cerre Centre on Regulation in Europe

The European Wholesale Electricity Market: From Crisis to Net Zero

CERRE Paper Publication Hybrid Event

11 October 2022

AGENDA

1. **14:00 - Paper Presentation**
2. **14:30 - Panel Discussion and Q&A**
3. **15:30 – Coffee Break**
4. **15:45 - Roundtable Discussion on Selected Key Issues**

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Paper Presentation

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INTRODUCTION

- Large rise in prices and volatility has raised concerns about whether the current market design for electricity is working and **fit for Europe's net zero ambitions.**

- Markets deliver security of supply by **raising prices in times of scarcity**, creating profits for some, and leaving some market parties exposed to unhedged high prices or certain customers' inability to pay.

- The **distributional impact** of high prices on European households and industry and the competitiveness of national industries is a concern for the whole internal market.

- We examine wholesale electricity market design and **proposed interventions** in the light of Europe's current **energy crisis** and **carbon neutrality goals**.

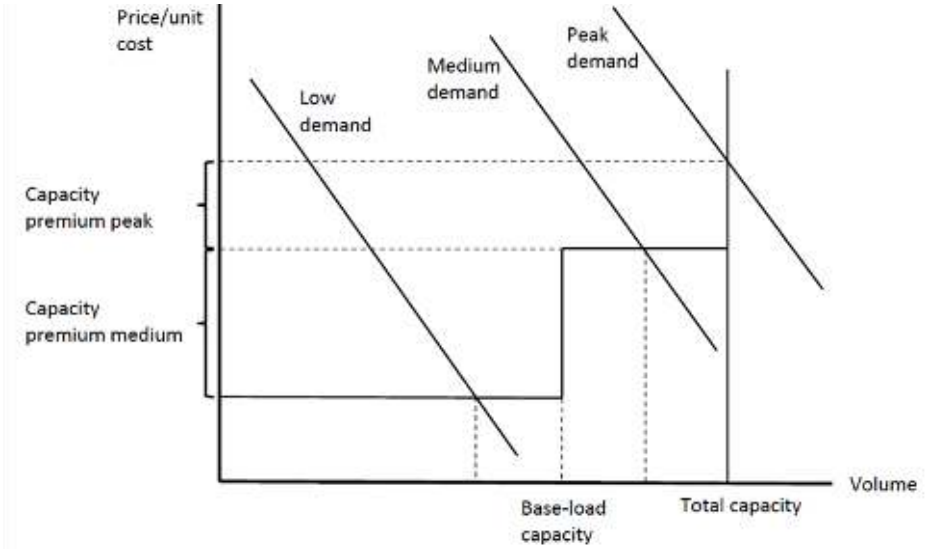
THE CURRENT WHOLESALE ELECTRICITY MARKET DESIGN (1/2)

- The current market design is based on a set of fundamental principles, including
  - **separation** of monopolistic and competitive activities
  - **decentralised decisions**,
  - the availability of **marketplaces** where participants can trade, and
  - **integration** of markets (internal market)

- The design is intended to ensure a **balance of demand and supply**, **cost-efficient dispatch** and **supply security**, including resilience to shocks.
- An open question is whether the current design does provide sufficient **hedging opportunities,** especially for generators who invest in plants with a long lifetime.

THE CURRENT WHOLESALE ELECTRICITY MARKET DESIGN (2/2)

- Investment in generation capacity in principle market-based but to a large extent driven by **government interventions**.
- If ambitious climate and energy targets are to be achieved, **government support** will be required.
- As cost of renewable generation becomes competitive, one would expect **unsubsidised renewable generation to be dominant**.
- Whether this will require **further development of long-term contractual arrangements** is an open question.



