

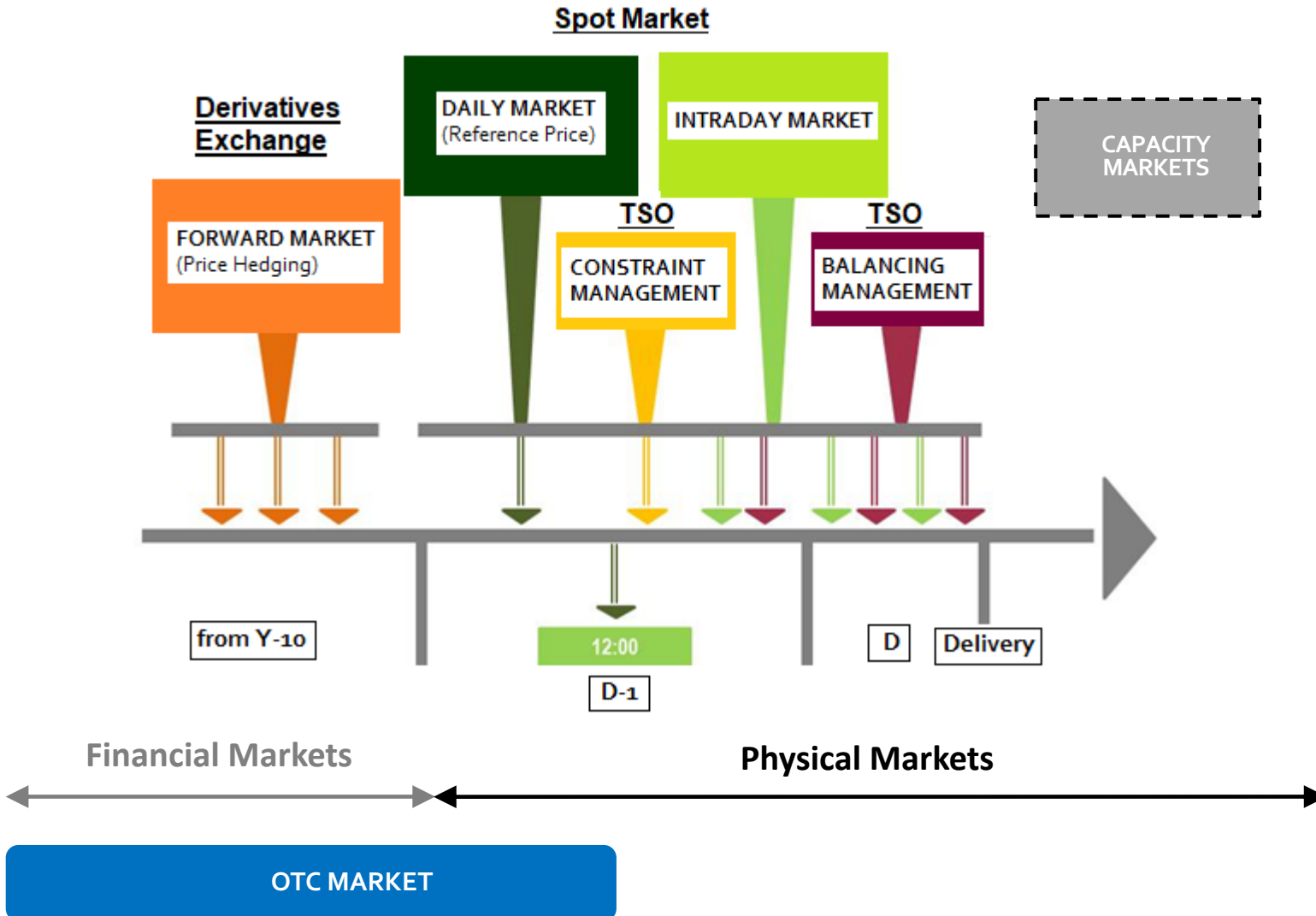
Energy Markets and Energy Transition

DOMINOES Webinar on Local Energy Market Solutions

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Power Market Sequence



- The Generation Market is the aggregation of different markets, contracts and processes.
- Each market has its own price.
- European Daily and Intraday Markets are Coupled.

