



UNEFA

Unión Española Fotovoltaica

Merchant PV, a new dawn for PV development and challenges

Session 1:

Merchant PV and commercial PPAs: a new perspective on competitive PV development

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What is **UNEF**?

The Spanish Photovoltaic Union (**UNEF**) is the **reference Association of the Spanish PV sector.**

An Association that brings together **practically all the industry:** producers, installers, engineers, manufacturers of raw materials, modules and components, distributors and other related companies.

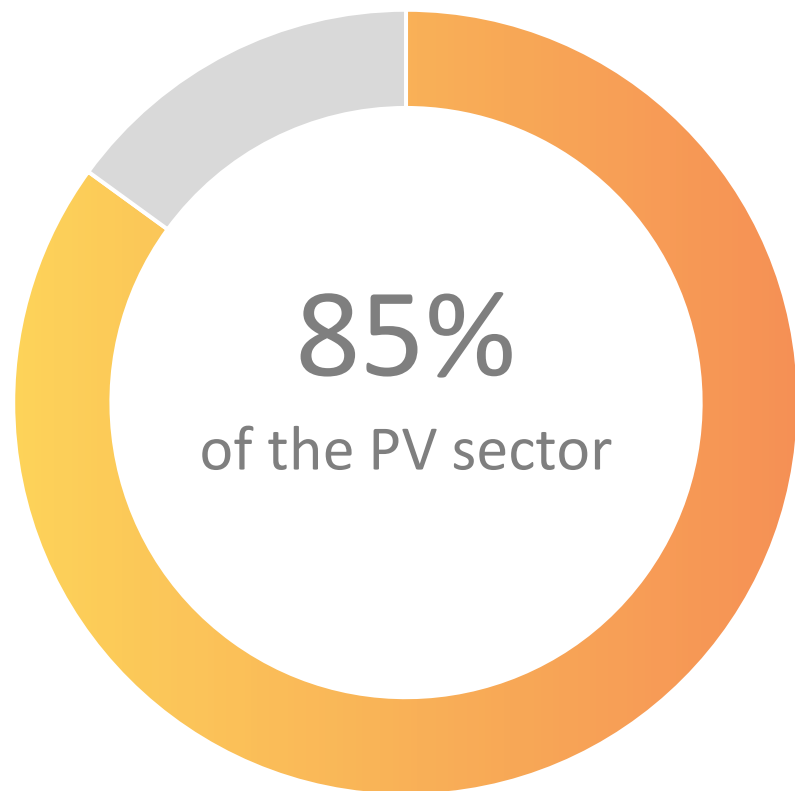
UNEF also holds the Presidency and Co-Secretariat of **FOTOPLAT**, the Spanish Technological Photovoltaic Platform.

The Platform brings together Universities, Research Centers and leading companies of photovoltaic R & D in Spain.



