

# Mexican PV Markets Perspective

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# PRINCIPAL ENERGY MARKETS INDICATORS IN MEXICO

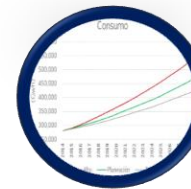
## 2016

**121** MILLION HAB

**98.58%** OF THE POPULATION WITH ENERGY ACCESS

**2.5%** AVERAGE ECONOMIC VARIATION

**3.7 %** ENERGY USE INCREASE VS. 2015



## 2031

**138.4** MILLION HAB

**UNIVERSAL ACCESS**

**2.4%** LOW  
**2.9%** PLANED  
**3.6%** HIGH

**2.5%** LOW  
**3.0%** PLANED  
**3.7%** HIGH

# ELECTRIC SECTOR REFORM NEW LAWS



ELECTRIC INDUSTRY LAW  
(LIE)

GEOHERMAL LAW

ENERGY TRANSITION LAW  
(LTE)

The **Electric Sector Reform** promoted the creation of 3 new laws to that align the **sustainable development, clean energy use, reduction of GHG emissions, environmental protection, social participation and universal access to energy.**

# ENERGY TRANSITION

## CLEAN ENERGIES



**Clean Energies (LIE):** solar, wind, geothermal, hydro, bioenergy, ocean, efficient cogeneration, nuclear, carbon capture and use and hydrogen.

**Distributed Clean Energy (LIE and LTE):** energy generation with clean energy sources, capacity under 0.5 MW and grid connected.

