



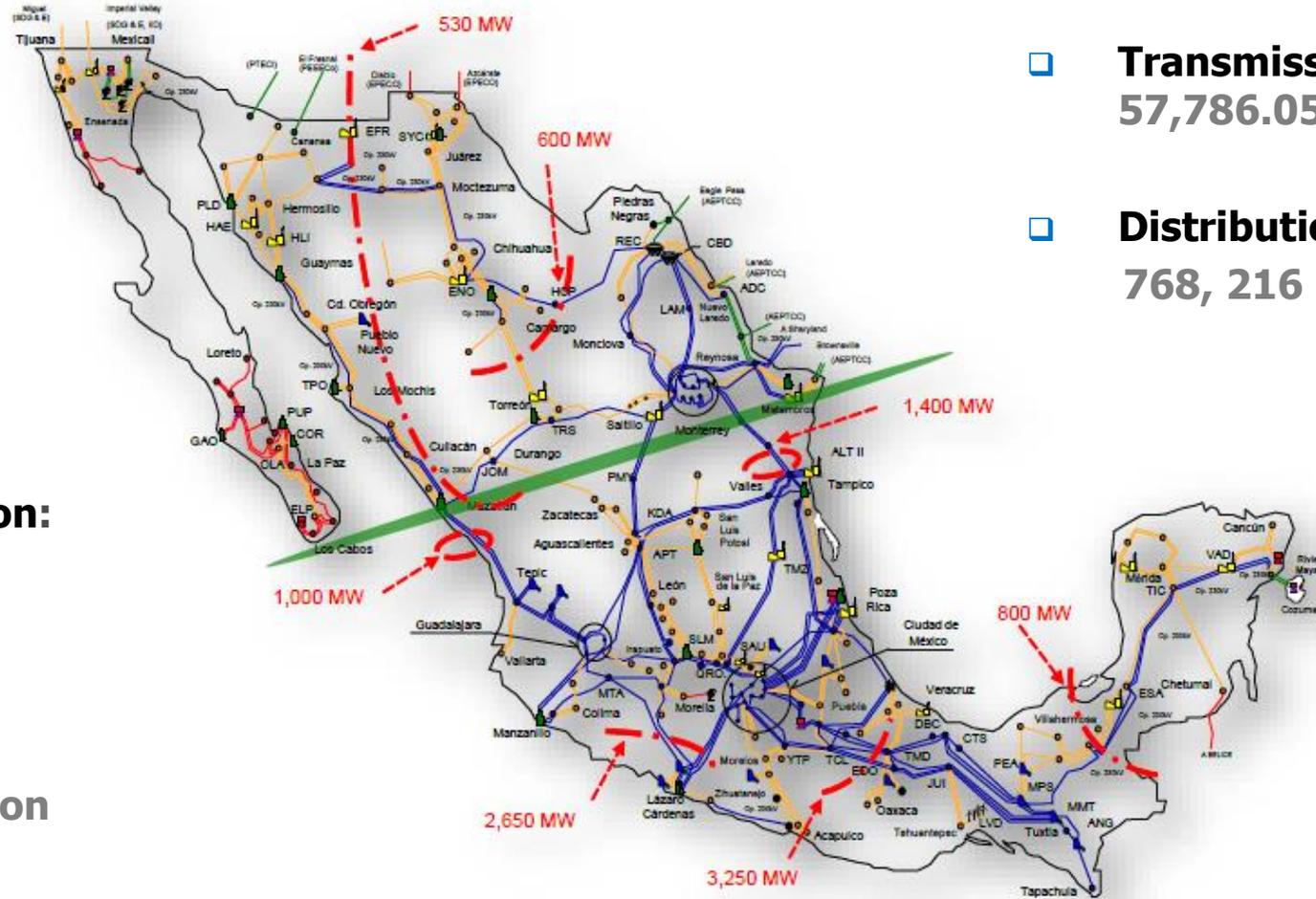
MEXICAN ENERGY REFORM & CLEAN ENERGY CERTIFICATES

2016 UT: ENERGY WEEK



OUR CONTEXT: MEXICAN POWER SYSTEM

- ❑ **Installed Capacity:**
68.418 GW
- ❑ **Electricity Generation:**
313.5 TWh
- ❑ **Peak Demand:**
≈40 GW
- ❑ **Population**
122, 273, 437 million



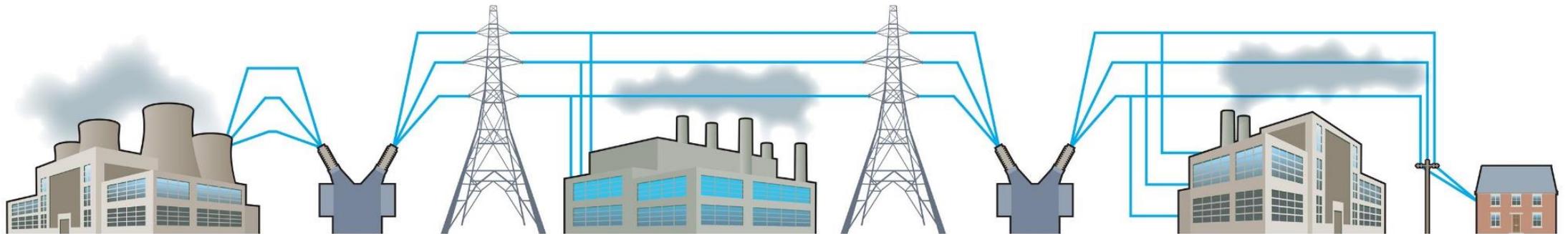
- ❑ **Transmission Lines:**
57,786.050 km
- ❑ **Distribution Lines:**
768, 216 km



