the financial intermediaries, who have a direct relationship with the end borrowers for the construction of green housing and its purchase by consumers. In April 2012, SHF updated the Institutional Capacity Assessment System (ICAS) questionnaire, which resulted in a consolidated summary of 100%, indicating a high level of development in fiduciary systems and a low risk for the fiduciary execution of the program. No weaknesses were identified that might jeopardize proper execution of the project. **No procurements are anticipated in this operation.**
- 2.2 The operation will be executed in the same manner as the previous programs. SHF will send a list with details on the placements made by the financial intermediaries for approval by the IDB. As with the previous operations, SHF is likely to request disbursements of the Ordinary Capital resources in local currency, and the CTF resources, in accordance with CTF rules, will be disbursed in United States dollars.

III. FIDUCIARY RISK EVALUATION AND MITIGATION MEASURES

- 3.1 As indicated above, the use of the ICAS assessment reflects a total weighted score of 100%, which shows that SHF has a satisfactory level of development in fiduciary systems and a low risk for fiduciary execution. Details on the ICAS questionnaire completed by SHF and reviewed by FMP/CME can be found in the [Results Summary](#).
- 3.2 The program is now in Phase V, and the executing agency has demonstrated solid experience and capacity to execute IDB-financed programs. In order to keep the executing agency up-to-date on the Bank's financial and procurement policies, each year FMP/CME conducts training workshops on the preparation of audited financial statements, and procurement training and refresher activities may be conducted, if deemed necessary.

IV. CONSIDERATIONS FOR THE SPECIAL CONDITIONS OF THE CONTRACT

- 4.1 The exchange rate used for accountability reporting will be the one used in SHF's and the Banco de Mexico's accounting records, as of the day of transfer to the financial intermediaries.
- 4.2 The audited annual financial statements and end-of-project financial statements will be prepared pursuant to the general terms of reference harmonized with the Civil Service Department (SFP) by IDB-eligible auditors, and will be delivered to the Bank within 120 days after the close of each fiscal year. The final audited financial statement will be delivered within 120 days after the scheduled date of the last disbursement.
- 4.3 During the execution period, SHF will deliver its own financial statements to the IDB, audited by IDB-eligible auditors, within 120 days after the close of the fiscal year.
- 4.4 No procurements are initially planned for this operation. If envisaged in the future, procurements will be conducted in accordance with the Bank's procurement policies (documents GN-2349-9 and GN-2350-9) of March 2011.
 - a. For the selection and contracting of works, goods, nonconsulting services, consulting firms, and individual consultants, the executing agency will use the competitive bidding documents and contracts agreed upon between the SFP and the Bank, which are published at: www.funcionpublica.gob.mx/unaopspf/credito/normace.htm, or the procedure provided in Appendix 4 to documents GN-2349-9 and GN-2350-9 for procurements under private-sector loans, as applicable.
 - b. Prior to any competitive bidding solicitation or contract award, the executing agency will submit the proposed procurement plan for the Bank's review and approval, pursuant to the Bank's procurement policies.

V. FINANCIAL MANAGEMENT

1. Programming and budget

- 5.1 SHF's budgets its own resources directly, independent of the federal budget published by the Department of Finance and Public Credit (SHCP). SHF is responsible for coordinating the programming of resources to be transferred to financial intermediaries, as well as for technical and financial monitoring of the execution of these resources. SHF has a department that serves as a liaison with international lenders, which coordinates the monitoring of contractual obligations with the Bank. This coordination includes the preparation of progress reports and disbursement requests, supporting documentation for expenditures provided to the IDB, preparation of financial statements, and coordination with external auditors.
- 5.2 The participation of the intermediary financial institutions as well as eligibility for subloans will be governed by SHF's current policies, and established in the Operating Regulations, as a condition precedent to disbursements under the program.
- 5.3 **Accounting and information systems.** SHF has a multicurrency accounting system that allows it to record and track the placements with each financial intermediary. SHF's chart of accounts and financial and information systems must meet the requirements of Mexico's National Banking and Securities Commission (CNBV). The accounting system also allows SHF to record credits received in the currency of each transaction.

