



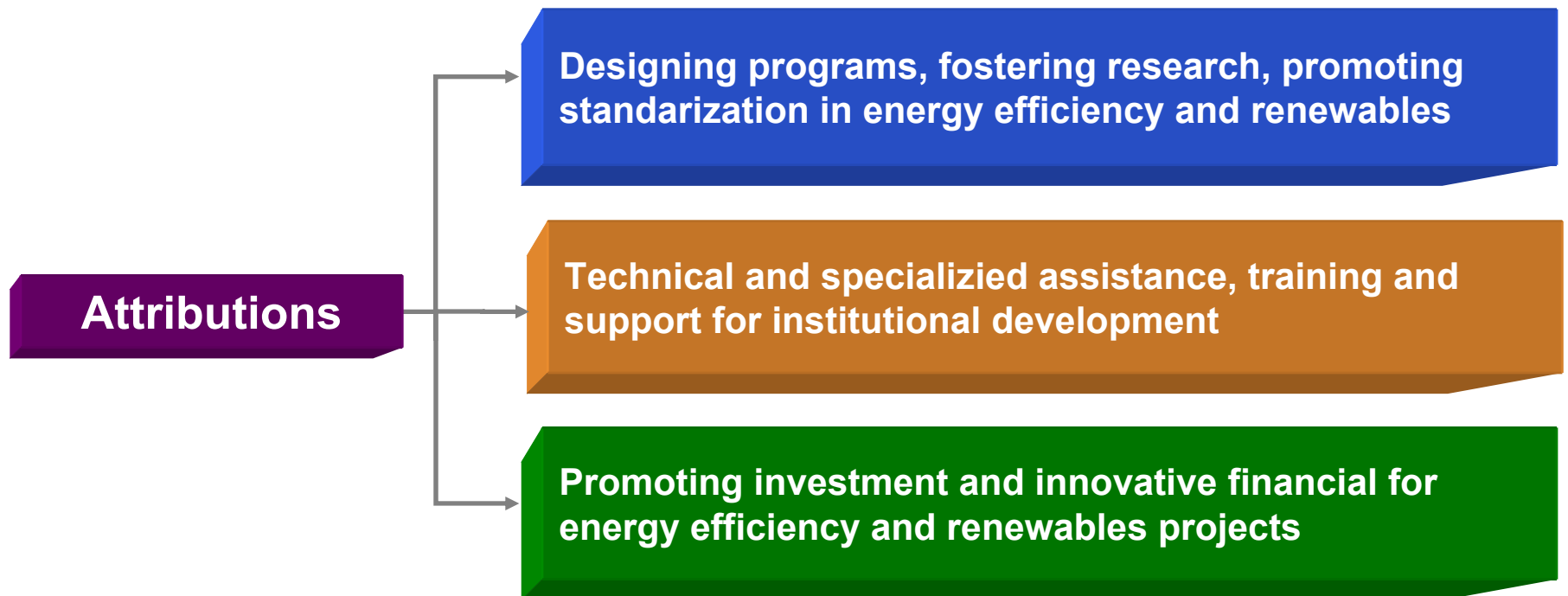
# Renewable Energies: Opportunities for Mexico

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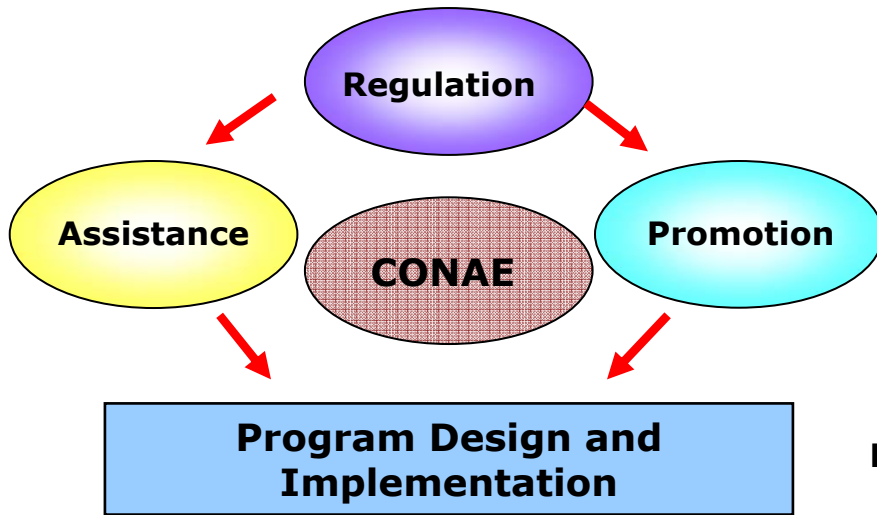
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# What is CONAE?