FORMER REGULATORY FRAMEWORK: "LEY DEL SERVICIO PÚBLICO DE ENERGÍA ELÉCTRICA"

Article 1.-

It is an exclusive obligation of the Nation, to generate, to conduct, to transform, to distribute and supply electricity that is intended to provide a public service, under the terms of Article 27 of the Constitution. In this matter no concessions will be granted to individuals and the Nation, through the Federal Commission of Electricity (CFE), will take advantage of the natural resources required for these purposes.

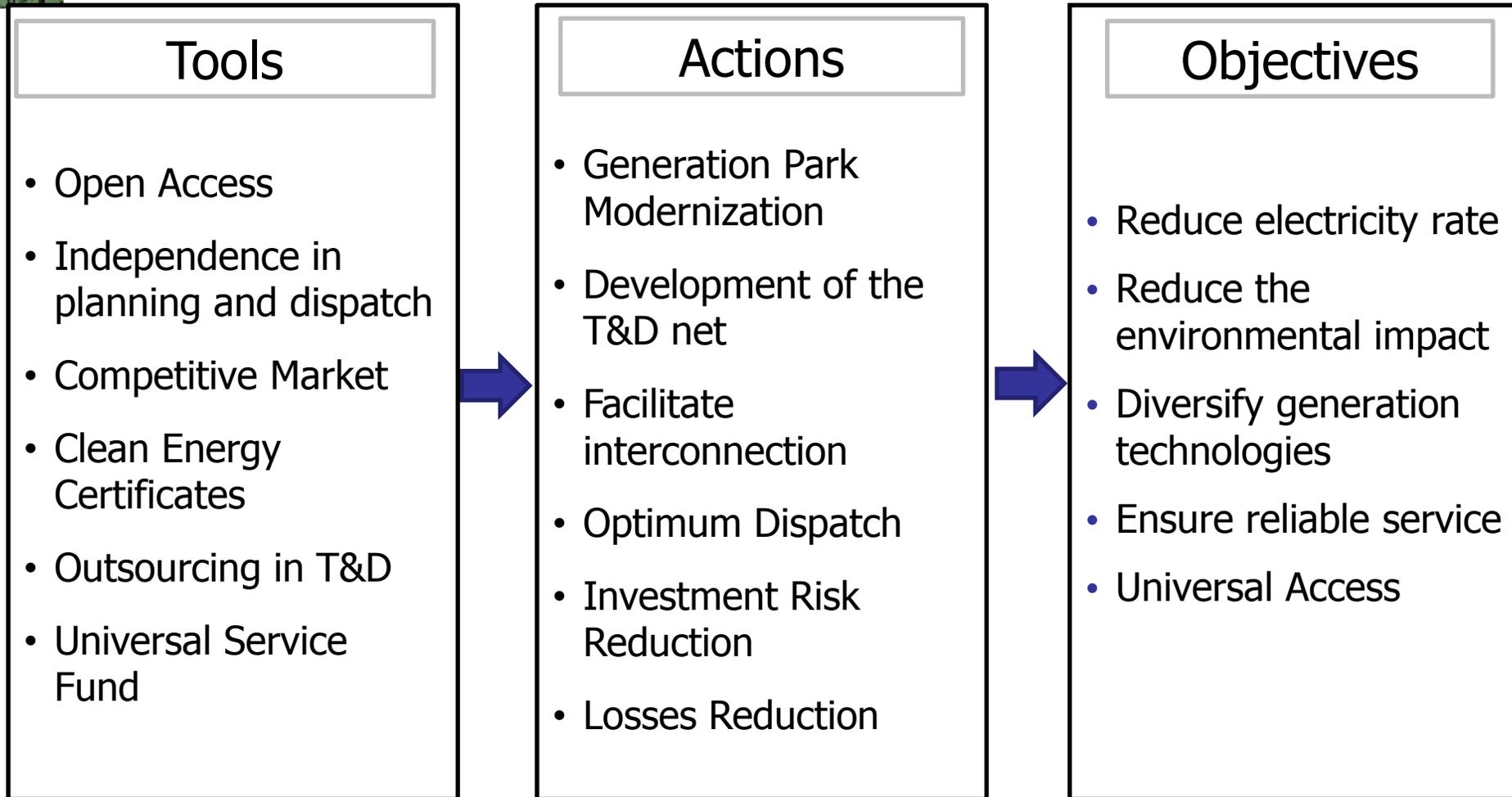


**Generation
(CFE + Privates)**

**Dispatch, Transmission, Distribution and Retail
(CFE)**



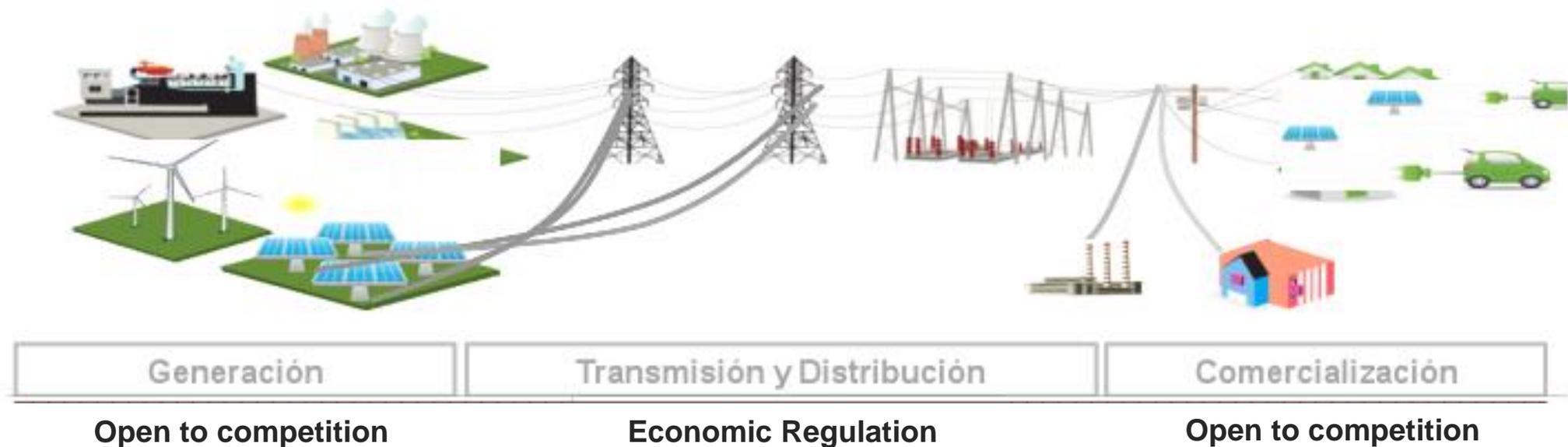