UNEF represents

≈ 470
companies



||||| Installers & Engineers

|||| Mixed

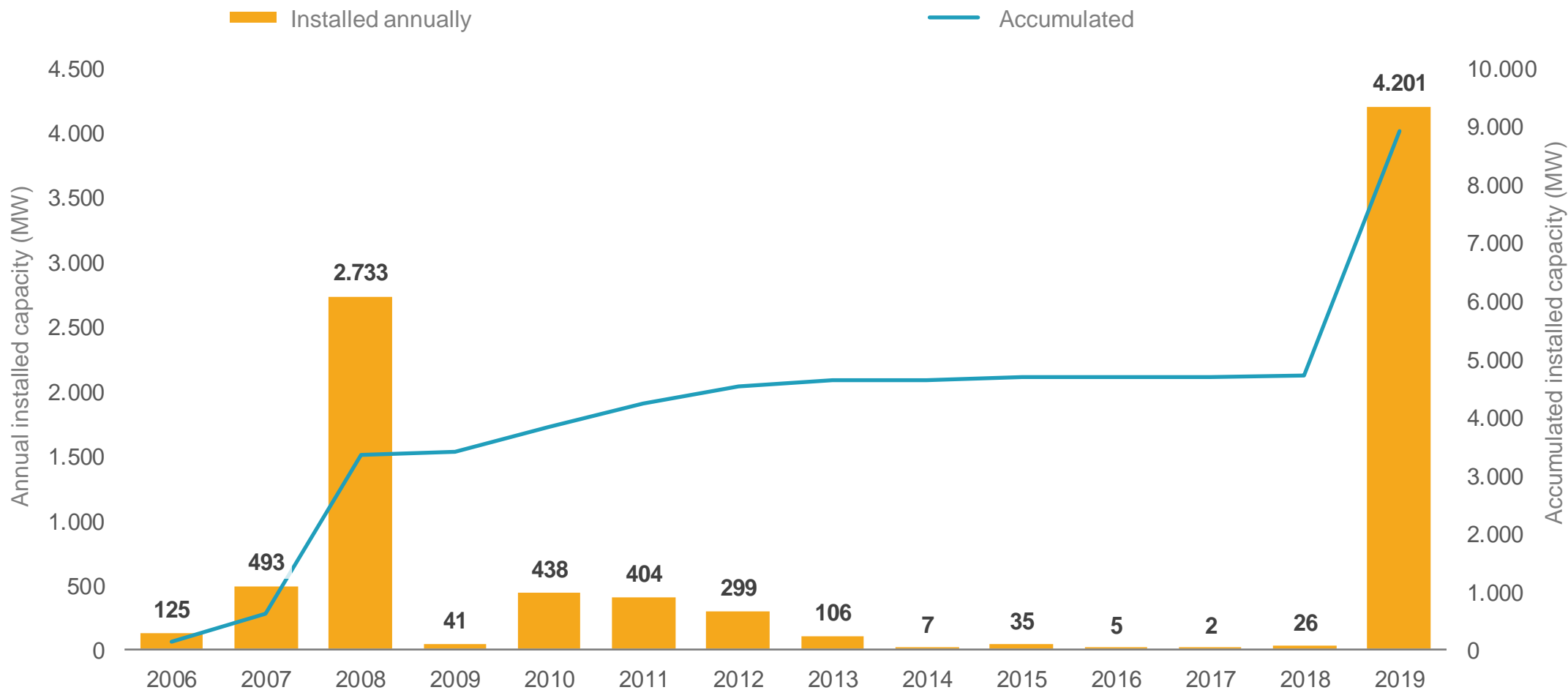
|||| Producers

||| Manufacturers

|| Distributors

2019: New record of PV capacity

Utility-scale ground mounted (MW)



What about the future? PNIEC



In 2030



Renewables 74% of
electricity generation



Renewables 42% of final
energy consumption



Emissions - 23 % with
respect to 1990

Parque de generación del Escenario Objetivo (MW)				
Año	2015	2020*	2025*	2030*
Eólica (terrestre v marítima)	22.925	28.033	40.633	50.333
Solar fotovoltaica	4.854	9.071	21.713	39.181
Solar termoeléctrica	2.300	2.303	4.803	7.303
Hidráulica	14.104	14.109	14.359	14.609
Bombeo Mixto	2.687	2.687	2.687	2.687
Bombeo Puro	3.337	3.337	4.212	6.837
Biogás	223	211	241	241
Otras renovables	0	0	40	80
Biomasa	677	613	815	1.408
Carbón	11.311	7.897	2.165	0
Ciclo combinado	26.612	26.612	26.612	26.612
Cogeneración	6.143	5.239	4.373	3.670
Fuel y Fuel/Gas (Territorios No Peninsulares)	3.708	3.708	2.781	1.854
Residuos y otros	893	610	470	341
Nuclear	7.399	7.399	7.399	3.181
Almacenamiento	0	0	500	2.500
Total	107.173	111.829	133.802	160.837

*Los datos de 2020, 2025 y 2030 son estimaciones del Escenario Objetivo del PNIEC.

