



Un Plan de Hoy
para el Mañana



GOBIERNO
DE ESPAÑA

MINISTERIO
PARA LA TRANSICIÓN
ECOLÓGICA



IDAE
Instituto para la Diversificación
y Ahorro de la Energía

Challenges and Opportunities of Transforming the Energy System in Spain

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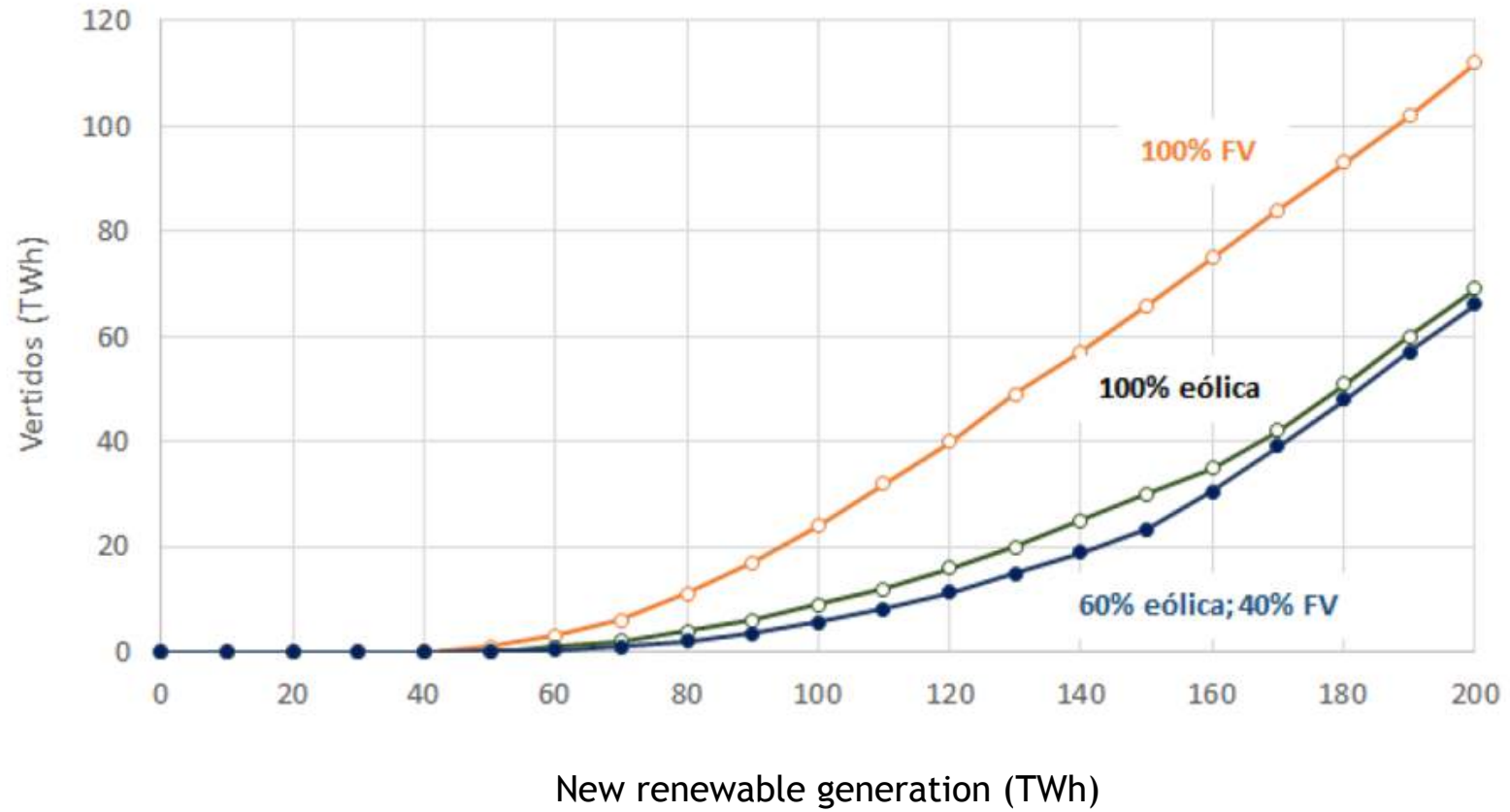
DECARBONISATION ROADMAP TO 2030: FOUR PILLARS

- 1) Energy efficiency comes first
- 2) Maximize RES at large scale
- 3) Raise decentralised energy share in energy system
- 4) Mass electrification of other sectors