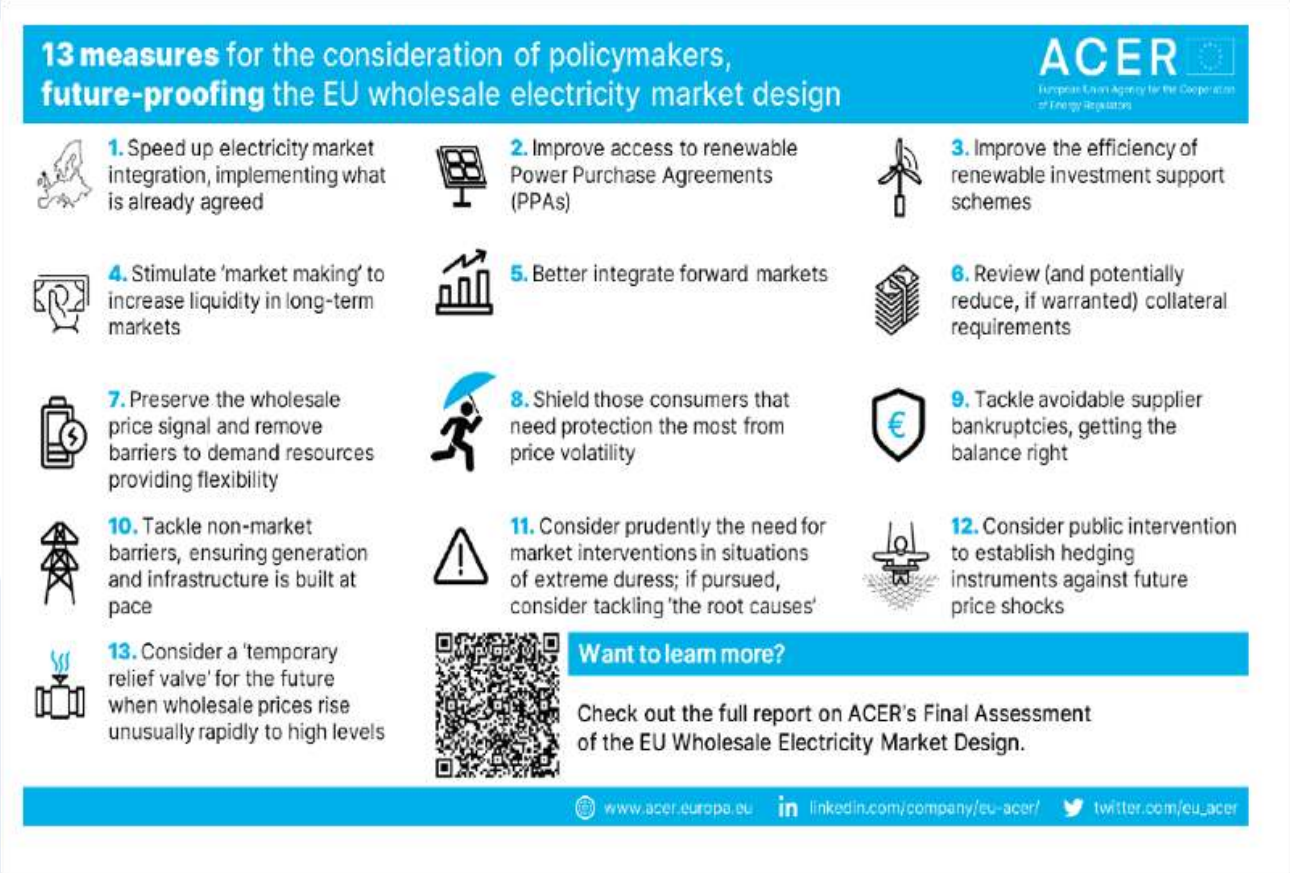
A DISCUSSION OF SUGGESTED INTERVENTIONS (1/2)

- Discussion of proposals put forward by **ACER, Great Britain, Spain, Greece**, and the **European Commission.**
- Frequently suggested change is for governments to sign **longer term contracts** with generators on behalf of customers. Question of **efficiency** remains, as it effectively borrows money at a high cost of capital from private energy firms.
- Proposals of **two market solutions** raise difficult issues in the short run, whereby market efficiency is likely to be reduced.
- In the short run, the **marginal cost of extra low carbon output** from a given facility can be high and this should be **priced.**

A DISCUSSION OF SUGGESTED INTERVENTIONS (2/2)

- The **macroeconomic aspect of energy markets** was initially overlooked.
- **High prices** which are outside the normal range of prices require tough political decisions to be taken on how to **ration energy** for industries and households.
- Many of the proposals for market design mix up **sensible long-term measures** for net zero with interventions driven by the nature of the **war economy.**
- Being clear about the timeframe of suggested interventions and their likely impacts is important → **proper impact assessment required**.

ACER ASSESSMENT OF EU WHOLESALE MARKET (APRIL 2022)



Source: ACER (2022, p.7)

- 1,4,5: All current objectives of design.
- 2,3: Sensible RES scheme design.

- 1 - Includes better use of locational signals.
- 4 - Need to worry about interventions doing the reverse of this.
- 5 - Do current interventions help with developing forward markets?

- 2 - If government signs PPAs does that help develop private PPA market?
- 3 - Already true that EU has failed to develop a pan-European RES support framework, raising costs by 100bn euros to 2014.

THE ENERGY CRISIS, NET ZERO AND ELECTRICITY MARKET DESIGN (1/2)

- Market outcomes are determined mainly by **market fundamentals** and by **market structure** - **not market design.**
- Policies aimed at **paying firms different short-run prices** for what is in essence the same product:

  (1) by creating a hybrid setting, or

  (2) by moving from uniform-price to pay-as-bid auction,

  increase system cost that **consumers will have to pay for.**
- RES production relies on **scarce** natural resources. **Extracting scarcity rents** does not require a change in market design. High returns can be captured by **profits taxes.**

THE ENERGY CRISIS, NET ZERO AND ELECTRICITY MARKET DESIGN (2/2)

- Use of **long-term contracts by private parties** will increase in net zero scenario.

- Arguments for **government intervention** in contracting market:

  ➢ Regulating risk of retailers, standardising contracts to simplify netting, improving transparency on contract prices and positions, contracting on behalf of small consumers.