ENERGY REFORM OBJECTIVES



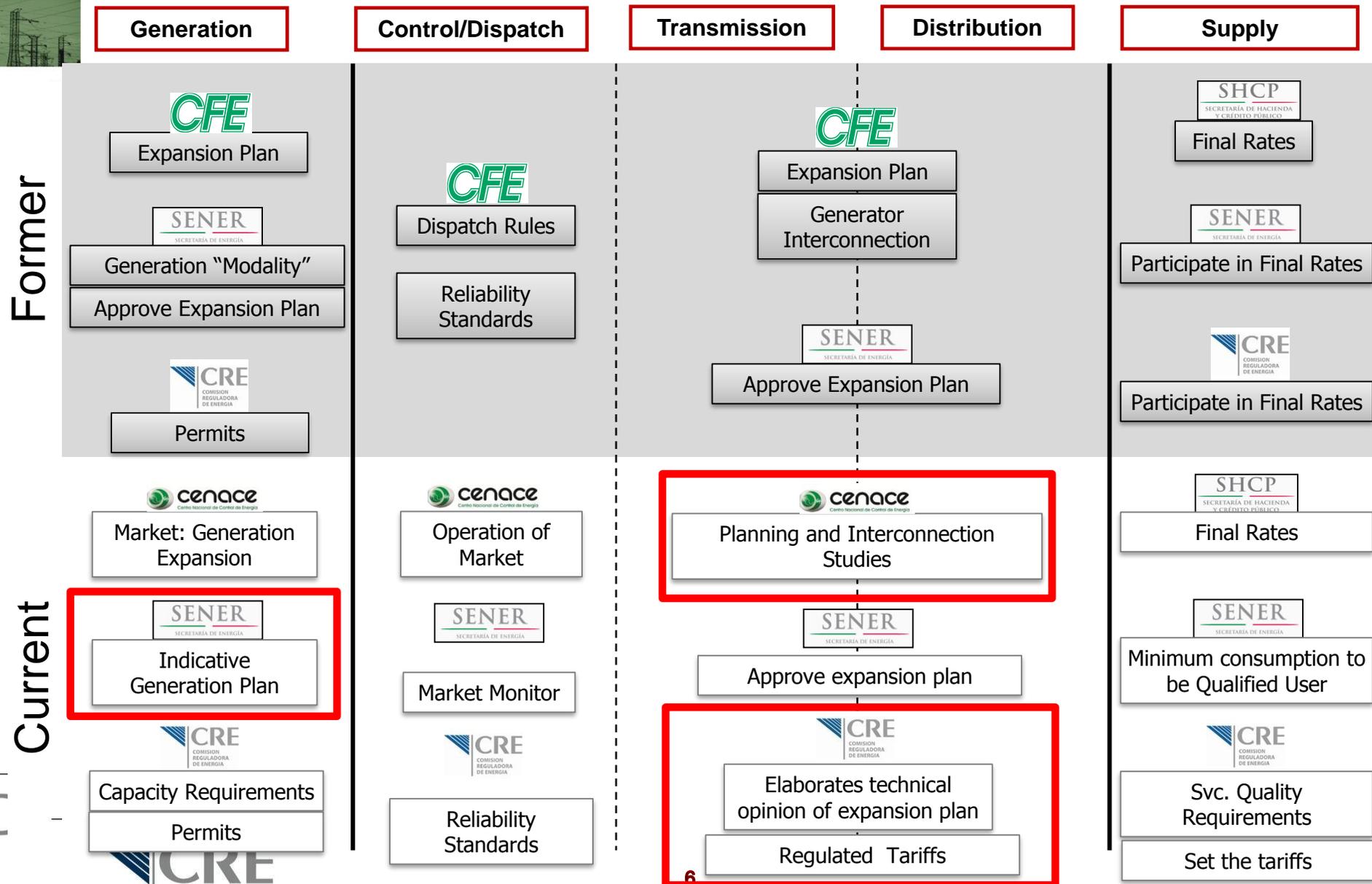


CURRENT REGULATORY FRAMEWORK: ELECTRIC INDUSTRY ACT (EIA)

Recently approved EIA establishes the guidelines under which the development of the Mexican Power Sector should be carried out. Federal Government will have control over strategic activities such as: Planning, operation, control, dispatch, transmission and distribution.



NEW AUTHORITIES FOR SENER, CRE AND CENACE





WHOLESALE ELECTRICITY MARKET: PRODUCTS

Product	WEM	Bilateral
Energy		
Ancillary Services (Operating Reserves, Non-spinning Reserves)	✓	
Power	✓	
Clean Energy Certificates	✓	
Financial Transmission Rights	✓	
