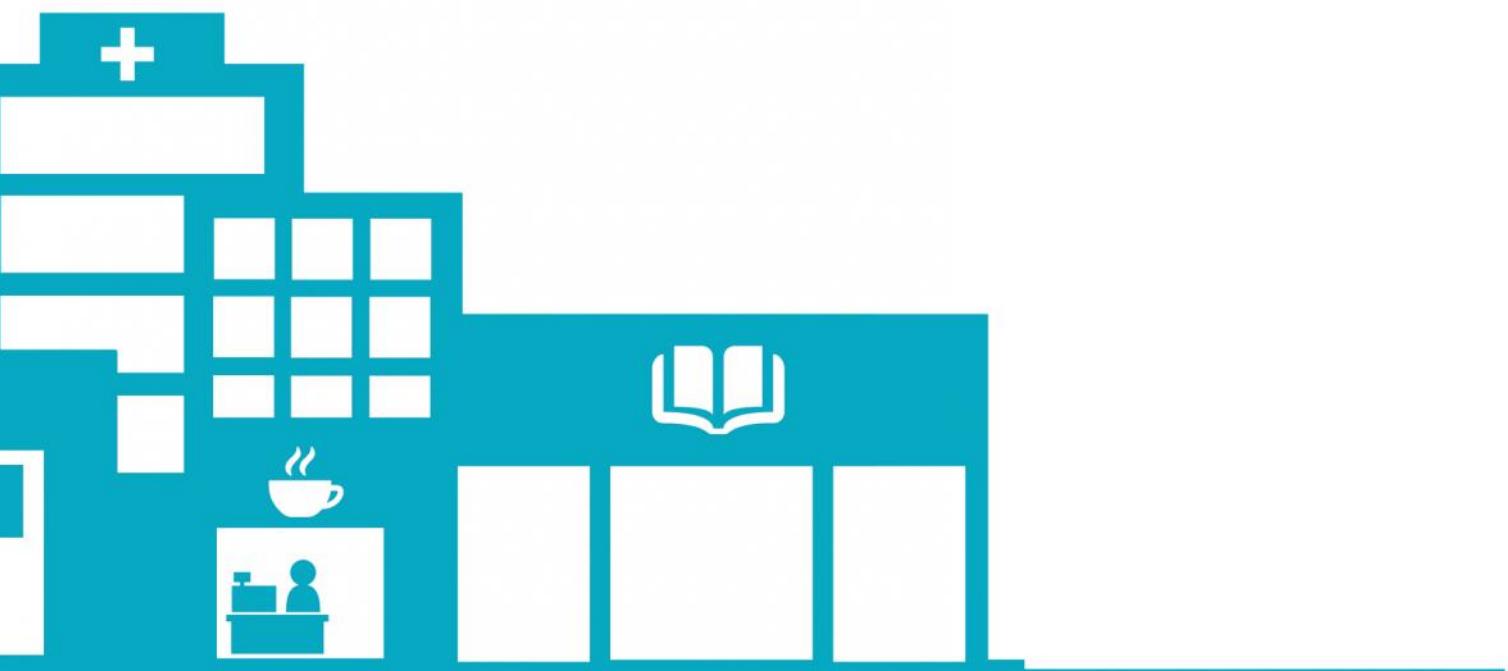


NAMA PyME

Concept Design of a NAMA in the Mexican SME Sector





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FINAL Report

Cross Sectoral Electrical Energy Efficiency NAMA

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Commissioned by:

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Terms and definitions

The terminology in the NAMA space is currently in the making. Hence in order to ensure clarity, accuracy and consistency throughout the present document and in the context of this mandate, the following terms and definitions apply:

Unilateral NAMA: A NAMA whose implementation is supported by domestic funds alone. Though not an official term, it is used to readily differentiate it from a NAMA that receives international support in order to be implemented.

Supported NAMA: A NAMA whose implementation is supported by both domestic and international funds. Though not an official term, it is used to differentiate from a NAMA that is implemented with domestic funding sources only.

NAMA Concept Design: A NAMA initial design exercise that, if successful, will be able to put forward a credible request for support to carry out a detailed NAMA design exercise.

Detailed NAMA Design: A more thorough NAMA design exercise that will include the definition of all the necessary elements of a NAMA, from the underlying programme, to the operational structure, the institutional framework, the MRV system and the financial architecture. A Detailed NAMA design will also include a trial launch. Only after the NAMA has been tested and the results of such test taken into account in the NAMA's design, the NAMA can be considered to be ready to be implemented. Shall be used interchangeably with "ready to implement NAMA" in the present report.

NAMA Trial Launch: a test whereby the underlying energy programme's offering, systems and steps are all tested. It is done to ensure that the system and steps work as intended, and to assess all metrics. The results are used to improve procedures and revise any assumptions made, concerning for instance, the level of uptake, times taken to carry out the various tasks, MRV system (GHG and Energy Efficiency Programme Management System related). In other words NAMA Trial Launch will mean launching the programme but in a controlled, small yet representative scale.

"Ready-to-implement" NAMA: A NAMA whose design has been completed (including having been tested under a NAMA Trial Launch), and is deemed to be ready to be implemented. This expression can be used interchangeably with a completed a successful Detailed NAMA Design.

Implementation: the roll out of a NAMA that has already been tested out as a trial launch.

Executive Summary

This NAMA is at a very advanced stage of design. It is managed by a competent, experienced and well reputed energy efficiency programme operator, FIDE. It receives a considerable amount of support from the Mexican Government, and is not expected to demand much additional effort to be brought to a Detailed Design stage.

Therefore, the Cross Sectoral Electrical Energy Efficiency NAMA is very well positioned to mobilize international donor support to complete its detailed design, and eventually for its implementation. Only once the detailed design has been completed, should the NAMA be put forward to international donors for implementation support.

Sections 1 and 2 provide a Summary of and describe the NAMA Concept Design, respectively. The Design Packages that need to be funded in order to complete detailed design of the NAMA are also presented. However, it is noted that the costs associated with these packages need to be provided by FIDE and other domestic design/implementing stakeholders, as well as an indication of how much of such costs are expected to be covered by international donors. And for this to be able to be put forward equipment replacement targets need to be set, which in turn translate into GHG reductions targets.

Section 3 discusses the various sources of funding that could be tapped to complete the NAMA detailed design, and eventually the implementation. The section also elaborates on the general NAMA donor requirements and the key steps to approach them. It shall be noted as well that before international donors can be approached, the Mexican Govt. should first endorse the concept note officially, subscribe its contents, and file a request for support by using the appropriate UNFCCC template.

Section 4 provides the key recommendations with an emphasis on the design gaps identified earlier and the need to close them before a request is made to donors to pursue its implementation. The NAMA's case for funding to complete its detailed design will be significantly strengthened by putting forward a business plan, in which indicative costs associated with achieving a given target are presented, and where the sources of funding needed to cover such costs are also described. As it stands, such information is not readily available and thus the approximate cost to reduce a tCO₂ to a donor cannot be assessed. Knowing beforehand what the cost to reduce a tCO₂ is likely to be (even if it is indicative) is of great value to potential donors, and constitutes almost a prerequisite to decide whether it should or should not provide additional funding to the NAMA for preparation (and more importantly, NAMA implementation work).

1 Summary of the Cross Sectoral Electrical Energy Efficiency NAMA Concept

The following is a draft Summary of the NAMA Design Concept and the NAMA draft Design Sheet which provides key information “at a glance”, to potentially interested donors.

NAMA Summary

The Small and Medium Enterprise, SME sector is an essential part of the Mexican economy, accounting for 52% of the country's GDP and 72% of the work force. The SME sector consumes almost 50% of the country's electricity and around 10% of the nation's fossil fuel energy. There are around 3,400,000 low voltage power consumers, located in tariffs 2 and 3, most of which belong to the commercial SME sector. This group of energy users consumes around 13,400 GWh/yr of electricity. Studies suggest that 20% of the energy consumed in this group of users could be saved by the use of more energy efficient air conditioning, refrigeration, lighting and motors.

Despite their attractiveness, the uptake of such technologies and measures amongst this group SMEs has been very limited.

Considering the importance of this sector to the wider economy, the stated objective to reduce its GHG emissions, and the challenges of overcoming the existing barriers to achieving energy efficiency in this sector, the Mexican Government requested in 2011 support from the German Government for the design of various Nationally Appropriate Mitigation Actions (NAMAs).

To date, an offer to incentivize the uptake of electrical energy technologies has been designed, which lowers the most important barrier, which is access to finance but which also mitigates the risk associated with adopting measures and technologies with which SMEs in the commercial sector have had very limited experience.

An operating scheme designed in conjunction with key stakeholders and NAMA implementation partners, such as SENER, the Electricity Savings Trust Fund (FIDE), NAFIN, is currently being tested out.

The present Design Concept Note describes in greater detail the stage of design at which the Cross Sectoral Electrical Energy Efficiency NAMA is, what work remains to be done in order to complete its detailed design and the funding need to be able to do so. The objective being to design the NAMA so that it is capable of delivering the GHG emissions reductions that it sets out to achieve over a given period of time. In so doing, such design seeks to reduce the risk to donors, domestic and international alike, of NAMA underperformance upon implementation. In so doing, this Concept Note will place the NAMA in a better position to mobilize international donor funding for detailed design and thereafter, for implementation.

