



SENER
SECRETARÍA DE ENERGÍA

“Piloting Energy Efficiency and Behaviour Policies in México”

Paris, France. March 2015

Mexico's National Development Plan 2007-2012

“The advocacy efforts of more energy-efficient appliances and lighting technologies should be increased.”

National Sustainable Energy Use Program 2008-2012 , 2014-2018

Considered as one of its goals, to promote energy efficiency in the residential sector mainly lighting and appliances.

National Energy Sector Program 2013-2018

Objective 5. To increase, the use of renewable and clean energy, and promote energy efficiency along with social and environmental responsibility

Lighting

Appliances

- ✓ **NOM-028-ENER-2010.** (The **Official Mexican Standard**) Energy efficiency lamps for general use. Incandescent Bulb (IB) being phased out and could not be merchandised.

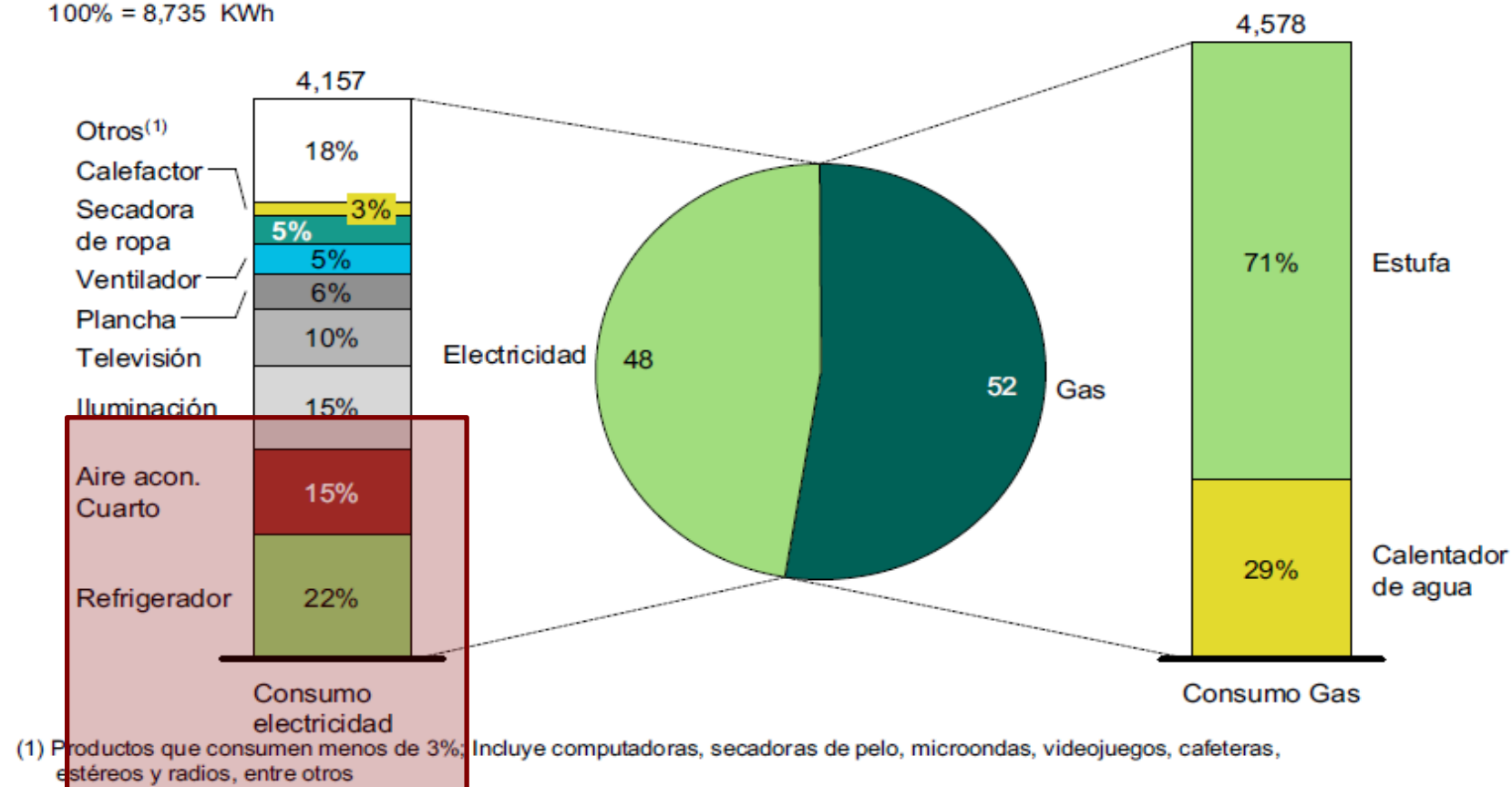
- ✓ **January 7th, 2009.** The **National Agreement to Support Households Economies and Employment** was signed to implement the Energy Efficiency Replacement Appliance Program.