2. Disbursements and cash flow (in coordination with use or nonuse of the country cash management system)

- 5.4 The IDB's disbursements to SHF will be based on SHF's cash flow requirements with its financial intermediaries. Under the operation, resources will be disbursed within a period of 24 months. Disbursements with CTF resources will be made in United States dollars, and disbursements with IDB resources will be made in the currency requested by SHF, as stipulated in the respective contract. Disbursements will be subject to ex post review. In the past, SHF has requested disbursements in local currency, and the disbursements with IDB resources under this operation may also be in local currency. This will be specified by the executing agency, depending on the financial market conditions at the time the resources are requested.

3. Internal control and internal audit

- 5.5 SHF has an internal control unit (OIC) that performs internal audits. The coordinators of the OIC's activities report directly to the SFP, while the other OIC personnel are SHF staff or contractors who report to the OIC senior management. Each year, the SFP coordinates the OIC's activities and work plan in each agency of the federal government. The universe of transactions subject to OIC review includes transactions with the loan proceeds. In addition, the OIC is responsible for supporting the external audits of IDB-financed programs, and for monitoring the timely implementation of the external auditor's recommendations.

4. External control and reports

- 5.6 The external audit of SHF is conducted annually by the Federal Audit Office (ASF). The items reviewed vary depending on the risk analysis determined by the ASF, and its reports are delivered 14 months after the close of the fiscal year. SHF is also audited annually by the CNBV and by its own external auditors. PriceWaterhouseCoopers audited SHF for fiscal year 2011 and issued a clean opinion. The audited financial statements from 2003 to 2011 can be found on SHF's website.
- 5.7 For the programs executed with the resources of international financial institutions such as the IDB, country laws and regulations make the External Audit Office of the SFP responsible for evaluating firm eligibility and appointing and negotiating contracts with external auditors to conduct the audits pursuant to the contractual requirements of the respective programs. Once the auditor is appointed, SHF is responsible for the contract and all resulting payments. In Mexico, the terms of reference for audits of operations with the Mexican government have been harmonized with the IDB, the World Bank, and the SFP, and training workshops are conducted each year for the executing agencies and external auditors. The audited financial statements for previous loans have received clean opinions, and no change is expected in the audited financial statements for this program.

5. Financial supervision plan

Supervision activity	Supervision plan			
	Nature and scope	Frequency	Responsible	
			Bank	Third party
OPERATIONAL	Review of eligible portfolio with the executing agency	Periodic	Technical team	
	Ex post review of disbursements	Annual	Fiduciary team	External auditor
FINANCIAL	Inspection visits / analysis of internal controls and control environment	Annual	Technical and fiduciary teams	
	Annual allocation of budget resources necessary for project execution	Annual	Fiduciary team, FIN	Executing agency
FULFILLMENT	Delivery of financial statements	Annual	Fiduciary team, FIN	External auditor
	Conditions precedent to the first disbursement	Once	Technical and fiduciary teams	

6. Execution arrangements

- 5.8 Like previous operations, execution of the program will be decentralized through the financial intermediaries. No problems are anticipated in the execution of the program.

7. Other financial management agreements and requirements

- 5.9 There are no other financial management agreements or requirements.

Technical Cooperation for the CTF-IADB Ecocasa Program-ME-L1121

I. Basic Information for TC

- Country/Region: Mexico
- TC Name: Technical Cooperation for the CTF-IADB Ecocasa Program-ME-L1121
- TC Number: ME-T1201
- Team Leader/Members: Claudio Alatorre (INE/CCS), Team Leader, Gisela Campillo (INE/CCS), Ramón Guzmán (IFD/CMF), Leticia Riquelme (CMF/CME), Gmelina Ramirez (CCS/CME), Maria Isabel Haro (IFD/CMF), Juan Carlos Pérez-Segnini (LEG/SGO), Ernesto Monter (VPS/ESG), Víctor Escala (PDP/CME), and Juan Carlos Gomez-Sandoval (INE/CCS).
- Indicate if: Operational support
- If Operational Support, provide the number of the Operation associated to: ME-L1121
- Reference to Request: IDBDOCS # 36680760
- Beneficiary (countries or entities which are the recipient of the technical assistance): Sociedad Hipotecaria Federal (SHF), Mexico.
- Executing Agency and contact name: Inter-American Development Bank. Contact: Claudio Alatorre, Climate Change and Sustainability Division (INE/CCS).
- IDB Funding Requested: USD1,600,000
- Local counterpart funding, if any: N/A
- Disbursement period (which includes execution period): December 2012-December 2016
- Required start date: December 1st, 2012
- Types of consultants (firm or individual consultants): firm and individual consultants.
- Prepared by Division: INE/CCS
- Division of Disbursement Responsibility: INE
- Included in Country Strategy (y/n) No; TC included in CPD (y/n): Yes
- GCI-9 Sector Priority: Protect the environment, respond to climate change, promote renewable energy, and ensure food security.