NAMA Draft Design Sheet

Country: Mexico Sector: Mexican SMEs	
Action: Cross Sectoral Electrical Energy Efficiency Program	
Scope target	<p>Scope: The Mexican Government is currently implementing nationwide an ambitious and cross sectoral electrical energy efficiency credit scheme called <i>Programa Eco Crédito Empresarial</i>, which aims to encourage SMEs to implement energy efficiency measures. The initiative offers finance to small businesses to substitute inefficient commercial refrigeration, air conditioning equipment, electric motors and upgrade lighting systems, with Programme-approved energy efficient equivalents requiring investments of up to 350,000 MXN (ca. EUR 20,000). The Programme is overseen by the Mexican Energy Secretariat, SENER, and operated by the Electricity Savings Trust, FIDE, a leading Energy Efficiency Program design and implementation entity in the region. The initiative is currently being tested out and targets the 3,400,000 low voltage tariff 2 and 3 commercial customers, which accounted for 13,400 GWh in 2009, that also meet a number of eligibility criteria (see details in the NAMA Concept Design Document).</p> <p>Target: Financing of 165 MM MXN to be assigned by December 2013</p>
Eligibility criteria	<ul style="list-style-type: none"> • SME registered before the SHCP (tax authority) under one of 3 categories • SME must have been in operation for at least one year • Contract in place between SME and the electricity supplier (CFE), with no outstanding debts • Must have a good credit track record or none at all • Adequate loan repayment capacity (estimated from savings) • For individuals, age between 18 - 65 years
Fit with existing policies and activities: value-added and co-benefits	<p>An Electrical Energy Efficiency Program such as the one being planned would have a number of positive impacts in the market for energy efficient products and services.</p> <ul style="list-style-type: none"> • Electricity subsidy savings • Create jobs (production of energy efficient equipment, fitters and maintenance services) • Increase competitiveness of SMEs as a result of lower electricity bills • Nudge informal SMEs to go formal in order to access discounts and other benefits. • Raise awareness to the benefits of electrical energy efficiency paving the way for the implementation of other EE measures in the future. • Reduction of particulates and other gaseous emissions, associated with the combustion of fossil fuels used to generate power • Reduction of risk to lending institutions as experience in financing energy efficiency projects by FIDE is gained and the risks are better

	<p>understood.</p> <p>Equipment that is to be replaced with more efficient one shall meet the following requirements:</p> <ul style="list-style-type: none"> • Property of the participating business • At least 10 years old • Operational and being used in the participating business's premises at the time of replacement
Baseline	Instead of a unique baseline for the NAMA, individual energy savings are estimated by using data from FIDE's previous equipment substitution experience. Energy savings for the NAMA are thus the sum of all the individual equipment savings. Although this standardized approach enables the electricity cost savings to be readily estimated, eliminating the need for site assessments and measurements, a comprehensive online platform is envisaged to collect, process and corroborate field information, which also contributes to a more robust MRV system.
MRV procedures	The MRV system that has been designed for the NAMA includes the tools and procedures required to document, evaluate and communicate in a clear, transparent, objective and systematic manner the following aspects to key stakeholders: <ol style="list-style-type: none"> 1. NAMA Implementation progress; 2. NAMA impact, in terms of energy savings and emissions reductions; and 3. Contribution towards sustainable development / Co-benefits. - See more details in the Concept Note.
Operational Scheme	<p>The NAMA's proposed operating scheme has been designed to deliver an offer devised to entice customers to improve the efficiency of their installations and is currently being tested out by FIDE. The programme is communicated to the target audience by a number of channels, including manufacturer and suppliers' channels such as flyers, direct mail, site visits, mass media, etc.</p> <p>The potential participant contacts a NAMA approved Equipment Supplier or Distributor who guides the SME through the administrative process steps that need to be followed. The equipment distributor loads the participant's information on a dedicated website to check eligibility to join the Programme as well as to provide information on the type of technology to be installed, number of units, size and unit price. The amount of the loan is then compared with the energy savings estimated to be realised by the SME within 4 years, so that it will be able to repay the loan using the savings alone. Once the credit application forms have been submitted, FIDE undertakes the necessary credit assessment, and if deemed appropriate, awards the loan and the contract with the beneficiary is signed.</p> <p>The supplier delivers the EE equipment to the user and removes the existing one. The user signs a proof of delivery, the equipment warranty and the promissory note. The used equipment is taken to the scrapping centre where proof of handover is awarded to the distributor, once it has been determined that the equipment handed in is in working condition. The used equipment is disposed of in an environmentally sound manner following FIDE approved procedures, to ensure that the equipment/components do not find their way back into the marketplace, and also ensure the refrigerants with Global</p>

	Warming/Ozone Depleting Potential are not released to the atmosphere. The process is also tracked through the NAMA's Web based Management System. See more details in the Concept Note, in particular Figure 1.
Incentive system/ regulations	<p>The solution that is to be put forward to SMEs is one that also seeks to address a number of additional barriers of a technical nature that are also at play. See the NAMA Technical Solution (including Table 3) in the Concept Design for more info.</p> <p>The financial component of the offer to the SME includes a discount on the purchase price of the equipment, as well as subsidy to cover the cost of retiring and disposing of the existing equipment in an environmentally sound manner. The current financial offer is structured with a reduced upfront payment, a 10% discount on the equipment cost, reduced interest rate and the option of extended loan repayment term (up to 48 months). See the NAMA Financial Solution (including Table 2) in the Concept Design for more info</p>
Amount of Support provided (Domestic Layer)	<p>SENER (Fondo de Transición Energética): 166 MM MXN for project financing and incentives.</p> <p>NAFIN (Federal funds): 132,800,000 MXN as credit guarantees</p>
Amount of Support provided (International Layer)	GIZ: EUR 50,000 for online platform development / MRV

2 General NAMA description

2.1 Background to the Cross Sectoral Electrical Energy Efficiency Supported NAMA

The Mexican Government is currently implementing an ambitious nationwide and cross sectoral electrical energy efficiency credit scheme called *Programa Eco Crédito Empresarial*, to encourage SMEs to implement energy efficiency measures.

The initiative offers finance to SMEs to substitute inefficient refrigeration, air conditioning equipment, lighting and electric motors with Programme-approved energy efficient equivalents requiring investments of up to 350,000 MXN (c.a EUR 20,000). The Programme is overseen by the Mexican Energy Secretariat, SENER and operated by the Electricity Savings Trust, FIDE, a leading Energy Efficiency Programme design and implementation entity in the region.

2.2 Target Sector

The NAMA targets the 3,400,000 low voltage tariff 2 and 3 commercial customers¹, which accounted for 13,400 GWh in 2009². In addition to this, businesses or individuals interested in participating in the Programme (and by extension in the NAMA) must meet the following eligibility criteria:

- Be registered in the SHCP (tax authority) under one of 3 categories
- SME must have been in operation for at least one year
- Contract in place between SME and the electricity supplier (CFE), with no outstanding debts
- Must have a good credit track record or none at all
- Adequate loan repayment capacity. This is determined based on the expected energy savings resulting from the implementation of the chosen electrical energy efficiency measure, as follows:

$$\text{Payment capacity} = \text{Net monthly income} / \text{monthly loan payment}$$

Where:

$$\text{Net monthly income} = \text{Monthly income} - \text{Monthly expenses} + \text{Energy Savings resulting from the chosen electrical energy efficiency measure}$$

Payment capacity must be at least 2.0 to able to join the Programme³.

- For individuals, age between 18 - 65 years

¹ Tariff 2 up to 25 KW, Tariff 3 up to 100 KW.

² "Recomendacion estrategica sobre tecnologias y subsectores como orientacion para sustentar acciones de eficiencia energetica en del sector PyME". GIZ (2011).

³ "Enterprise Energy Saving and Efficiency Programme" (PAEEEM) Operating Manual. FIDE

2.3 Objective of the Cross Sectoral Electrical Energy Efficiency NAMA

The Cross Sectoral Electrical Energy Efficiency Supported NAMA seeks to introduce a variety of energy efficiency solutions in the tariff 2 and 3 electricity consumers. Equipment that it to be replaced with more efficient one shall meet the following requirements:

- Be property of the participating business
- At least 10 years old
- Operational and being used in the participating business's premises at the time of replacement

The NAMA provides financial incentives to reduce the barriers to the uptake of electrical energy efficiency technologies.

Table 1: Technologies and measures covered by the Cross Sectoral Electrical Energy Efficiency Supported NAMA

Technology	Measure	Key technical criteria
	Replace commercial refrigeration equipment with more efficient equivalent.	Effective cooling volume shall be no greater than 20% than that of the unit being replaced?
 	Replace existing AC with more efficient room type and split type units	Capacity of equipment to be installed should not exceed that of the unit being replaced
	Lighting efficiency projects based on T8/T5	
 	Replace electric motors with Premium energy efficiency ones	Existing motor must have been manufactured prior 2003 (when the NOM-016-ENER-2002 High Energy Efficiency Motors norm was introduced). Size of the motor to be installed must not exceed that of the one being replaced.

Source: Ingeniería Energética Integral / Carbonding Climate Community / Enervalia Eficiencia Energética/ GIZ / South Pole

Energy savings that are obtained by adopting the proposed measures are based on a number of baseline energy studies carried out by FIDE. The studies show that in almost all cases, existing equipment is replaced by equipment of a similar size (rating, cooling capacity). Only on rare occasions does the end user replace the existing unit with one of lower capacity.

This research has enabled FIDE to quantify and standardize the savings that can be achieved when replacing equipment of a given size and design. These are discussed in greater detail in Annex 1.

This standardized approach enables the electricity cost savings to be readily determined. It thus eliminates the need for site assessments to determine the efficiency of the existing equipment and usage pattern, upon which the baseline energy consumption, and hence GHG emissions would be determined.

2.4 Co benefits

An Electrical Energy Efficiency Programme such as the one being planned would have a number of positive impacts in the market for energy efficient products and services.

- Subsidy savings
- Increase the local production of energy efficiency equipment
- Create jobs (production of energy efficient equipment, provision of energy advisors, fitters and maintenance services)
- Increase competitiveness of SMEs as a result of lower electricity bills
- Nudge informal SMEs to go formal in order to access discounts and other benefits.
- Raise awareness to the benefits of electrical energy efficiency paving the way for the implementation of other EE measures in the future.
- Reduction of particulates and other gaseous emissions, particularly when liquid fuels are displaced.
- Reduction of risk to lending institutions as experience in financing energy efficiency projects by FIDE is gained and the risks are better understood.

2.5 Barriers to the uptake of the proposed measures

Investments in electrical energy efficiency offer paybacks typically between 1 – 4 years.

Despite their apparent attractiveness however, the uptake of the proposed electrical energy efficiency measures amongst the targeted users remains low. Lack of suitable financial products in the marketplace is the main reason for such a low uptake of such measures, though other barriers such as the doubt that they will deliver the expected energy costs savings also weigh in on end user decision not to adopt them.