Energy Markets: Integrated, Complex, Volatile

Forward Market – Bid / Ask dynamic
Daily Market - Marginalist Auction

Renewables (*Hydro, Wind, Sun*)

Demand

Commodities (*Gas, Coal, CO2*)

Availability (*Outages, Maintenance*)

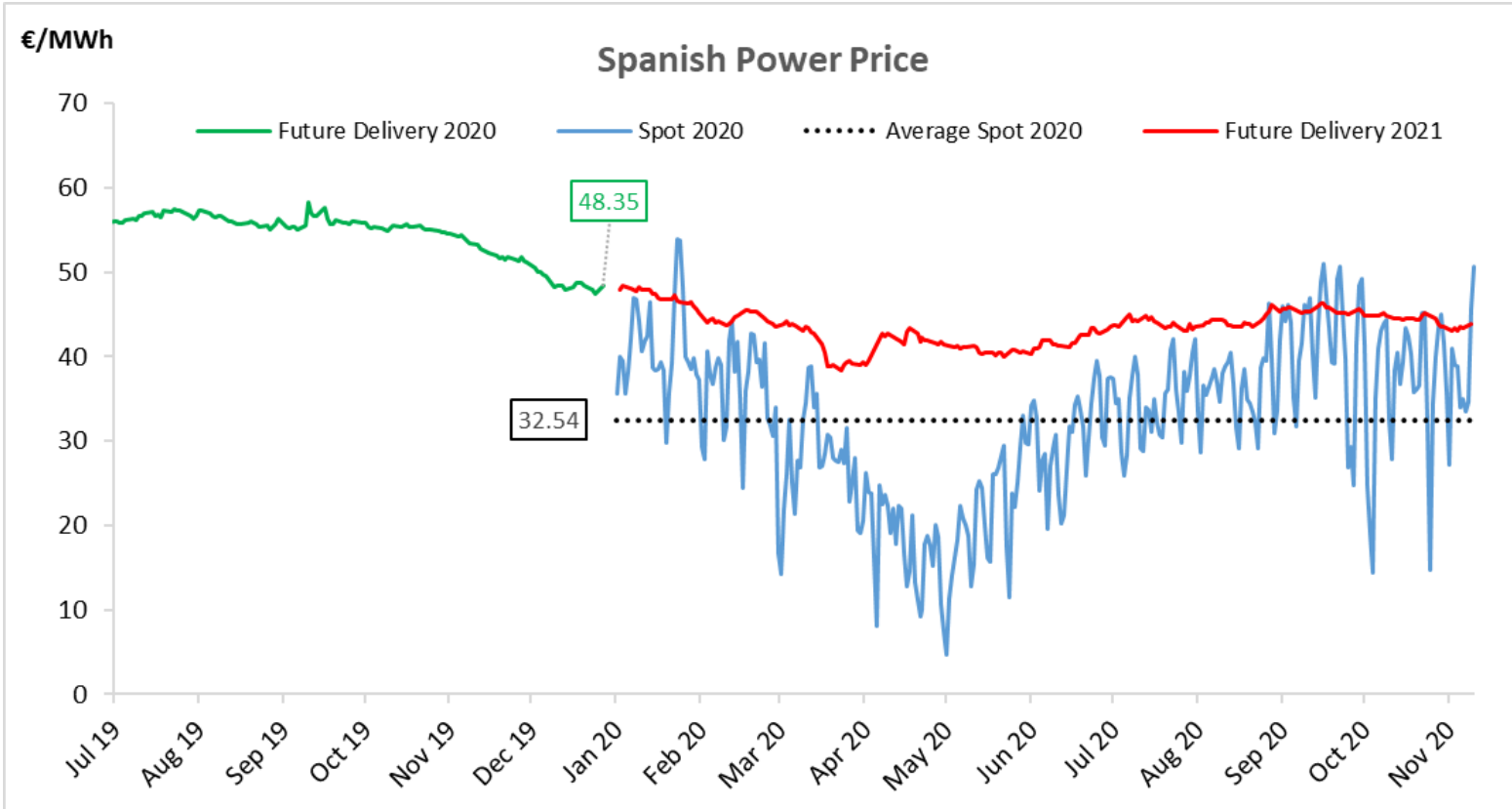
Taxes

Interconections

Flexibility, Availability, Capacity

Regulation

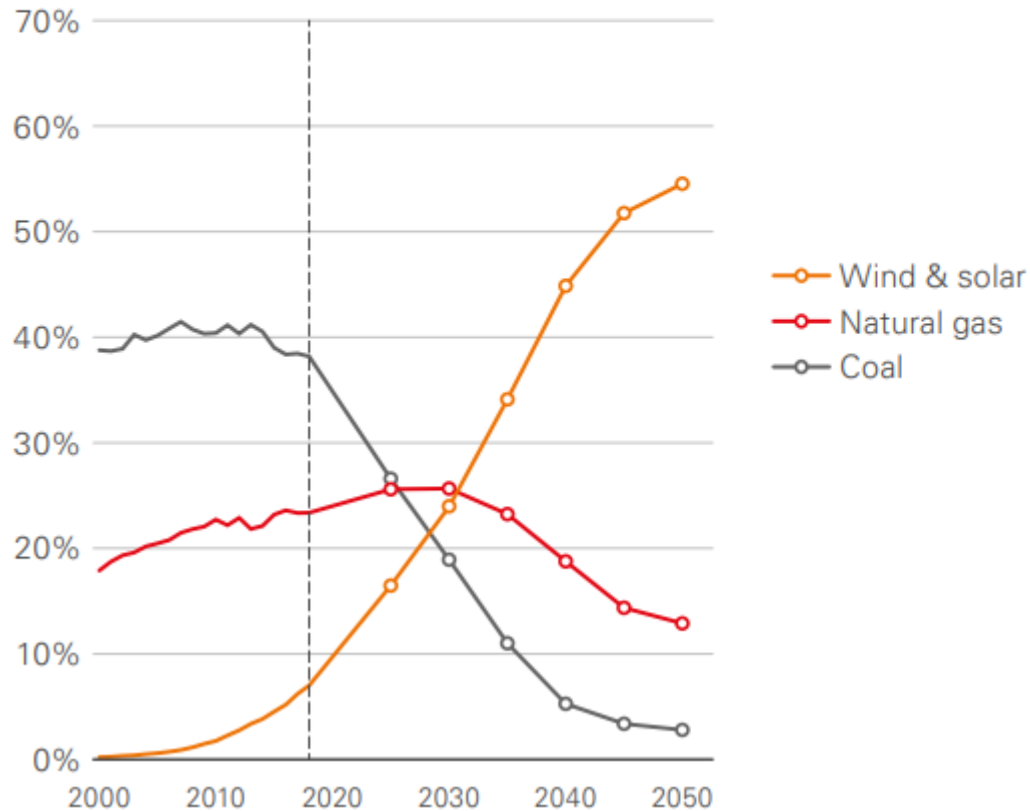
Time



Energy Transition: Impact

Share of global power generation by energy source

Rapid



Source: BP Energy Outlook 2020 edition

- Growth in share of Renewable non-dispatchable Capacity
- Growing Importance of Flexibility => Technical and Regulatory Developments required
- Emerging Concepts
 - Flexible Generation (*Gas Turbine, ...*)
 - Pumped Storage
 - Interconnections
 - Demand Side Management
 - Batteries
 - Virtual Power Plants
 - Smart Charging of EVs
 - H2, Biofuels, Synthetic Fuels

- Limitation of marginalist markets in ensuring price signals that guarantee investment in renewables and in back-up capacity
- Market redesign to guarantee decarbonization and security of supply

Energy Transition: Trends

Electrification of the Economy

Electricity replacing fossil fuels in Industry, Transport, Buildings. Digitalization.
-> Increase in Demand and change in the Load Profile.

Distributed Generation

Integration of large quantities of distributed generation into networks.
-> Incentives; Market Participation; Grid Remuneration.

Digitalization of Demand

Opportunity to create consumer services but also for consumers to participate as active agents in energy and flexibility markets.

Market Integration

European Integration already happening in Daily and Intraday markets, developing in balancing markets. -> Importance of developing Interconnections.

Regulation

Regulatory framework promoting investment, innovation and competition between different technologies. -> Efficient systemic risk management.

Innovation

Decentralization, digitization, more volatility -> new business models (VPPs, DSM, demand aggregators, aggregators) -> market framework?

Energy Transition: Development on Organized Markets

Organized Energy Markets will have to adapt to the new paradigm, participate in their development and act as a value vector for agents.

Short and Medium Term Developments:

- Trading closer to real time (currently in MIBEL it is possible to trade up to 1 hour before delivery).
- No price caps (currently in MIBEL [0, 180 €/MWh] limits in Daily and Intraday Markets).
- Greater Granularity, 15-minute period trading in the Daily and Intraday markets (currently hourly prices in MIBEL).
- Earlier opening time for the negotiation of D+1 contracts on Intraday Market.
- European-wide auctions in order to price Capacity.
- More Interconnection Capacity.
- Promote participation in Forward Markets (currently it is possible to hedge price risk in MIBEL up to 10 years).

Contacts

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