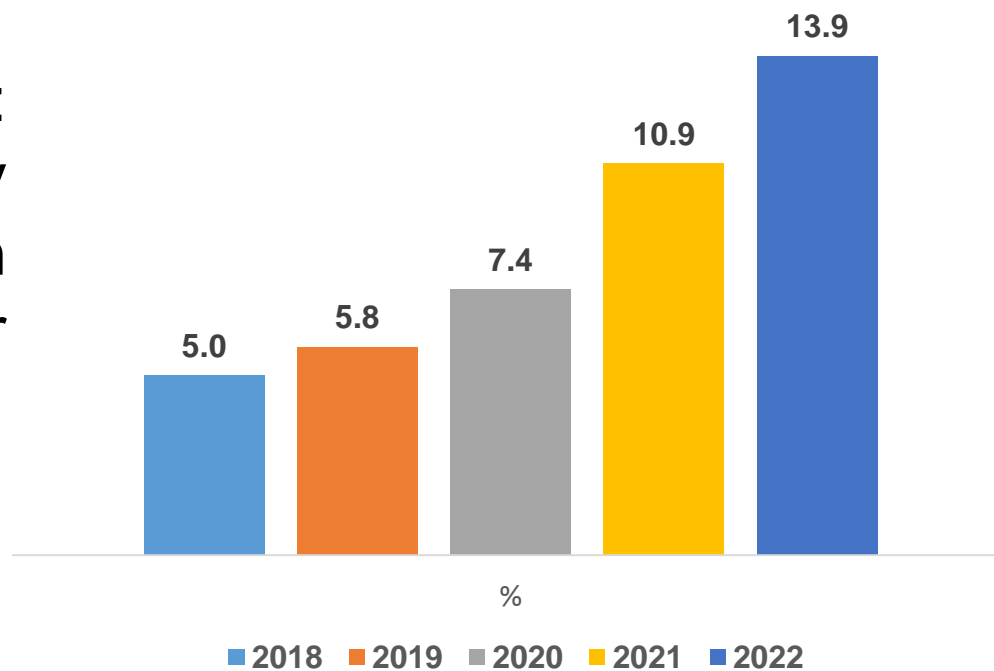


# ENERGY TRANSITION CLEAN ENERGIES

**CELS y Long Term Auction:** main mechanisms for clean energy promotion.

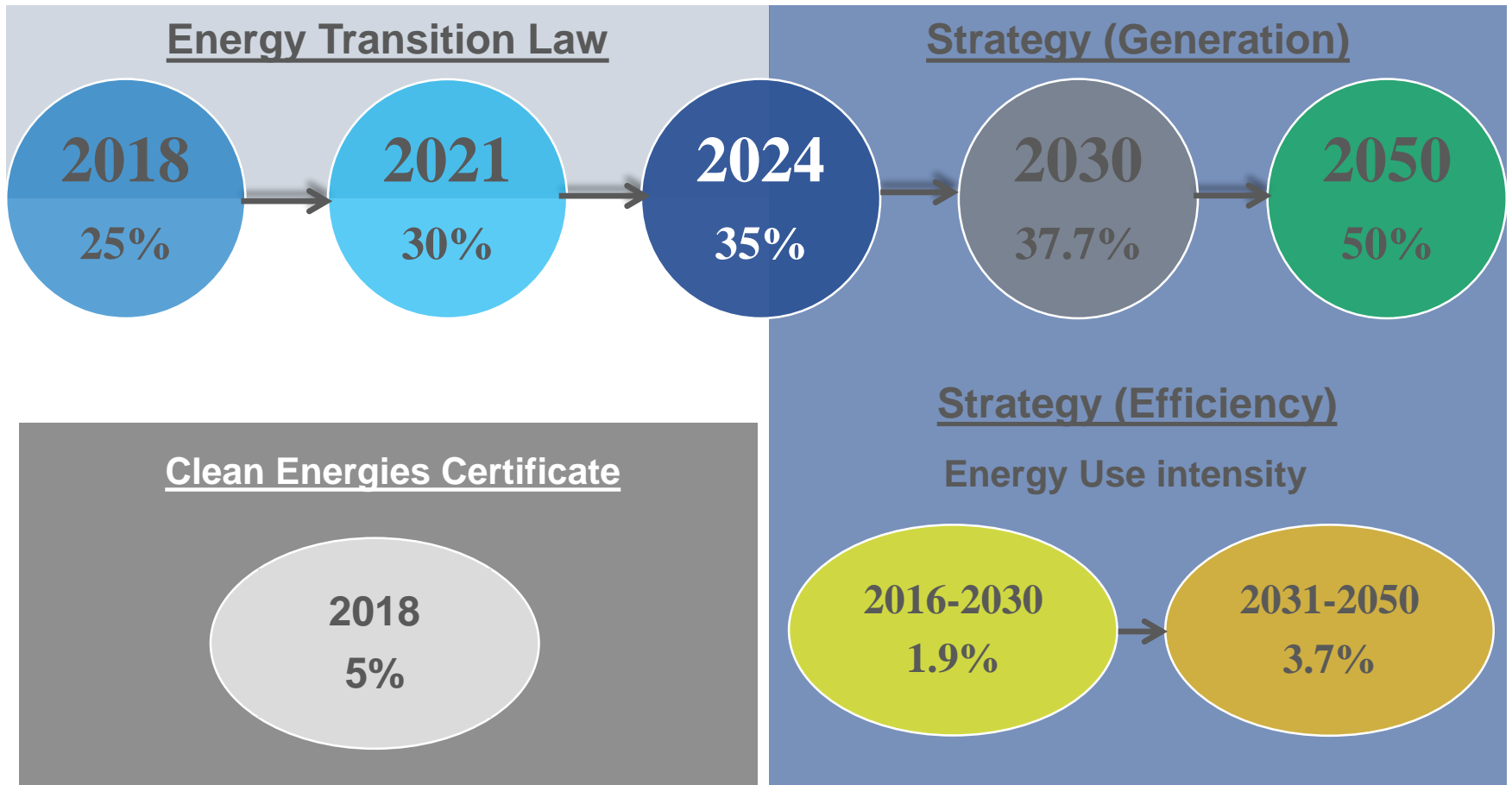


**Clean Energy Obligations:**  
Main mechanism to guaranty the compliance of clean energies obligations for intensive energy consumers.



# ENERGY TRANSITION FOR CLEAN ENERGY TRANSITION

## CLEAN ENERGIES AND EFFICIENCY GOALS



# ENERGY TRANSITION STRATEGY + OTHER COMPROMISES

## Regional Goal



50% clean  
energy

2025

## NATIONAL DETERMINED CONTRIBUTIONS

2030

-22%

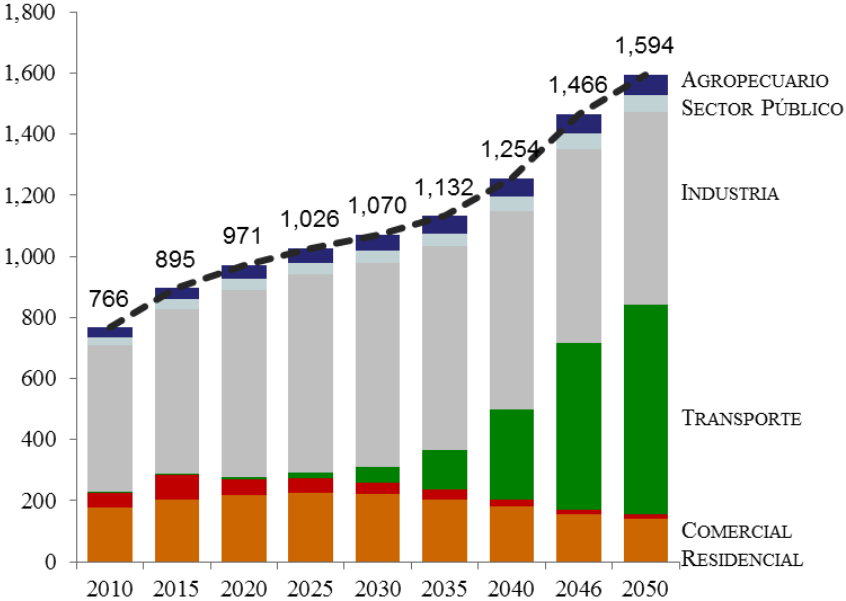
2050

-50%

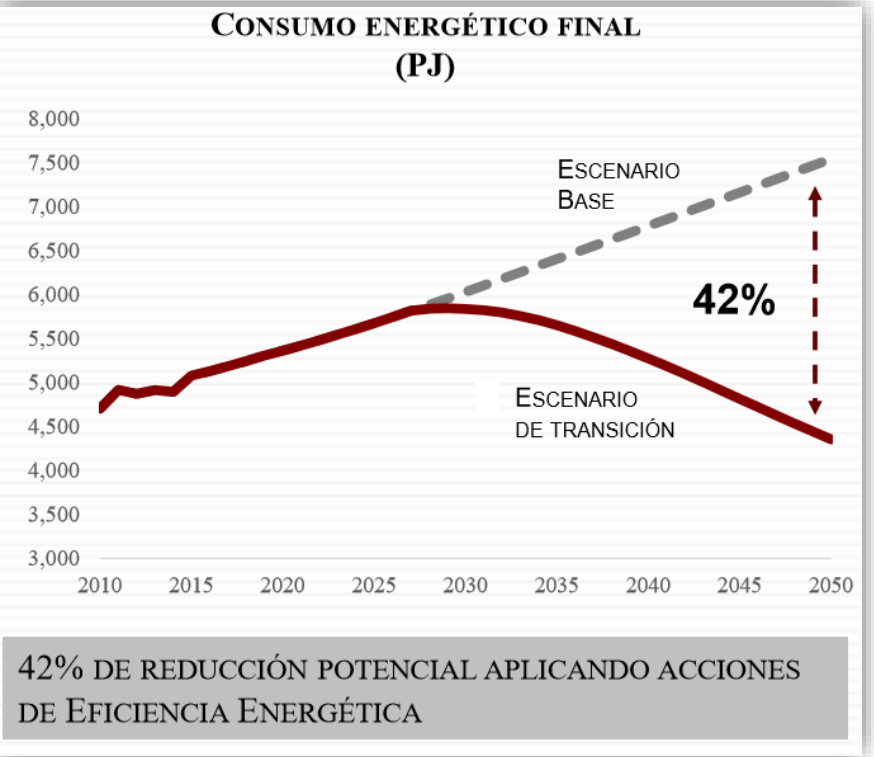
# ENERGY TRANSITION FOR CLEAN ENERGY TRANSITION