**Federal Entity under the umbrella of the Ministry of Energy with managerial, financial and technical autonomy**



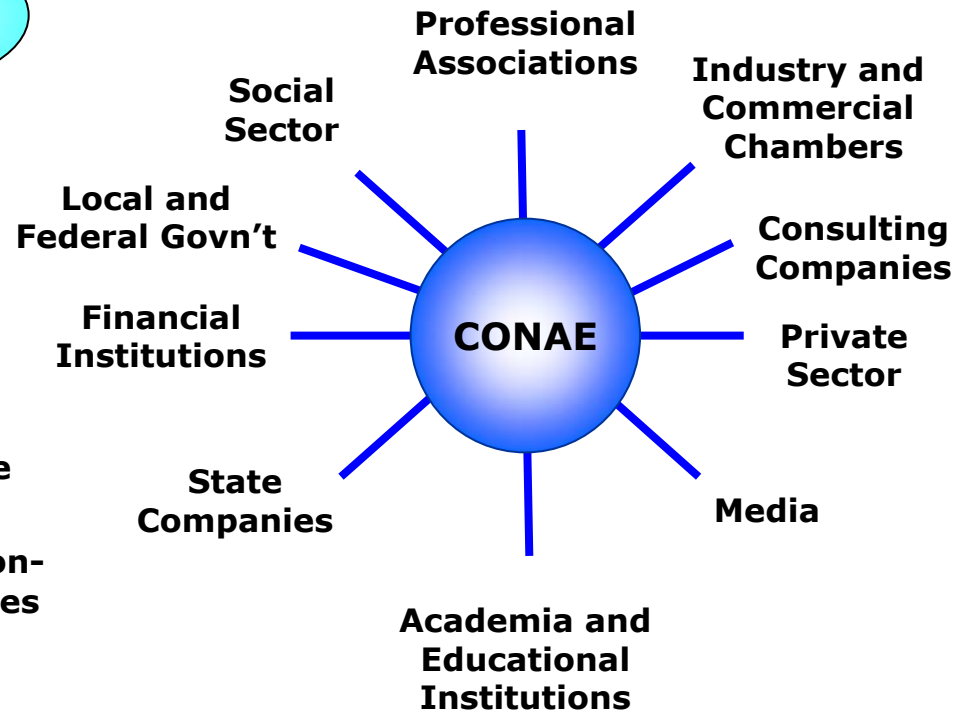
# CONAE's Strategy



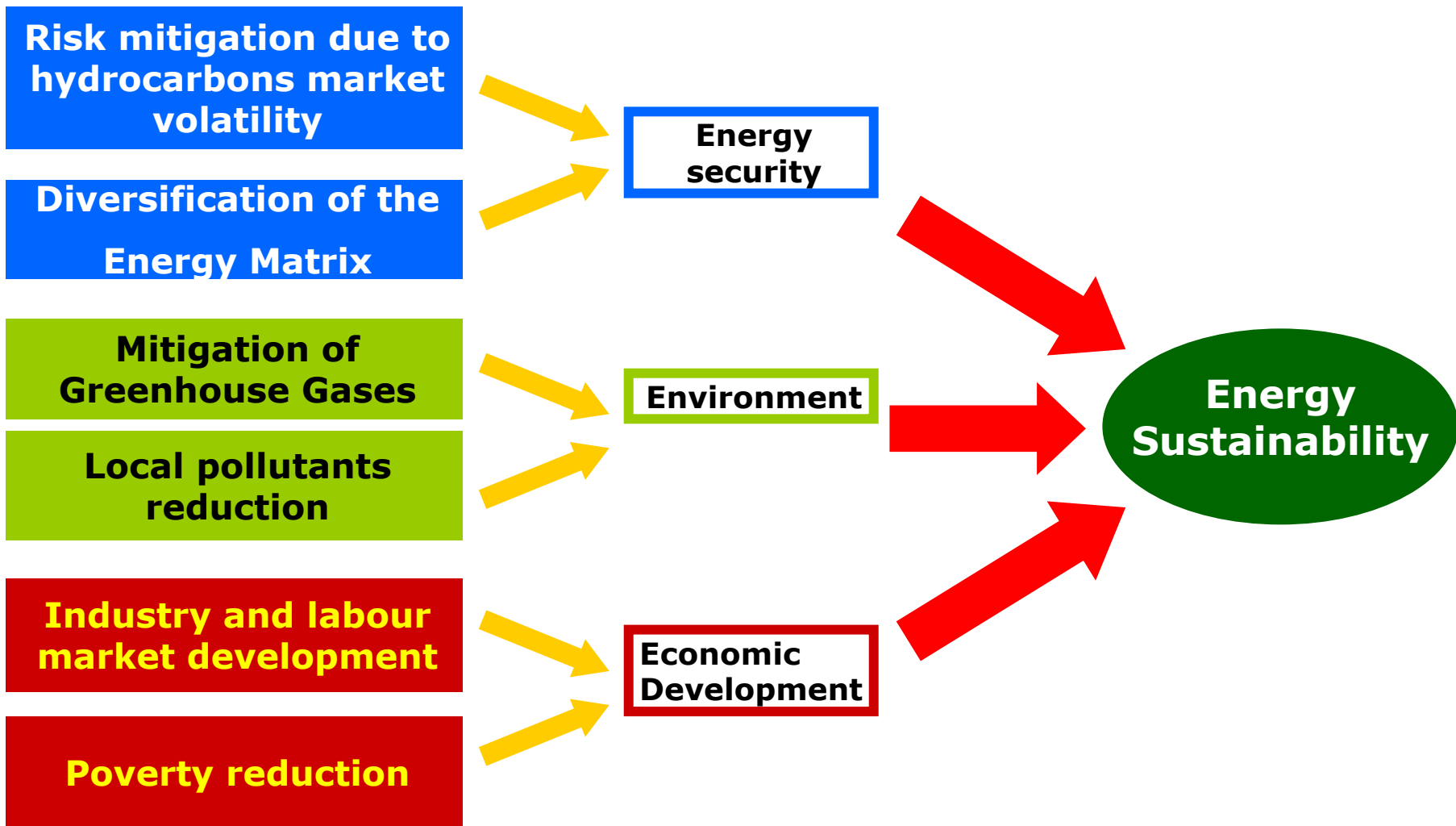
- ✓ Conserving energy resources
- ✓ Diversifying the energy matrix
- ✓ Protecting the environment

- ✓ Benefiting household income
- ✓ Efficient use of renewable and non-renewable energies
- ✓ Increasing private sector competitiveness