Background

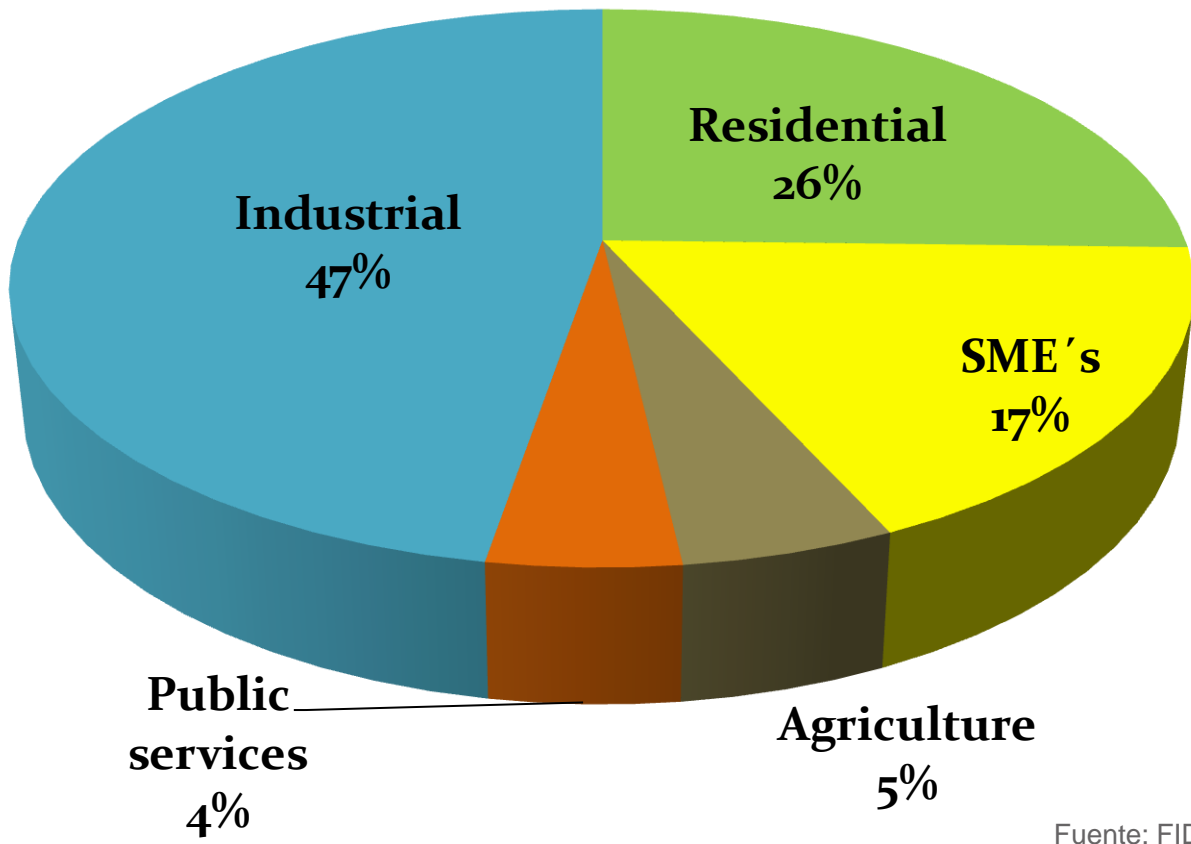
The National Commission for the Efficient Use of Energy, CONUEE, identified in 2008 that **more than 50% of residential electricity consumption in Mexico came from lighting, refrigeration and air conditioning.**