2.6 Development of the offer

The offer to be made to tariff 2 and 3 electricity customers entails a financial and a technical solution:

2.6.1 Financial solution

In order to overcome the access to finance barrier, the NAMA enables customers in the tariffs 2 and 3 to access a simple structured loan, with attractive terms and conditions.

Key to enabling this offer is the National Development Bank, NAFIN's capacity to loan funds to FIDE for energy efficiency projects and the use of the state owned power utility's (CFE) billing system as the vehicle by which borrowers can repay their loans.

The financial component of the offer to the SME includes a discount on the purchase price of the equipment, as well as a subsidy to cover the cost of retiring and disposing of the existing equipment in an environmentally sound manner.

The current financial offer is structured with a reduced upfront payment, a 10% discount on the equipment cost, reduced interest rate and the option of an extended loan repayment term (up to 48 months) as Table 2 shows.

Table 2: Financial Offer

Financial offer characteristics	
Credit type	Monthly payments on principal and interest
Maximum Loan Size:	MXN 350,000.00
Interest rate:	Fixed: 14% + VAT over outstanding balance
Loan term	Up to 4 years
Energy Efficiency Incentive	10% discount of equipment price including VAT
Repayment means:	State owned power utility (CFE) Electricity Invoice

Source: FIDE

Monthly loan payments should not exceed 20% of the average monthly electricity bills over the prior 12 months.

2.6.2 Technical solution

The solution that is to be put forward to SMEs is one that also seeks to address a number of additional barriers, of a technical nature that are also at play. Table 3 presents key technical barriers and the solutions that have been proposed to overcome them.

Table 3: Technical barriers and proposed solutions

Barrier	Solution
Lack of capabilities to estimate the energy costs savings and thus assess the attractiveness of the proposed energy efficiency measures.	FIDE has developed standardized performance baselines taking into account the efficiency and usage patterns of the existing equipment and based on the trust's experience in developing electrical energy efficiency projects over the years for the type of applications and project sizes considered by this NAMA. Energy savings are then estimated taking into account the capacity of the existing equipment and the energy efficiency of the equipment installed under the programme (e.g. kWh/month saved for various cooling capacity requirements in the case Air Conditioners; kWh/litre/month saved for different commercial refrigeration design types and cooling volumes). There is no need to conduct site visits to determine the baseline energy consumption.
Technology aversion: concern that the estimated costs savings will not materialize because the equipment may not perform as expected or fail.	Technologies and suppliers to the programme need to comply with technical specifications and commercial requirements of the NAMA: <ul style="list-style-type: none"> • Energy efficiency equipment installed under the NAMA must be certified to FIDE standards, and carry the FIDE Seal, in cases where such specifications exist. • Equipment manufacturers/vendors selling equipment into the NAMA shall do so at prices previously agreed with FIDE. FIDE reserves the right to suspend any manufacturer /supplier that offers equipment into the NAMA at a higher price than that previously agreed with FIDE • High Energy Efficient Equipment manufacturers and/or distributors must offer a 1 year guarantee on parts and 4 years on air-conditioning and refrigeration compressors
Uncertainty surrounding the cost savings that are achieved: even though an expert may estimate the savings that would be achieved by implementing the measure, in other words, how does the SME know that they have been achieved?	SMEs need to be given assurance that the implemented measures deliver the energy and hence cost savings that were offered. SME's however lack the capabilities to undertake this assessment on their own. The energy and cost savings are based on research carried out by FIDE over the years on standardized energy performance baseline of the existing equipment. In addition, GIZ is working closely with FIDE to review the algorithms used to estimate future savings, as part of its support to FIDE's IT Platform. Only suppliers that adhere to the Programme's rules in terms of quality, service and performance may sell equipment and services into the NAMA.
Lack of incentive to dispose of the used equipment so that it may not be reused.	Customers will generally seek to sell the used equipment into the second hand market or as scrap. Air conditioning and refrigeration equipment refrigerant charge is bound to be released to the atmosphere. In order to participate in the NAMA used equipment needs to be surrendered so that it may be scrapped to ensure that neither it, nor any of its parts can be reused (GHG leakage avoidance) and that the refrigerant can be recovered. The NAMA covers the costs of such disposal and recovery and monitoring the processes involved.

Source: GIZ / South Pole

2.7 Size of the opportunity

Tariff 2 and 3 electrical consumers are mostly located in the commercial sector. Given that the total consumption of such users is around 13,400 GWh/yr and assuming potential energy

savings of 20%⁴, it is estimated that the technical energy savings and GHG reduction potential are 2,700 GWh/yr and 1,400,000 tCO₂ per year respectively. How much of the energy savings and emissions reductions can be achieved in practice and over what period of time will depend though on the level of uptake of the energy saving measures being proposed. This in turn depends on how attractive the offer put forward to the potential participants is and on the amount of resources available to operate the scheme that enables such an offer to be delivered to the target audience, i.e. on the amount of funding available to provide the incentives and subsidies described earlier, as well as to cover the costs associated with running NAMA to deliver them.

During the next phase of the NAMA's design, assumptions made earlier such as, energy savings ranges and the likely uptake of the offer made, will be confirmed and/or revised. The results will make it possible to put forward a realistic and well-grounded figure of the real, as opposed to the technical, size of the opportunity that the NAMA will entail. This will then be used to refine the inputs to the business plan that will be put forward to international donors when seeking funding to support the NAMA's full roll out.

This will enable the NAMA promoter to provide a better estimate for the tCO₂ that can be expected to be enabled per Euro invested by a donor in the NAMA.

2.8 Cross Sectoral Electrical Energy Efficiency NAMA Operating Scheme

The NAMA's proposed operating scheme has been designed to deliver an offer devised to entice customers to improve the efficiency of their installations and is currently being tested out by FIDE.

The implementation of such scheme requires a coordinated effort involving a number of entities or NAMA implementation partners.

The NAMA Operating Scheme enables NAMA eligible participants to obtain finance for energy efficiency saving measures. The programme is communicated to the target audience by a number of channels, including manufacturer and suppliers' channels such as flyers, direct mail, site visits, mass media, etc.

The potential participant contacts a FIDE approved Equipment Supplier or Distributor who guides the SME through the administrative process steps that need to be followed. The equipment distributor loads the participants information on a dedicated website needed to check eligibility to join the programme as well as the type of technology being installed, number of units, size and unit price as shown in Figure 1.

4 «Recomendacion estrategica sobre tecnologias y subsectores como orientacion para sustentar acciones de eficiencia energetica en del sector PyME». Ingenieria Energetica Integral, March 2013

Figure 1: Cross Sectoral Electrical Energy Efficiency Supported NAMA Operating Scheme

1. Manufacturer/Distributor registers as a supplier to the NAMA
- 2.- FIDE evaluates and accepts or rejects application
- 3.- User contacts supplier and submits forms
- 4.- Supplier reviews documentation and registers the user on the NAMAs system.



- 5.- User chooses the EE equipment



- 6.- Credit Screening System check is carried out. Payment capacity is determined and request approved/rejected.



- 7.- Supplier prints out the credit forms for the user



- 8.- User signs the documents.



- 9.- Supplier delivers the new, high EE equipment to the user.



- 10.- User signs off reception of the equipment, equipment guarantee, and promissory note.



- 11.- Supplier removes the old equipment and disposes of it.



- 12.- Supplier sends the old unit to the used equipment Scrapping Centre



- 13.- Scrapping Centre receives the old unit and prints proof of delivery form.



- 14.- Supplier submits the full dossier to the regional FIDE office .



- 15.- Regional FIDE Office reviews and approves/rejects the documentation



- 16.- Regional FIDE office releases payment FIDE via the SICOM System to the equipment supplier



Source: FIDE

Figure 2: NAMA IT Management System – Distributor's portal

The screenshot shows a web-based application interface for generating an investment budget. At the top, there is a navigation menu on the left with options like 'Navegación', 'Módulo de Distribuidor' (selected), 'Formatos de Impresión', and 'Ir a Página Inicio'. On the right, it displays 'Bienvenido dist.polanco5 (Distribuidor), Log Out' and the date 'Fecha 2012-12-12'. The main content area has a title 'Generación de Presupuesto de Inversión' and a sub-section 'DATOS DE LOS EQUIPOS SOLICITADOS' with a note '(*) El Costo Unitario de los Equipos incluye el IVA'. Below this is a table for entering equipment details:

Tecnología	Tipo de Producto	Marca	Modelo	Cantidad	Precio Unitario	Capacidad	Importe
(dropdown)	(dropdown)	(dropdown)	(dropdown)	1	(dropdown)	(dropdown)	(dropdown)

Below the table, there are several input fields for calculating costs: 'Subtotal', 'IVA', 'Costo Equipo(s)', 'Costo Acopio y Destrucción', 'Incentivo (10%)', 'Descuento', and 'Total'. At the bottom left are buttons for 'Agregar' and 'Borrar Cotización', and at the bottom right are buttons for 'Regresar', 'Siguiente', and 'Salir'.

Source: Carbonding

Once the credit application forms have been submitted, the FIDE undertakes the necessary credit assessment, and if deemed appropriate, signs a contract and awards the loan and the contract with the beneficiary is signed (Annexe 2).

The supplier delivers the new, EE equipment to the user and removes the old one. The user signs proof of delivery, the equipment warranty and the promissory note. The used equipment is taken to the scrapping centre where proof of handover is awarded to the distributor, once it has been determined that the equipment is in working condition. The used equipment is disposed of in an environmentally sound manner following the FIDE approved procedures, to ensure that the equipment/component does not find its way back into the market place and also ensure that the refrigerants with Global Warming/Ozone Depleting Potential do no not escape to the atmosphere. The process is also tracked by the NAMA's Web based Management System.

Figure 3: NAMA - IT Management System – Scrapping Centre Page

Source: Carbonding

The supplier then hands over the necessary documentation to the Regional FIDE office for approval. Once approval is given, payment to the supplier is released via the SICOM system. The CFE billing system then proceeds to invoice the first monthly loan payment on the users next electricity bill. Examples of some of the forms that need to be completed are presented in Annex 2.