Bilateral Contracts - Energy, Ancillary Services - Power - Clean Energy Certificates - Financial Transmission Rights		✓
Auction Contracts - Energy - Power - Clean Energy Certificates	✓	

Market Instruments:

- Energy & Ancillary Services (Day Ahead Market & Real Time Market).
- Power (Annual Power Auction).
- Clean Energy Certificates (Long term Auctions).
- Financial Transmission Rights (Annual Auction).
- Bilateral Contracts (Energy, Ancillary Services, CEL).



INVESTMENT OPPORTUNITIES IN GENERATION

Projects in development: CFE will conclude all of his projects included in the federal budget of 2015, under the procedures prior to the reform.

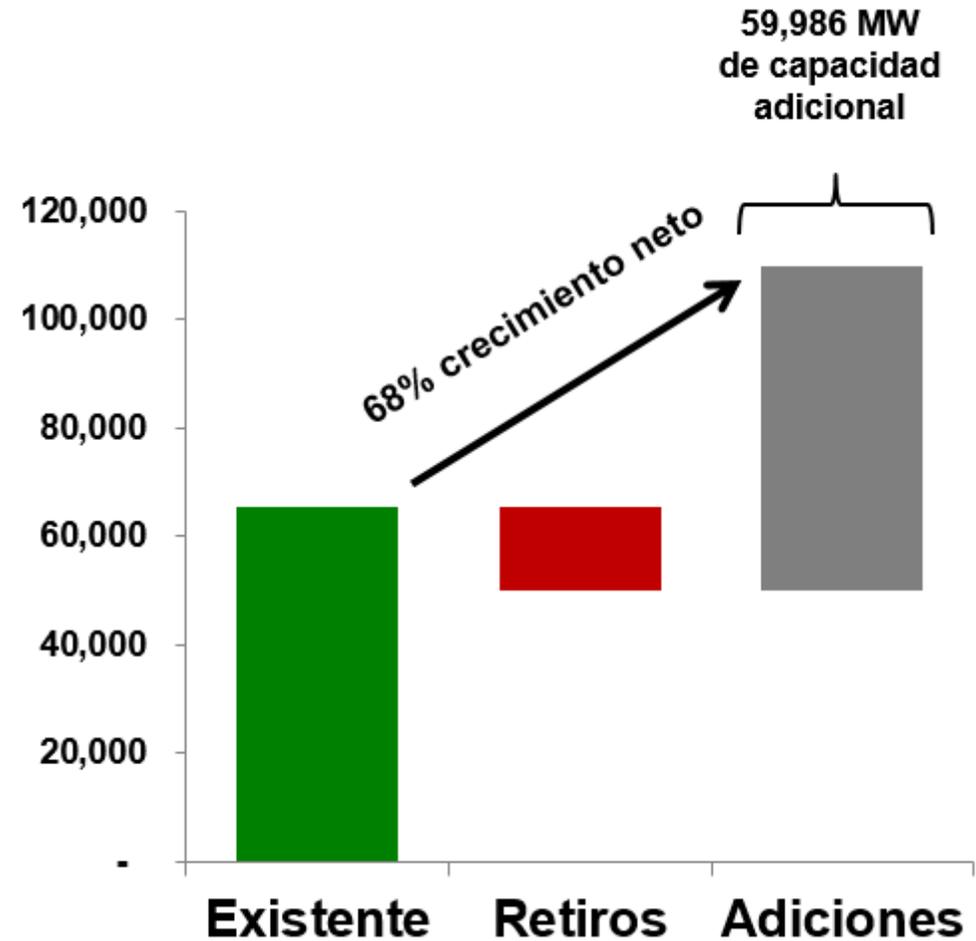
Additional projects: new modalities for investment in generation.

