What we have learned from the energy crisis and future perspectives on (new) market design

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CERRE report

Recommendations

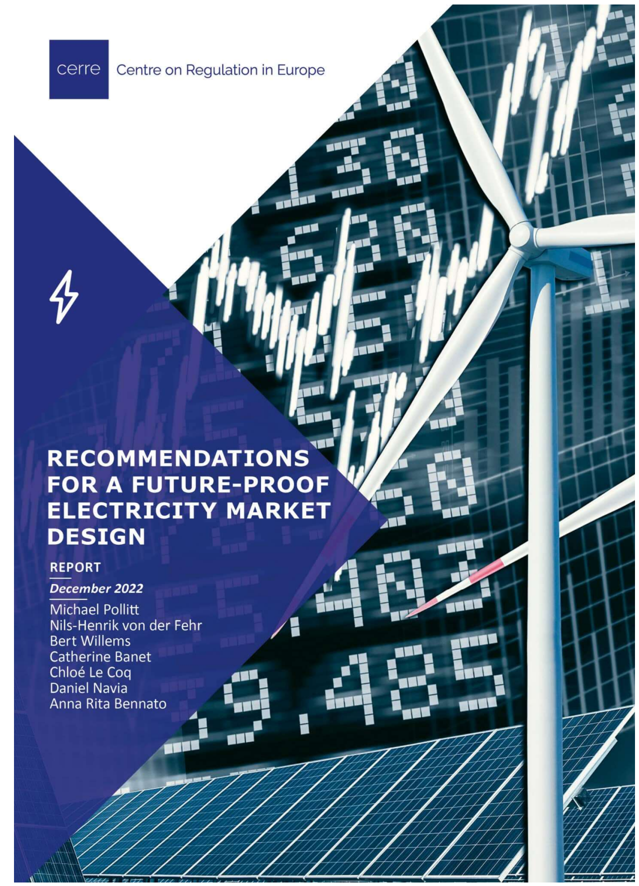
Executive summary

Wholesale market

- current market design
- suggested changes: ACER, GB REMA, Greek proposal, Spain, EU
- theoretical analysis of potential market changes
- legal aspects of market (re-)design

Retail markets

- 6 case studies: France, Italy, Great Britain, Netherlands, Norway and Spain
- analysis of demand response



Current market design

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 or "single" market)

Intended to ensure balance of demand and supply, cost-efficient dispatch and supply security, including resilience to shocks

Government interventions

- infrastructure: regulation
- carbon emissions: ETS, taxes
- renewable energy: auctions, feed-in-tariffs, subsidies
- energy efficiency: regulation, standards, subsidies

A history of bottom-up, consensus-based development of market design

EU common policy and (mis)coordination

Distinguish between short-term crisis management and long-term market reform

- in wartime, some intervention may be necessary, but should be proportionate, short-term and reversible

Actions that weaken internal energy market in the short- or long-term are to be rejected

Current energy crisis is fundamentally a European-wide gas supply crisis

- short-term interventions must be evaluated as to their impact on aggregate European gas demand.

Low demand elasticities mean even small demand reductions have disproportionate effect on prices

- policies which significantly increase demand cannot be left unanswered at European level
- eg., Spanish cap on price of gas for power generation

Case for reducing regulatory barriers to additional low carbon generation strengthened by crisis

A common approach to common challenges through EU harmonisation must be prioritised

Market design incentives and efficiency

In a net-zero world, market integration even more important in reaching climate and security of supply goals at least cost

Short-run efficiency not to be compromised by long-term physical contracts

- should clearly distinguish physical and financial hedging

Private financial hedging is a good idea <u>before</u> prices rise

- in the middle of crisis, with high uncertainty and peak prices, likely to be bad value

Over the longer run, arguments for long-term contracts with new generation

- provide price stability and certainty to electricity consumers
- lower the cost of capital faced by investors in generation

Keeping market design in perspective

Monitoring demand, supply and anti-competitive behaviour more important than changes to electricity market design