## ENERGY TRANSITION AND EFFICIENCY SCENARIOS

**ESCENARIO DE TRANSICIÓN (PJ)**



**CONSUMO ENERGÉTICO FINAL (PJ)**

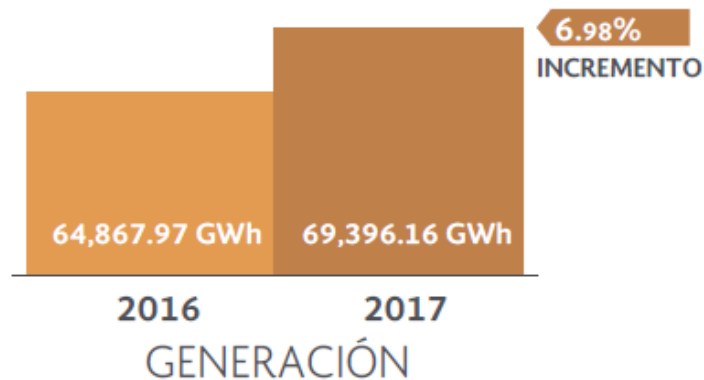
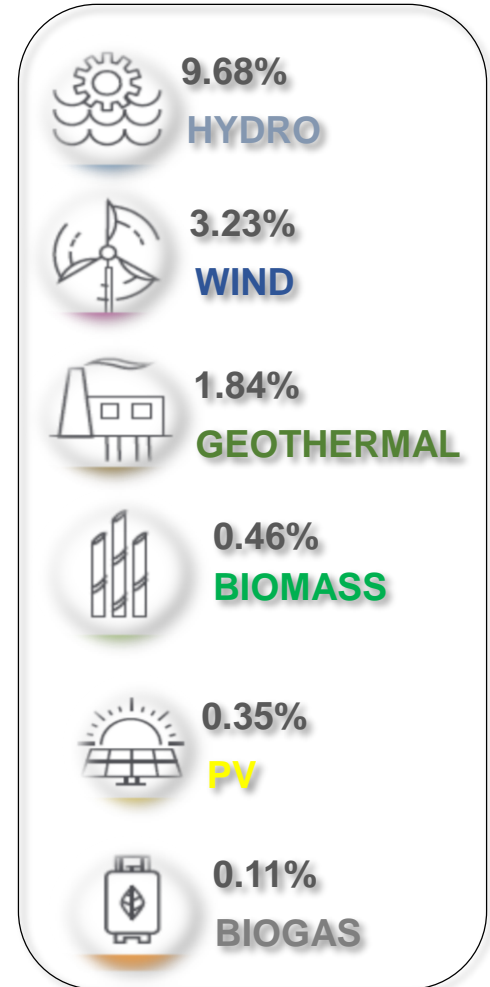
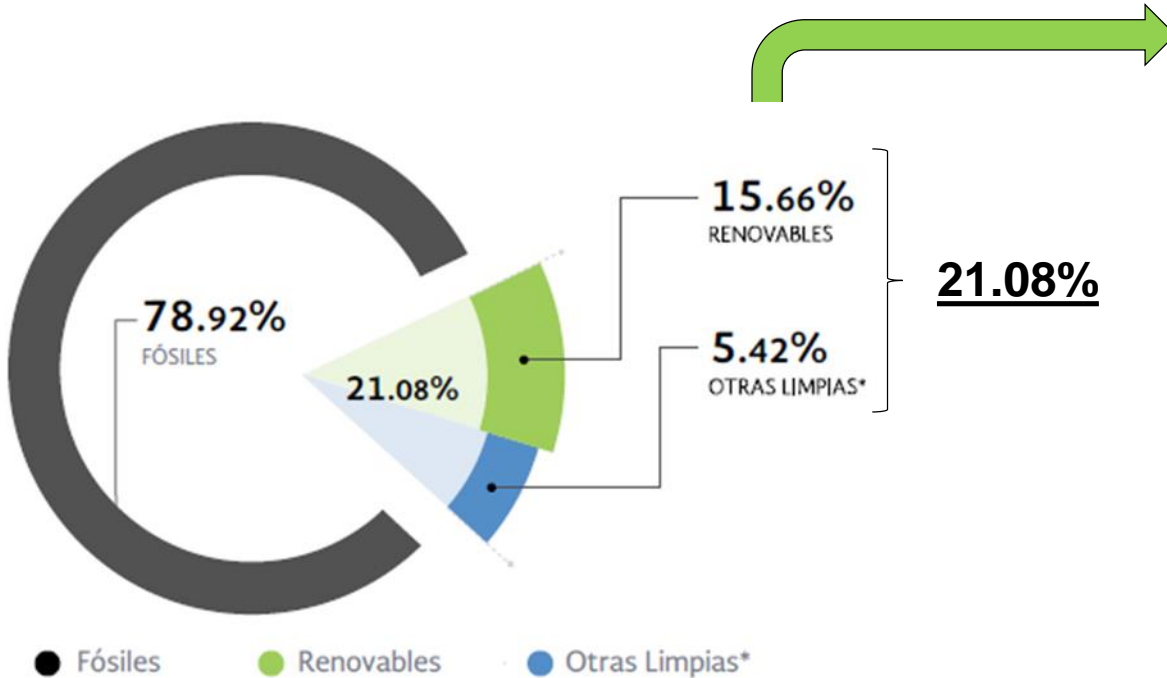


FUENTE: SENER Y CONUEE.



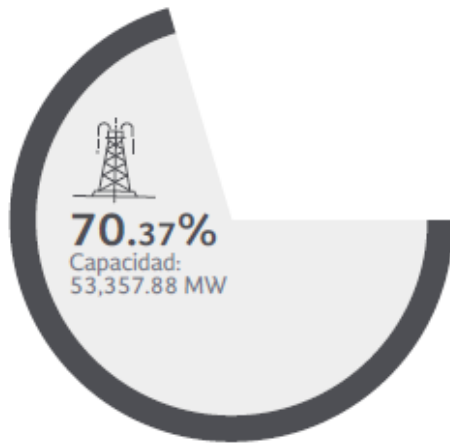
# CLEAN ENERGIES PARTICIPATION GENERATION (2017)