Through the wholesale electricity market (Spot and short-term contracts).

Bilateral contracts between qualified users and suppliers.

Auctions for basic supply contracts.

Associations: CFE will formalize alliances for the modernization of its plant.





MEXICO CLIMATE CHANGE COMMITMENT



“...Mexico has a solid commitment on reducing GHG emissions in order to provide elements to the new Paris Agreement that was adopted during the COP21.”
(Paris, 2015)



ENERGY AND ENVIRONMENTAL POLICY IN MEXICO

Environmental Policy

- Emissions Reduction Compliance
- Emissions National Registry (RENE)
- Emissions Reduction in accordance with the General Law on Climate Change (LGCC) and the Energy Transition Law (LTE)
- Direct mandate to reduce GHG emissions
- Primary policy to fight climate change (mitigation and adaptation)
- There should eventually be a cap and trade mechanism and a carbon market in Mexico that must be linked to the CEL market

Energy Policy

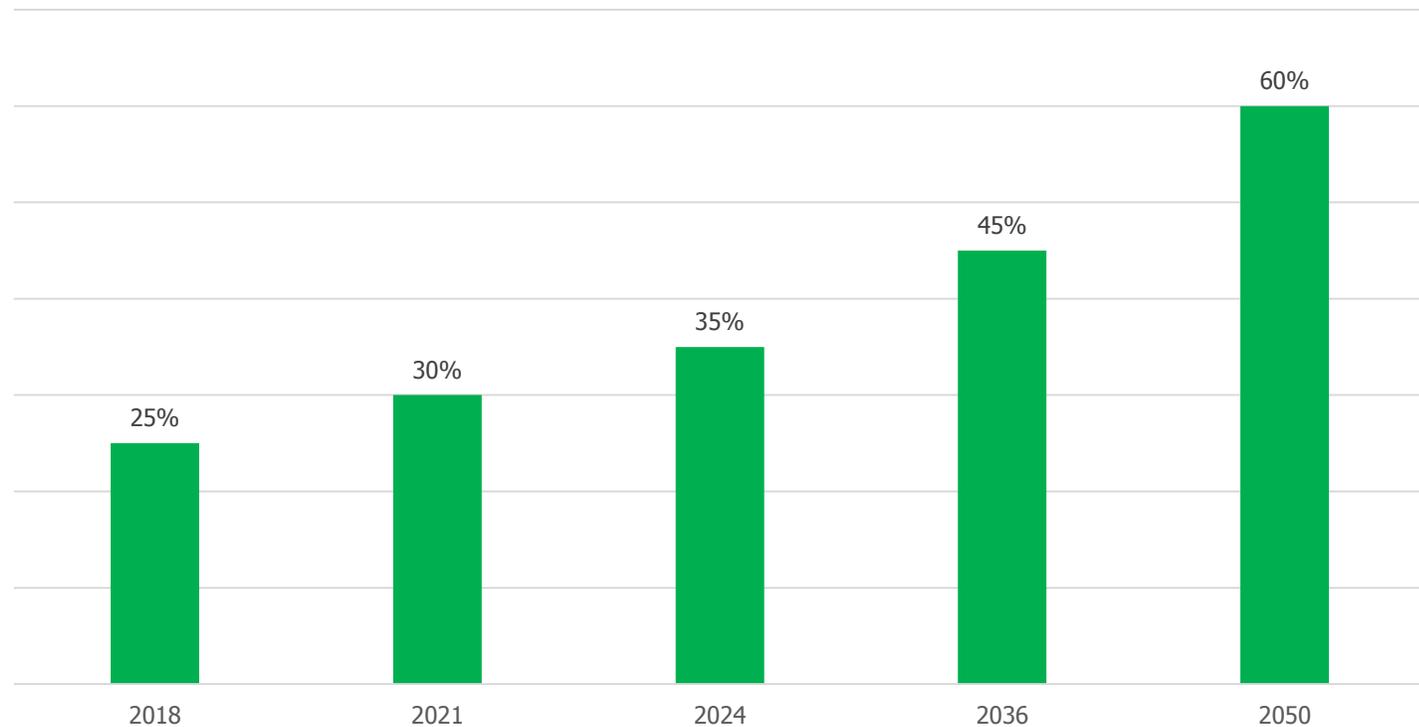
- Clean Energy Goals Compliance
- Clean Energy Certificates (CEL)
- It promotes clean energy in order to diversify the energy matrix as provided by the Electric Industry Law and the Energy Transition Law.
- Indirectly contributes to the reduction of GHG emissions from the electricity sector
- It is a complement to the environmental policy
- CEL market must be indirectly linked to the carbon market



CLEAN ENERGY GOALS

Sener established these goals:

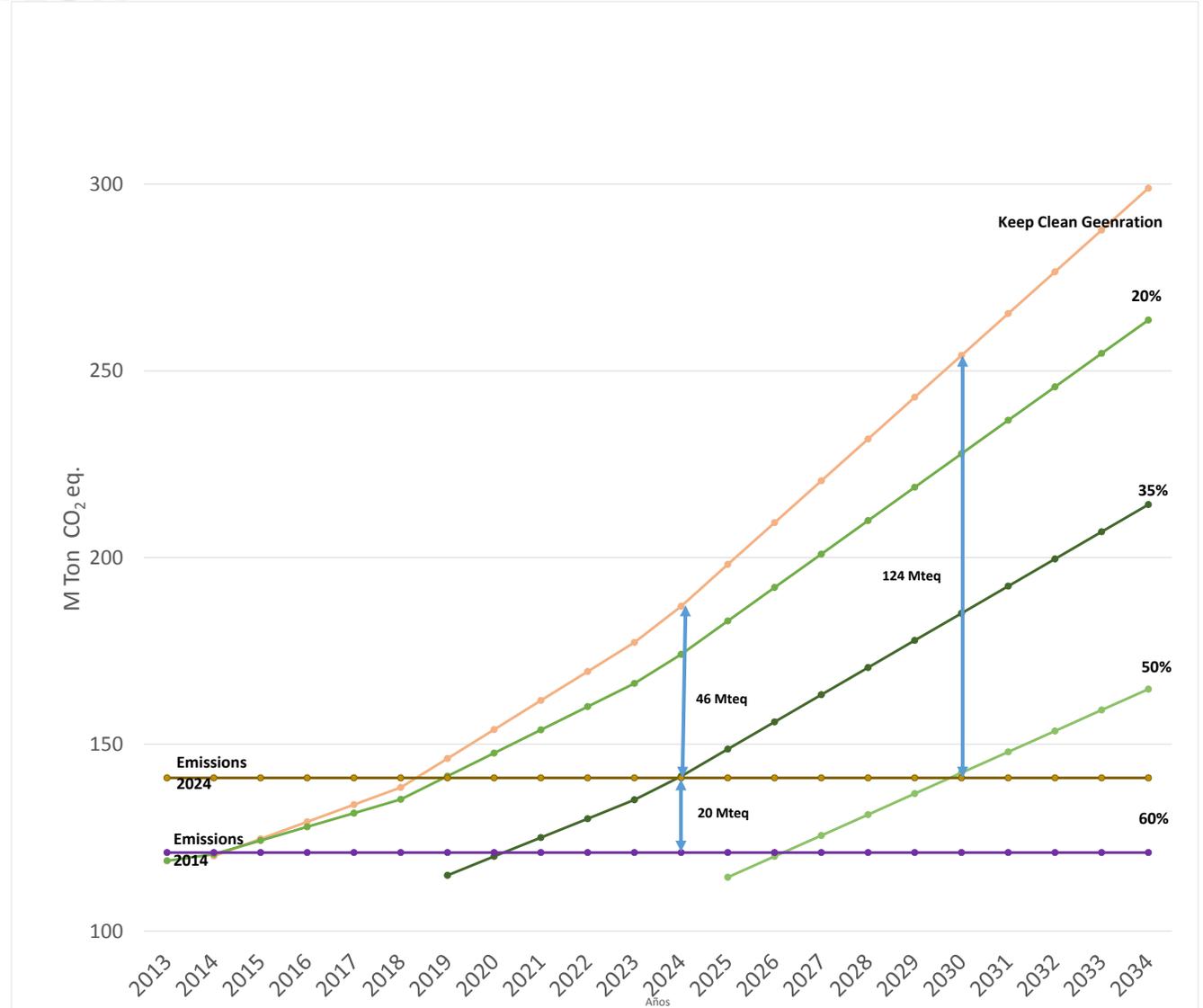
Clean Energy Participation
(% Total Electrical Energy Generation)





EMISSION REDUCTION

- In 2024, with 35% of Clean Energy in the Generation Mix, there would be 141 MTON of CO₂ eq., which is **12% more than the emissions in 2014.**
- In order to maintain the 2015 emissions (121 MTON CO₂ eq.) a **45% of Clean Energy generation is needed in 2024.**
- If there are no new Clean Energy Projects, there would be 25% more emissions.





RENEWABLE POTENTIAL

With the Clean Energy Resources in the Country, it is possible to comply and exceed the Clean Energy Generation of 35% in 2024.



Renewable Energy Potential Generation (GWh/a)				
Resources	Geothermal 	Small Hydro 	Wind 	Solar 
Tested	2,310	4,457	15,307	8,171
Probably	45,207	23,028	--	--
Possible	52,013	44,180	87,600	6'500,000

Source: National Renewable Energy Inventory. Sener. 2015



CONSTITUTIONAL MANDATE

- One of the mandates for the Electricity Sector, derived from the Energy Reform, is to achieve the goals in electricity generation from clean energy sources and reduce the respective GHG emissions. (LIE, LTE and LGCC).
- The Clean Energy Certificates (CEL) mechanism is the main instrument for achieving these goals for the Electricity Sector.
- A CEL is defined as the title issued by the Energy Regulatory Commission (CRE) which attests the production of a certain amount of electricity from clean energy sources and serves to meet the requirements associated with the consumption of the load centers.



