



OVERVIEW OF SOLAR ENERGY IN PERU

**The Peruvian Solar Energy and Environment
Association**

Asociación Peruana de Energía Solar y del Ambiente (APES)





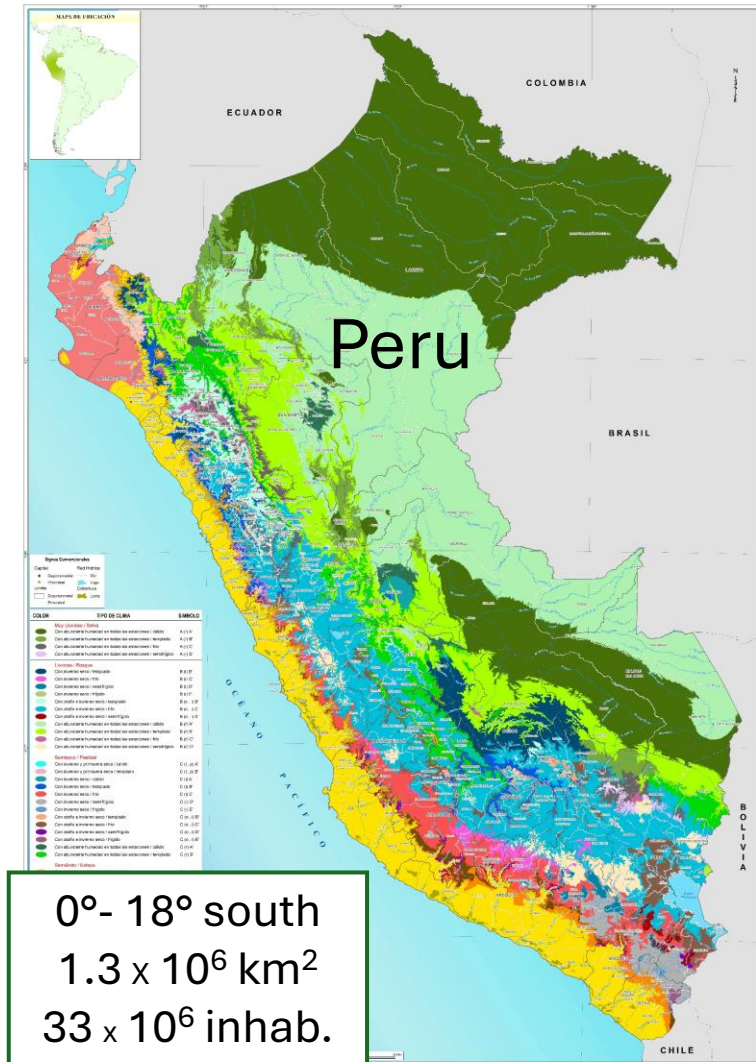
OUTLINE

- **Electric energy situation of Peru**
- **Solar energy: potential and actual situation**
- **Policy and regulations on solar energy**
- **Institutions related to renewable energy**
- **Future prospects and challenges**