The implementation of the Operating Scheme involves numerous interactions between several key implementation partners closely coordinated by a NAMA Operating Entity and overseen by SENER:

SENER

SENER is Mexican National Energy Secretariat. SENER provides direction and ensures that the NAMA's goals are aligned with the country's energy and climate change policies. Its leadership and commitment, provides the necessary assurance to potential international donors that the NAMA is aligned with Mexico's Energy and Climate Change policy framework and fully supported by the host country government.

FONDO PARA LA TRANSICIÓN ENERGÉTICA Y EL APROVECHAMIENTO SUSTENTABLE DE LA ENERGÍA

The Energy Transition and Sustainable Energy Fund, together with the Secretariat of Economy provides the resources needed to guarantee the loans given by NAFIN to FIDE. The Fund also covers the costs of the incentives offered to join the NAMA, as well as the transport and disposal of the used equipment in an environmentally sound manner.

FIDE

The Electric Power Savings Trust Fund (FIDE) is an experienced and highly regarded Mexican energy efficiency programme manager. FIDE has carried out over 4,500 Energy Efficiency Projects across the industrial, commercial, services and institutional sectors. It has managed energy efficiency schemes in which over 2 million loans have been granted for the purchase of energy efficient household appliances and to improve home insulation, and where 26.4 million lamps have been replaced. By February 2012, FIDE's Domestic Electric Appliance replacement programme had delivered 1.5 Million energy efficient refrigerators and created an estimated 10,000 direct jobs and over 24,000 indirect jobs. FIDE's interventions to date have resulted in accumulated electricity and power savings of 18,000 GWh and 1,990 MW respectively.

CFE

The Comision Federal de Electricidad (CFE) is the State Owned power utility. CFE's billing system is the means by which NAMA participants repay their loans to FIDE. CFE is thus responsible for collecting loan repayments and channeling them back to FIDE.

NACIONAL FINANCIERA, NAFIN

Nacional Financiera, S.N.C., (Nafinsa) is a Development Bank that seeks to promote the overall development and spur modernization of the industrial sector, stimulate the development of financial markets and act as financial agent of the Federal Government in the negotiation, contracting and management of credits from abroad. NAFIN structured the NAMA's financial offer to end users and is responsible for providing FIDE with the funds that are loaned to the business that join the NAMA.

EQUIPMENT SUPPLIERS AND INSTALLERS

Energy Efficiency equipment providers can supply equipment and services to the market provided they meet a set of requirements, both of a technical and commercial nature.

The operating scheme thus involves key players that are already present in the market and understand its functioning. The NAMA provides the necessary stimulus to enable their interests to be aligned with the NAMA's promoters, which is to achieve GHG mitigation through enhanced electrical efficiency.

2.9 Cross Sectoral Electrical Energy Efficiency NAMA MRV

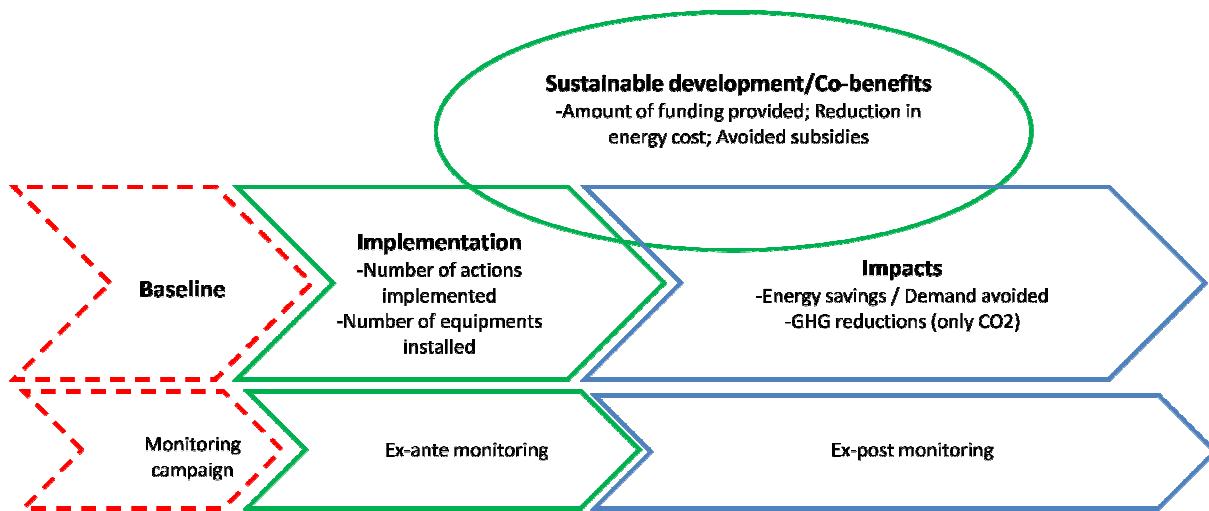
The MRV system that has been designed for the NAMA includes the tools and procedures required to document, evaluate and communicate in a clear, transparent, objective and systematic manner the following aspects to key stakeholders:

- NAMA Implementation progress;
- NAMA impact; and
- Contribution towards sustainable development / Co-benefits.

Monitoring / Measurement

The data needed to measure and communicate progress of implementation on a number of fronts can be obtained directly from the NAMA operating scheme. At the same time some of the parameters needed for quantification of the impacts and co-benefits are also need to be captured in the operating scheme (Figure 4).

Figure 4. NAMA Monitoring requirements overview



The Data Management system will in principle be around the system used by the FIDE, but augmented to meet GHG monitoring and reporting requirements and expanded to include the specific electric energy efficiency measures promoted under the NAMA.

Approach

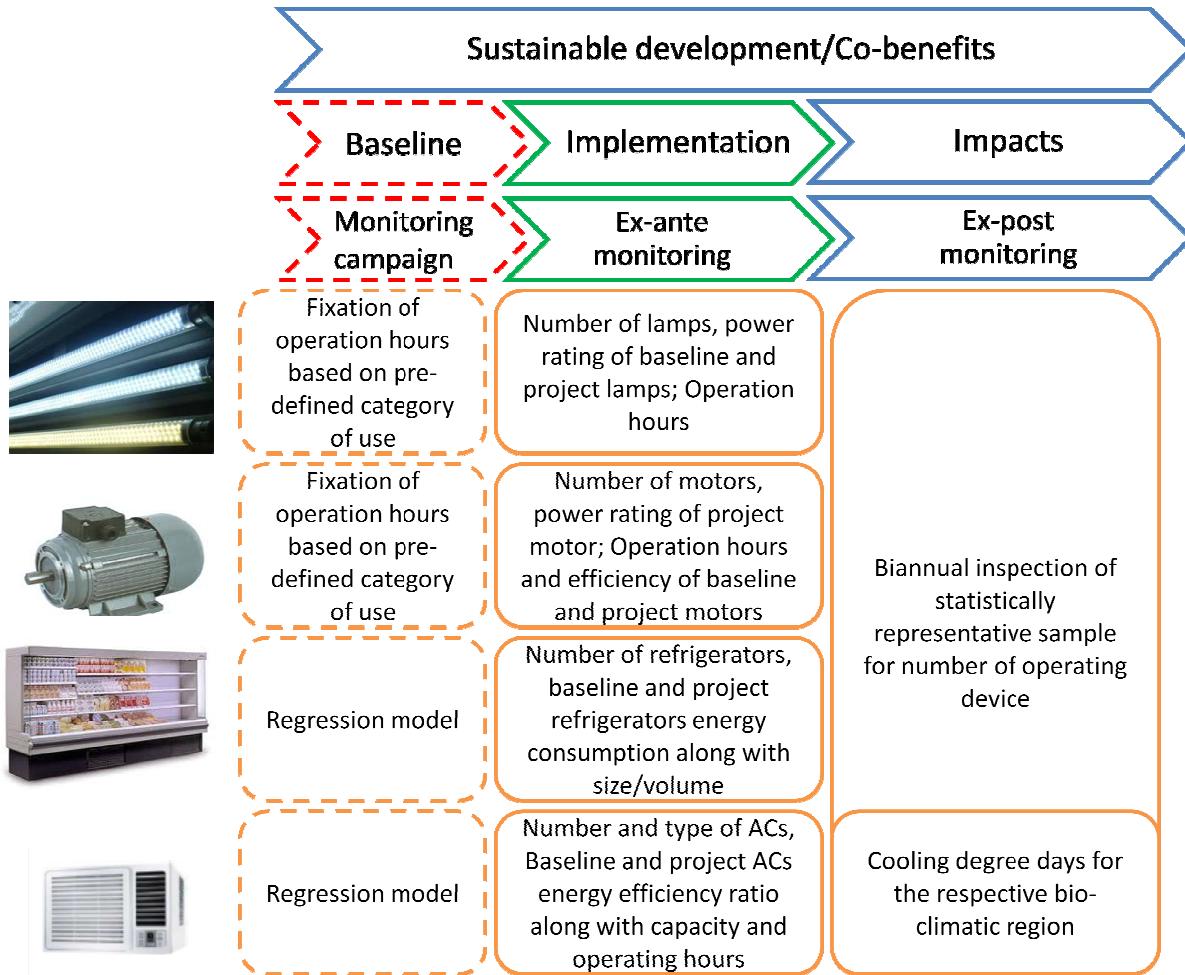
Due to the nature of this NAMA and the types of interventions, it is considered that the approach of 'isolation of the conservation measure' (instead of Whole-Building Approach or Calibrated Simulation) is the most appropriate approach for estimating energy savings and emissions reductions.

Measure	Energy consumption characteristics
Replace commercial refrigeration equipment with more efficient equivalent.	Constant use; Variable load
Replace existing AC with more efficient room type and split type units	Variable use; Variable load
Lighting efficiency projects based on T8/T5	Constant/Variable use; Constant load
Replace electric motors with Premium energy efficiency ones	Variable use; Constant load

The energy consumption is based on the load and usage. For constant load interventions the deemed savings approach would be applied. In case of variable load (refrigeration, AC), ex-post determination of baseline consumption is to be used owing to influence of various independent

variables on energy consumption (e.g. climate variables or volume of production - for industrial SMEs) that cannot be predicted with certainty. Regression analysis is proposed for determination of the baseline energy consumption, based on measurement campaigns after the replacement has been made (i.e. export monitored date).