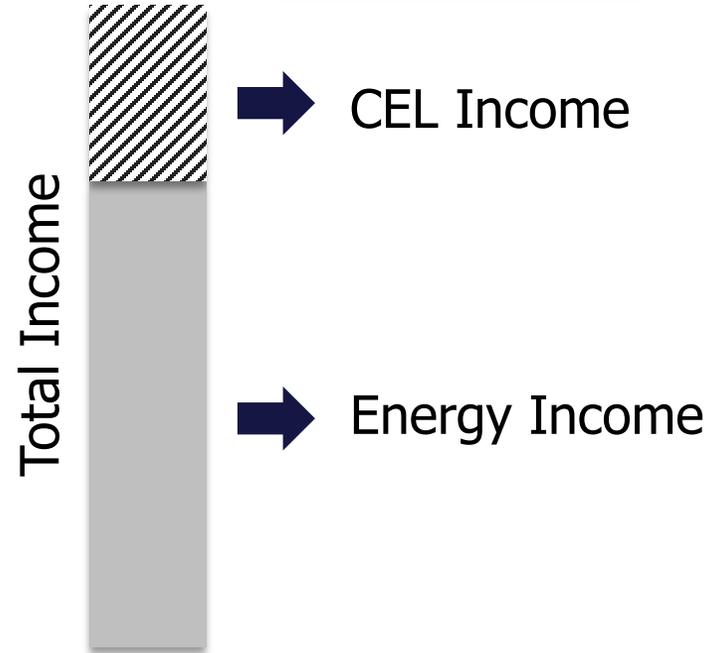
1MWh=CEL



CEL REPRESENT ADDITIONAL REVENUE FOR THE CLEAN GENERATORS



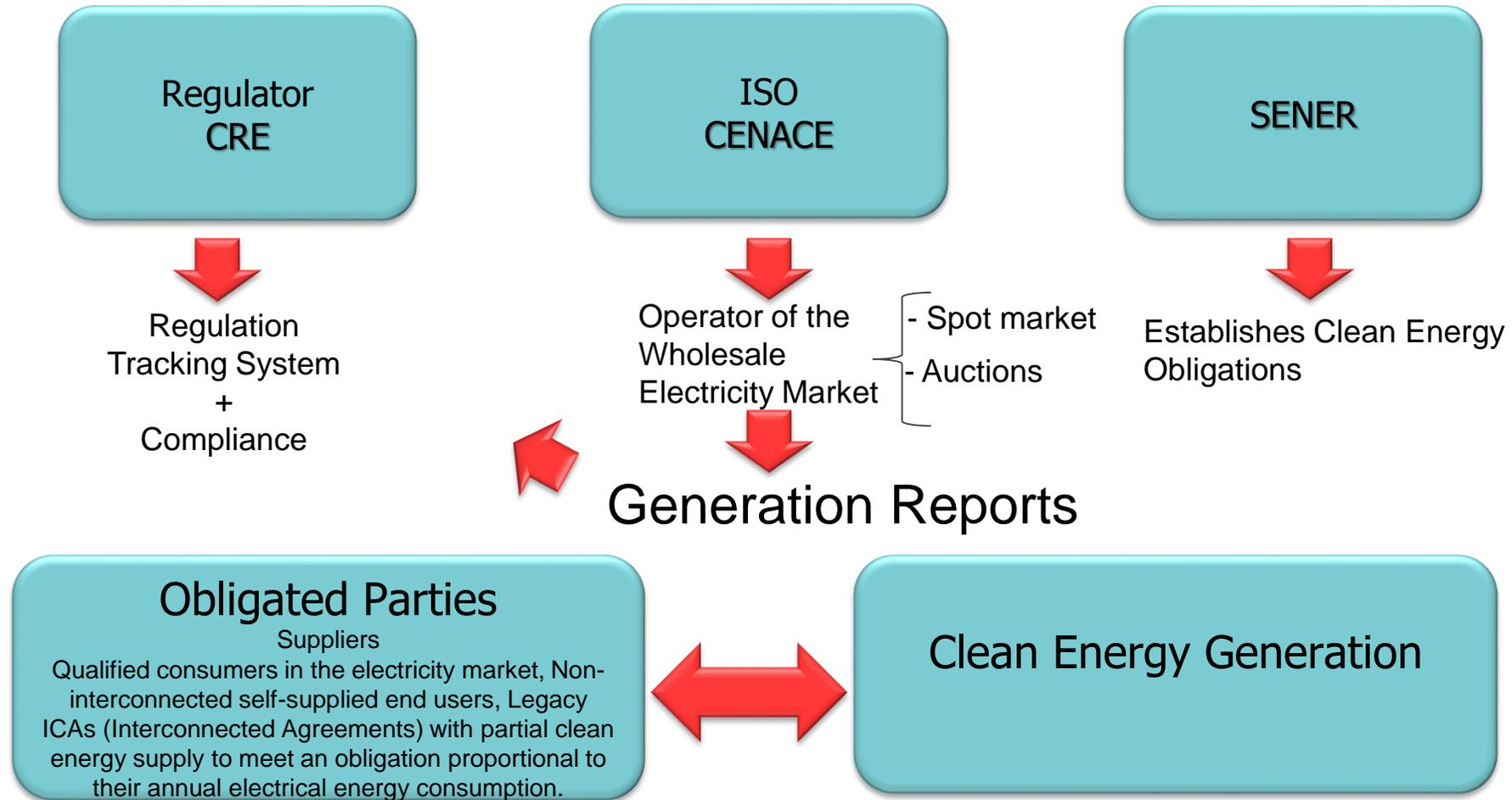
- The national goal of clean electricity generation translates into individual obligations (requirements): the largest consumers and suppliers are obliged to buy CEL in a proportion, established by the Energy Ministry, to their electricity consumption.
- Clean generators receive an additional income for the CEL they sell to the Obligated Parties.