II. Description of the Associated Loan/Guarantee

A. Background

- 2.1 Sustainable houses (houses with improved thermal performance, less lifecycle emission-intensive building techniques, more efficient water using devices, and transport-based location criteria) offer a number of benefits to their dwellers (comfort, energy savings), to urban infrastructure and to the national economy. But they also significantly contribute to the mitigation of climate change, and are in fact crucial to enable the country to reach its goal of greenhouse gas (GHG) emission reductions of 50% by 2050. Due to these synergies between its development and climate benefits, sustainable housing is located at the intersection between Mexico's housing and climate change policies, and carbon has become a proxy for the multiple benefits of sustainable housing.
- 2.2 There are a number of initiatives within Mexico's governmental housing agencies, aimed at improving the sustainability of Mexico's housing stock.¹ The most recent one (April 18th, 2012) has been the approval by Congress of the First General Law against Climate Change. The new law contains many sweeping provisions to mitigate climate

¹ http://bit.ly/Sus_Hous

change, including a mandate to reduce emissions of carbon dioxide by 30% below business-as-usual levels by 2020, and by 50% below year 2000 levels by 2050. Furthermore, it stipulates that 35% of the country's electricity should come from renewable sources by 2024, and requires mandatory emissions reporting by the country's largest polluters. The act also establishes a commission to oversee its implementation, and encourages development of a carbon-trading scheme.

- 2.3 The National Housing Commission (CONAVI) recently launched an “Inter-institutional Sustainable Housing Working Group” in order to coordinate the existing initiatives and find synergies in pressing topics such as monitoring and evaluation, training and capacity building and sustainable pilot projects.
- 2.4 This wide array of initiatives in the housing sector, which show Mexico's climate leadership and interest to promote sustainable growth, has been especially focused on the low-and medium income markets and has resulted in the implementation of the world's first Nationally Appropriate Mitigation Action (NAMA) in the housing sector, intended to promote the use of energy-efficient appliances and sustainable building design, as well as to scale-up the adoption of new technologies, which would make new homes increasingly efficient as the program develops. The NAMA concept is based on the whole-house approach, not focusing on specific energy efficiency and renewable energy measures in housing, but on performance of the house as a whole. The NAMA has designed three levels of energy efficiency for standard housing units in the different climatic areas in Mexico: Ecocasa I, Ecocasa II and PassivHaus Level. The Ecocasa Program takes its name from these different levels, and is aligned with the NAMA concept. SHF and CONAVI are working together with IDB to ensure this alignment. Worldwide experience shows that performance-based systems are more cost-effective, as they enable housing developers to choose the most appropriate means to achieve emission reductions *vis-à-vis* a baseline.
- 2.5 The program will rely on the DEEVI² thermal performance simulation system currently being developed by CONAVI and the Housing for Workers National Fund Institute (INFONAVIT) with a double purpose: labeling of finished houses for buyers' information, and determination of eligibility to access to NAMA-related finance. The DEEVI is currently being developed by the PassivHaus Institut (PHI), by simplifying and adapting to the Mexican conditions its Passive House Planning Package (PHPP). Unlike the PHPP, which is a complex software that requires several days of work to assess a single house, the DEEVI is a simplified, Excel-based version. INFONAVIT is currently working with the Housing Registry (RUV) so that it can provide licenses and training on the use of DEEVI to developers.
- 2.6 In order to support these efforts, the Bank, as an executing agency for the Clean Technology Fund (CTF), will request to the CTF Trust-Fund Committee (TFC) USD51.6 million in concessional loan and grant resources. These resources would be channeled, together with USD50 million from the Bank's ordinary capital, for the implementation of the ECOCASA Program. In addition, the German Bank (KfW) will provide an additional concessional loan of EUR80 million.
- 2.7 The general objective of the ECOCASA Program is to contribute to the reduction of GHG emissions in the housing sector in Mexico. This will be achieved by providing financing for housing developers to build housing projects that meet GHG reduction goals established by the program, as well as mortgages that follow CONAVI's sustainability criteria. A component financed by European Commission resources through the LAIF window to build Passive Houses in Mexico has been requested. The program envisages: (i) developing and implementing, building on the existing efforts, the simulation, rating, inspection, and