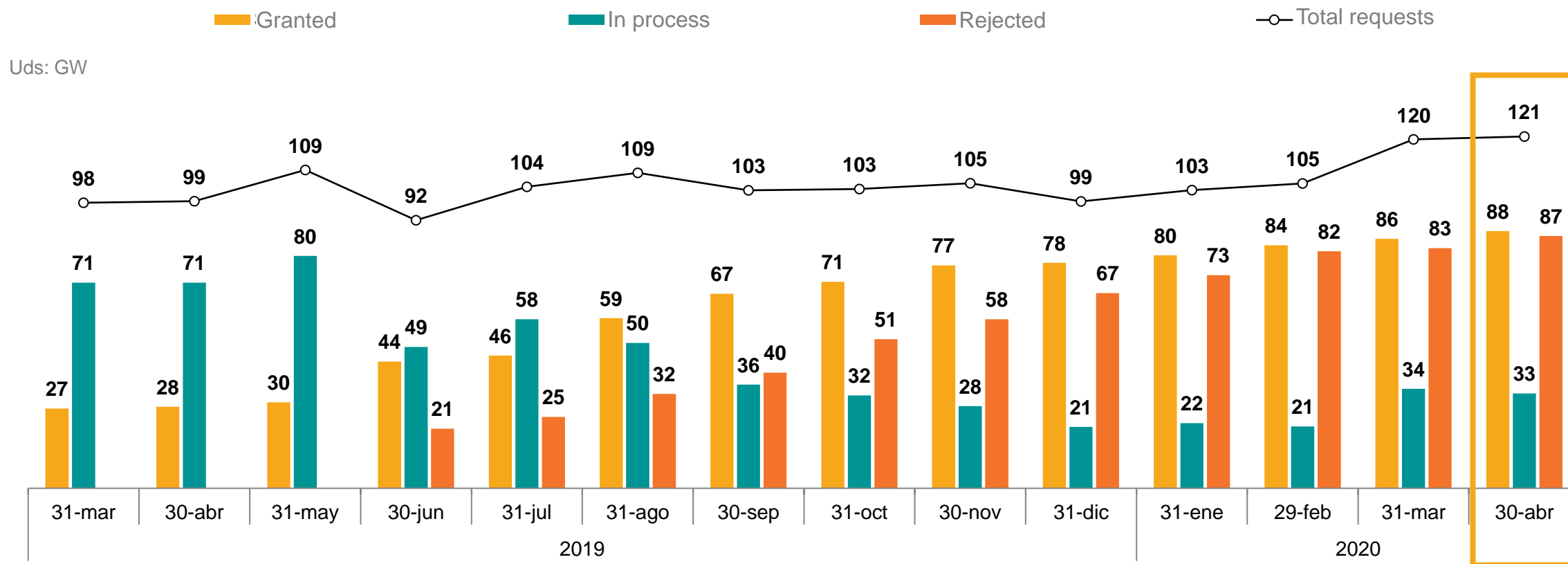
Source: PNIEC

We need a **stable deployment**

Stable evolution of photovoltaic capacity (MW) to meet the 2030 target scenario of PNIEC

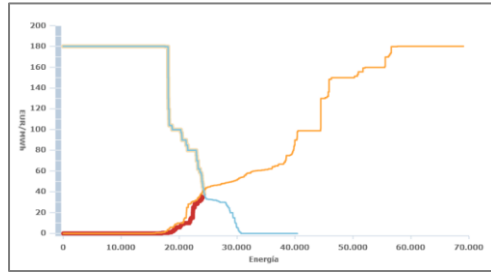


Network access and connection permits (GW) for PV



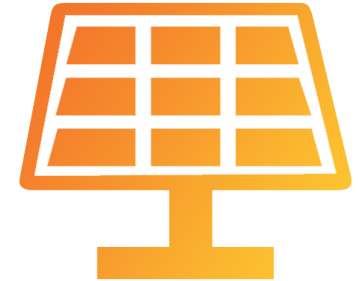
Source: REE

How do we get there?



omie

Market (€/MWh)