Figure 5: Overview of pre-installation (ex ante) and post installation (ex post) monitoring requirements

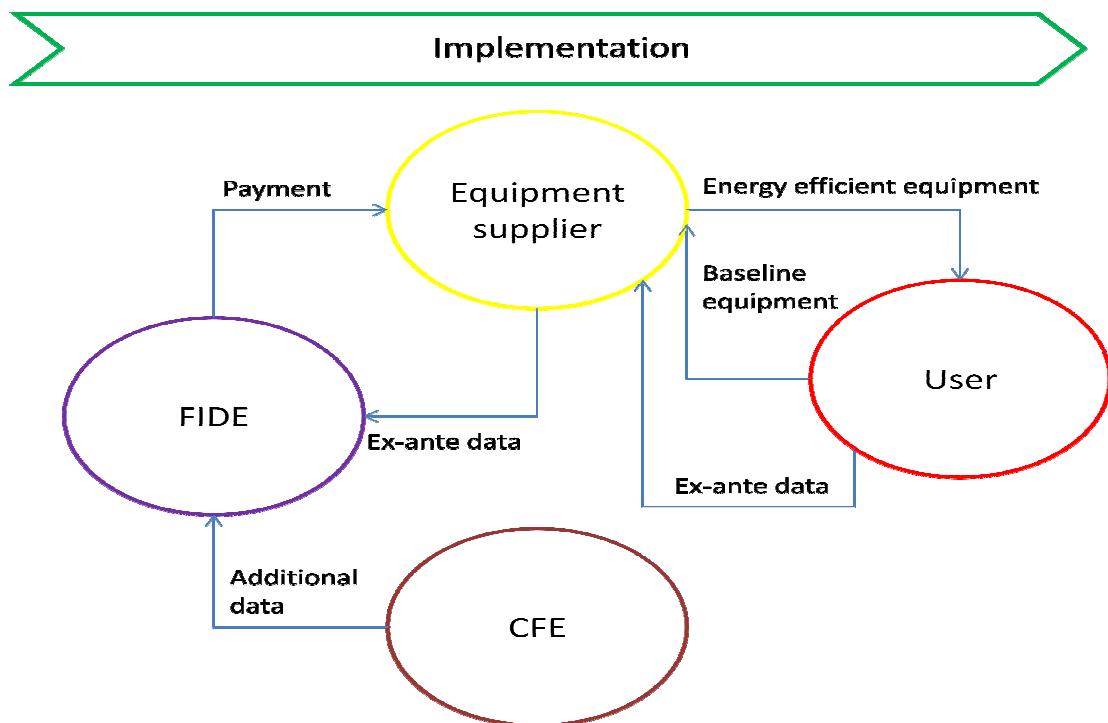


For the simpler, deemed savings approach monitoring campaigns are not required, however if relatively detailed computation of energy savings is to be carried out then the respective monitoring campaigns will be required.

A very simplified monitoring approach is being proposed wherein most of the data is captured prior to equipment replacement, during in the credit application processes. There is limited interaction/interference envisaged with the user after the new equipment has been installed except for the sampling which is done to check that the equipment installed is operational.

Furthermore, the collection of the ex-ante data and providing the same to FIDE is linked to the energy efficient equipment supplier as the payment is made from FIDE to the respective equipment supplier, as is shown in Figure 6.

Figure 6: MRV information and data flows



The involvement of CFE with its team of surveyors is also proposed for carrying out the biannual inspection to determine that equipment is still operating properly and for gathering the additional data necessary for the NAMA's performance assessment. The additional data pertains to: user details (Name, location/address); type of energy efficiency measure implemented with specifications, bioclimatic region, thermal details, electric energy consumption during the period and confirmation that the equipment to be replaced works.

The sampling plan is to be based on the Standard for sampling and surveys for programmes of activities and project activities of the Clean Development Mechanism (CDM) of the UNFCCC. For sample size computation a 90/10 confidence/precision is proposed.

The information gathered from the field is integrated to proceed with the analysis and calculation of the NAMA's aggregated energy savings and emission reductions.

FIDE is expected to implement and operate the MRV, organize, analyze and report the impact of the NAMA in terms of energy cost savings.

Reporting

The proposed Reporting and Verification approach is one that is aligned with the general minimum requirements established by the Convention United Nations Framework Convention on Climate Change (UNFCCC) and the specific requirements of the NAMA funded bodies. Section

IV, Annex III, Decision 2 of the Conference of the Parties (COP) 17 held in Durban in 2011, establishes the following reporting requirements biennially for mitigation actions (NAMAs i.e.):

- a) Name and description of mitigation action, including information on the nature of the action, scope, coverage (sectors and gases) quantitative goals and indicators of progress;
- b) Information of methodologies and assumptions;
- c) Objectives and action steps to achieve such action
- d) Information on the progress of implementation of the action, results achieved metrics and impact indicators and estimation of emission reductions.
- e) Information on local arrangements for measurement, reporting and verification.

The reporting format takes into account the requirements established by the UNFCCC and the aforesaid elements.

Verification

Due to the diversity of the indicators and complexity involved, the verification procedure is split into three categories:

Direct verification (FIDE): Since the installation of efficient equipment is carried out directly by users and / or technology providers, it is suggested that FIDE, either directly or through a third party, perform an inspection to ensure that technologies were actually installed and are in operation. For this verification process, it is proposed that the sample size of random users should have an accuracy level of 95% and a margin of error of 10%. This verification procedure is to be carried out on a biennial basis and is expected to be reported through the monitoring report.

Second party verification (SENER): SENER, the supervisory body checks the monthly report, the number of loans provided, the amount of such financing, and the amount of resources devoted to energy incentive. Based on these reports, the supervisory body performs an audit at least once a year to verify the veracity and authenticity of such reports. The audit process should include desk review of the actions implemented, database review, and consultation with various stakeholders such as NAFIN, FIDE, CFE, etc. The executive summary of the audit shall be signed by those responsible for its development and shall be included as part of the monitoring report of the NAMA.

Third party verification: The assessment of impact report must be verified by a third party with sufficient technical qualifications to undertake such exercise. The scope of the third party verification involves checking the following aspects:

- Data and parameters used in the estimation of impact as well as ensuring that their sources are adequately documented in the monitoring report.
- The sources of information used in the estimation of impact have been correctly interpreted.
- Procedure carried out for the selection of the sample has been in accordance with the criteria set forth herein.
- Application of the formulas for the determination of impact and the estimated impact for each technology has been appropriately determined.
- Reduction of emissions of greenhouse gases (GHGs) is correctly reported.

2.10 Demonstration Projects

Demonstration tests will be carried out to:

- Test the proposed MRV system design, as well as other, simple and low cost means of detecting loss in performance to enable prompt action to be taken.
- Confirm that the savings achieved are no less than those upon which the financial offer is based, and if so determine the reasons for such departure.
- Track equipment energy efficiency and energy savings over an extended period of time (periodic monitoring over a period of time to be defined by the NAMA operating entity)
- Identify any issues regarding installation, commissioning, operation and maintenance that need to be factored in to the NAMA's offer and/or operating scheme.
- Assess Demonstration Project host business's satisfaction with the implemented measure over an extended period of time.
- Develop case studies and testimonials that can then be used as part of the NAMA's promotional campaign.

Implementing such demonstration projects will require identifying hosts that are willing to participate in these extended trials in return for having the project implemented on their premises free of charge and the results periodically monitored. They will also involve developing test protocols to ensure all the information desired is captured and putting in place a more comprehensive instrumentation and metering system to detect any loss in equipment performance that may occur during a predetermined period (that over which the emissions reductions are to be claimed by the NAMA), and assist managers in determining the cause of such loss of performance and in the development of solutions to correct them. These Demonstration Projects are to be initiated as part of the detailed design.

2.11 NAMA trial launch

Conducting a trial launch is considered Best Practice when designing programmatic actions such as the Cross Sectoral Energy Efficiency NAMA. Experience shows that a number of problems faced by mass scale initiatives during their implementation can be avoided by judicious detailed design and concept testing.

The objective of the NAMA's trial launch is to road test the NAMA's operating scheme and reduce the risk to Donors and all stakeholders involved, domestic and international, that the NAMA may not deliver the number of replacements/retrofits needed to achieve a given GHG emissions reductions target.

The results of the trials being carried out to date are presented in Table 4 below.

Table 4: NAMA initial trial results

State	Application status		Total
	Pending approval	Approved	
BAJA CALIFORNIA	6	0	6
BAJA CALIFORNIA SUR	4	1	5
CHIHUAHUA	10	4	14
COAHUILA	36	6	42
COLIMA	10	0	10
DISTRITO FEDERAL	7	1	8
DURANGO	5	0	5
ESTADO DE MEXICO	43	88	131
GUANAJUATO	10	9	19
GUERRERO	9	3	12
HIDALGO	6	10	16
JALISCO	168	256	424
MICHOACAN	48	112	160
MORELOS	29	34	63
NAYARIT	28	72	100
NUEVO LEÓN	23	55	78
OAXACA	1	2	3
PUEBLA	20	78	98
QUERETARO	23	54	77
SAN LUIS POTOSI	39	23	62
SINALOA	34	67	101
SONORA	4	12	16
TAMAULIPAS	9	20	29
TLAXCALA	6	0	6
VERACRUZ	36	28	64
TOTAL	614	935	1,549
Finance, MXN	21,828,535	31,288,747	53,117,282
Incentive, MXN	2,142,408	3,375,943	5,518,351

Source: FIDE – Data to June 9th, 2013

As the above table shows, as of June 09, 2013, a total of 1,549 credit applications for replacements have been processed of which 935 have been implemented), _____, USD have been loaned and _____ USD have been awarded as incentives. .

The test will reveal a number of aspects concerning the NAMA's design that can only be found by implementing it, such as (but not limited to) the following:

- Whether the various steps involved work as planned

- The time taken to complete the various steps involved in the operating scheme
- The level of uptake

The test enables operating scheme procedures to be improved and any assumptions made previously e.g., in terms of level of uptake, number of visits that can be made in a day, time taken to approve a loan, etc., to be revised accordingly. In other words, the test will enable to firm up the estimates of how much resource and time is needed to deliver a certain quantity of GHG emissions reductions.