KWh

100% = 8,735 KWh



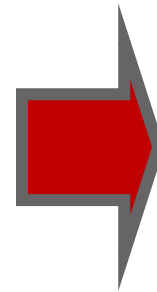
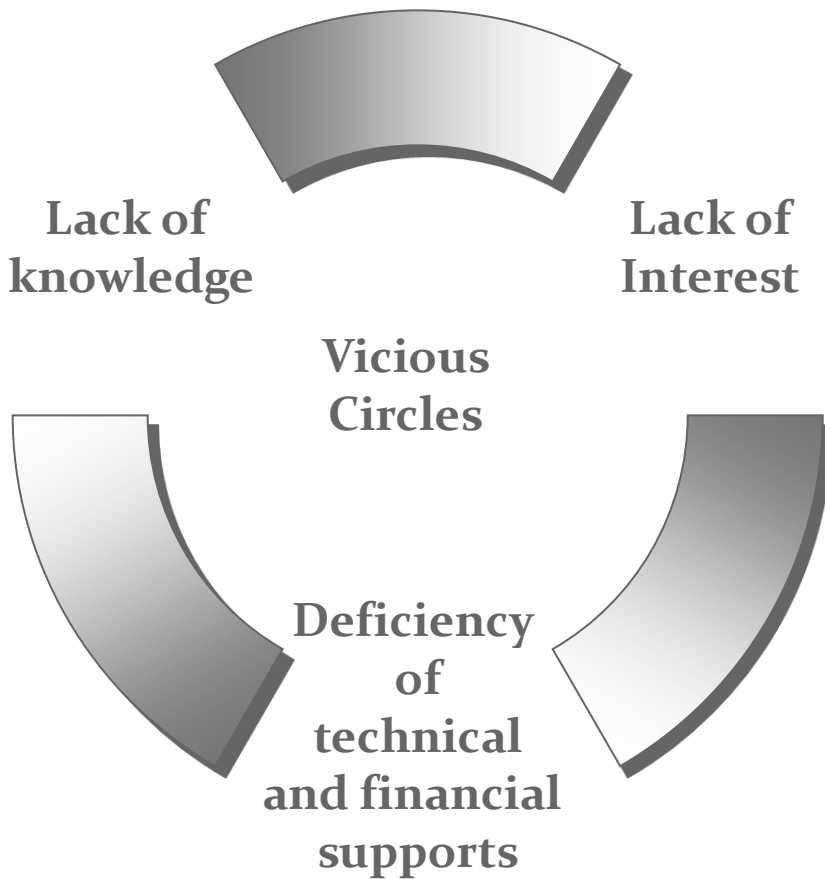
Total electricity consumption in 2013
206,140 GWh



Fuente: FIDE

Main barriers for a change in energy consumption behavior

in Virtuous Circles



- Energy efficiency culture
- Technical support
- Financial mechanisms
- Regulatory framework
- Standards
- Incentives
- Programs



Background

Energy Efficiency Programs

(ended-programs)

Sustainable Lighting Program (2009 - 2012)

Support



Replacement of incandescent light bulbs with more efficient, environmentally-friendly ones – compact fluorescent lamps, better known as energy-saving light bulbs.

45.8 million of CFLs

Energy savings: 3,087.6 GWh/year

Residential Appliances Replacement Program (2011-2012)

Loans



Replacement of a working refrigerator or air conditioning with at least 10 years old with a new appliance efficient appliance of the same type.

Replacement : 2,648,730 appliances

From which

2,315,085 were Refrigerators

Institutions and organisations participating in the National EE Programs



Ruling Federal Institution



Implementation and administration of the direct cash payments



Financing National Development Bank.



Operating Institution



Operating Institution

Retailer stores

Promote energy efficiency appliances, support in the delivery and installation of the new products.

Collection and Distruction Facilities C&DF

Companies in charge of dismantling and destroying old appliances collected.

National Energy Efficiency Programs 2012-2018

Current programs

- ✓ **Incandescent Light Bulb Replacement National Program - Rural Zones - operated by FIDE-**
- ✓ **National Energy Efficiency Program for Small and Medium Enterprises (SME's) - operated by FIDE-**

New Programs

- ✓ **Municipal Energy Efficiency Project**
32 municipalities to be operated by FIDE

All Programs aimed to motivate the current market to accelerate the penetration of energy efficient technologies and to foster an energy efficiency culture

Incandescent Light Bulb Replacement Pilot Program

In towns up to 100,000 inhabitants
(Michoacán, Chihuahua, Sonora and Guerrero)



