

g-advisory
GRUPO GARRIGUES



2023-Q2 MIBEL pool prices outlook and market services

July 2023

Contents

- Why G-advisory – Simulyde?
- 2023-Q2 Regulatory highlights - Brief
- 2023-Q2 Market review
- Model The logo for xPryce! features the word 'xPryce!' in a stylized font. The 'x' is blue, 'Pryce' is in red and yellow, and the exclamation point is green with a lightbulb shape inside. Below the 'e' is a small yellow sun icon with rays.
- Products and contacts
- Results and products overview

Why G-advisory – Simulyde?

g-advisory
GRUPO GARRIGUES

www.g-advisory.com

- ▶ **G-advisory + Garrigues.** Integrated approach combining technical and legal aspects.
- ▶ **Multidisciplinary team.** Industrial Ing., Civil Ing., Mining Ing., Forestry Ing., Chemical Ing, etc.
- ▶ **+ 20 years experience in Energy and ESG.** Supporting our clients in energy transition, sustainability and climate change.
- ▶ **+ 40 countries experience in 5 continents.** Offices in México City, Santiago de Chile, Paris and Madrid.
- ▶ **+ 40 GW of renewable capacity analysed.** Experience in all commercial technologies and innovative projects.
- ▶ **+ 5 years providing advice on electrical market.** MIBEL market outlook and pool price projections.

 **SIMULYDE**
INVESYDE

www.simulyde.com

- ▶ **Invesyde group.** Consultancy and IT services firm.
- ▶ **+ 15 years experience.** Assisting our clients to reach their goals in the energy sector.
- ▶ **+ 5 countries modelled.** Spain, Portugal, France, Italy and UK.
- ▶ **+ 6 major energy agents use our models.** Price model (xPryce) used for price and revenue projection, and ad-hoc models for any energy aspect.
- ▶ **+ 7 years modelling MIBEL.** Price projections, market and regulatory reports.

360° visión of the Spanish Electricity sector



In depth knowledge of renewable technologies and market modelling.



Comprehensive technical, economic, strategic, environmental and market advisory services.

Technical analysis, pool price projections, PPA, EPC and O&M contracts analysis, hybridisation assessment, storage solution analysis, cost-benefit analysis of own consumption projects, project environmental assessment, etc.

2023-Q2 Regulatory highlights - Brief

01 Aid programmes for H₂

- Order TED/1445/2021 approved the regulatory bases of “H2 PIONEROS”. The first call resolution was published in April 2023 and a second call was launched in May 2023, which allocated 150 MEUR to assets with a minimum investment per project of 1 MEUR.
- Order TED/1444/2021 sets the regulatory bases of “Programa H2 Cadena de Valor”. First part resolution (150 MEUR) was published in May 2023; second part (80 MEUR) resolution was published in April 2023; third and fourth part of the programme have offered 140 MEUR.

02 Order TED/741/2023

- The methodology for updating the RECORE Ro (remuneration for operation) will be based on the main costs and revenues of the system, i.e. the price of fuel, and futures markets of CO₂, commodities and electricity. The Order also approves new installation types and their remuneration parameters.

03 Aid for storage projects

- On June 2, MITECO called for innovative electricity storage projects to be granted, that may be stand-alone, hybridised with renewables and reversible pumping, or thermal.
- Total amount is 160 MEUR, that may cover up to 60% depending on the company size (if location is non-peninsular territory, the aid could be increased by an extra 5%).
- Important requirements: (i) virtual storage is not eligible; (ii) useful life must be more than 12 years, with a residual storage capacity of 65%; (iii) for stand-alone, minimum power of 5 MW. In the case of thermal storage, minimum power of 1 MW; (iv) storage capacity equal to or greater than 4 hours.

04 Order TED/567/2023

- On May, the MITECO approved the Order TED/567/2023, announcing access to the regulatory sandbox, previously introduced in Royal Decree 568/2022. Aid may not exceed 15 MEUR per company and project.