This information will then be fed into the business plan, resulting in a more accurate estimate of the funding required to achieve a certain amount of GHG emissions reductions over a given period of time.

This approach reduces significantly the risk of NAMA underperformance (i.e. not delivering the amount of GHG emissions forecasted in the business plan), to donors and implementation partners alike.

2.12 NAMA Planning and Estimated NAMA Implementation Costs

Efforts are underway to refine the estimates of the resources that will be needed to operate the NAMA and achieve the predetermined replacement/retrofit targets within a specific period of time. While at this stage of the Design these numbers will be only estimations based on educated guesses and the results of the NAMA trials carried out so far, it is paramount in order to request funding to complete the NAMA's detailed design that an indicative estimate of resources required be provided(in term of financial requirements). The estimated NAMA Implementation costs can then be further refined during the final stage of the NAMAs design. This will enable firmer estimates to be forward in proposals put forward to potential donors when for implementation support.

The costs associated with delivering the offer described in Section 2.6 by scaling it up to a wider base will include the amount of the subsidies, that will be needed to enable a discount on the equipment purchase price to be offered to the NAMA participants.

The NAMA also will have to cover the cost of retiring the inefficient equipment from the market, to ensure that neither it nor any of its components can be reused. In addition to this, disposal is to be done in an environmentally sound manner. The scrapping and disposal system to be used is based on the system currently being tested out on the Cross Sectoral Electrical Energy Efficiency NAMA and the comprehensive protocol that governs its operations.

Estimating how much incentive money, resources and subsidies will be needed, how much money will cost to monitor, report and verify (MRV) the GHG ER savings, and how much it will cost to manage the NAMA will depend on the number of replacements and retrofits that will have to be targeted to reach that overall mitigation objective within a given period of time. The number of replacements targeted will in turn depend on the emissions reduction target

Therefore, the amount of NAMA implementation funding required form domestic and international donors will be able to be estimated only once a NAMA target has been set, translated into an equivalent number of replacements and retrofits, and framed into a defined timeline. . The analysis of the costs of the replacement and retrofits carried out so far will also enable the different replacement technologies to be regrouped or classified in terms of their ER potential, cost-effectiveness (i.e. how much money per ton of CO_{2eq} saved each technology costs), or other criteria. This in turn will allow the elaboration of financial packages for the NAMA that can be prepared to facilitate its access to financial support.

With the information received so far, it is possible to realize a very basic estimation for instance of the amount of finance that will be required. Based in the initial results obtained from the NAMA trial launch, the average size of the loans given to date is around 34,300 MXN (2,670 USD). Given the funds that have been earmarked so far by NAFIN for loans of 166 MM MXN (ca.13.4 MM USD), one might expect that around 4,850 replacements could be made. Given that the average amount of incentive awarded per implemented measure is around 3,560 MXN (280 USD), the approximate volume of incentives associated with 4,850 measures would be close to 1.34 MM USD.

Table 5 below provides an indication of the magnitude of the funding involved, based on a scenario in which 50,000 of the 3,400,000 Tariff 2 and 3 consumers join the programme and take up a 34,300 MXN loan.

Table 5: Estimated Finance and Incentive required

(based on 50,000 participants and initial results from the NAMA's trial)

Number of electrical energy efficiency measures	50,000
Average loan size	34,300 MXN
Total amount of finance required	1,715,000,000 MXN (134,000,000 USD)
Average incentive	3,560 MXN (280 USD)
Total amount on incentive required	17,246,000 MXN (1,340,000 USD)

Source: South Pole

As the above table shows, the incentives provided are enabling almost 10 times as much money being invested in low carbon technology. Money which is provided by numerous Mexican SMEs.

In addition to the very indicative cost estimation presented in the table above, a comprehensive list of NAMA “budget items” that will definitely be part of the NAMA implementation cost is provided below:

Table 6: Estimated NAMA Implementation Costs

NAMA Implementation Cost Item	Estimated Value MXN (USD)
NAMA Entity Set-up and NAMA Administration (including personnel costs, maintenance, IT operation costs, and all fixed costs).	
NAMA Subsidies and other financial support for the replication of the underlying program	
NAMA MRV System Operation	
NAMA Loan guarantee funds	
NAMA Promotional campaign	
NAMA Investment Cost (Cost of Technical Equipment)	
Total NAMA Implementation Cost required	

Source: South Pole

2.13 Mexico's contribution to the funding of the Cross Sectoral Electrical Energy Efficiency NAMA

The Mexican Government, as well as the various implementation partners, has been actively involved in the NAMA's design work carried out to date. GIZ has and continues to provide support to coordinate efforts and assist the Mexican authorities in completing the detailed design of the NAMA.

The Mexican Govt. has committed resources in the form of loans, guarantees, incentives and subsidies to ensure that the equipment that is retired is disposed in a way that ensures that neither it (nor any of its components) can be reused and that it is disposed of in an environmentally sound manner.

Table 6: Partner's support (to date) (MXN)

Entity		Support provided to date
SENER	National Energy Secretariat	196,000,000 ⁵
FIDE	Electric Power Savings Trust Fund (FIDE)	
NAFIN	National Development Bank	132,800,000 ⁶
Manufacturers/Suppliers	Various	N.A ⁷

Source: FIDE / GIZ

2.14 Support required to complete the Cross Sectoral Electrical Energy Efficiency NAMA Detailed Design

The following section describes the support that is deemed required to complete the Detailed Design of the NAMA. Once the NAMA's Detailed Design is complete, it can then be put forward to the international donor community for co-founding to assist in its roll out (NAMA Implementation).

2.14.1 Technical Assistance Support

Technical assistance is needed to complete the detailed design of various elements that conform the NAMA.

⁵ Funding from SENER's Transition and Sustainable Energy Use Fund channelled to FIDE via NAFIN. This includes the incentive for scrapping the old equipment

⁶ NAFIN has guaranteed 80% of the loans with Federal funds

⁷ Manufacturers / Suppliers incur in costs to market the program thus reducing the burden on the NAMA's operating budget

Table 7: Technical assistance for the NAMA's Detailed Design

TA	1	Quantify benefits of the proposed EE measures at project, target sector and NAMA level	Estimated Funding required ⁸
TA	1.1	Refine aggregate energy saving and GHG reduction estimates for the energy saving measures considered	
TA	1.2	Identify and quantify co benefits (job creation, competitiveness, other gaseous and, particulate emissions reductions, etc).	
TA	2	Barriers identification	Estimated Funding required
TA	2.1	Engage potential participants and complete barrier analysis assessment to Identify other barriers to the uptake of EE technologies and measures: Air Conditioning, Refrigeration, Lighting, Premium Energy Efficiency Motors.	
TA	2.2	Survey to assess the extent to which the barriers are present in the targeted sector	
TA	3	Determine market replacement potential	Estimated Funding required
TA	3.1	Determine Potential market uptake	
TA	4	Complete Detailed NAMA operating scheme Design	Estimated Funding required
TA	4.1	Define Operating scheme key Performance Indicators, e.g. number of energy assessments carried out/month, number of loans issued/month, time between visit and client acceptance, time taken to approve loan, etc. That need to be tracked to ensure operating managers have the information needed to manage the NAMA	
TA	5	Revise assumptions for energy savings and project economics in light of demonstration tests	Estimated Funding required
TA	5.1	Confirm energy savings (based on sample of projects implemented during test phase)	
TA	5.2	Update the NAMA design to reflect any unforeseen results	
TA	6	NAMA Design review	Estimated Funding required
TA	6.1	Revise NAMA design elements as appropriate based on the NAMA test results and produce final detailed design	
TA	7	Supported NAMA detailed design document and ancillary packages	Estimated Funding required
TA	7.1	Prepare business case to request implementation support	
TA	7.2	Supported NAMA concept note (Ready to Implement or Detailed Design Document)	

Source: South Pole / GIZ

2.14.2 Energy Efficiency Demonstration Projects

A number of EE demonstration projects are also deemed necessary to complete its Detailed Design, as they will be required to fill some of the technical and financial gaps, and to test the

⁸ N.R = Not Required, be it because the task is currently being carried out or it is planned. These tables are thus "living" tables, to be updated by GIZ going forward. Tasks should be deleted as soon as GIZ considers that they have been satisfactorily completed.

MRV element of the operational scheme described earlier. The following list summarizes the activities required.

Table 8: Energy Efficiency Demonstration Projects

EEDP	1	Technology demonstrations to test MRV and assess performance of savings and GHG emissions reductions	Estimated Funding required
EEDP	1.1	Define the number of demonstration projects to be carried out with due consideration for (technology, manufacturers, capacity, and subsector or sectors initially targeted)	
EEDP	1.2	Design demonstration test plans, clearly indicating their objectives, scope and duration.	
EEDP	1.3	Identify demonstration sites and agree terms with site owner to participate as host	
EEDP	1.4	Specify metering and instrumentation needed to quantify impact, costs, including periodic calibration	
EEDP	1.5	Estimate resources required to carry such test	
EEDP	1.6	Design reporting format	

Source: South Pole / GIZ

2.14.3 NAMA Management Support: Capacity Building

Capacity Building and Training will have to be provided to all the relevant NAMA management entity staff as well as those involved in overseeing its operation, eg NAMA managers, technical experts, MRV staff, the officials that will process and file the applications to the replacement and retrofit Programme; and the administrative personnel, etc All of these officials will need to receive the appropriate training before the NAMA is rolled out. Following is a list of the main capacity building requirements:

Table 9: NAMA Capacity Building Programs

CB	1	NAMA Capacity Building	Estimated Funding required
CB	1.1	NAMA Operational Entity General Training	
CB	1.2	NAMA Supervision Training	
CB	1.3	NAMA MRV Training	
CB	1.4	NAMA Finance Training	
CB	1.5	NAMA Cross Sectoral Electrical Energy Efficiency Retrofit Program Training	
CB	1.6	NAMA Admin Training	

Source: South Pole / GIZ

2.14.4 NAMA Management Support: IT Tool design and development

In order to get the NAMA to be *Ready to Implement* in relation to its management and operational needs, the following IT tools will have to be designed and put in place:

Table 10: NAMA IT Management Tool design and Development

IT	1	NAMA Management system tool development	Estimated Funding required
IT	1.1	Adapt FIDE's IT Solution to capture and process the additional information track the NAMAs progress (GHG reductions) and enable management to meet targets (Key Performance Indicators)	EUR 50,000

Source: South Pole / GIZ

3 NAMA Funding: International Strategy to Request NAMA Support

Overview

The preceding sections have described the activities that need to be carried out to complete the NAMA's detailed design and also the funding that has been provided to date and is committed to being provided going forward by the Mexican Authorities and GIZ to complete the NAMA's detailed design. It is presented in a way that donor with different funding objectives can chose which activities it wishes to support, and forms the basis of the NAMA Concept Design document.