ELECTRIC ENERGY SITUATION OF PERU

Climate Map



Electricity consumption 2024: 53.3 GWh
1500 kWh/cap

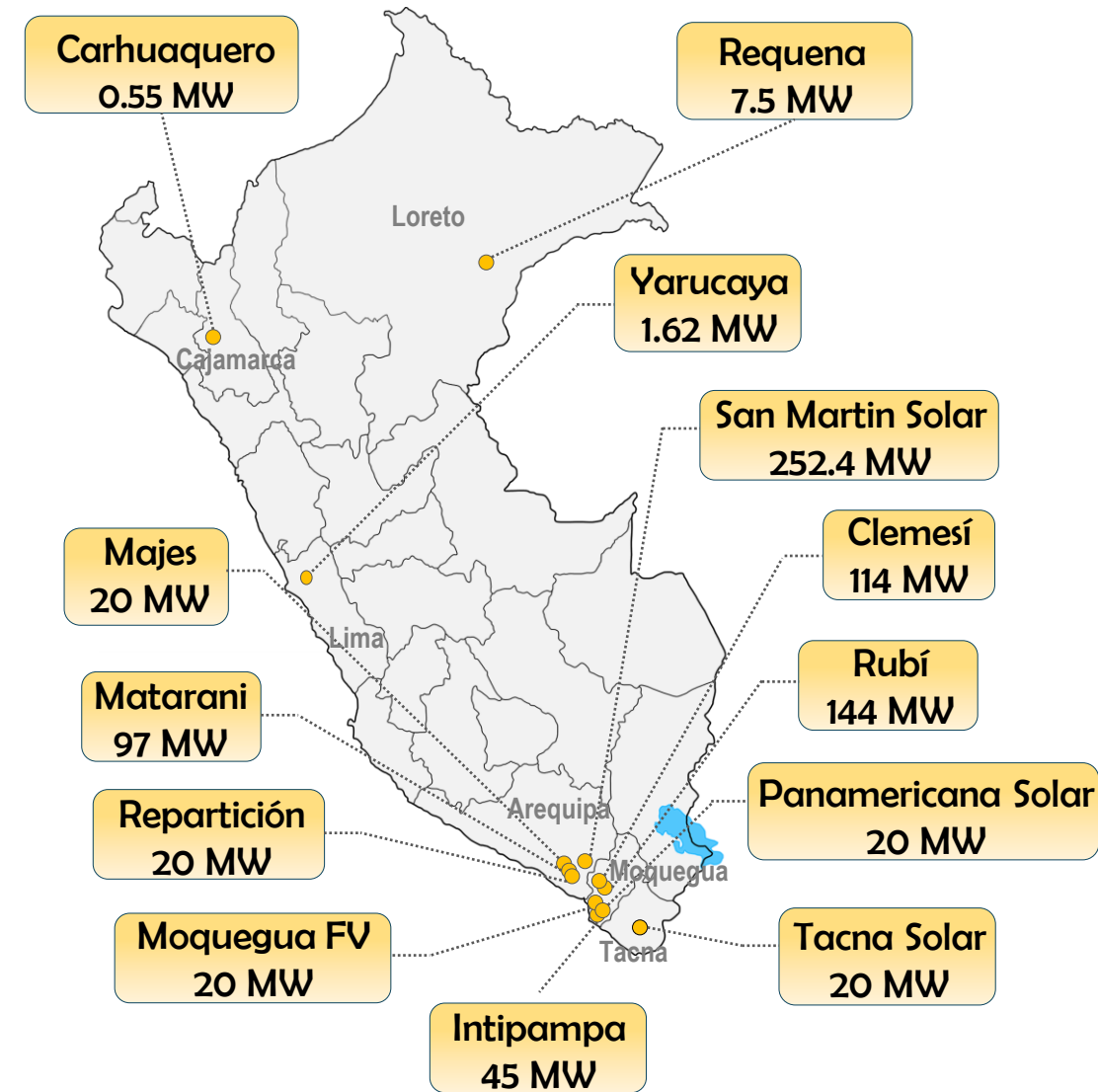
Hydro energy ~ 52%
Wind energy ~ 6 %
Solar energy ~ 3 %
Thermal energy* ~ 39 %
*** mainly natural gas**

Installed capacity ~ 16 700 MW
Hydropower ~ 7800
Thermal (mostly natural gas) ~ 7000
Solar ~ 950
Wind ~ 1000
Other renewables ~ 100

National Access to Electricity 96 %
Rural 86 %

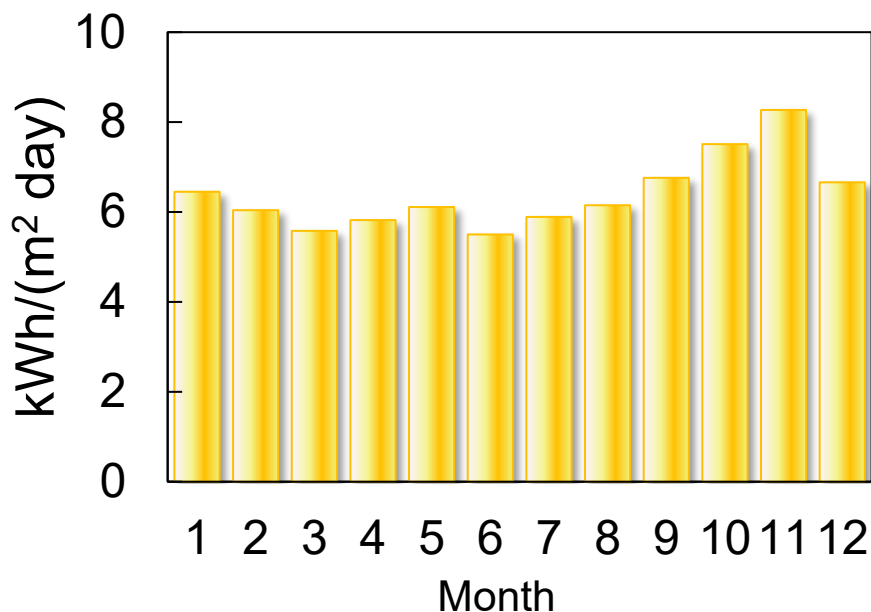
Source: MINEM (Energy Ministry)