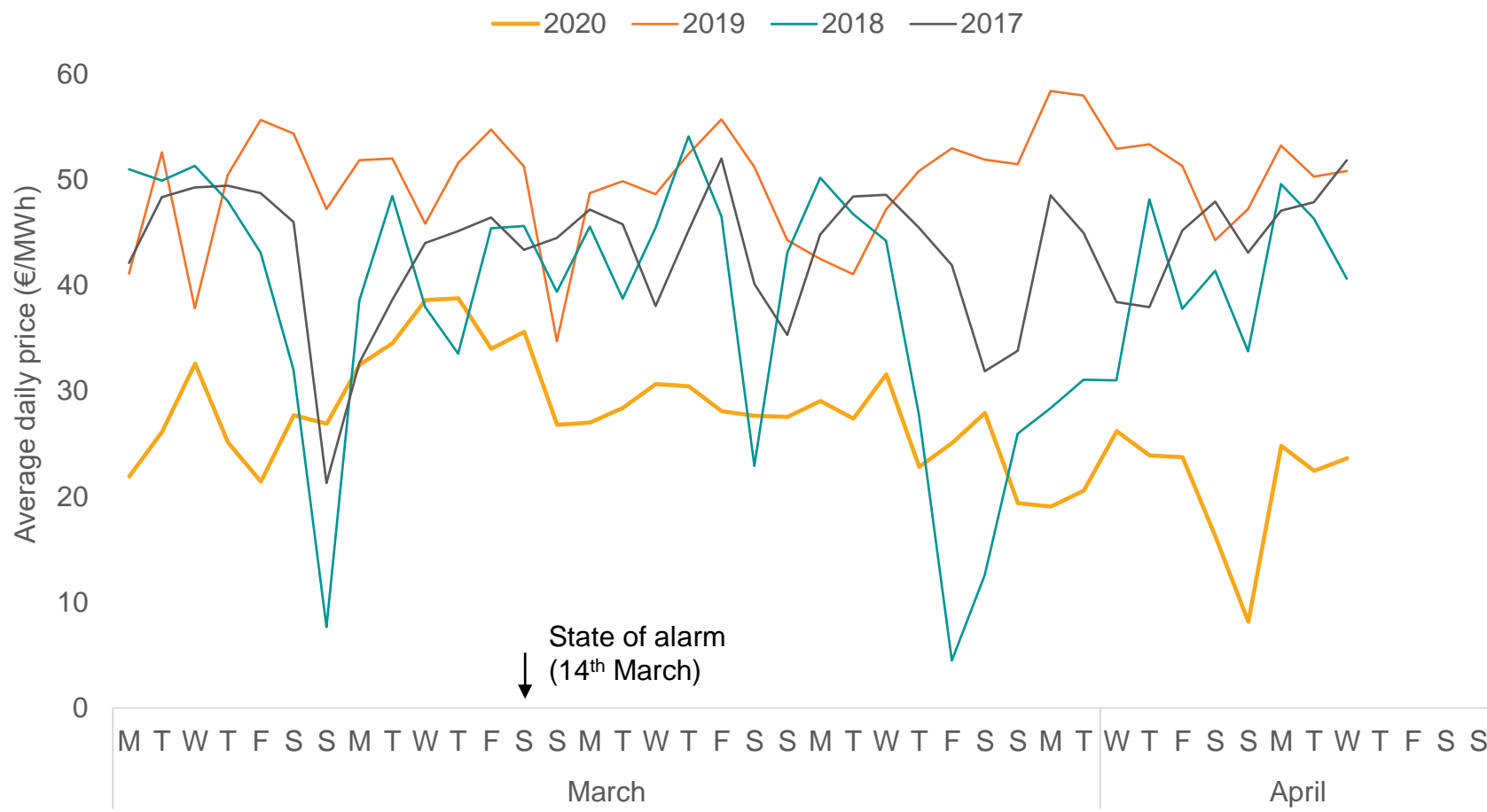
Auctions
Held by the regulator for a price for the energy generated (€/MWh)

PPAs
Private energy purchase and sale contracts at a certain price (€/MWh)