## WORKING GROUPS



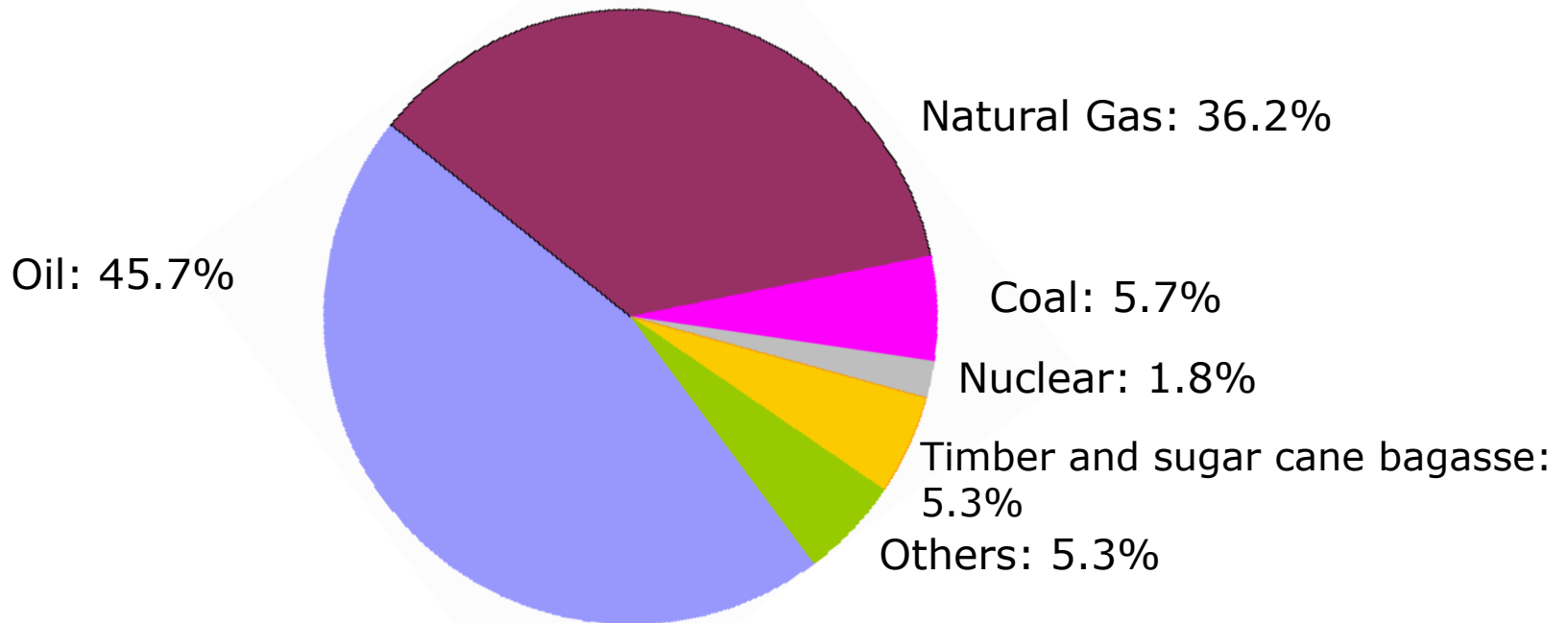
# VISION: Energy Sustainability



# Mexico: Current Situation

**En 2005, renewable energies represented 10.6% of the domestic primary energy supply**

**Total Primary Energy Supply: 6,649 PJ**



# Current Status: Renewable Energy Electricity Generation

## Solar

- **15 MW (8,000 MWh/yr) in installed PV**
- **762,000 m2 installed in solar water heaters in different applications**

## Mini hydro

- **16 MW (67 GWh/yr) installed in three minihydroelectric facilities**
- **3 hybrid facilities in operation (natural gas-mini hydro)**

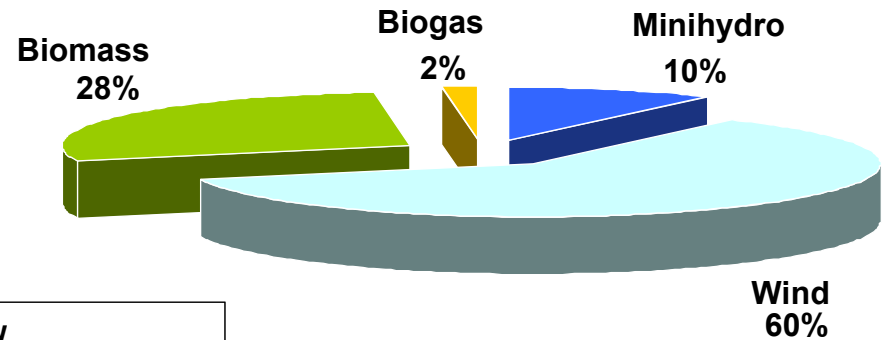
## Biomass

- **313 MW authorized for 2005: 19 MW from biogas, 70 MW from sugar cane bagasse; y 224 MW hibrid (fuel oil- sugar cane bagasse)**