PHOTOVOLTAIC ELECTRICITY POTENTIAL AND SOLAR PHOTOVOLTAIC POWER PLANT IN PERU



Low monthly variation of solar irradiation in the south of Peru

Solar irradiation at Imata, Arequipa, Peru

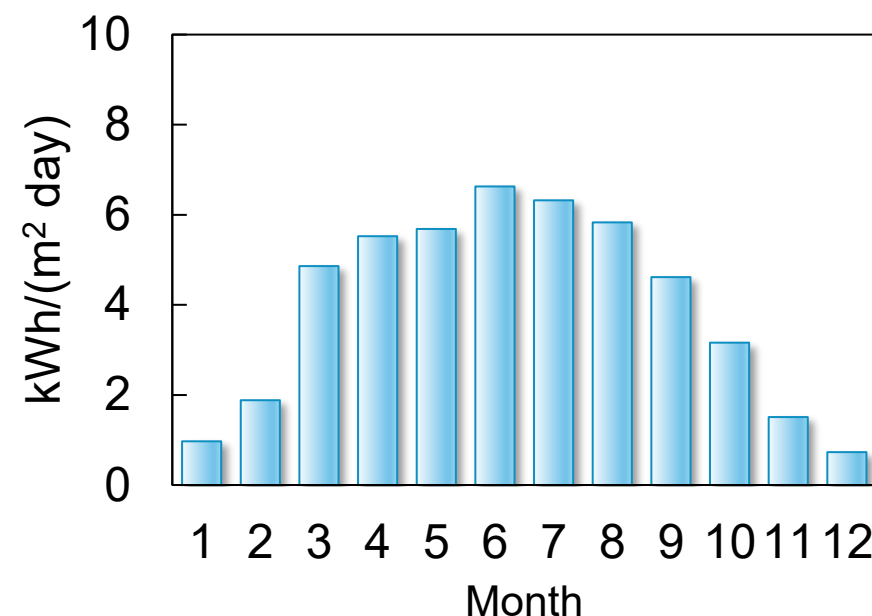


Annual mean irradiation
6.4 kWh/m² day

Installed solar PV capacity per capita
~ 24 W

Molina, J.O., et al. (2020):