BENEFITS

- 25,034 families
- **CFLs:** 4 CFLs per family
- **Total CFLs:** 117,670
- **Programs launched in 2014**
- **Energy Savings:** 6.91GWh/year
- **tCO₂/year:** 3,407



Incandescent Light Bulb Replacement National Program

In towns up to 100,000 inhabitants (Rural Zones)

40,000,000

- Total CFLs: 40,000,000
- Target: 8 million families
- CFL: 5 CFLs per family
- Program launched in 2014



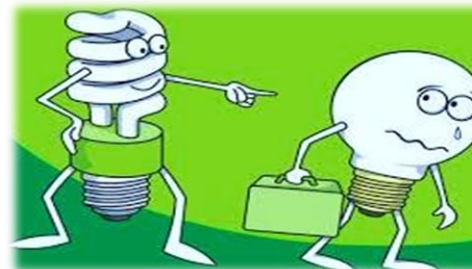
Incandescent Light Bulb Replacement National Program

In towns up to 100,000 inhabitants (Rural Zones)



• SOCIAL AND ECONOMIC IMPACTS:

- ✓ Promotion of energy efficiency and optimal use of energy
- ✓ Create a culture of energy efficiency



• BENEFITS:

- ✓ Energy savings: more than 1,921 GWh/year
- ✓ Household savings: aprox 160 MUSD/year
- ✓ Savings in gov. subsidies: more than 300 MUSD/year

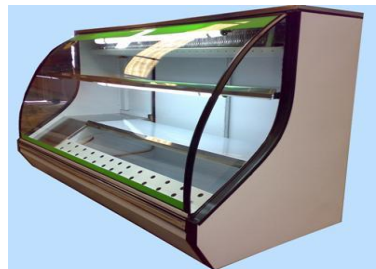


National Energy Efficiency Program for Small and Medium Enterprises (SME's)

Program designed to support the industrial national sector including SMEs (Small and Medium Enterprises) through financing schemes with attractive rates. It considers the replacement of old appliances for efficient ones fulfilling standards established in the PAEEEM (Enterprise's Energy Efficiency Financing Program).

Financing Efficient Technology

- ✓ Air conditioner (1.5 TR)
- ✓ Efficient Lighting
- ✓ LED Lighting
- ✓ Commercial Refrigerators
- ✓ High Efficiency Motors
- ✓ Electrical Power Substation
- ✓ Capacitor Banks



National Energy Efficiency Program for Small and Medium Enterprises (SME's)



Inefficient
refrigerator



Efficient
refrigerator

- SOCIAL AND ECONOMIC IMPACTS:
- SME's : 8,935*
- Financing: 22 MUSD
- Program launched in 2012
- Total of Efficient Appliances replaced: 17,534

- Commercial refrigeration: 11,312
- Air conditioners: 1,689
- Lighting systems: 4,473
- Motors: 1
- Electrical substations: 59

* February 27, 2015

National Energy Efficiency Program for Small and Medium Enterprises (SME's)

• BENEFITS

- ✓ Energy savings: 41.88 GWh/year
5.44MW
- ✓ CO_{2e} avoided emissions: 20,368.49*
- ✓ BOE** : 26,396.8

Grocery “Mi Tiendita”

Initial electric bill :

\$146USD/month

Current electric bill:

\$70USD/month

Savings:

76USD/month



Grocery owner's statement

I like very much the new refrigerator. Although it was a little expensive, the savings allow me to pay the loan.

* emission factor 486.33 ton CO₂ / GWh (National Balance of Energy SENER, 2012)

** Barrels of Oil Equivalent

Municipal Energy Efficiency Project

(PREEM) 32 Cities



1. Aguascalientes
2. Tijuana
3. Los Cabos
4. Campeche
5. Tuxtla Gutiérrez
6. Cd. Juárez
7. Monclova
8. Colima
9. Miguel Hidalgo
10. Durango
11. Ecatepec
12. Acapulco
13. Pachuca
14. Guadalajara
15. Morelia
16. Cuernavaca
17. Tepic
18. Monterrey
19. Oaxaca
20. Querétaro
21. Cozumel
22. San Luis Potosí
23. Culiacán
24. Hermosillo
25. Centro
26. Reynosa
27. Huamantla
28. Veracruz
29. Mérida
30. Fresnillo
- 31. Puebla***
- 32. León***

31 Municipalities,
1 Borough at Federal District

* Pilot projects 2013

Municipal Energy Efficiency Project (PREEM)

The Ministry of Energy considers as a part of his Energy Transition Strategy to establish a public policy project , in three phases:

1. Diagnostics for Energy Efficiency in 32 municipalities of the country (TRACE – ESMAP) (August 2014- April 2015)

2. Policy and institutional strengthening



3. Support the implementation of energy efficiency investments.

The diagnostics for Energy Efficiency began in August 2104 *(supported by The World Bank)*

The Ministry of Energy seeks international cooperation partnerships to promote the efficient use of energy in the cities/municipalities of Mexico, specially in phases 2 and 3.