05 Royal Decree 446/2023

- On June, Royal Decree 443/2023, modified the methodology for calculating PVPC as of January 1, 2024, leaving partially the indexation to spot market and incorporating gradually futures markets: 25% in 2024, 40% in 2025 and 55% in 2025. 2025 and 55% in 2026.

06 Royal Decree-Law 5/2023

- On June, RD-L 5/2023 extended until the end of the year of the 80% reduction in tolls for the electro-intensive industry.
- Deadline to get AAC has been extended by six month (until January 25, 2024), benefiting about 50 GW of renewables (approximately 85% solar photovoltaic and the remaining 15% onshore wind) that are advancing in their procedures to get Ready-to-build state.

07 New PNIEC raises targets

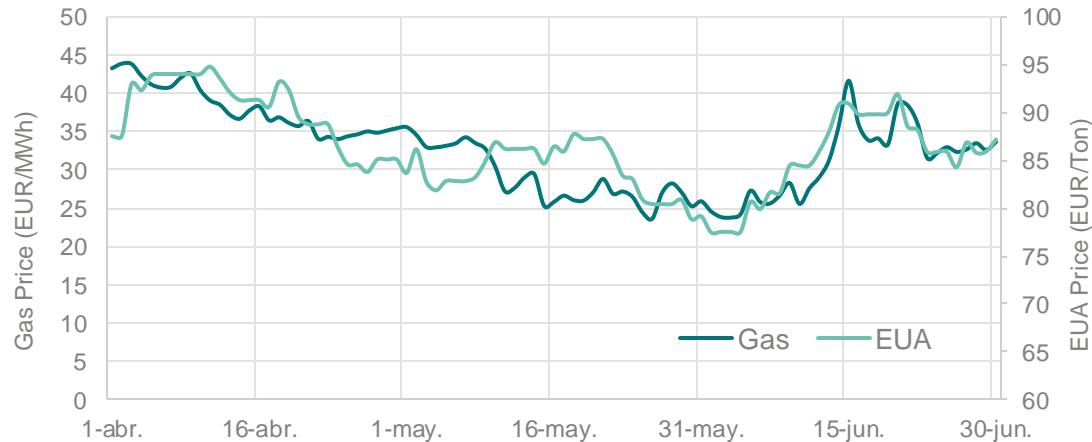
- Proposal to update PNIEC increases renewable capacity by 2030: (i) wind from 50 GW to 62 GW; (ii) solar PV from 38 GW to 57 GW (76 GW with self-consumption); (iii) storage from 8 GW to 22 GW, between pumped storage and batteries.
- In total, the NECP increases from 161 GW renewable in 2030 to 214 GW



Further regulatory and market highlights included in our Quarterly subscription to MIBEL pool price projection. Click [here](#) to contact for further information.

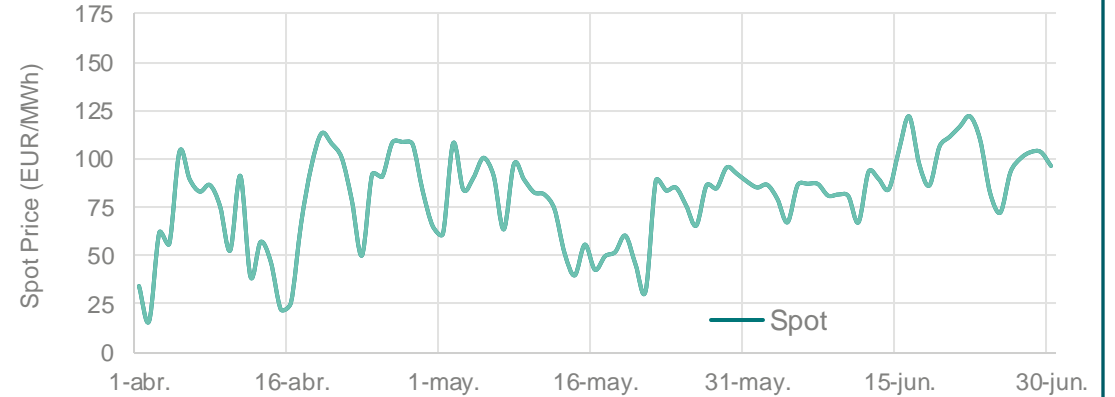
2023-Q2 Market review

Fundamentals (Gas, EUAs)