Moving to pay-as-bid from pay-as-clear (uniform) auction reduces economic efficiency, without much impact on average price paid, and is not recommended

Net benefits of US standard market design in delivering Europe's ambitious goals unproven and not easy to quantify – now is not the right time to do this

Nodal pricing is not solution to current crisis, but better locational signals and long-term incentives to invest in transmission and renewables should be encouraged

Future-proof market design to enable integration of renewables and flexibility and ensure that market rules function with a higher share of renewables

Two short-run and hybrid markets

Two short-run markets – for *on demand* and *as available* power – raise difficult issues

market efficiency will almost certainly be reduced, potentially substantially

Two short-run markets make little sense now, even less in the long-term

power, heat and transport fuel markets will be fully integrated and there will be more, not less, concern about efficient pricing across all sources and final uses of energy

Hybrid markets which concentrate on locking in low long-term (maybe government-backed) contract prices for new low-carbon generation, while continuing with shorter-term private contracting for existing generation, make more sense

long-term corporate, retailer or government power purchase agreements (PPAs), in the form of fixed price contracts for differences (CfDs) for an extensive period can be sensible financial instruments

The use of (financial) PPAs

Corporate PPAs make sense for long-lived companies that can commit 15+ years of purchasing

Retailer PPAs make sense for large incumbent retailers with stable customer base

- secondary markets for PPAs and additional risk regulation for retailers is likely to grow this market.

Government PPAs successful in driving down cost of capital, particularly for emerging technologies

- where retailer or corporate PPAs are not competitive or available in sufficient quantity
- can improve on older schemes (eg. feed-in tariffs) if they provide incentives to participate in short-term markets
- should be left to subsidiarity principle

Auctions for PPAs to new capacity combined with current short-run markets can be desirable

- competition for the market in combination with competition in the market

Retrospective PPAs with existing generation is smoothing payments at private sector discount rates

- should be a matter of national preferences

Dealing with crisis excess generator profits

Recouping excess profits essential to handle concerns about economic justice

Best done through non-discriminatory profits taxes

- target excess profits and not blunt incentives to efficient dispatch
- on inframarginal rents wherever possible
- preferable to arbitrary price caps on certain types of generators

Revenues should be recycled to consumer bills and direct income support

- finance bill reductions
- mitigate inflationary effects of high average wholesale market prices

Excess profits taxes should be imposed for no longer than necessary

- negative impact on long-run incentives, particularly for new entrants

Positional rents from renewables can be extracted via site auctions

- auctions for long term PPAs + profits taxes

Retail markets: need for desirable change

Behavioural change to increase energy efficiency and support transition

Key wartime priority that retail customers reduce gas demand

- retail tariffs and behavioural interventions must reflect this
- campaigns to reduce demand

Encourage prosumers to increase use of photovoltaic panels, battery storage and electric heating system installation

- large amounts of distributed installation can be done relatively quickly

Smart meters need to be used more effectively

- in energy crisis to ration energy
- requires smarter contracts

Regulation of retail offers

Stricter requirements on the financial position of suppliers likely warranted

- including supplier stress-testing and specification of forward hedging requirements

Consumers must, to some extent, be held responsible for choice of supplier

- otherwise door would be wide open to offers that are "too good to be true”
- but must also be able to enter into new contracts on reasonable terms

Finding the right trade-off should be a priority for national regulators

- financial regulation and customer protection come at a cost

Good commercial practices corresponding to national circumstances should continue to be preferred approach

- requirements for hedging of suppliers harmonised by EU legislation

Conclusions

The crisis has not taught us much about market design

- the market has performed as expected
- main concern about resulting high prices
- other (realistic) designs unlikely to have performed better, likely (much) worse

Handling “war economy” versus ensuring “net zero”

- some suggestions will not address energy crisis in the timeframe required
- others may be sensible in the long run, but require proper impact assessment
- not a good time for contemplating reforms with long-term impact

A future-proof market design should evolve from current design

- fundamental reform not warranted
- timely removal of wartime measures