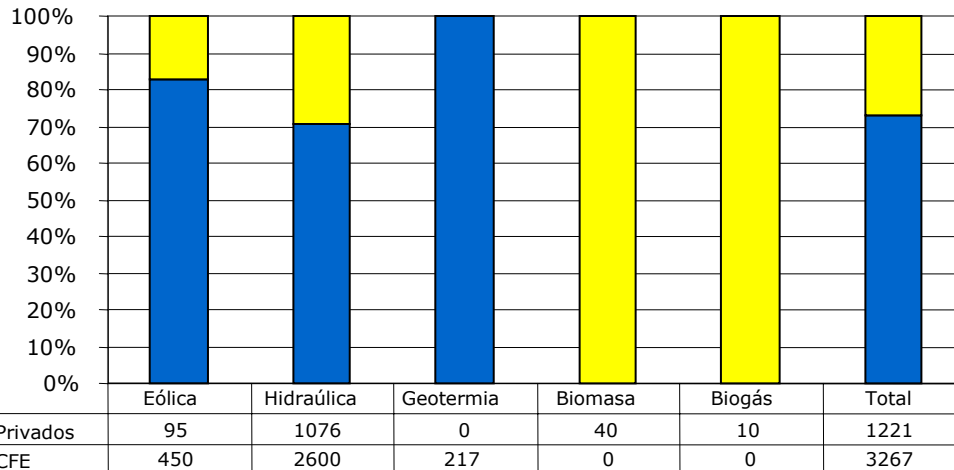
# Current Expansion Plans. Renewable Energy Electricity Generation

**The Energy Regulatory Commission has authorized around 1,900 MW of total capacity in the next few years, 552 MW are already in operation**

**Authorized Capacity Per Technology**



**Next Public and Private Investments in MW**



**In the next ten years around 4,500 MW energy generation from renewables will come into operation**

# Current Regulatory and Legal Framework

**Constitutional and regulatory limitations exist within the private participation in the Energy Sector.**

**– Since 1992 the Public Electricity Service Act allows private generation under two schemes:**

**❑ Self-supply**

**❑ Independent Power Production**

**– Electricity public utilities have a mandate to acquire energy at the lowest available short term economic cost.**

**❑ Under this scheme, electricity generation from renewable sources faces a serious setback due to their initial higher investment's costs.**

**❑ The lack of assessment regarding the social, economical, and environmental benefits derived from the use of renewables, explain why national energy policies are based on fossil fuels.**



# CONAE: Current Policy Instruments

## 1. Energy Efficiency Standards (14 electrical and 4 thermal)

## 2. Strategic Programs

- **Federal Government**

- Energy Saving Initiatives in:

- » Federal Office Buildings
    - » State-owned Companies (PEMEX, CFE y LFC)
    - » Vehicles

- **Local Governments**

- Energy Saving Initiatives in:

- **Buildings**

- » Municipal Services (street lighting, water pumping, etc.)

- **Private Sector**

- Aid in Energy Audits and Capacity building for

- » Small companies
    - » Large Industry (through associations and chambers)

- Capacity Building in an efficient use of fuels for transportation

## 3. Daily Light Saving Time

# Renewables: Current Regulatory and Fiscal Mechanisms

## **Accelerated Depreciation**

Since 2005, the National Income Tax Law establishes a depreciation of a 100% of the investment in a single exercise, for renewable electricity generation equipment and machinery.

## **Interconnection Contract Model for Self Supply from Intermittent Sources of Energy**

A new Contract came into force in 2006, in order to incorporate a methodology to estimate and credit the capacity contribution of these sources of energy to the national electric system.