The present section discusses the possible sources of funding that can be tapped to complete such design and the suggested approach to access them.

The general strategy proposed to attract funding is based primarily on highlighting that:

- a) A robust approach underpins the NAMA's design work, as highlighted by GIZ's and FIDE's close involvement in the design process, and by the efforts undertaken to date to engage and secure the commitment of other key NAMA partners;
- b) The entities that will be involved in the NAMA operation are competent to fulfill the roles that they have been entrusted with. In this sense, FIDE's experience is a very strong asset. The present Concept Note presented in the earlier sections portray FIDE's involvement as a source of risk mitigation.
- c) The NAMA's design is very advanced, and the remaining gaps to its Detailed Design could be completed in the short term, which will allow its implementation in the mid-term (1-2 years), provided the required funding is made available in due course. As pointed out previously, determining the amount of funding required to attain the NAMA objectives is definitely the most critical and urgent task that the NAMA promoters will need to elucidate to complete the Detailed Design. In other words, the NAMA Detailed Design could be completed, and its Implementation started in a very short period of time, if the efforts are primed with the necessary resources.
- d) There is a clear commitment from local authorities to implement such a Programme. The fact that the Programme has already been launched and is being tested is the best proof.
- e) The private sector, through the SMEs, is making the greatest contribution to the NAMA, and therefore the requested implementation support could be able to leverage a major volume of private sector capital.

In summary, the NAMA presented in this Concept Design Document is one that has many solid reasons to be deemed worthwhile by an international donor to be invested in.

The following section describes the approach that is recommended to seek support from the international donor community to complete the NAMA's Detailed Design, and thus position it to be able to mobilize funds for its roll out.

3.1 Official request for preparation support: UNFCCC template to seek support for preparation (NAMA Detailed Design)

The current Concept Design sets the stage for the NAMA promoters to request the funding needed to complete the detailed design, and highlight its attributes as an initiative that is clearly geared towards implementation.

However, such a request should also be aligned and filed according to the proposed standards of the international community. This would make the request for funding easily comparable and would facilitate the matching with potential donors.

The Design Concept Document will be strengthened if it is accompanied by the UNFCCC template to seek support for preparation (i.e., support to complete its Detailed Design phase). Please refer to relevant form attached to this report.

Additionally, the request for support should be submitted to the UNFCCC NAMA Registry once this Concept Note has been populated with the information that is pending and it's ready to be circulated to a wider audience.

3.2 Official request for implementation support: UNFCCC template to seek support for implementation (NAMA roll-out/NAMA Implementation)

Similarly, a UNFCCC template is available to seek support for implementation. This template should be submitted to the UNFCCC only once the Detailed Design stage has been completed. Its purpose is to provide to the donor community the most precise financial and technical information on the amount and type of support that will be required to undertake the NAMA's implementation, as well as the NAMA's ER target, cost-effectiveness co-benefits and timeline for implementation. The corresponding template is attached to this report for information purposes.

3.3 International Strategy to request additional support

The first step will involve obtaining the necessary endorsement of the Concept Design document presented in Section 2. This will include ensuring that the statements concerning the Government's contribution to date (and any additional funding committed, earmarked or planned going forward) are confirmed.

Secondly, the Mexican Government should submit the request for support to the UNFCCC Registry in the provided template, to ensure that this is treated as an official request.

Once these official steps are taken, in addition to this a specific effort should be made to have a credible case for financing, and to reach out specifically to the most relevant NAMA donors. It is therefore very important that SENER, in conjunction with FIDE and other key stakeholders, be able to set targets for the NAMA and from there on, quantify the resources needed to achieve those targets and the split between the funds that would be provided by the Mexican Government and the international donor(s).

3.3.1. Support to complete the NAMA Detailed Design

While most of the design work has been completed, gaps still remain in the design's budgeting and financial elements that ought to be closed. The funding proposal and business case mentioned above should also bring to the picture considerations of potential financing instruments that may be suited to bridge the financing gap.⁹ The support needed to close these design gaps would be provided by GIZ.

The following Table summarizes the main financing packages required to fill the remaining gaps to complete the Detailed Design

Table 11. Main financing packages

CODE	NAMA Detailed Design Gap: NAMA Packages	Potential Donor
TA	Technical Assistance to complete Detailed Design	GIZ (contemplated in the 2013 Budget)
EEDP	Energy Efficiency Demonstration Projects (case studies and long term test)	GIZ (contemplated in the 2013 Budget)
CB	Capacity Building to complete Detailed Design	GIZ (contemplated in the 2013 Budget)
IT1	IT Tool Development to complete Detailed Design	GIZ

Source: South Pole

3.3.2. Strategy to request support to complete the NAMA Implementation

Beyond the global funds and the multilateral and bilateral agencies described above, it has to be noted that Germany and the UK have been leading the donor's efforts in the area of NAMA development. Both countries, through their respective governmental agencies (BMU and DECC) presented their **NAMA Facility**¹⁰ in December 2012.

The NAMA Facility is currently the only source of funds for implementation, and was provided with 30 mEUR of seed funding from DECC and another 40 from the BMU. Its scope is "to support developing countries that show leadership in tackling climate change and want to implement transformational country-led NAMAs within the existing global mitigation architecture in the short term".¹¹

The focus of this Facility is on **financing the implementation** of NAMAs already at an advanced design stage. The first NAMA that the Facility is already financing is the Housing NAMA whose conceptual design was also supported by GIZ in Mexico. Some of the **eligibility criteria**¹² for the

⁹ While this document proposes a tentative budget to operate the underlying EE programme, a specific analysis will have to be done upon completion of the Detailed Design to refine the estimated funds that will be required for the implementation

¹¹ <https://www.gov.uk/government/publications/information-about-the-nationally-appropriate-mitigation-actions-nama-facility>

¹² See NAMA Facility's complete information document at: http://www.international-climate-initiative.com/fileadmin/Dokumente/nama_facility_information.pdf

selection of NAMA candidates to be financed refer to some of the basic elements mentioned above, such as:

1. The request for support (called NAMA Support Project in the jargon of the NAMA Facility) has been submitted directly by a National Government, or by an eligible submitting entity (the eligibility criteria for a Delivery Organization other than national governments still remain to be defined, but an agency such as GIZ should be able to meet them);
2. If submitted by a Delivery Organization, the NAMA Support Project must be endorsed by the National Government;
3. If submitted by a National Government, the NAMA proposal has been prepared in coordination with a Delivery Organization;
4. The NAMA Support Project (SP) is requesting funds for implementation, and will be able to directly mobilize capital investments;
5. Timeline: the NAMA SP foresees to start implementation within 3-12 months and finalize within 5 years (the international support is expected to phase out in the mid-term);
6. NAMA implementation funds qualify as overseas development assistance (ODA) finance;
7. The required support will be in the magnitude of 5-15 mEUR (even if this value is indicative and could be higher for big countries, and as long as it is properly justified in the proposal);
8. The NAMA SP includes a feasibility assessment and a draft implementation plan;
9. The SP includes a conceptualization of the phasing-out of the international support: an end of it is foreseeable and a concept exists to address future support needs.

On top of the Eligibility Criteria, there are also additional criteria for evaluating the ambition of the NAMA Project Outline that is requesting the Support Project, namely the following:

1. Potential for transformational change (aligned to policy framework or sectoral programmes, replicability, scalability, sustainability, etc.)
2. Co-benefit Potential
3. Financial Leverage (amount of domestic commitment, private sector contributions, etc.)
4. GHG Mitigation Potential

Given the particularities of this NAMA, the detailed design should be completed with a view to tapping into this source of implementation funding.

4 Recommendations

This NAMA is at a very advanced stage of design, as this Concept Note shows. It is managed by competent, experienced and reputed energy efficiency programme operators; it receives a considerable amount of support from the Mexican Government; and it will not require much additional effort to be brought to a completed Detailed Design stage.

Therefore, the Cross Sectoral Electrical Energy Efficiency NAMA is very well positioned to mobilize international donor support for its implementation. However, as discussed in the previous section, it has first to close the few remaining gaps that hinder the completion of its Detailed Design (and this should be done ideally within the next 12 months). Only once this phase has been completed, should the NAMA be put forward to international donors for implementation support.

Key recommendations to close these remaining gaps include the following:

- a. **Define the NAMA's Target:** in absolute terms (total tons of CO_{2eq} to be reduced); The total emissions reductions that the NAMA can achieve will depend also on the permanence of the measure (i.e., for any given energy efficiency measure there will be an estimated annual GHG emissions reductions – for how long does the NAMA manager assume such levels of emissions reductions will be achieved and what previsions are put in place to make sure that they are, are questions that need to be addressed).
- b. **Determine the domestic support** provided to date and determine the expected cost of implementing a full roll-out of the Programme (based on the overall NAMA target and the estimations of the costs incurred so far). Provide an estimate or indicative figure for the amount that the Mexican Government would be willing to commit toward the NAMA's Implementation. The results from the initial NAMA implementation activities already provide valuable information that can be used to determine the extent to which the Mexican authorities are willing to cofund the initiative and consequently the amounts of funds that would be requested from the international donor community. Being able to put forward such information at this stage could entice the donor community to provide the funds needed to complete the detailed design, and thus, in due course place the NAMA in a position to seek funds for its full scale implementation.
- c. **The MRV system needs to be tested out.** Being able to quantify the impact of the measures implemented in GHG terms is paramount to any NAMA that seeks international donor support. Moreover, the MRV design has also taken into account the need to provide the NAMA operating manager with key performance indicators that will assist management in achieving the targets it sets out to achieve. This reduces the risk of NAMA underperformance (to both NAMA operators and NAMA supporters).
- d. **A well grounded business plan has to be incorporated into the Concept Design.** Making a credible case to request international donor support will require presenting a solid business plan to the potential donor. This involves setting GHG reductions targets, quantifying the resources needed to achieve these targets, and stating the

funding that will be required. For example, additional funding could be requested to increase the level of uptake by further improving the offer made to the target audience, relaxing eligibility criteria to join the NAMA (e.g. by lowering the capacity payment threshold below which an SME can join) or increasing the pace at which the NAMA is rolled out. While this paper has attempted to develop some of the information mentioned above, a more thorough effort beyond the scope of this exercise is still required to strengthen the financial considerations behind the deployment of the EE programme and the completion of the Detailed Design.