<https://doi.org/10.4067/S0718-07642020000200173>

Solar irradiation in Germany

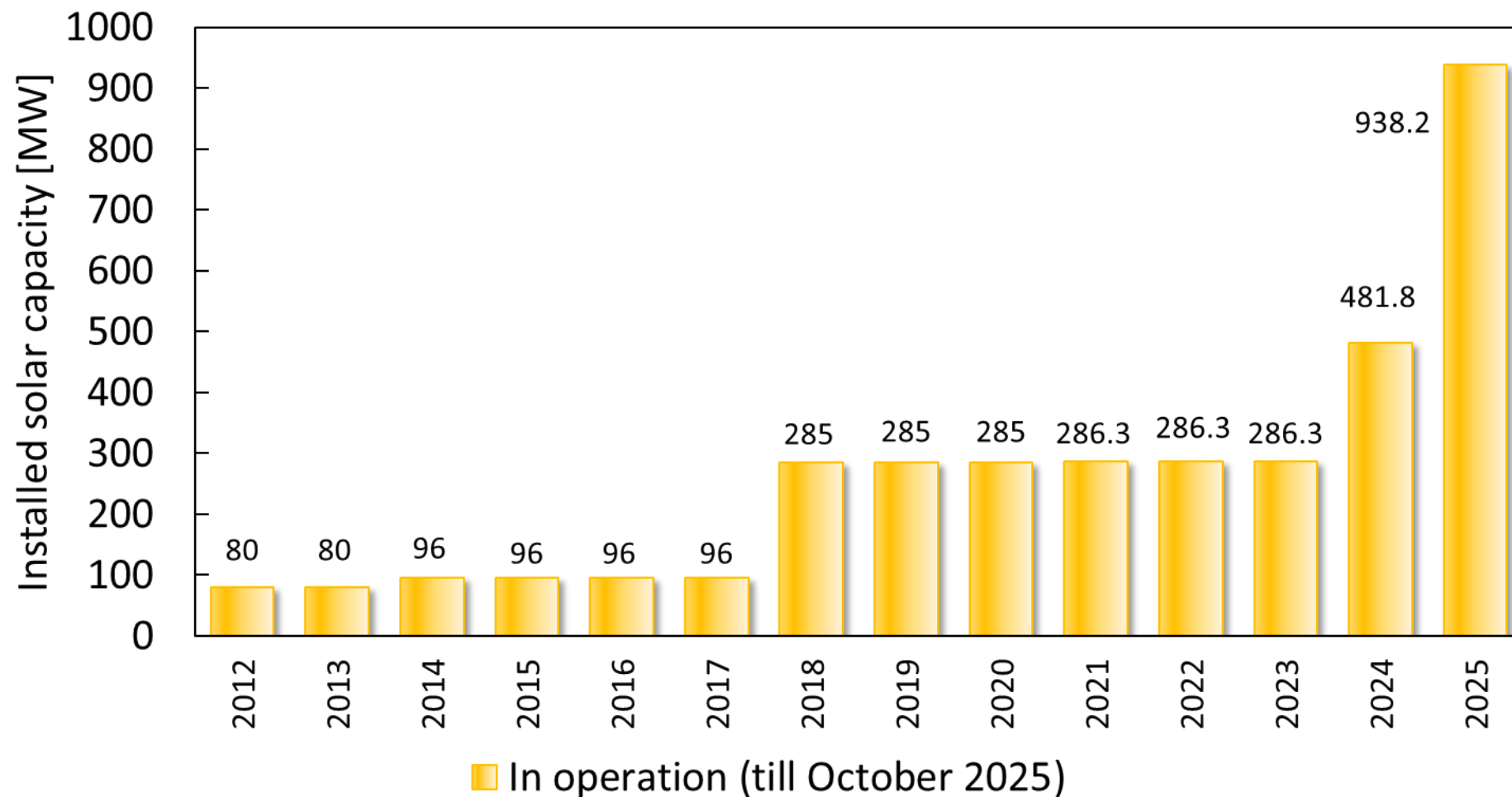


Annual mean irradiation
< 4 kWh/m² day

Installed solar PV capacity per capita
~ 1200 W

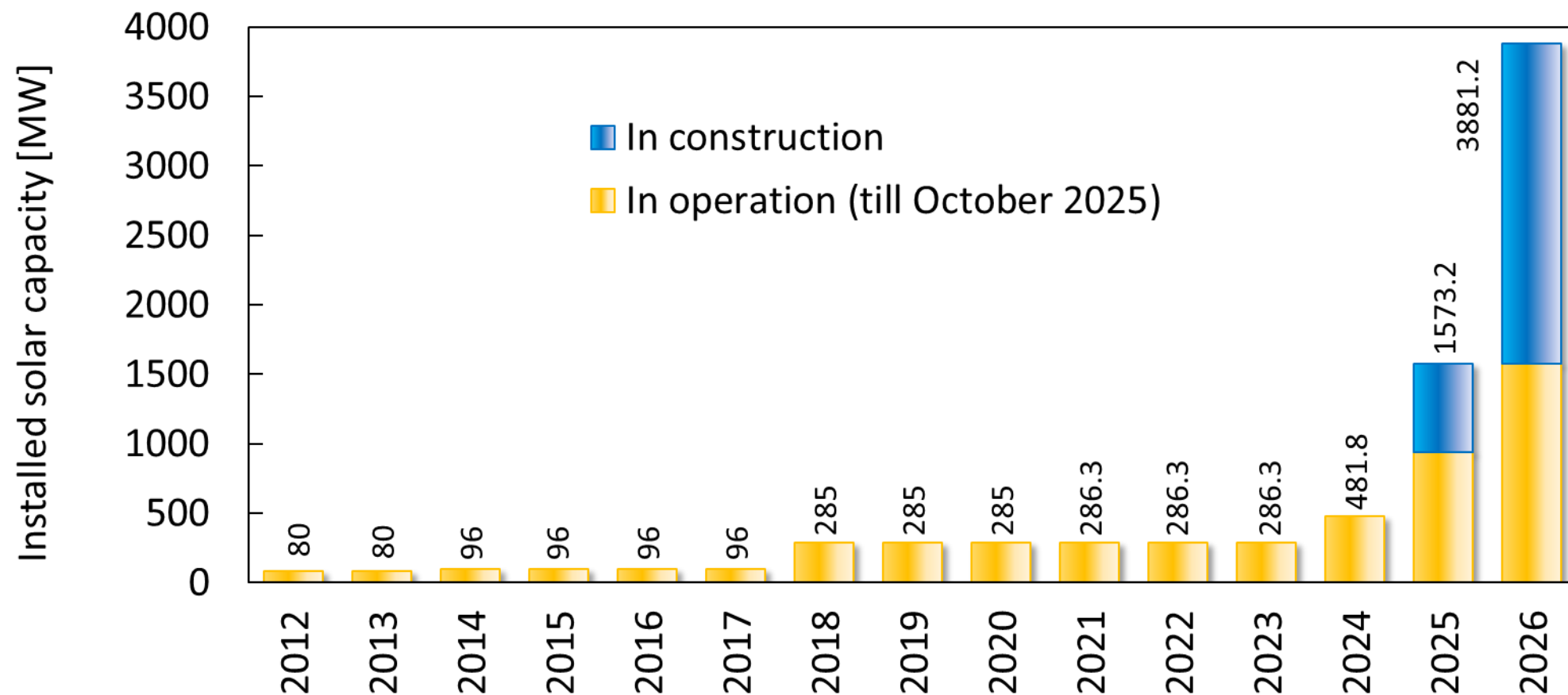
Adapted from: <https://regional-photovoltaik.de/grundlagen/pv-ertrag-tabelle-aktuelle-daten/>