TOTAL GENERATION: **329,162 GWh**

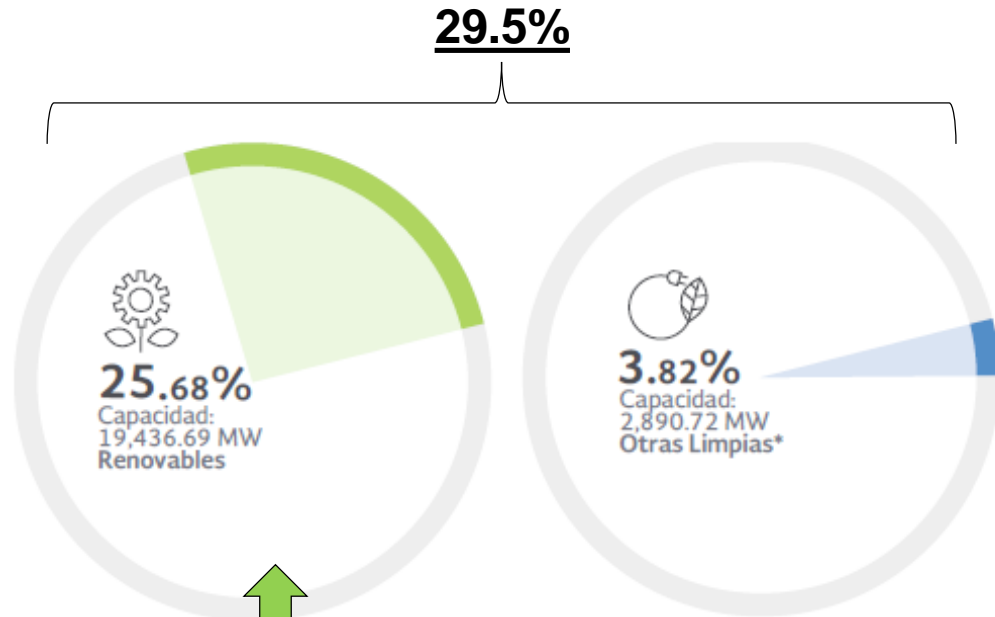


# CLEAN ENERGIES PARTICIPATION INSTALLED CAPACITY (2017)

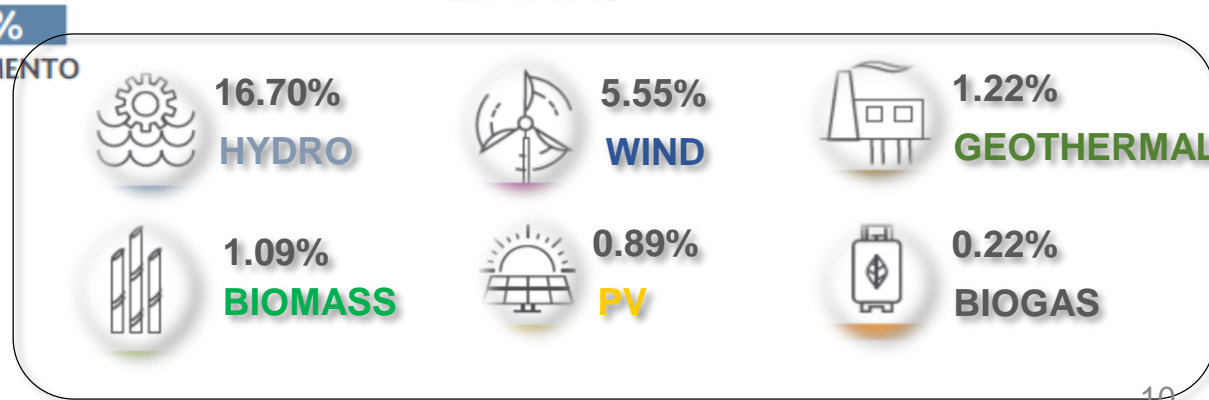
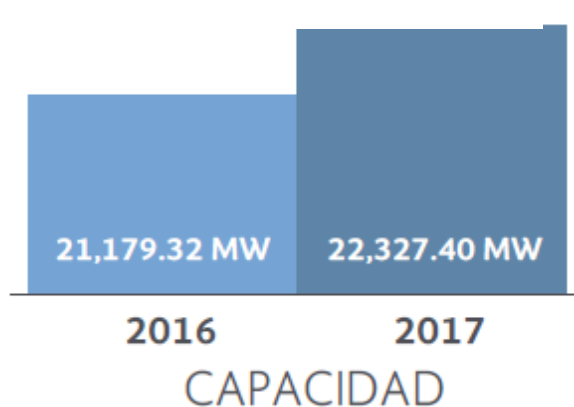
TOTAL CAPACITY: **75,685 MW**