² Energy efficient Design for Buildings, DEEVI for its Spanish Acronym.

monitoring procedures addressing the thermal performance of houses; (ii) developing methodologies for assessing the GHG emissions resulting from water usage, accessibility (location) and building material lifecycle aspects of houses, so that they can be used in the program; (iii) strengthening the capacities of the housing industry and housing finance institutions for the financing and construction of low-carbon housing through the provision of bridge loans to housing developers, as well as technical studies and training opportunities; (iv) disseminating knowledge on low-carbon housing among the public, industry, universities, and government institutions at the national and local level; and (v) providing inputs to support the development of public policies for low-carbon housing.

- 2.8 The immediate outcome of the program will be the construction of homes with lower GHG emissions. In addition, the program is expected to provide additional, long-lasting benefits to the housing sector in Mexico, as it will: (i) constitute an integral part of the NAMA Program, joining targeted efforts with relevant actors in the housing sector and contributing to the mainstreaming of sustainability criteria in the housing industry; (ii) encourage municipal and state governments to incorporate sustainable housing tools into their housing and urban policies; (iii) provide the grounds for intermediaries to offer financial products designed in accordance with the particularities of sustainable homes; (iv) reach an increasing number of home buyers who will be made aware of the long-term benefits of sustainable homes; and (v) provide access to housing industry stakeholders to knowledge about improved architectural and building approaches and techniques.
- 2.9 This TC aims to support the implementation of the ECOCASA Program through: (i) the improvement of simulation tools on energy and water use, building materials, and location and transportation systems; (ii) the development and implementation of a Monitoring and Evaluation system; (iii) a Knowledge Management and Training component; and (iv) a Project Management component.

III. Objectives and Justification of the TC

- 3.1 The TC components envisages: (i) the development and implementation, building on the existing efforts, of simulation, rating, inspection, and monitoring procedures addressing the thermal performance, water usage, accessibility (location) and building material lifecycle aspects of new homes; (ii) the strengthening of capacities for the housing industry and housing finance institutions to promote the financing and construction of low-carbon housing through technical studies and training opportunities; (iii) the dissemination of knowledge on low-carbon housing among the public, industry, universities, and government institutions at the national and local level; (iv) the generation of inputs to support the development of public policies for low-carbon housing; and (v) the development and implementation of a Monitoring and Evaluation (M&E) system for the program.

IV. Description of Activities

- 4.1 The activities to be developed in the framework of this TC operation are:

A. Component 1. Improvement of the simulation capabilities

- 4.2 The TC will contribute to the enhancement of the simulation data and capabilities regarding the performance of sustainable buildings in Mexico through the improvement of the DEEVI System. The activities will enhance the DEEVI system by: (i) improving its thermal performance module including new climate and building material data; (ii) including a model that represents the ownership and use of air conditioning and heating devices; and (iii) including the carbon reductions related to the lifecycle of building materials. Case studies on the carbon footprint of housing developments in urban areas related to transport will also be conducted in the framework of the improvement of the simulation efforts.