NATIONAL INTEGRATED PLAN FOR ENERGY AND CLIMATE: OBJECTIVES 2030

Generation Park within the target framework (MW)				
Year	2015	2020	2025	2030
Wind energy	22.925	27.968	40.258	50.258
Solar photovoltaic	4.854	8.409	23.404	36.882
Solar thermoelectric	2.300	2.303	4.803	7.303
Hydraulic	14.104	14.109	14.359	14.609
Mixed pumping	2.687	2.687	2.687	2.687
Pure pumping	3.337	3.337	4.212	6.837
Biogas	223	235	235	235
Geothermal	0	0	15	30
Ocean energies	0	0	25	50
Biomass	677	877	1.077	1.677
Coal	11.311	10.524	4.532	0 – 1.300
Combined cycle	27.531	27.146	27.146	27.146
Coal cogeneration	44	44	0	0
Gas cogeneration	4.055	4.001	3.373	3.000
Cogeneration with petroleum products	585	570	400	230
Fuel/Gas	2.790	2.790	2.441	2.093
Renewables cogeneration	535	491	491	491
Waste cogeneration	30	28	28	24
Urban Solid Waste	234	234	234	234
Nuclear	7.399	7.399	7.399	3.181
Total	105.621	113.151	137.117	156.965

CHALLENGE: CURTAILMENT



Source: Endesa

RES POLICY AND TARGETED MEASURES

HIGH GROWTH IN RES CAPACITY AND NETWORK INTEGRATION

NEW RES DEVELOPMENTS

Auctions

Multiannual schedule
Priority: sustainable growth, lowest possible cost
Drivers:

- Participatory projects
- Manageability
- Fair Transition

Bi-lateral contracts

Public Administrations and large consumers
minimum RES contributions

Self-consumption

Repowering

NETWORK INTEGRATION

Grid developments

New evacuation points and existing ones
reinforcements + interconexions. Informed
processes to guarantee planning execution is on-
schedule.

Connection criteria

Revised actual network use provisions and
generation manageability

Flexibility

Demand side management/participation,
storage systems and pumping usability criterion

Technology Hibridization

RES POLICY AND TARGETED MEASURES

HIGH GROWTH IN RES CAPACITY AND NETWORK INTEGRATION

Flexibility

Demand side management/participation, storage systems and pumping usability criterion

Storage

- 3,5 GW additional pumping
- 2,5 GW de baterías, mostly second period (2025-2030)
- Pumping Operation procedure reformulation to prioritize/accommodate larger RES-share and provide system stability

Demand Side Management

- Demand participation in services to the System
- Direct participation of large consumers
- Retail consumers participation by means of Aggregators

Alternatives nuanced according to actual readiness of each technology option

CHALLENGE: VERY LARGE SCALE DISTRIBUTED GENERATION



Aggregators: prosumers, demand side management, e-mobility

1. Access to markets, definition of services:

- Existing
- Requested by the DSO
- Provided ad-hoc by the aggregator



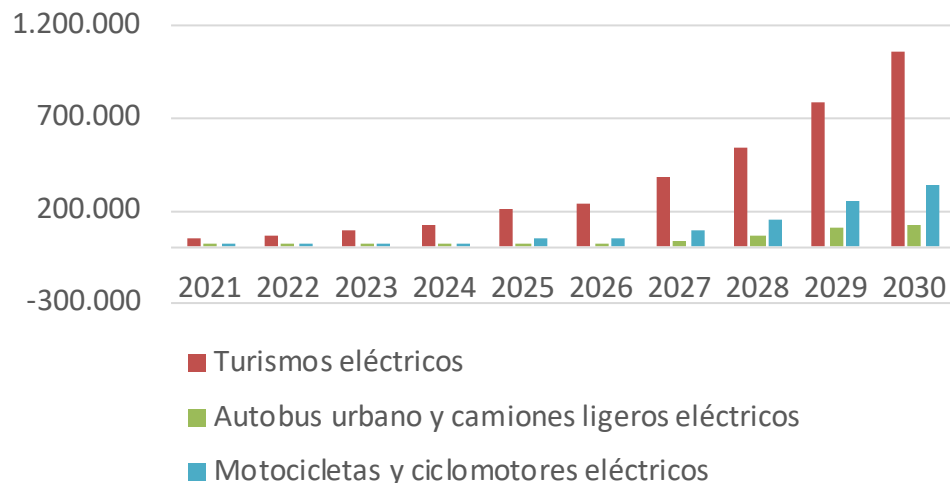
2. Access to data:

- Producers from 10 kW
- Data hub

EASE INTEGRATION WITHIN OTHER SECTORS

TRANSPORT ELECTRIFICATION VEHICLES FLEET TARGET: 5 Millions EV in 2030 (15% vehicles fleet)

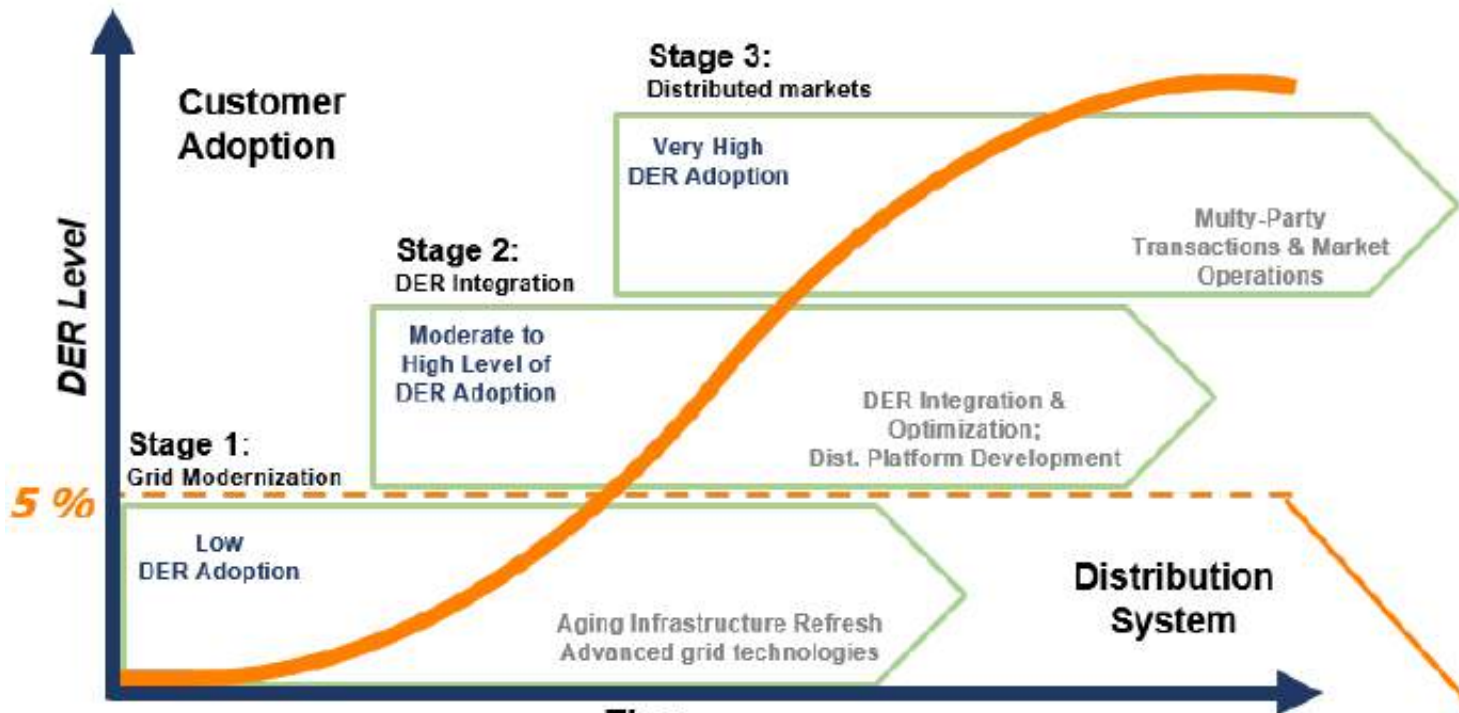
Foreseen evolution for new vehicles
2021-2030



Enforcement and implementing Mechanisms

- **1.000M€** available public funds until **2025** (afterwards price parity is expected)
- **Tax reform to apply a reduced VAT to the procurement of EV**
- **Tax reform to exempt excise duty on certain means of transport** (“Impuesto de matriculación”), emission thresholds update of CO₂/km to be eligible for “type 0” emission.
- **Implementing measures to speed up the deployment of recharging points and enable the bulk penetration of EV in cities** (parking management, HOV lanes, access restrictions to the centre,...).

CHALLENGE: VERY LARGE SCALE DISTRIBUTED GENERATION





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