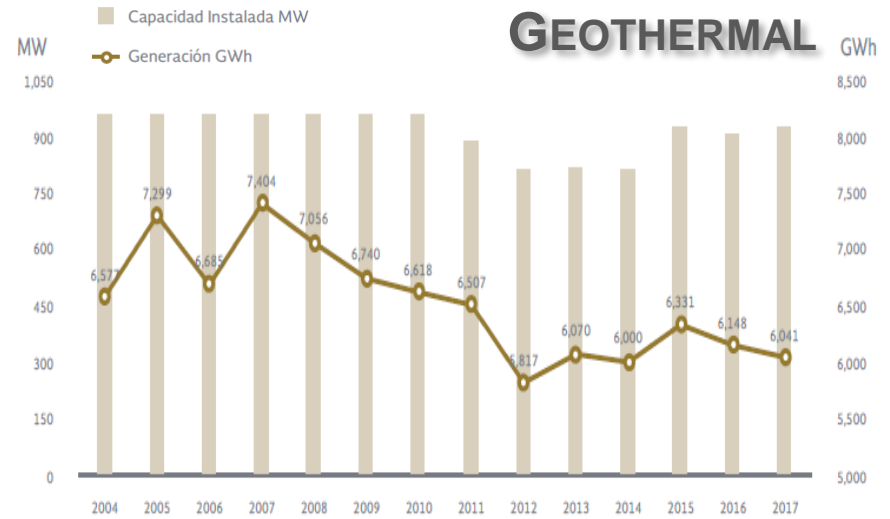
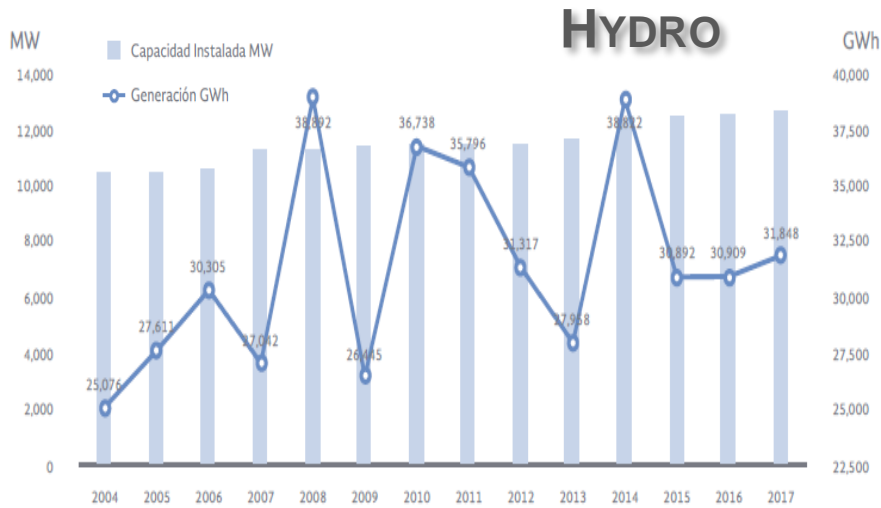
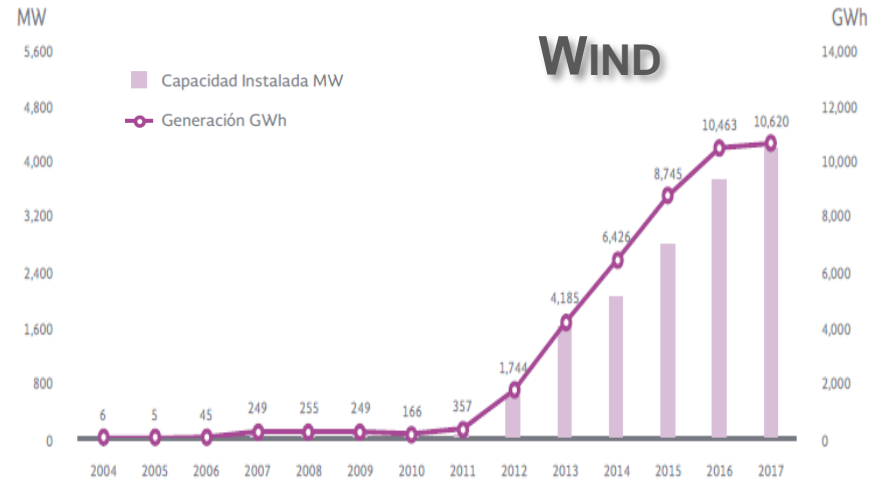
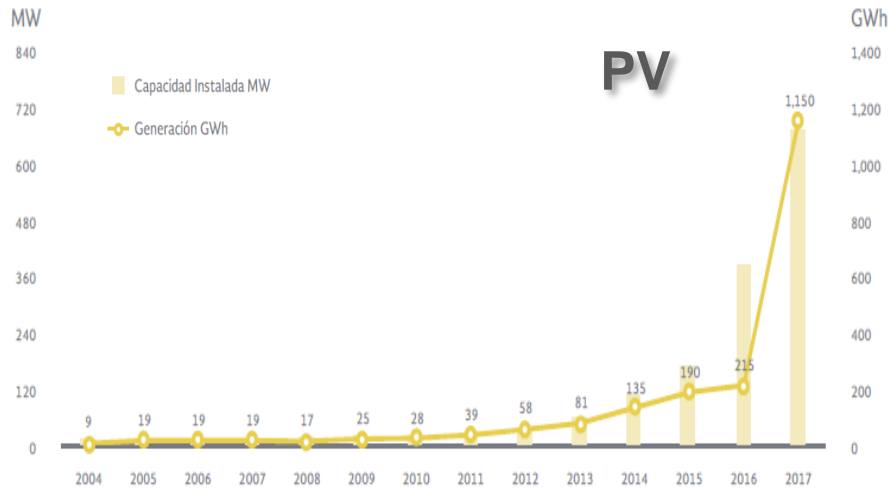
FÓSILES



