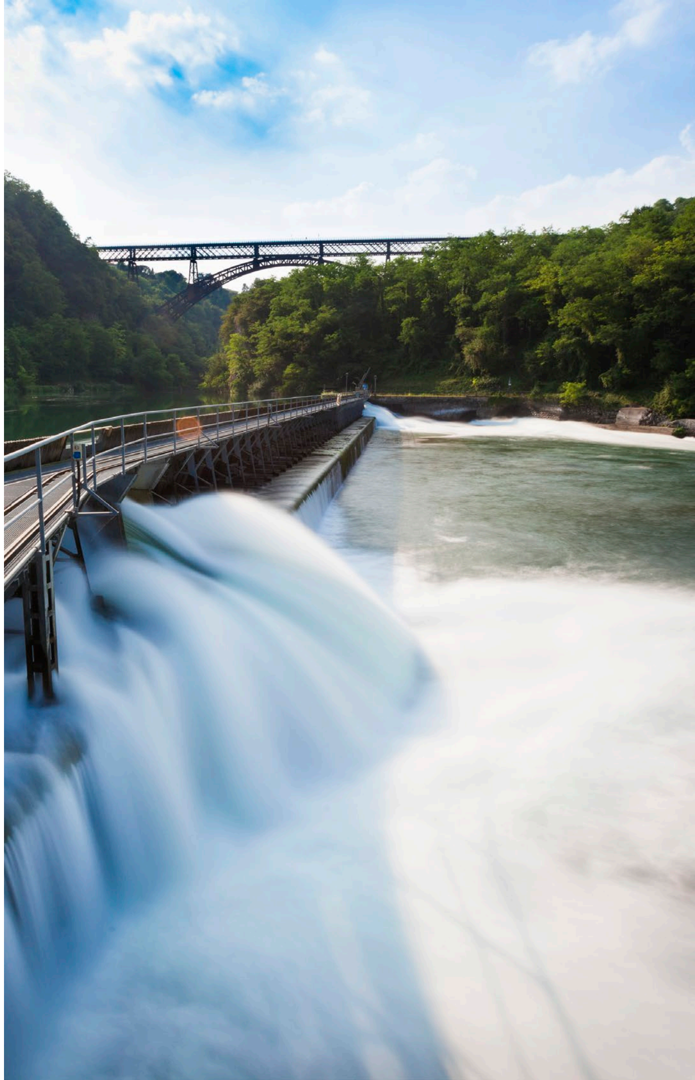
REGULATORY CHALLENGES FOR THE EUROPEAN ELECTRICITY MARKETS IN A RENEWABLE-BASED ENERGY SYSTEM: THE EU NEW MARKET DESIGN