- An **important role** remains with **private contracts** between generators and large customers and **risk management within integrate utilities.**

- Whether Member States provide long-term government-backed financial PPAs, should be left to the **subsidiarity principle.**

LEGAL ASPECTS OF WHOLESALE ELECTRICITY MARKET (RE-)DESIGN (1/2)

- Today's wholesale electricity market regulation is the result of detailed and prescriptive legislation, and elements of **co-regulation**.
- **Article 194 TFEU** is the legal basis for EU energy policy based on a **shared competence** between **Member States and the EU.**
- EU energy price emergency measures adopted in 2022 are based on **Article 122 TFEU**, leaving the **Council** with a **large influence** on EU measures.
- Need to distinguish between what should be a **future-proof market design under net zero objectives** and **medium- to long-term constraints**, and the **toolbox of temporary measures.**

LEGAL ASPECTS OF WHOLESALE ELECTRICITY MARKET (RE-)DESIGN (2/2)

- Important to assess the **sequencing of market interventions**: short-term (toolbox, crisis), mid-term (risk management) and long-term (reform) processes.
- Any **short-term intervention** should not jeopardise the functioning of the internal energy market, in a time where **solidarity** and **complementary** are required.
- Market reform proposals focus on two elements:
  - "**price formation**" (completion of ongoing processes, MD with more RES)
  - "**market behaviour**" (planning, permitting, investment in RES)
- The EU regime of **PPAs** will probably further evolve as part of the Renewable Energy Directive (REDII). Government-backed PPAs would require an assessment under state aid rules, and possibly an EU harmonised approach.

CONCLUDING THOUGHTS (1/2)

- Any short-term action aimed at reducing high energy prices to protect European households and industries should be **carefully designed and executed at European level, so as not to undermine the single market in electricity.**

- **Reducing the demand for gas** is key to reducing electricity prices and reducing electricity demand has a disproportionate effect on prices. It is also important that **gas supplies to Europe are improved**.

- It is important to recognise that **long-term contracts** represent a bet on the future and the nature of discount rates. The extent of the signing of long-term contracts by the state for power should be a matter of **national preference**.

CONCLUDING THOUGHTS (2/2)

- **Voluntary reduction** in the short run flow of payments to low carbon generation **won't reduce the long run NPV of payments.**
- Marginal **regulated retail prices should reflect wholesale prices**, to incentivise demand reduction and energy efficiency investment. This could be done with well calibrated **rising block tariffs**.
- **Regulatory barriers to additional low carbon generation** and distortionary taxes on marginal electricity production **should be removed**.
- Some of the suggestions for electricity market reform are sensible but they will **not address the magnitude of the energy crisis in the timeframe required**.

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Long-term Price Signals

COMPLEMENTARY STREAMS OF REFORM

- **Strengthened transparency requirements on price formation**: complete the ongoing processes, incl. CACM 2.0 (now on hold), Market Coupling Operation (MCO) functions, balancing platforms, bidding zone review, more auctioning.

  ➢ Possible delays or changes of approach. Avoid risks of market fragmentation and distortion on the IEM.

- **Ensuring sufficient investments in renewable energy generation capacity** coupled with **flexibility**, **demand response**, and a diversified energy mix (electrification, renewable gases, etc.)

  ➢ Enabling legal framework, use corporate and government-based PPAs, new forms of support (two-way CfDs), deepening market integration.

GOVERNMENT-BACKED LONG-TERM CONTRACTS (1/2)

- **No consensus** among economists → Political preferences.
  [dash for gas, corporate PPA for RES, oil and gas investments]
- **Benefit**: Lower capital cost of investments.
- **Drawbacks:** (1) Contracted capacity not fully taking part in spot market (2) prices too high (3) inefficient combination of technologies (4) crowding out of private PPAs → Implications internal market [anecdotal experience in Ontario/US]
- **Limiting drawbacks also reduce risk-hedging properties:** Technology neutrality of contracts, auction-based price, financial settlement (=CfD), quantities based on deemed (not actual) production level.
- **Target contract design to policy objective:** E.g., consumer consumption profile**,** instead of specific technology.

GOVERNMENT-BACKED LONG-TERM CONTRACTS (2/2)

- **PPAs will not decouple electricity price from gas price, but provide a hedge**

  Forward price depends on expected future spot prices, which includes gas price.

- Unless we massively overinvest in generation, net zero will increase the role of flexibility. **Spot, balancing, and reserve markets become more important.**

- PPAs are no magic bullet to lower consumer expenses (trade-offs).

- Current high forward prices are not right benchmark to judge success of possible PPA.

  Policy uncertainty on price caps, counterparty risk, war situation.

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Two Market Solutions

TWO ELECTRICITY MARKETS OR ONE?

- **Not new…and not just about crisis**
- Keay and Robinson proposed this in 2017. Grubb and Drummond proposed a similar idea in 2018. Greek proposal to Council proposes one in 2022.
- Gross et al. (2022) proposal for switching low carbon generators to long term contracts.
- Some questions: alteration to short run market? Or long-term market?
  - ➢ If short run, what inefficiency would this introduce via arbitrage or reduction of incentive for short run optimization of renewables?
  - ➢ If long run, would this reduce NPV of payments for renewables and, if so, how? In theory tax-payer subsidy/levy would lower financing cost, if simply about revenue smoothing.
- ***Basically, short-run version does not make sense…***

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Improving network and digital industries regulation

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