LIMPIAS



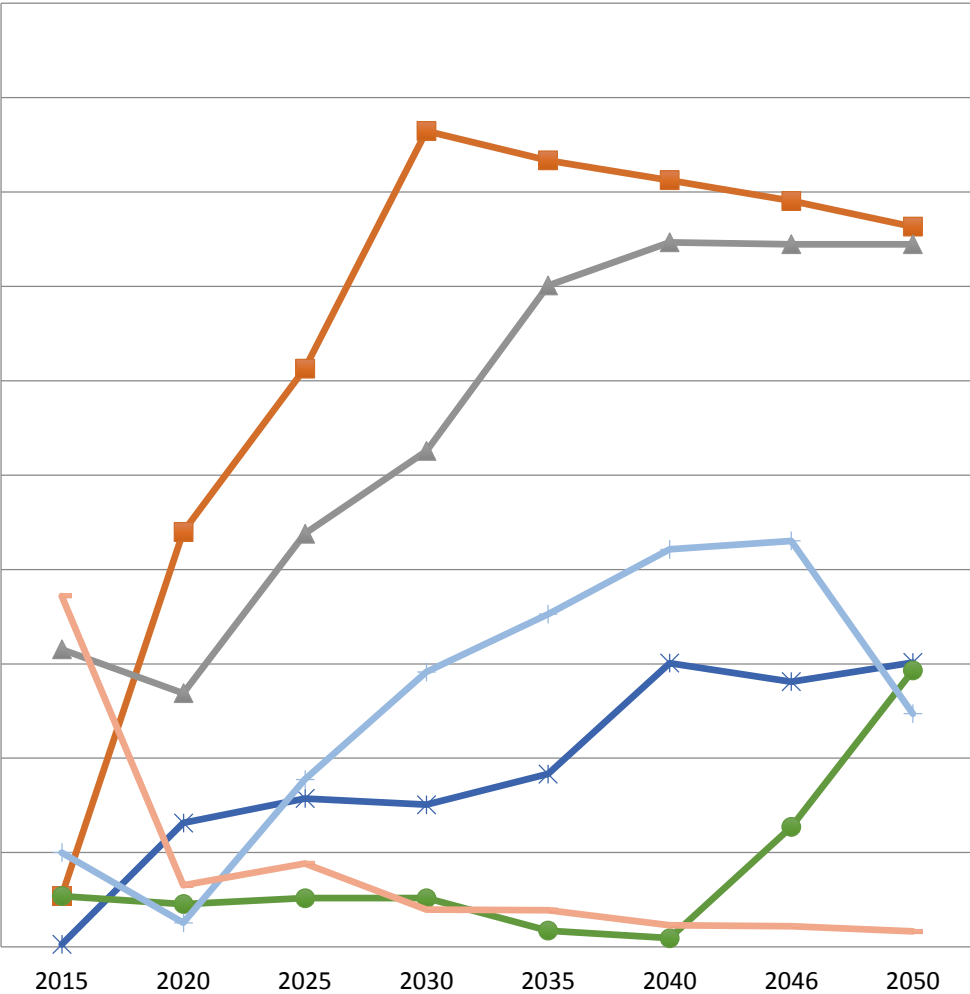
# HISTORICAL EVOLUTION CLEAN ENERGIES



# RENEWABLE ENERGIES PROSPECTIVE 2015-2050

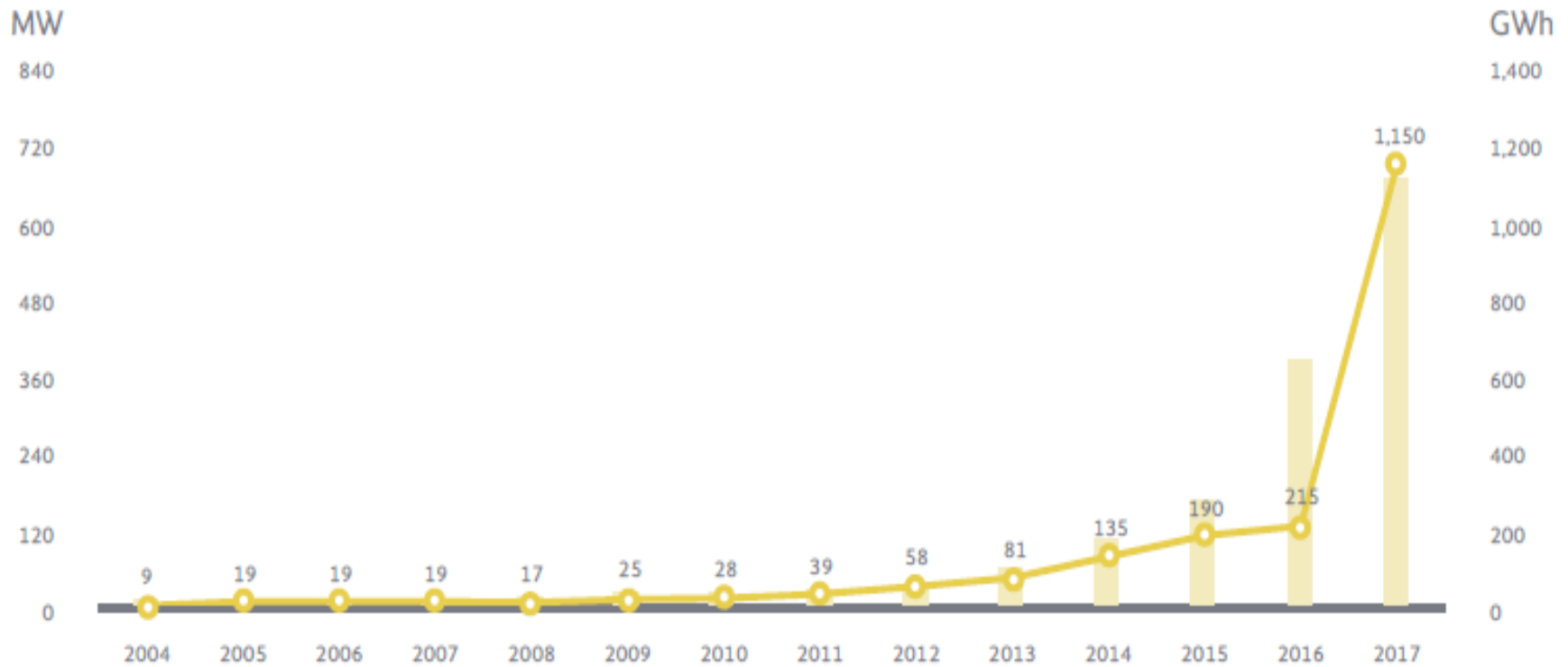
TWh

100.00  
90.00  
80.00  
70.00  
60.00  
50.00  
40.00  
30.00  
20.00  
10.00  
0.00



- Wind
- Hydro
- Photovoltaic
- Geothermal
- Efficient Cogeneration
- Thermoelectrically