18TH IAEE EUROPEAN CONFERENCE

MILAN, JULY 26TH 2023



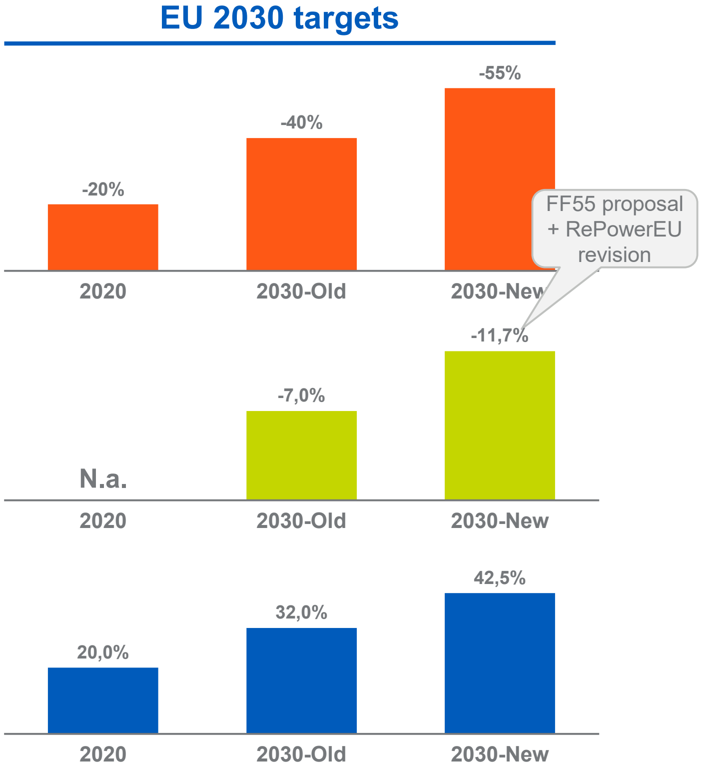
THE CONTEXT

THE EU 2030 CLIMATE TARGETS

GHG EMISSIONS
GHG emissions reduction vs 1990 levels

EFFICIENCY[1]
Primary energy consumption reduction vs 2020 projections

RENEWABLES
RES share on gross final energy consumption



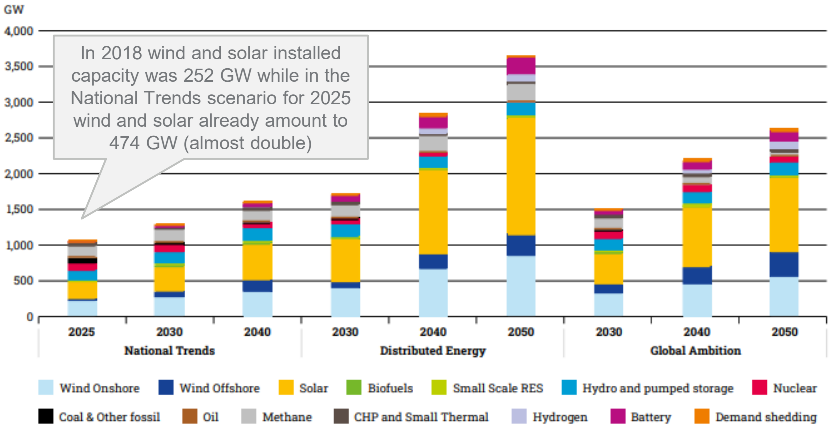
The European Union with the Fit for 55 Package set ambitious goals for 2030 with the view to achieve climate-neutrality by 2050

1) Reductions compared to the 2020 Reference Scenario for 2030 by PRIMES; respectively -20,5% in 2020, -32,5 % in 2030-Old, and -41,5% in 2030-new, if calculated with 2007 Reference Scenario for 2030 by PRIMES

THE CONTEXT

A STRONG DEPLOYMENT OF RES AND NEW FLEXIBILITY SOURCES

Capacity mix for EU 27

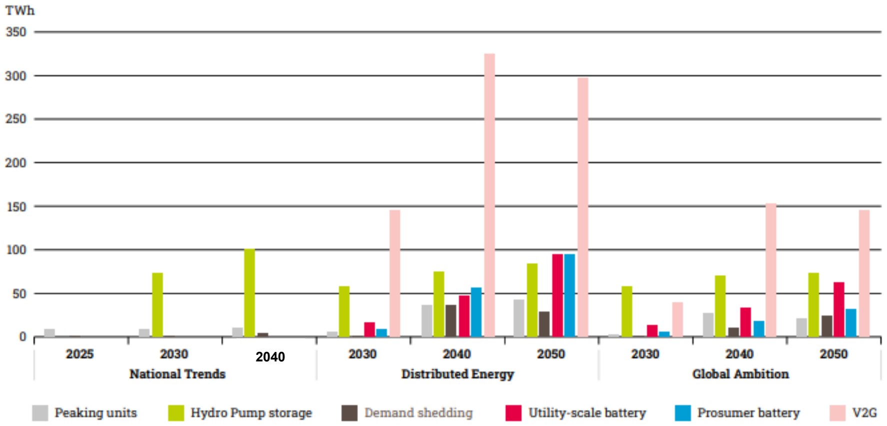


Source: ENTSO-E // ENTSOG TYNDP 2022 Scenario Report - 2022

A strong increase in wind and solar capacity is necessary already in 2030 to keep the pace towards carbon neutrality in 2050

Flexibility needs will increase together with the development of non-programmable RES and electrification of final uses (e.g. heating and EVs)

Main flexibility sources for adequacy



Source: ENTSO-E // ENTSOG TYNDP 2022 Scenario Report - 2022

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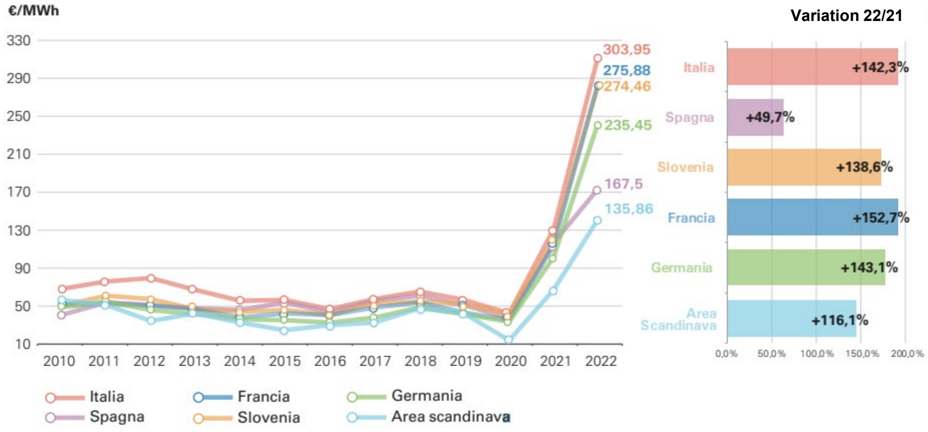
THE CONTEXT
THE ENERGY PRICE CRISIS