Diagnostics for Energy Efficiency in 32 municipalities of the country (TRACE – ESMAP).

Evaluating Energy Efficiency Opportunities in 6 Municipal Sectors (through TRACE implementation)

1. Transport

2. Buildings

3. Public Lighting

4. Water & Wastewater

5. Power & Heating

6. Solid Waste



TRANSPORT



BUILDINGS



PUBLIC
LIGHTING



WATER &
WASTEWATER



POWER &
HEATING



SOLID
WASTE

Energy Efficiency Awareness Campaign

2012

“Soap opera with cause”

(Telenovela con causa) supported by Televisa Foundation

Advertisements on energy efficiency awareness for households.

Acted by popular actors of the soap operas.



<https://www.youtube.com/watch?v=byLWR8XGcO0> (use patterns)

<https://www.youtube.com/watch?v=DHUzfEbjMa4> (refrigerator replacement)

https://www.youtube.com/watch?v=BuZBTah_uwg (incandescent bulbs replacement)

<https://www.youtube.com/watch?v=NuqE3M0tXps> (reducing the use of appliances)



2015

Electronic Brochure on EE

12 monthly electronic brochures published at SENER web page. To promote and inform about best practices on EE, programmes of EE implemented by SENER , successful projects of EE, etc.

To be issued in june 2015



Energy Efficiency App for Iphone, Ipad, PC and Smartphones

App for children and App for Adults:

Didactic and interactive software on line for kids (to be installed on primary schools), and another for adults.

Apps to strenghten knowledge on Energy Efficiency, renewable energy, energy savings, energy use impacts, etc. It will be of free access on line at least for a year.

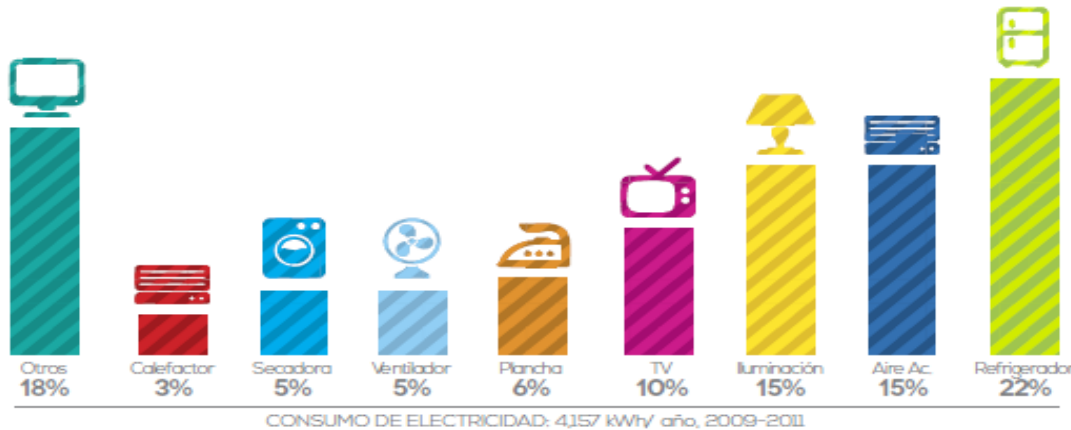
To be issued by june 2015

Energy Efficiency Awareness Campaign

Guide of Good Practices for Saving and Efficient Use of Energy

Provides practical information, simple actions on energy savings and energy efficiency.

- “how to read EE labels”, good practices at home, at the office, on transport, etc.
- What are the benefits of a change in, energy use patterns and their impacts in the environment, their homes, the country, at global level.



The main target of the Guide is to scale up awareness about energy conservation at all levels, within a framework of gender equity.

Issued in June 2014



Thank you!

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