- If transaction costs are close to zero, then the CEL price should be equal to the difference between clean energy generation cost and fossil fuel generation costs.



ENERGY POWER ACT (LIE): INSTITUTIONAL FRAMEWORK FOR CEL

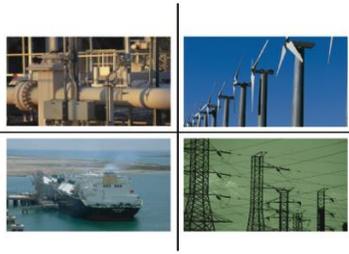




WHO IS ENTITLED TO RECEIVE CEL?

- Clean Energy Facilities that initiate operations after August 11th, 2014
- The Legacy Contracts that generates electricity from Clean Energy sources which have entered into operation before August 11, 2014, provided the Facility has completed a project to increase the production of electricity using Clean Energy technologies.
- The Clean Energy Facilities with a generation capacity that has been excluded from a legacy contract for it to be included in a contract under the terms of the new Law (LIE).





WHAT IS THE TRACKING SYSTEM?

The Tracking System is the platform through which CRE will carry out the registration and management of the following information:

Generation and
Consumption of electricity

The issuance, transactions,
settlement and the voluntary
cancellation of the CEL

Clean Energy Obligations
Compliance

- It will be operated by CRE in the role of the system administrator
- Auto-update with the information that receives and is generated by CRE, as specified by the Handbook (Manual) which shall be issued by CRE
- System participants: Clean generators, Suppliers representing clean distributed generation, Obligated Parties according to the Law and Voluntary Entities.
- Cenace (Mexico's ISO), DSOs and TSOs are also participants of the System.

Articles 126 fraction III, 127 y 128 from LIE



OBLIGATIONS COMPLIANCE

1. Provisional monthly and annual statements will be made in DECLARACEL.
2. In the provisional monthly statements the Obligated Parties will inform about their electricity consumption and may partially or fully comply with their current and deferred obligations.
3. The annual statements will be presented no later than May 15 of each year.
4. The obligations to be deferred must be declared in the annual statements.
5. The annual statements will provide the information for calculating the sanctions for non-compliance.



PENALTIES

Application
Criteria



Fines apply for each megawatt-hour of non-compliance in the acquisition of CEL.

The percentage of non-compliance is defined as the difference between the Clean Energy Obligations and the number of CEL that are settled in the corresponding year, divided by the Clean Energy Obligations, expressed as a percentage.

Choosing to defer Obligations and not complying with the remaining Obligations is considered as a criteria for establishing a higher fine.



PENALTIES

$$\text{Penalty} = \text{Fine} + \text{CEL}$$

The application and subsequent payment of the fine does not release Obligated Parties from the compliance of its Obligations to acquire CEL.



GENERAL CONCLUSIONS

- The CEL mechanism, will contribute to:
 - Achieve the Paris goals by reducing the GHG emissions from the electricity sector.
 - Achieve the national goals on Clean Energy Generation.
 - Attract new investment in Mexico.
 - Provide the basis for a strong legal framework and clear rules for complying with clean energy obligations and GHG emissions reduction.
 - Decarbonize Mexico's economy.
 - Provide elements for a low carbon transition.
 - Comply with Sustainable Development Goals.



KEY ELEMENTS TO PROMOTE CLEAN ENERGY



Competitive Market and Clean Energy Interconnection

- Generators that take advantage of Clean Energy may have access to a competitive market to sell their energy.
- In the process of planning the expansion of the network will be considered the infrastructure needed to connect regions with high potential for Renewable Energy.
- CRE is also required to provide an opinion in the Grid Expansion Plan.



Distributed Generation

- Rules will be developed to ensure interconnection projects in the form of Distributed Generation
- Small users that generate energy (e.g. solar panels on their roofs) can sell power to CFE at regulated prices or sell to other suppliers at market prices



Smart Grid

- An important element of the Smart Grid is the modernization of the network that will allow more Renewable Energy to interconnect.
- The CRE has developed a roadmap to implement the Smart Grid in Mexico
- CRE will publish General Administrative Provisions for the regulation of Smart Grid and Distributed Generation, in order to have rules that will promote more integration of Renewables in the grid.
- There is a national group formed by SENER-CFE-CRE



THANK YOU!

Mtra. Norma Álvarez

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