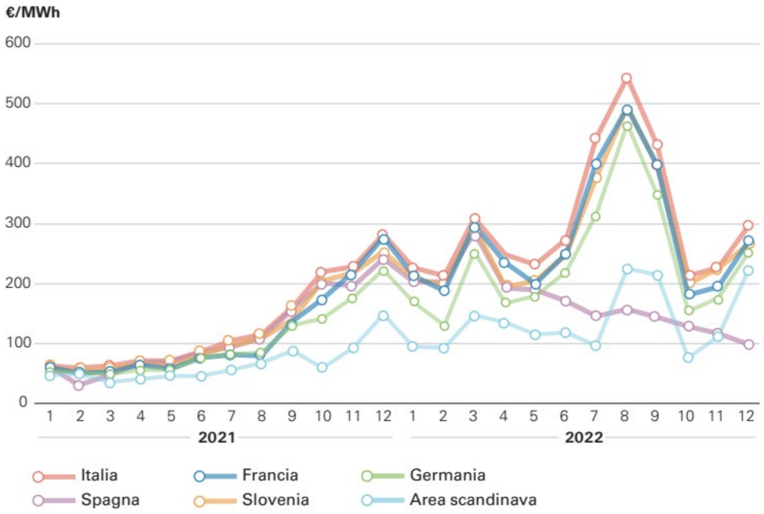
Day-ahead prices on main EU Power Exchanges (annual average)



Source: GME ([Relazione Annuale 2022])

The crisis on gas markets led to unprecedented high electricity prices that had a strong impact on the affordability of energy supply for household and industry

Day-ahead prices on main EU Power Exchanges 2021-2022 (monthly average)



Source: GME ([Relazione Annuale 2022])

THE COMMISSION PROPOSAL

WHY A REFORM OF THE EUROPEAN ELECTRICITY MARKET DESIGN?

The energy crisis and its impact on prices paid by consumers for energy supplies have convinced the European Commission (EC) of the need for a partial revision of the current European electricity market design, with the aim to **accelerate the energy transition, while mitigating the impact on the prices paid by final consumers**

The objectives

The European Commission proposal consists of a Regulation **amending existing European legislation:**

- Regulation (EU) 2019/943 on the internal market for electricity
- Directive (EU) 2019/944 on the internal market for electricity
- REMIT Regulation (Regulation (UE) 1227/2011)

Incentive to long-term contracts for the development of RES

Customer protection from price variations and/or instruments to take advantage of them

Development of non-fossil flexibility resources (e.g. storage and DSR)

Protection of the system from the risk of default of energy suppliers

Stabilisation and higher predictability of energy prices in the long-term to support industrial development

WHOLESALE ELECTRICITY MARKET PROPOSALS (1/2)

PPAs

- **Member States (MS)** must **facilitate the development of PPAs to achieve climate goals**
- **Public guarantees** for credit risk management
- Operators who have access to **RES support schemes can sell part of their production through PPAs**
- Operators who have **signed PPAs can enjoy priority selection in the auctions for incentives**

- **PPAs** are an effective tool for **mitigating the impact of short-term market price levels** on the prices paid by end customers
- Some **targeted interventions by Member States** can facilitate the development of PPAs
- **PPAs must remain a market-based tool** that responds to supply-offer dynamics (no excessive standardization)

CFDs

- **Two-way CFDs** become the **only incentive tool** for the **development of new «low carbon» generation capacity** (wind, photovoltaic, geothermal, hydro without reservoir and nuclear).
- By **new production capacity** it is also meant **re-powering, extension and lifetime prolongation of existing plants**
- **Redistribution to end customers** of the **revenues obtained from the settlement of CFDs** on the basis of their share of consumption

- The **use of CFDs** to support the development of RES must be **limited to what is strictly necessary** to achieve **climate objectives**
- **Excessive use of** (badly designed) **CFDs** can have a **distortive impact on market prices**
- The **role of CFDs** must remain limited to support **new RES capacity**

WHOLESALE ELECTRICITY MARKET PROPOSALS (2/2)

Peak Shaving

- TSOs can introduce ***peak shaving products*** to boost **demand side response** (DSR)

Capacity Mechanism

- Member States which apply a **capacity mechanism** shall consider the **promotion of the participation of non-fossil flexibility** such as demand side response and storage by introducing **additional criteria or features** in the design of the capacity mechanism

Flexibility support schemes

- Member States may apply **flexibility support schemes** consisting of payments for the available capacity of non-fossil flexibility such as demand side response and storage

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- The creation of a **dedicated DSR product** and **market segment** risks **reducing liquidity on existing markets** (spot and balancing markets)
- The **proposed solution does not seem effective** as to **incentivise a wider participation** in the provision of **DSR services**

- To face the growing penetration of non-programmable renewable sources while ensuring system security, **capacity mechanisms** must become an **integral part of the design of the European electricity market**, with the main objective to ensure the **adequacy of the electricity system** in a **technology neutral** way
- **Dedicated support mechanisms** for **flexibility resources**, such as storage systems (including pumped hydro storage facilities), necessary to manage the variability of RES production, are an essential tool for **encouraging investments in capital-intensive assets** characterized by highly uncertain market remuneration perspectives

THANK YOU

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