B. Component 2. Design and implementation of the monitoring and evaluation tool

- 4.3 This TC will finance the design and implementation of a Monitoring and Evaluation System in close coordination with the initiatives being undertaken by CONAVI in the framework of the “Inter-institutional Working Group for Sustainable Housing”. The TC will finance the installation of monitoring devices in selected pilots and control groups to reliably obtain data regarding: (i) water and electricity consumption in 2,400 houses, annually, over a period of 4 years (Basic NAMA Monitoring); and (ii) temperature and energy performance and other selected variables in 200 houses one year after the program starts, to serve as a calibration and reassessment method, together with a household survey (in depth, short term monitoring). This TC does not include a budget allocation for the mid-term and final evaluation activities. Funds for the evaluation component are now being requested to the CTF (USD400,000), for which a TC operation will be developed in early 2015 upon completion of the construction and occupation of the first ECOCASA and Passive Houses homes. The evaluation will include post-2015 monitoring and a final impact evaluation 5 years after the implementation of the program, to assess its impacts regarding CO₂ emissions, utilities savings and the level of comfort of the beneficiaries.
- 4.4 The survey will be designed in order to obtain gender-disaggregated data on: (i) socio-economic conditions of the household; (ii) electricity and water consumption habits; (iii) characterization of the housing devices (appliances, shades); (iv) usage of the house; (v) perceptions about comfort; and (vi) decision-making related to home buying.
- 4.5 The technical cooperation operation ME-T1202, also linked to this program, includes an allocation to hire a Technical Coordinator to support SHF in the delivery of reports and the evaluation of the program’s performance.

C. Component 3. Knowledge management and training

- 4.6 This component includes several activities for capacity building within SHF and among beneficiaries and developers, as well as to raise awareness among the general public regarding the benefits of energy and resource efficient homes. Some of those activities are:
- a. **Training courses** by international experts to SHF and housing developers, focusing on South-South Exchange, to foster knowledge interchange and the sharing of best practices in sustainable housing.
 - b. **Study on the assessment of the economic benefits of low-carbon housing**, and on the design of enabling policy, regulatory, and financial instruments, including gender issues.
 - c. **Municipality/state level policy development:** Resources will be channeled to provide Housing Institutes and Municipalities with training regarding potential modifications in building codes and municipal and state level regulations to enforce sustainability principles and implement energy efficiency policies at the local level.
 - d. **Communication strategy**, which will focus on differentiated target groups and highlight different aspects of the program. SHF will publish educational material aimed at homebuyers regarding the use and maintenance of environmental technologies, including new ones in addition to those provided in the INFONAVIT package, such as cross ventilation. As part of this effort, a new manual will be distributed, which will include general information about the average energy savings associated with each of the environmental technologies. It will be presented during the first half of 2013, which coincides with the event that will launch the program. Both KfW and SHF will take part in the launching event to introduce the program to relevant housing institutions and developers that were not able to participate in its first round. Media material will be prepared as part of the dissemination efforts.

D. Component 4. Program management

- 4.7 The present TC will finance a technical team to support SHF with activities related to the management of the program, the coordination between IDB and SHF, the technical review of the TC's products and actions and the supervision of monitoring efforts. The structure of the team is yet to be defined, as it will depend on the needs of the program as it is implemented, but it will be tentatively be composed of: (i) one Senior Specialist in Energy Efficiency, Sustainable Housing and Simulation and (ii) a Junior Manager to lead the implementation of the program on a daily basis.

1. Alignment with the work of the IDB in the sector in Mexico

- 4.8 The SHF Low Carbon Housing Program is aligned with the IDB's Country Strategy with Mexico in two intervention areas:

a) Housing, by increasing the availability of construction finance

- 4.9 In 2001 the loan 1298/OC-ME for USD505 million was approved to promote the expansion of the housing sector activities through the Fondo de Operación y Financiamiento Bancario a la Vivienda (FOVI), and in 2003 this loan was transferred to the Federal Mortgage Society (SHF) to continue the execution until its conclusion in December 2010. This program's goal was to facilitate access of 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, and validated nearly 4 million registry entries.

- 4.10 At the end of 2008 the IDB approved a program to support the Housing Sector in Mexico:

- a. A USD2,500 million Conditional Credit Line for Investment Operations (CCLIP) to SHF to Support Business Development in Mexico.³
- b. INFONAVIT's Mezzanine Finance Facility,⁴ a Support Line for the purchase of low-income mortgage-backed bonds (RMBS.)
- c. A series of Technical Cooperation Activities, including the evaluation and monitoring of integrated sustainable urban development (DUIS for its Spanish acronym.)