- Pressure on European and global gas markets has been easing in 2023, mainly due to mild weather conditions and energy policies by the EU executive that have boosted the decline in natural gas demand.
- Q2 closed with an average of 32.64 EUR/MWh, 19.25 EUR/MWh below 2023-Q1.
- Forward MIBGAS products indicate prices remain around 50 EUR/MWh: 2023-Q3 at 34.2 EUR/MWh and Yr-2024 at 49.13 EUR/MWh.
- CO₂ price average of 86.45 EUR/Ton, although EUA futures exceeded 90 EUR/Ton, something that had not happened since April

Spot-Market price



- Lower wind power production in several markets led to high prices on electricity markets in specific weeks. However, low demand levels and high PV have led power prices low.
- 2023-Q2 closed with an average of 80.25 EUR/MWh, 16.10 EUR/MWh lower than in Q1.
- The gas adjustment mechanism was not even activated any day of this Q2.
- Regarding futures, 2023-Q3 closed at 101.5 EUR/MWh and Year-24 at 92.35 EUR/MWh, which are still lower than prices in countries such as France or Germany.

Model



The xPryce model, used to simulate the MIBEL electricity market in the analysis for this report, was developed by **Simulyde**.

- **Fundamental Model**, simulating the hourly operation of the electricity system, optimising timing decisions taken by market agents and representing in detail both generation and demand.
- **Model output, pool hourly price projections** for all the simulated years in the base scenario (the “Base Scenario”) and in all the alternative scenarios; **hourly generation and capture prices for every technology**.
- **Modelling of France included**, due to its paramount importance in MIBEL price formation.
- **Optimization of the operations of plants involved in the market**, in order to simulate the pool dispatch, thermal, renewable and hydro units are represented using all their technical and economic characteristics.
- **Hourly thermal and hydroelectric programming**, for a yearly time horizon.

Why is it key to use a fundamental model now?

- **Fundamental models** are able to simulate the market clearing while considering the operation of the market, physical features of the power system, regulatory effects, etc.
- For **long-term horizons**, punctual events that have not occurred in the past are bound to happen, such as nuclear power plant decommissioning or the establishment of new interconnections between market areas.
- Given that **statistical models** perform under the assumption that **history will repeat** itself in the future, forecasting with fundamental models is more appropriate for the long term.

	Fundamental models	Statistical models	Examples
Structural changes	✓	✗	Regulatory changes (taxes, subsidies, windfall profits, etc)
New market events	✓	✗	Nuclear/coal/CCGTs plants decommissioning, external events (interconnections)
Market clearing	✓	—	Falling prices with the increase in renewable generation

Products and contacts

Report

A Complete MIBEL market outlook and pool price projection

B Quarterly subscription to MIBEL pool price projection

C Specific analysis for innovative projects

- Hybridization, Self-consumption, Batteries, Hydrogen

Content

- 01** Spanish Electricity System Overview
 - Demand, Generation, Transmission, Distribution and Retail activity
- 02** MIBEL Electricity Market
 - Market operation review, historical market pool prices, futures
- 03** 25 years MIBEL pool price projection
 - Base, Low and High Scenarios. Elaboration of other alternative scenarios
- 04** 25 years MIBEL Energy mix and production projection
 - Base, Low, High Scenario and other alternative scenarios.
- 05** 25 years capture price projection
 - Technologies capture prices
 - Specific asset capture price estimation
 - Capture ratios
- 06** Quarterly Market and Regulatory highlights review

Contacts



Antonio Baena
Partner – G-advisory
antonio.baena@g-advisory.com



Juan Cruzate
Partner – G-advisory
juan-cruzate@g-advisory.com



Javier Reneses
Coordinator G-advisory / Simulyde teams
javier.reneses@g-advisory.com
javier.reneses@simulyde.com

