

HEAT
PUMPS
IN
SPAIN

NATIONAL WORKSHOP

11TH NOVEMBER 2024

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HEAT PUMPS IN THE SPANISH UPDATED NATIONAL INTEGRATED ENERGY AND CLIMATE PLAN (PNIEC) 2023-2030

Enrique Pablo Palop Sánchez. Ministry for the Ecological Transition and the Demographic Challenge
Madrid, 11th november 2024



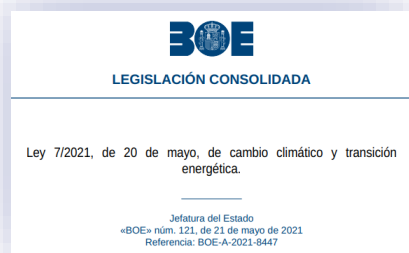
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The Regulation 2018/1999 on the Governance of the Energy Union and Climate Action mandates the development of National Integrated Energy and Climate Plans



Law on Climate Change and Energy Transition

The NECP serves as a national strategic planning tool that integrates energy and climate policies, reflecting Spain's commitment to achieving objectives set within the European Union

According to the **Governance Regulation**, the results and measures to achieve NECP objectives are structured around the following **five dimensions** of the Energy Union:

Dimensions of the NECP 2023-2030

Descarbonization

Energy Efficiency

Energy Security

Internal Energy Market

Research, Innovation and Competitiveness

Cross-cutting issues



Socio-economic impact

GHG emissions reduction

vs. 1990



PNIEC 2021

23%

PNIEC 2023

32%

% of RES in final energy

vs. 2005



PNIEC 2021

49%

PNIEC 2023

55%

% of RES in electricity generation

End-use Energy Efficiency



PNIEC 2021

41,7%

PNIEC 2023

43%

Energy independence



PNIEC 2021

42%

PNIEC 2023

48%



PNIEC 2021

74%

PNIEC 2023

81%



2019

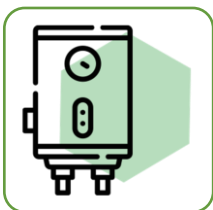
27%

PNIEC 2021

39%

PNIEC 2023

50%



Technologies

- Aerothermal
- Hydrothermal
- Geothermal



Demands

- Process heat
- Heating
- Cooling
- Domestic Hot Water (DHW)



Sectors

- Industrial
- Residential
- Services

European context:

- Fit for 55
- REPowerEU
- Renovation Wave
- Green Deal Industrial Plan
- Net-Zero Industry Act

	Heating & Cooling
NECP 2023	1,4% (2021-25) 2,4% (2026-30)
Fit for 55	0,8% (2021-2025) 1,1% (2026-2030)
NECP 2020	0,8% (2021-2025) 1,2% (2026-2030)