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

- 4.11 The GoM has established in its Special Climate Change Program (PECC) a reduction target of 50.6 MtCO₂e per year in 2012 and a long-term vision for the "decarbonization" of the economy, with an aspiration for 2050 of a 50% reduction in carbon equivalent emissions based on the levels of year 2000. The housing sector has been recognized as a fundamental element in the energy structure in the country, consuming more than a quarter of the total electricity demand and a high percentage of liquefied petroleum gas, while it continually expands its natural gas demand. The PECC establishes a target for GHG mitigation of 2.1 MtCO₂e for the 2008-2012 period, which is expected to be accomplished with the implementation of housing projects and efficient and green mortgages. The Sustainable Housing Program is not only considered in the National Housing Program 2008-2012 (PNV), but also in the National Program for Sustainable Energy 2009-2012 (PRONASE). There have also been federal policy programs like the Sustainable Housing Development Plan and the Transversal Sustainable Housing Program, the latter one implemented by the SEMARNAT, SENER and CONAVI. Mexico has already taken the first steps towards greening its residential sector through programs such as "Hipoteca Verde" (Green Mortgage) and "Ésta es

³ ME-X1010 CCLIP.

⁴ ME-L1062.

tu casa” (This is your house). The former offers supplemental loans that cover the incremental costs of energy-efficient appliances in new homes.⁵ Furthermore, Mexico has engaged international support through the establishment of programmatic Clean Development Mechanism (CDM) activities (Programs of Action) to channel carbon finance towards the sustainable housing sector.⁶

V. Indicative Results Matrix

Component/Product	Baseline		Target	Completion Date
	Value	Year		
Comp. 1: Improvement of the Simulation capabilities				
Improved climate data: granularity and climate change forecast	0	2011	1 technical report	Dec 2014
Thermal characteristics of additional building materials	0		1 technical report	Dec 2014
Air conditioning/heating decision model	0		1 technical report	Dec 2015
Transport Simulation: Case studies of selected cities on the carbon footprint of housing developments	0		1 technical report	Dec 2014
Lifecycle analysis of building materials	0		1 technical report	Dec 2014
Comp. 2: Design and Implementation of the M&E Tool:	0	2011		
M&E System designed and in place	0	2011	1 M&E System	Dec 14
Comp. 3: Knowledge Management Program	0	2012	1 manual prepared	July-Aug2012
Training courses by international experts to SHF and housing developers, focusing on South			8 training courses delivered	June 2013-June 2014
Study on the assessment of the economic benefits of low-carbon housing, and on the design of enabling policy, regulatory, and financial instruments			1 technical report	Dec 2015
Municipality/State Level Policy Development	0	2011	10 working sessions held	Dec 2013-Dec 2016
Communication Strategy, including events, manuals, social media, websites	0	2011	Communications Strategy implemented	Jan2013-Dec 2016

VI. Indicative Budget

Activity	Tentative Budget	1Q 2013	2Q 2013	3Q 2013	4Q 2013	2014	2015	2016
Improved climate data: more granularity and climate change forecasts	100,000			x	x	x		
Thermal characteristics of additional building materials	40,000			x	x	x		
Air conditioning/heating decision model	10,000						x	
Lifecycle emissions of additional building materials	15,000			x	x	x		
Transport case studies	60,000		x	x	x			
Basic NAMA Monitoring	260,000	x	x	x	x	x	x	
In depth, short-term Monitoring	200,000				x			
Training courses by international experts. south-south exchange	200,000		x		x		x	
Study on the assessment of benefits of low-carbon housing, and the design of enabling policy, and financial instruments	110,000		x	x	x	x	x	
Municipality/state level policies (10 regions; event+knowledge)	125,000					x	x	x
Knowledge management strategy; website; final report; events	190,000	x	x	x	x	x		
Program management	215,000	x	x	x	x	x	x	
Contingencies (5%)	75,000							
Total	1,600,000							

⁵ CONAVI and INFONAVIT jointly defined the green criteria as a set of basic eco-technologies: (i) Fluorescent energy efficient lighting; (ii) solar water heater; (iii) high-efficiency gas heater (hybrid of solar and gas); (iv) thermal insulation; (v) water saving toilets, shower-heads and faucets; (vi) organic and inorganic waste containers, and (vii) water and electricity meters.

⁶ Source: NAMA document.

VII. Executing Agency and Execution Structure

A. Executing agency

- 7.1 The Climate Change and Sustainability Division (INE/CCS) will be in charge of the execution of the operation, in coordination with the Federal Mortgage Society (SHF).

B. Structure for implementation

- 7.2 At the request of SHF, the Bank will select, hire and pay the consultants for program implementation. SHF and IDB will coordinate the supervision of consultant's contracts.