PHOTOVOLTAIC SOLAR PLANTS CAPACITY 2012 - 2025



Source: OSINERGMIN

PHOTOVOLTAIC SOLAR PLANTS CAPACITY 2012 - 2026



Source: OSINERGMIN



INSTITUTIONS RELATED TO RENEWABLE ENERGY

Public Institutions (Governors and Regulators)

➤ **Ministry of Energy and Mines (MINEM)**

Formulates the National Renewable Energy Plan and the legal framework.

Directs the national energy policies (ER)



➤ **Supervisory Agency for Investment in Energy and Mining (OSINERGMIN)**

Regulates the technical-legal functioning of the energy sector



➤ **Economic Operation Committee of the National Interconnected System (COES).**

Manages the injection of variable energy (solar and wind) into the grid.



➤ **Ministry of the Environment (MINAM)**

Proposes policies related to RE as part of environmental policies, climate change, etc.



INSTITUTIONS RELATED TO RENEWABLE ENERGY

Research Institutions

- **National University of Engineering (UNI)**
with Renewable Energy Center CER-UNI



CENTRO DE
ENERGÍAS RENOVABLES
Y USO RACIONAL
DE LA ENERGÍA



**UNIVERSIDAD
NACIONAL DE
INGENIERÍA**

- **Pontifical Catholic University of Peru (PUCP)**



PONTIFICIA
**UNIVERSIDAD
CATÓLICA**
DEL PERÚ

Associations

- **The Peruvian Solar Energy and Environment Association (APES)**
Since 1981, it has organized symposiums throughout Peru.
SWC 2025 Partner