- e. **The Concept Design and business case mentioned above should also be complemented by UNFCCC's template** to submit a request for support to complete the preparation activities (i.e., to complete the Detailed Design, including piloting activities). The template should be submitted to the UNFCCC, ideally by SENER, to make this request official. This will not only ensure that this NAMA is aligned with the international procedures, but also will facilitate the task of requesting support, as this standardized template will make it easier for potential NAMA donors to compare it with the other requests for support that have been submitted to the NAMA Registry at the UNFCCC. Additionally, the Detailed Design stage should also try to comply with the NAMA Facility's eligibility and ambition criteria, so a solid NAMA Support Project that complies with all their requirements can be submitted as soon as that Phase is completed.

ANNEXE 1. Energy savings estimation basis

Basis for energy savings estimate

The expected energy savings are based on FIDE's extensive experience in running electrical equipment substitution schemes since 1990. By standardizing equipment parameters such as size (max. 10% increase on previous inefficient equipment), age (min. 10 years), location and use patterns, FIDE has established savings ranges that broadly describe the energy consumption of new and used equipment. To illustrate, data used to determine the energy savings that are to be expected from installing high efficiency air conditioners and commercial refrigeration are given below.

Air conditioning

The energy savings to be expected when replacing an aged and inefficient air conditioning unit with a new, more efficient mini- or multisplit are shown in Table A1.1 below, for a range of cooling capacities up to 5 tons of refrigeration (TR).

Table A1.1: Standardised Energy Savings resulting from the installation of NAMA approved high energy efficiency air conditioners for different AC cooling capacities

Tons of Refrigeration	Energy Savings (KWh/month)
1	112
1.5	197
2	299
3	631
4	1015
5	1015

Source: FIDE

The above energy savings values are based on the following studies:

- *Evaluación del ahorro de energía por sustitución de aires acondicionados en el sector doméstico en la ciudad de Mérida, Yuc, IIE 2001.*
- *Evaluación del potencial de ahorro de energía eléctrica por el reemplazo de equipos de aire acondicionado y aplicación de aislamiento térmico en el sector doméstico, FIDE 2003*

Commercial refrigeration

Energy savings resulting from the replacement of aged, inefficient commercial coolers and freezers by more efficient equivalents are derived by comparing the specific energy consumption specific in the NOM-022-ENER/SCFI/ECOL-2000 Norm with the FIDE certified equivalents promoted under the NAMA, for various equipment designs and cooling space volumes in liters. Table A1.2 provides an example of the type of data that is used to determine the energy saved,

in this case for a Vertical Forced Air Circulation type cooler. Similar tables are available for a number of additional cooler and freezer types over a range of sizes that are used in the Mexican market.

Table A1.2: Energy Savings resulting from replacing an aged Vertical Forced Air Circulation type cooler with a FIDE certified and NAMA approved higher efficient equivalent

Capacity Range (L)	Energy Savings (kWh/L/month)
10-50	0.0701
51-99	0.3572
100-150	0.4772
151-300	0.5522
301-450	0.4009
451-850	0.2710
851-1200	0.2586

Source: FIDE

ANNEXE 2. Samples of Forms to be completed by participants wishing to join the NAMA

Figure A2.1: Loan Application Form

Anexo 6

SOLICITUD DE CRÉDITO			NO. SOLICITUD : PAEEENIDGSI00044
LUGAR Y FECHA: ZARZAMORA, JALISCO, 21 DE OCTUBRE DE 2011.			
DONTO A PRIMAR: \$400,000	PLAZO: 24 MESES	GENERO: MACHO	
DATOS DE LA EMPRESA PARTICIPANTE			
NOMBRE RAZÓN SOCIAL: JUAN INGO FRUEZA		SEXO: HOMBRE	
DOMICILIO FISCAL: INSURGENTES SUR 1000, INSURGENTES, TLAJAHAN, DISTRITO FEDERAL C.P. 01240			
CURP: NOJEDH81	RFC: NOJEDH81	TIPO DE IDENTIFICACIÓN: IMSS	
TIPO PROPIEDAD: PROPIA	RIFC: 201001000000000000	TIPO DE IDENTIFICACIÓN: IMSS	
ESTADO CIVIL:	ENCARGO DE ESTAR CASADO (REGISTRO MATRIMONIAL)	TELÉFONO (CLAVE LADA): 6666666666	
SOLTERO	OTRO		
DOMICILIO DEL NEGOCIO: INSURGENTES SUR 1000, INSURGENTES, TLAJAHAN, DISTRITO FEDERAL C.P. 01240		TELÉFONO (CLAVE LADA): 6666666666	
TIPO DE PROPIEDAD: PROPIA			
• PAGO MENSUAL DE VENTA:	• TOTAL GASTOS MENSUALES:	INGRESO NETO MENSUAL (%)	
\$1000000	\$2000000	\$3000000	
DATOS DEL COACREDITARIO (En caso de Persona Física casada por bienes mancomunados)			
NOMBRE, PREDULDO PATERNO, APELLIDO MATERNO:			
DOMICILIO PARTICULAR: ... C.P.			
CURP:	TELÉFONO (CLAVE LADA):		
DATOS DEL OBLIGADO SOLIDARIO			
NOMBRE RAZÓN SOCIAL: OBLIGADO SOLIDARIO DE JUAN		SEXO: HOMBRE	
DOMICILIO OBLIGADO SOLIDARIO: IMPERIO 94, CENTRO, TLAJAHAN, DISTRITO FEDERAL C.P. 01240			
CURP: S04060000000	TELÉFONO (CLAVE LADA): 6666666666		
• PAGO MENSUAL DE VENTA: \$400,000.00			
"Dejo constar de decir la verdad, certifico que la información indicada en este documento es verídica. • Declaro de conformidad con el contenido de este documento"			
JUAN INGO FRUEZA		DEL GACO SOLIDARIO DE JUAN	
• Dejo constar de decir la verdad, certifico que la información indicada en este documento es verídica.			

Figure A2.2: Loan Contract

Anexo 9

CONTRATO DE CRÉDITO – PERSONA FÍSICA / MORAL

No. de Solicitud:

CAT ^c Costo Anual Total	TASA DE INTERÉS ANUAL	MONTO DEL CRÉDITO	MONTO TOTAL A PAGAR	COMISIÓNES
				Montos y Cláusulas
Mensual 17.51 % ó Bimestral 17.39 % del Capital Financiado	Interés Ordinaria: _____ % fija Interés Moratoria: TIE 28 x 2	\$ _____ Mxp	\$ _____ Mxp	Par liquidación total anticipada: N/A Par liquidación parcial anticipada: N/A Gastos de Cobranza moratoria: \$200.00 Mxp por evento
Metodología de cálculo de interés: Los intereses se calcularán cada periodo sobre el saldo insólito decreciente del monto del préstamo bajo la fórmula comercial: (Saldo + Iosa después de IVA * días transcurridos)/360				
Plazo del crédito: 4 años Sus Pagos serán como siguen: Mensuales / Bimestrales				
<u>Número</u>	<u>Monto</u>	<u>Cuándo se realizan los pagos</u>		
24 / 48 pagos	23 / 47 de \$ _____ Mxp y 1 de \$ _____ Mxp	Según Tabla de Amortización ANEXO B		
TASA VARIABLE (para moratorias):				
Tasa de referencia		Descripción		
Tasa de referencia: TIE 28, puede consultarse en: www.banxico.org.mx		Tasa de referencia de hoy:%		
Autorización: Los datos personales pueden utilizarse para mercadeo: ○ SI ○ NO				
GARANTÍA: Para garantizar el pago de este crédito, el Cliente deja en garantía el bien que se describe a continuación.				
<u>Bien</u>	<u>Descripción</u>	<u>Referencias</u>		
Equipo(s) objeto de este contrato	Ánexo A	Ánexo A		
Dudas, aclaraciones y reclamaciones: El procedimiento de reclamaciones prevista en el artículo 23 de la ley para la Transparencia y Ordenamiento de los Servicios Financieros se describe en la CLAUSULA NOVENA. Para seguir dicho procedimiento, la reclamación respectiva deberá dirigirse a la Unidad Especializada de Atención a Usuarios localizada en: Domicilio: Mariano Escobedo No. 420, Col. Anzures, CP. 11590, México D.F. Teléfono: (55) 11010520, correo electrónico: paseem@cfie.gob.mx Página de Internet: www.fide.org.mx CONDUSEF: Teléfono: 01 800 999 8080. Página de Internet: www.condusef.gob.mx				
ESTADO DE CUENTA				
Periodicidad: Indefinida				
<input type="checkbox"/> Entregada en domicilio <input type="checkbox"/> Consulta vía Internet <input type="checkbox"/> Consulta en oficinas regionales de FIDE				
Datos de inscripción en el Registro de Contratos de Adhesión: 0284-000-008768/01-13790-0911				
<small>^cCAT, Costo Anual Total de créditos denominated en moneda nacional basa 1ja, es a fines informativos y de comunicación exclusivamente. Este CAT sólo es comparable con el CAT de otros créditos denominados en moneda nacional basa 1ja.</small>				

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