C. Procurement

- 7.3 At the request of SHF, the Bank will select, hire and pay the required consulting services to implement the program according to the Procurement Plan included in Annex III. All contracts and procurement of goods carried out in accordance with the Policies for the Procurement of Goods and Works Financed by the IDB (GN-2349-9) and Policies for the Selection and Employment of Consultants Financed by the IDB (GN-2350-9) and with the provisions of Technical Cooperation Agreement, the Procurement Plan and the indicative budget.

VIII. Major issues

- 8.1 The TC does not entail any major implementation risks. The Bank has identified a potential risk regarding the possibility of a delay in the implementation that could harm the project due to the government change in December 2012. The Bank and SHF are working extensively to ensure that the project is in the execution phase at the time the next administration takes office.
- 8.2 As the project contents are highly technical, there is a risk of not obtaining good-quality results. In order to mitigate these risks, two peer reviewers will be assigned to each of the products involving technical studies. The objective of the studies and the design of the M&E system is to facilitate the effective preparation and design of the program to ensure a seamless implementation.
- 8.3 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.

IX. Exceptions to Bank Policy

- 9.1 No exceptions to the Bank's policies have been identified.

X. Environmental and Social Strategy

- 10.1 The proposed TC does not include any activity that has been identified to generate any negative environmental or social impacts. Following the Safeguard Policy Filter Report and the Safeguard Screening Report, this TC has been tentatively classified under category "C".

XI. Annexes:

- Annex I: [Letter of Request from the Government of Mexico](#)
- Annex II: [Terms of Reference](#)
- Annex III: [Procurement Plan](#)

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/12

Mexico. Loan ___/OC-ME to Sociedad Hipotecaria Federal, S.N.C.
CTF-IADB “ECOCASA” Program. Fifth Individual operation
under the Conditional Credit Line for Investment Projects
(CCLIP) for the “Development of Efficient and Inclusive
Mortgage Markets in Mexico” ME-X1006

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Sociedad Hipotecaria Federal, S.N.C. (SHF), as Borrower, and the United Mexican States, as Guarantor, for the purpose of granting SHF a financing to cooperate in the execution of the CTF-IADB “ECOCASA” Program, as the fifth individual operation under the Conditional Credit Line for Investment Projects (CCLIP) for the “Development of Efficient and Inclusive Mortgage Markets in Mexico”, approved by Resolution DE-165/08. Such financing will be for the amount of up to US\$50,000,000 from the resources of the Bank’s Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Executive Summary of the Loan Proposal.

(Adopted on ___ 2012)

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/12

Mexico. Loan ____/TC-ME to Sociedad Hipotecaria Federal, S.N.C.
CTF-IADB “ECOCASA” Program

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, in its capacity as Implementing Entity for the Clean Technology Fund, to enter into such contract or contracts as may be necessary with Sociedad Hipotecaria Federal, S.N.C., as Borrower, and with the United Mexican States, as Guarantor, for the purpose of granting the former a financing to cooperate in the execution of the CTF-IADB “ECOCASA” Program. Such financing will be for an amount of up to US\$49,514,000 from the resources of the Clean Technology Fund, administered by the Bank, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on _____ 2012)

LEG/SGO/CID/IDBDOCS#37062495
ME-L1121

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-___/12

Mexico. ATN/TC-_____-ME. Nonreimbursable Technical Cooperation
for the CTF-IADB “Ecocasa” Program

The Board of Executive Directors

RESOLVES:

1. That the President of the Inter-American Development Bank, or such representative as he shall designate, is authorized in the name and on behalf of the Bank, in its capacity as Implementing Entity for the Clean Technology Fund, to enter into such agreement or agreements as may be necessary with Sociedad Hipotecaria Federal, S.N.C., as beneficiary, and to adopt such other measures as may be pertinent for the execution of the project proposal contained in Annex IV of document PR-____ with respect to nonreimbursable cooperation for the CTF-IADB “Ecocasa” Program.

2. That up to the sum of US\$1,600,000 is authorized for the purposes of this resolution chargeable to the resources of the Clean Technology Fund.

3. That the above-mentioned sum is to be provided on a nonreimbursable basis.

(Adopted on ____ 2012)