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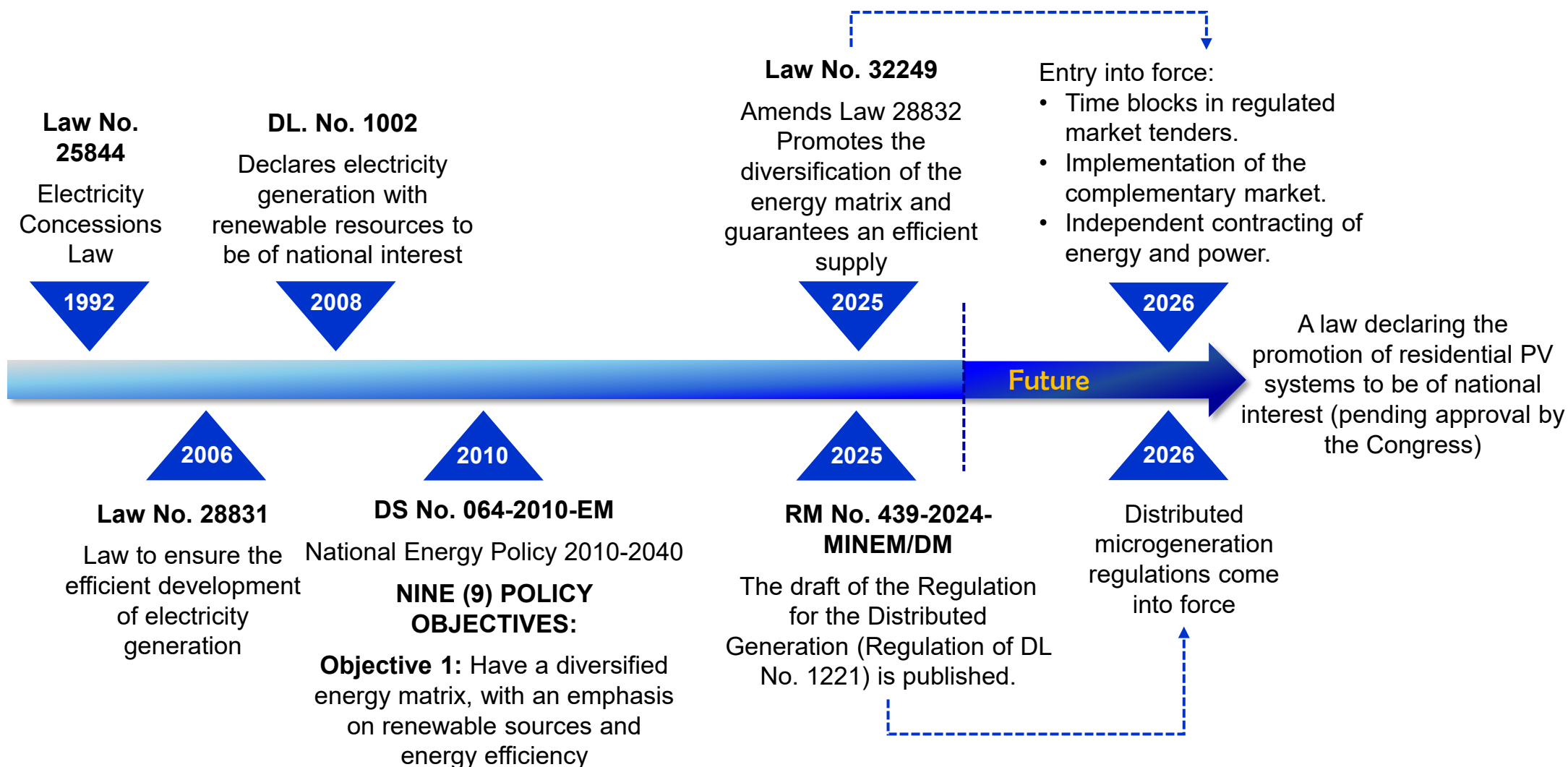
- **Peruvian Renewable Energy Association (SPR)**
Brings together companies and organizations
to promote RE



SPR
Asociación Peruana de
Energías Renovables



ENERGY POLICY AND REGULATION ON SOLAR ENERGY





FUTURE PROSPECTS AND CHALLENGES

- ✓ Peru's remarkable solar potential positions the country as a strategic hub for the development and expansion of PV energy projects.
- ✓ A significant expansion of solar energy is anticipated in the coming years, supported by projects currently under development and planning.
- ✓ Solar energy development supports national decarbonization goals and the diversification of the energy matrix.
- ✓ Limited infrastructure hinders efficient energy transmission from high-irradiation regions to major demand centres.
- ✓ Regulatory instability and lack of long-term incentives affect investor confidence and project continuity.
- ✓ Intermittency of solar generation demands energy storage, hybrid systems, and smart-grid integration.





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ENERGÍA SOLAR Y DEL AMBIENTE



XXXII SIMPOSIO PERUANO ENERGÍA SOLAR

"RAFAEL LEONARDO ESPINOZA PAREDES"

AREQUIPA 2025

17 AL 21 DE NOVIEMBRE



Cursos

- Autoconsumo Fotovoltaico
- Hidrogeno con EERR
- Electromovilidad
- Edificios sostenibles:
Higrotérmica y climatización
Legislación en EERR



Ponencias



Conferencias



Mesa redonda



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JOPES 2026

*Evento presencial
Fechas por anunciar*

Tópicos

- *Sistemas fotovoltaicos*
- *Energía eólica*
- *Cambio climático*
- *Hidrógeno verde*
- *Iluminación*
- *Hidroeléctricas*
- *Eficiencia energética*
- *Desarrollo sostenible*

Comité organizador

- | | |
|---------------------------|----------------|
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ACKNOWLEDGMENT



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