# PHOTOVOLTAIC DEVELOPMENT)

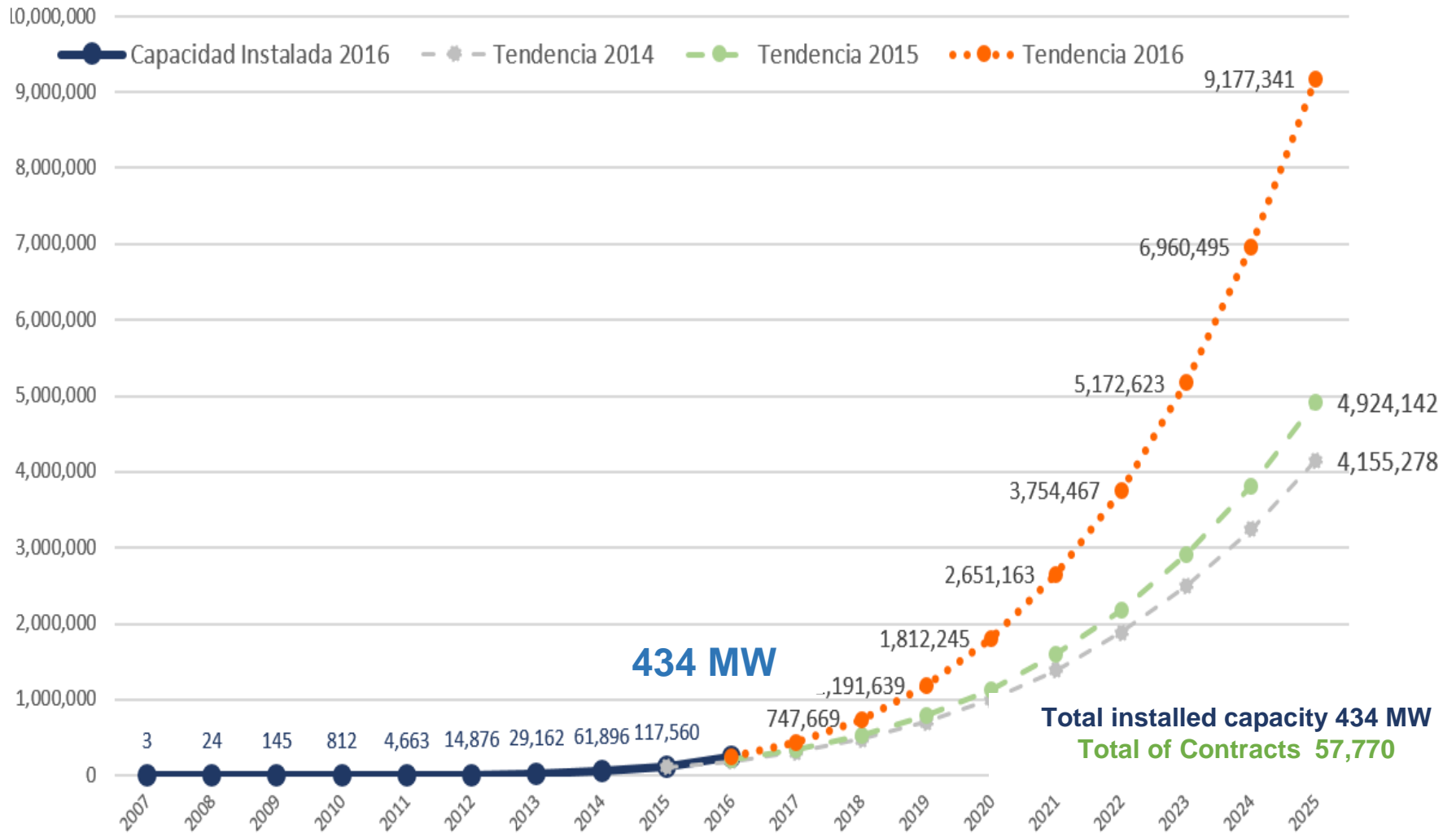


Photovoltaic generation in 2017 increased 5 times the generation of 2016.

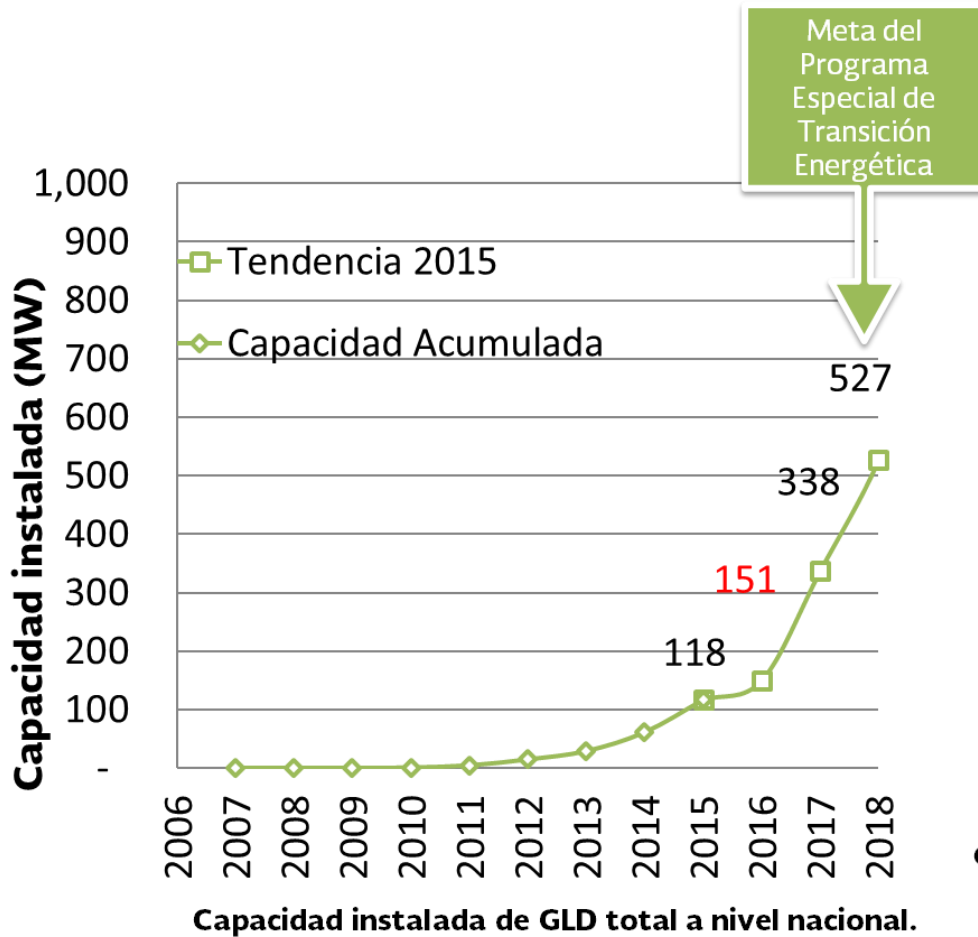
It's expected that capacity installed is going to growth 10 times in the next 3 years as result of the Clean Energy Auctions