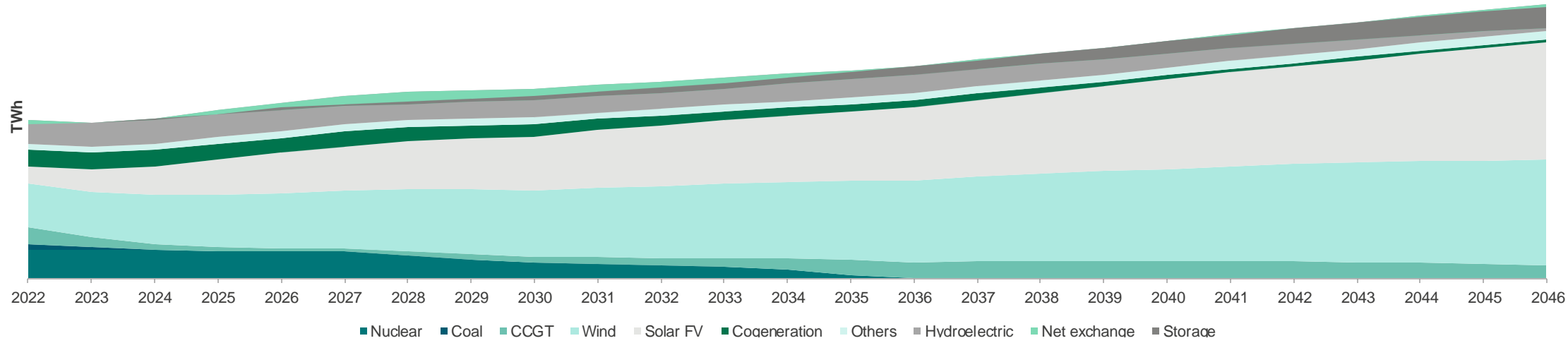


Pía Rodríguez
Senior Consultant - Simulyde
pia.rodriguez@simulyde.com

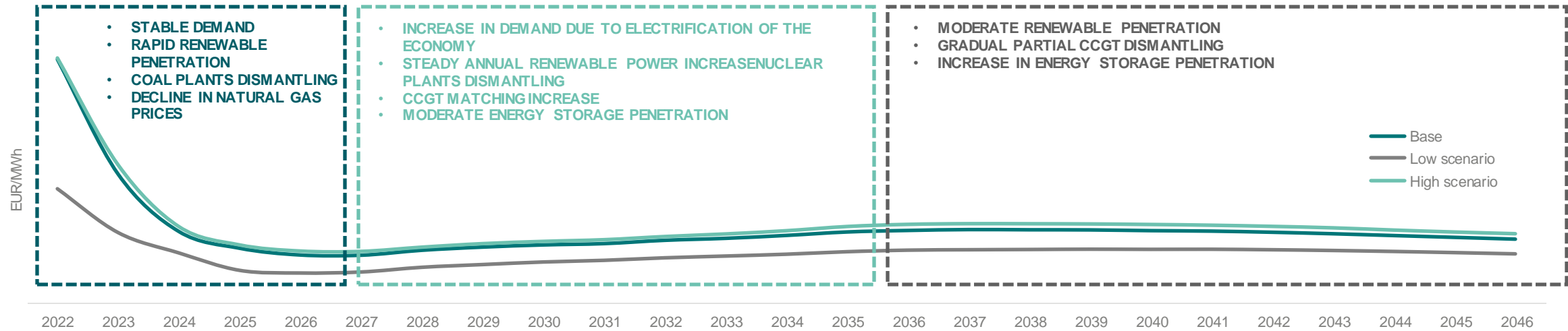
 Click [here](#) to contact for further information in relation to our market services

Results overview

Generation projection



Pool Price projection





Cardenal Herrera Oria, 63 3º Izda – 28034 Madrid (Spain) –
T +34 91 739 52 57 – simulyde.com



Hermosilla, 3 – 28001 Madrid (Spain) – T +34 91 514 52 00 –
g-advisory.com