**NECP
2023-2030**

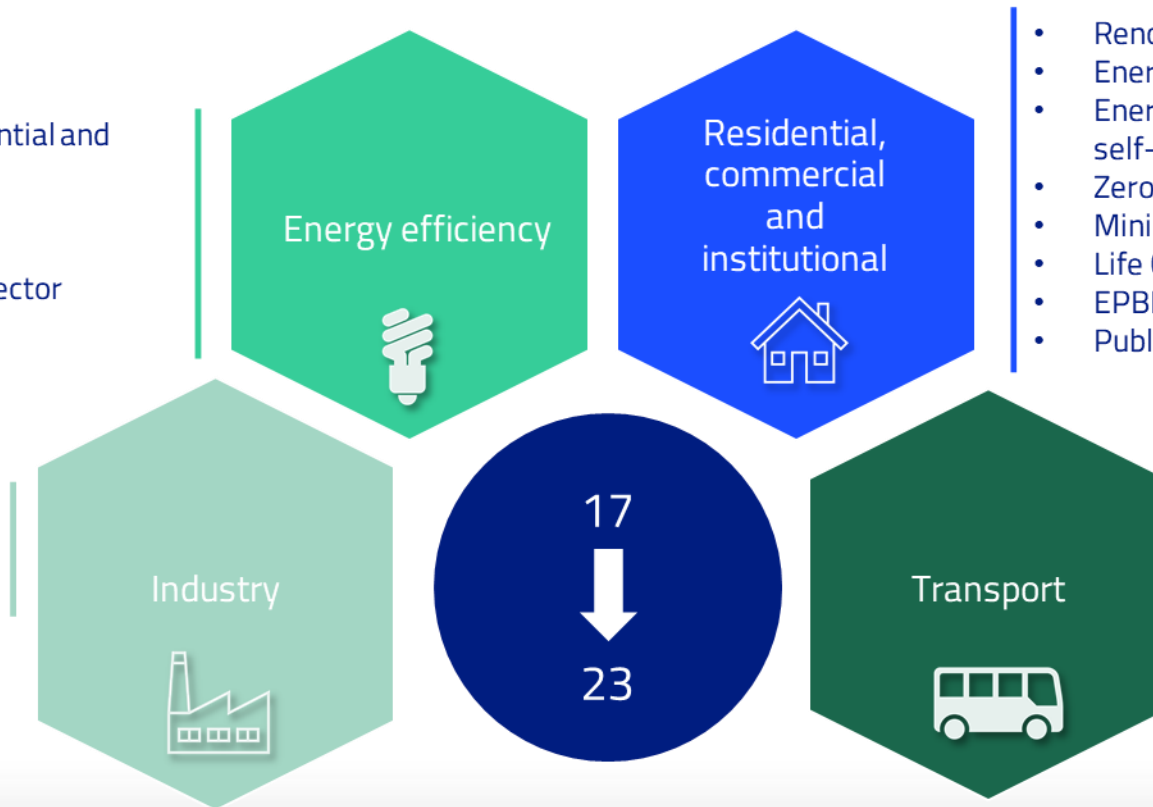
110 measures

**19
measures**

ENERGY EFFICIENCY DIMENSION

- Heating and cooling networks in the residential and tertiary sectors
- Energy Savings Certificates System (CAEs)
- Aid programs funded by the NEEF
- Energy efficiency measures in the fishing sector
- Training and awareness

- Specific efficiency measures
- Promotion of CAEs
- Electrification and self-consumption



- Renovation of 1.377.300 dwellings
- Energy renovation of the public building stock
- Energy efficiency measures, electrification, and self-consumption
- Zero Emission Buildings by 2050
- Minimum energy efficiency standards
- Life Cycle Analysis of buildings
- EPBD Directive
- Public investment: PRTR and FEDER

- **Low Emission Zones**
- 5.5 million electric vehicles
- **Modal shift**
- Commitment to public transport and rail
- Improvement of energy efficiency in ports

The EU Directive 2018/2001 on the promotion of the use of energy from renewable sources, enables the Commission to adopt a delegated act establishing a methodology for calculating the amount of renewable energy used for cooling:

18.5.2022

EN

Official Journal of the European Union

L 139/1

COMMISSION DELEGATED REGULATION (EU) 2022/759

of 14 December 2021

amending Annex VII to Directive (EU) 2018/2001 of the European Parliament and of the Council as regards a methodology for calculating the amount of renewable energy used for cooling and district cooling

- Heating:

$$E_{RES} = Q_{usable} * (1 - 1/SPF)$$

- Cooling. The application of this new methodology implies that the accounting of renewable cooling would be reduced by **-75% in the NECP 2020**

$$E_{RES-C} = (Q_{Csource} - E_{INPUT}) \times S_{SPF_p} = Q_{Csupply} \times S_{SPF_p}$$

The methodology of the delegated act seriously harms the accounting of renewable cooling in Spain, reducing the total contribution of heat pumps by **-36% in the NECP 2020**

Despite the **greater deployment of heat pumps** in the draft of the NECP 2023, the **methodology** of the Delegated Regulation 2022/759 for renewable cooling significantly **reduces the accounting** of energy supplied by heat pumps compared to the previous methodology

Share of renewable energy over final energy consumption in the NECP 2023-2030 Scenario*								
	Year*	RED III	2019	2020	2022	2025	2027	2030
Final consumption of RES (excluding renewable electricity consumption)	Agriculture (ktoe)	7.1 b)				159	173	207
	Industry (ktoe)	7.1 b)				2.239	2.372	2.902
	Residential (ktoe)	7.1 b)	4.229	4.116	4.241	2.281	2.344	2.619
	Services & other (ktoe)	7.1 b)				376	414	541
	Transport (ktoe)	7.1 c)		1.762	1.536	1.446	2.410	2.986
Energy supplied by heat pumps (ktoe)		7.1 b)	849	960	1.211	1.506	1.832	2.561
Electricity from Renewable Sources (ktoe)		7.1 a)	8.943	9.846	11.736	17.531	20.299	24.451
Total Renewable Energy (ktoe)		7.1 a)+b)+c)	15.783	16.458	18.633	26.503	30.421	37.295
Final consumption of energy corrected with the losses of the electrical system, aviation consumption, and the energy supplied by heat pumps (ktoe)		7.5	88.413	77.562	84.251	83.334	81.234	77.925
Share of energy from renewable sources		Art. 7	17,85%	21,22%	22,12%	31,80%	37,45%	47,86%

* RED I applies to 2019 and 2020, RED II applies to 2022 and RED III applies to 2025-2030 projections. In the table, electricity consumed in transport is accounted for in the row Electricity from Renewable Sources.

Aligned with climate neutrality



- 55% reduction in GHG emissions compared to 2005
- Compliance with Fit for 55

More strategic autonomy



- 50% indigenous primary energy
- Savings of 86.750 M€ in fossil fuel imports

More socio-economic benefit



- +3.2% GDP growth compared to the baseline scenario
- 560.000 jobs associated with the PNIEC in 2030
- 5.800 premature deaths will be avoided

Progress in the energy transition



Environmental and social reinforcement



Greater integration of cross-cutting policies



More ambitious objectives in:

- Renewables and self-consumption
- Storage
- Renewable H₂ and biogas
- Electrification
- Energy efficiency
- R+I+i

Incorporate measures of:

- Renewables compatible with biodiversity, territory, and social development
- Fight against energy poverty
- Just Transition

- National Climate Change Adaptation Plan
- Strategic Environmental Assessment NECP
- Gender approach
- Adaptation to progress and measures since 2020
- Demographic challenge

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Thank you



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