## **Renewable Energy Outlook. A vision for 2030**

A long term prospective for renewables penetration in the domestic energy matrix.

# Strategic Projects and Programs

The Ministry of Energy through CONAE is promoting different programs and proposals to cover all sectors where renewable energy use makes sense, either alone or in hybrid systems:

## **Electricity**

- 1.- Grid-connected electricity generation**
- 2.- Off grid electricity generation (rural electrification)**

## **Non-electric uses**

- 3.- Thermal energy (e.g. water heating)**
- 4.- Transportation (e.g. biofuels)**

# Strategic Projects and Programs

## **Large Scale Renewable Energy Project**

**US\$ 70 million GEF grant.**

**Its goal is to promote grid connected RE in Mexico. Its first phase focuses in wind energy. It provides, through a green fund, economical resources that will be assigned as performance incentives.**

## **Rural Electrification with Renewables**

**US\$15 million GEF, US\$ 15 million WB loan, Local Government's funds for aprox. US\$60 million. (2007-2011).**

**Within the next 5 years it will promote RE rural electrification projects in the states of Oaxaca, Veracruz, Guerrero and Chiapas, to provide electricity to 50,000 homes located in the poorest municipalities of the country, with more than 60% of indigenous population.**

## **Solar Water Heaters Program**

**Funds from the GEF/PNUD and the German Technical Cooperation Agency (GTZ).**

**Its goal is to designing a national program that fosters and introduces solar water heaters in the residential and commercial sectors.**

# CONAE: Renewables Promotion Policies

## Policy oriented

- Identifying regulatory and legal barriers to propose alternative solutions
- Assistance in energy policy making, taking into account RE sources and the benefits its exploitation provides to the national economy
- Elaborating the National Program for Renewable Energy Promotion (2007-2012)

## Financial Mechanisms

- Developing new finance schemes in coordination with local and international financial institutions.

## Technical Development

- Creating technology scenarios for promoting R&D clean energies in coordination with academia, research centers, CONACYT and private sector

# The need for a turning point in energy policy

A consensus is developing among a number of stakeholders, including Government and Congress:

- Existing projects and the tax incentive are not enough!!!
- The participation of renewable energy sources needs to grow steadily, both in absolute and relative terms
- The Ministry of Energy is taking action to support the development of new legal, regulatory, and financial instruments that are compatible with the current electricity law

# Legal and regulatory framework challenges

The Energy Sector requires a new legal and regulatory framework to promote Renewables and the following actions are in process:

1. Supporting the Congress in passing a new Law for the promotion of RE
2. Developing adequate regulatory instruments to deploy renewables in self-supply scheme
3. Engaging multilateral and bilateral cooperation to develop methodologies and policy instruments to serve the 2 previous actions
4. Supporting the development of CDM projects

# Law Initiative for the use of Renewable Sources of Energy

- A new Law for the use of renewable sources of energy is in discussion at the Senate, it establishes the creation of a Program for the Use of Renewable Energy Sources. An 8% target is set for RE contribution to the total primary energy generation, to be achieved by 2012.
- It proposes the creation of a fund that will foster the use of RE technologies,
- The Law includes a specific Fund that provides incentives to the application of commercial technologies (55%) to support technologies in transition (6%) for electricity generation; rural electrification (10%); biofuels (7%); other non-electrical applications and R&D (7%).



# Final Remarks

- Mexico is promoting renewable energy and energy efficiency as part of a sustainable development strategy with a long-term vision.
- The ongoing process of improving the regulatory and legal framework seeks to promote the development of RE based technologies and ensure that these obtain the corresponding economic retribution.
- The national strategy of RE and EE promotion is based on developing and fostering:
  - ❑ Adequate legal and regulatory frameworks
  - ❑ Stringent energy efficiency standards
  - ❑ Financial and fiscal incentives for project investments
  - ❑ Creation of an institutional framework with local governments, geared towards the facilitation and support of local initiatives
  - ❑ Promoting CDM projects in the energy sector, among others



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