Merchant
Obtain the income only from the market assuming the price risk

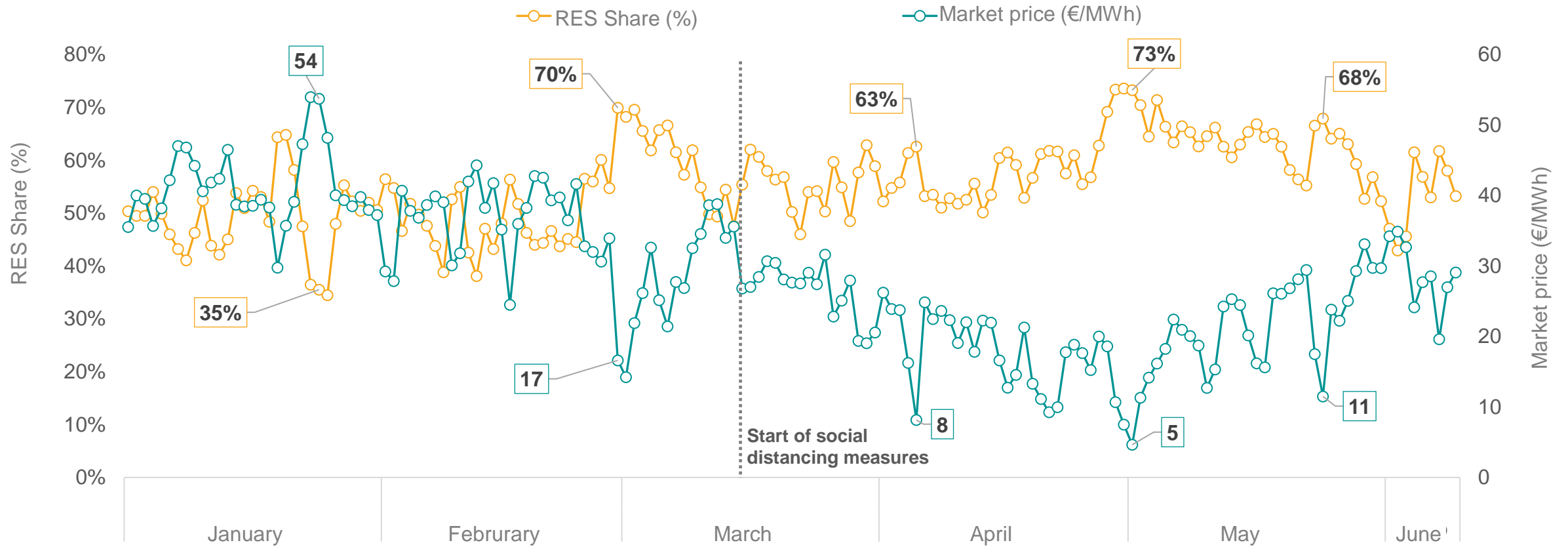
The new projects have three formulas of economic exploitation with different degrees of income stabilization.

Prices during covid-19



Impact of covid-19

Daily average of spot price in Spain (€/MWh) and Renewables share (%)



Source: OMIE and REE

Impact on Utility Scale Plants

- **Short term:**
 - Delays in the planning process
 - Delays in the connection of plants in construction
- **Medium/Long term:**
 - How the investors will integrate these day's low electricity prices in their investment decisions ?
 - Will the banks change their financial terms?

Ground Floor

- Speeding the planning process
- Auctions
- Access to good terms financing

The PV sector on the crossroad: Auctions versus merchant. What is the best solution?

Auctions:

- Give stability
- Easier finance
- Allow more players

But... too aggressive prices



- Difficult finance
- Big pressure on technological enterprises

The PV sector on the crossroad: Auctions versus merchant. What is the best solution?

P.P.A.:

- Strong pressure to reduce prices due to COVID19 electricity prices and auctions prices
- Not enough offtakers for PNIEC targets

Merchant:

- Inadequation of the marginalist price system
- Big incertitude about future price curve: canibalitation
- Not all the banks are ready to finance
- Less players



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Thank you for your attention