# SMALL AND MEDIUM SCALE INTERCONNECTION CONTRACTS (TENDENCIES)

## INSTALLED CAPACITY

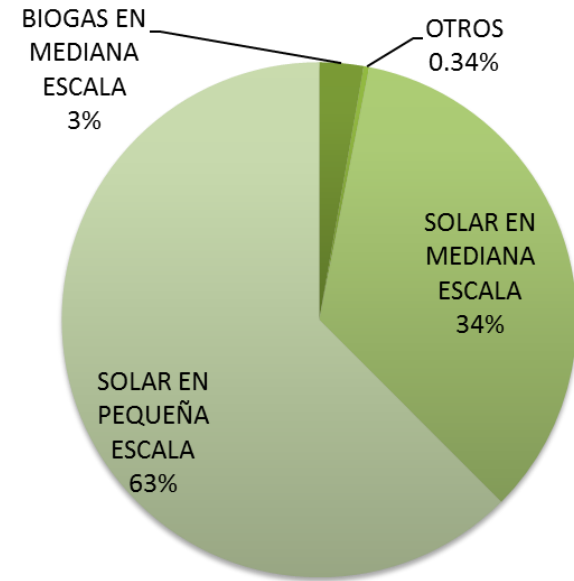


# CLEAN DISTRIBUTED GENERATION



Fuente: CRE

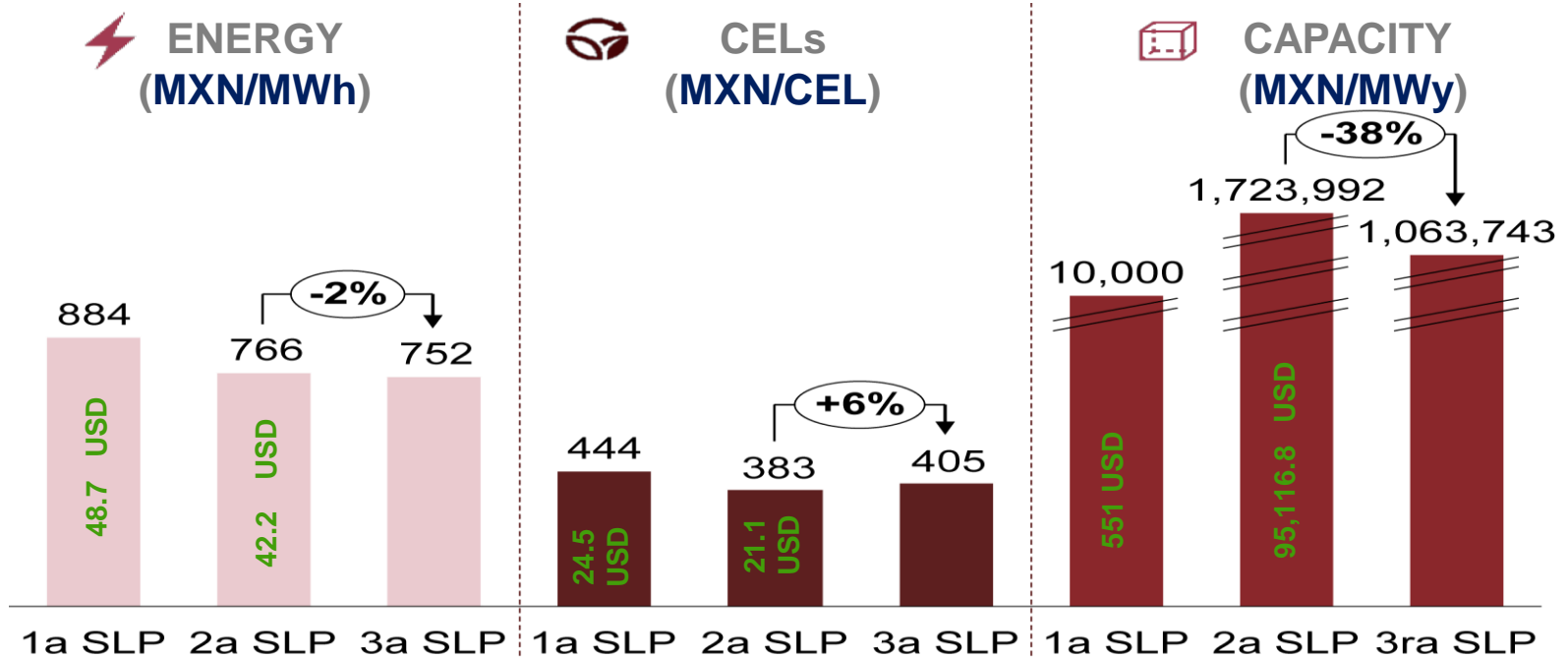
97 % of installed capacity comes out from PV systems



Capacidad instalada de GLD por tipo de tecnología.

Fuente: CRE

# LONG TERM AUCTIONS COMPARATIVE



**AVERAGE PRICE (1a SLP) = 47.70 USD/MWh**

**AVERAGE PRICE (2a SLP) = 33.80 USD/MWh**

**AVERAGE PRICE (3a SLP) = 20.57 USD/MWh**

**AVERAGE PRICE (3o vs. 2o) = 39%** ▼

**ADDITIONAL CAPACITY AUTHORIZED ER (1o+2o+3o)= ca. 7,451 MW** ▲

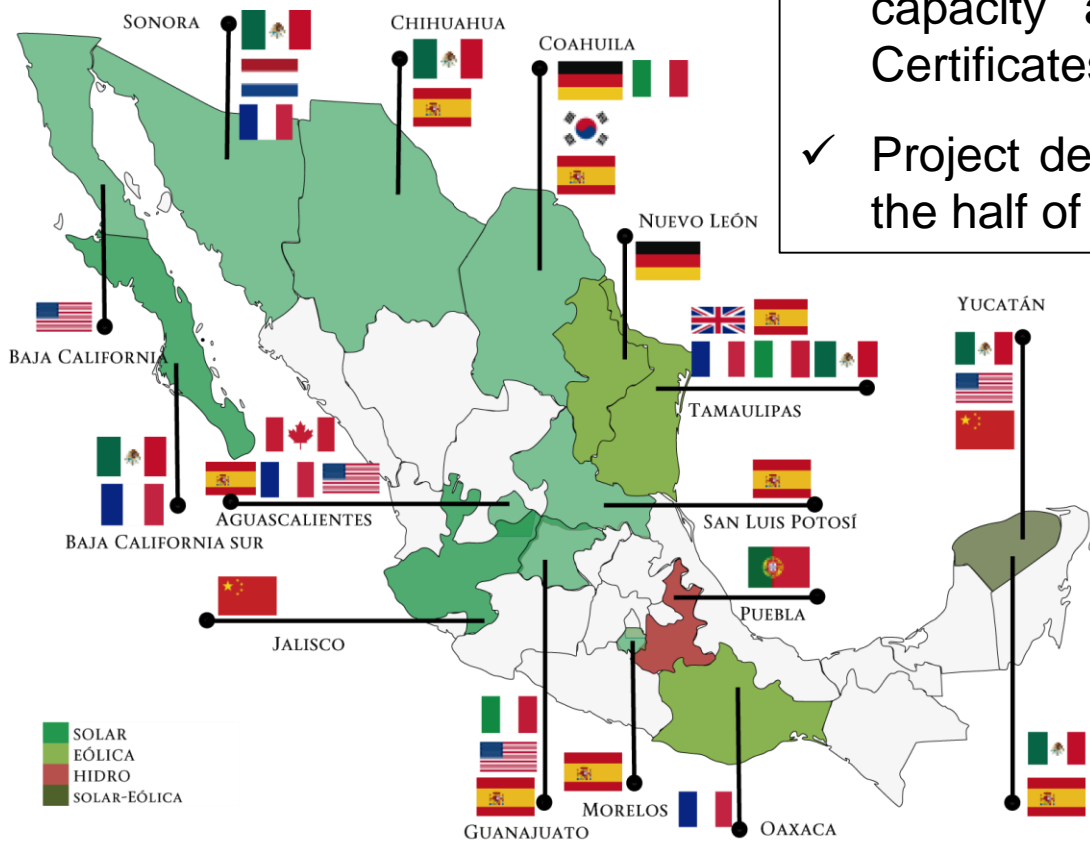
**RENEWABLE ENERGY INVESTMENT (1o+2o+3o) = ~ 8,600 millions USD** ▲



# LONG TERM AUCTIONS BENEFITS

## Country's

- ✓ Certainty for private investors with Renewable Energies selling compromises (15 years for capacity and 25 years for Clean Energy Certificates).
- ✓ Project development compromised for almost the half of the states in the Country.



- ✓ Companies of 11 Country's Investing
- ✓ The first auction is having an impact of 667 mill USD in different economic sectors and will generate over 9,200 new employs

- ✓ 15 states selected for projects construction

# Thanks for your attention

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