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Centre on Regulation in Europe



Recommendations For A Future- Proof Electricity Market Design

CERRE Report Publication Hybrid Event

16 December 2022



AGENDA

- 1** 10:05 – Recommendations Report Presentation
- 2** 10:25 - Panel Discussion on Selected Key Issues
- 3** 11:45 – Q&A
- 4** 12:00 – Standing Lunch

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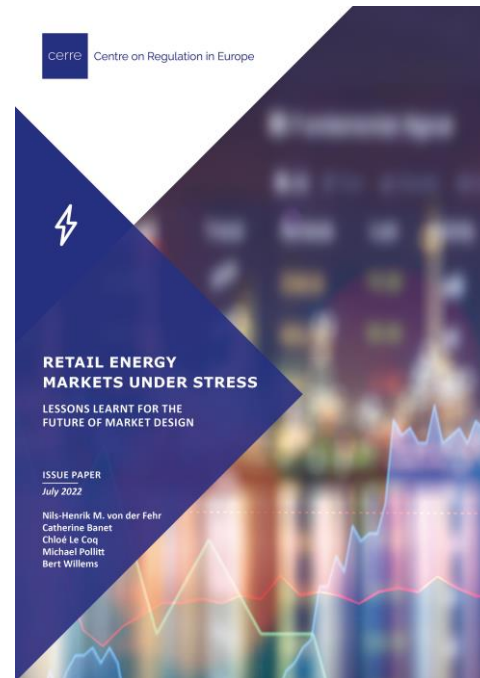
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Report Presentation



CERRE WORK ON ELECTRICITY MARKET DESIGN



- ❖ 2018 Report
- ❖ 2022 Two interim reports
- ❖ Briefing papers on:
Energy Market in Time of War
Equity and Efficiency
in Time of Crisis
- ❖ Final report today
65% longer than interims
Major additions on nodal pricing,
capacity markets, hybrid markets,
Italy and Spain case studies

AND 70+ recommendations.

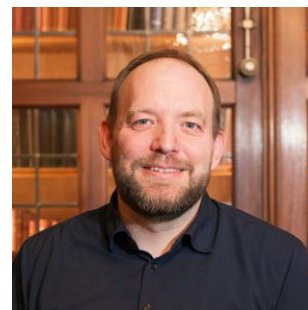
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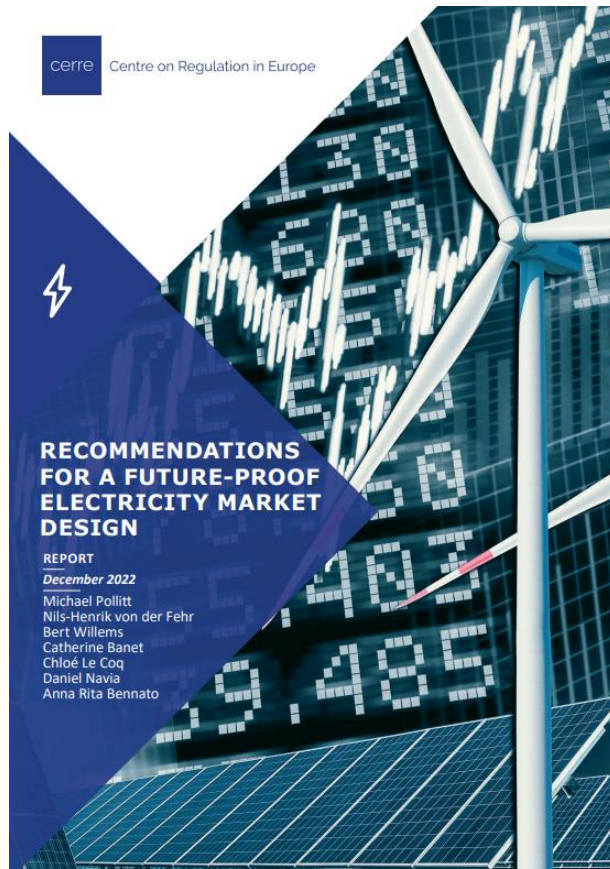


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STRUCTURE OF FINAL REPORT



- ❖ Policy recommendations
- ❖ Executive Summary
- ❖ Wholesale Market
 - Current market design
 - Policy proposals: ACER, GB REMA, Greece, Spain, EU
 - Theoretical analysis of potential ST/LT changes
 - Legal aspects of market (re-)design
- ❖ Retail Markets
 - 6 case studies: France, Great Britain, Italy, Netherlands, Norway and Spain
 - Demand response analysis

With many thanks to co-authors and CERRE members!

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POLICY RECOMMENDATIONS



CORE RECOS - EU COMMON ENERGY POLICY AND COORDINATION BETWEEN MEMBER STATES

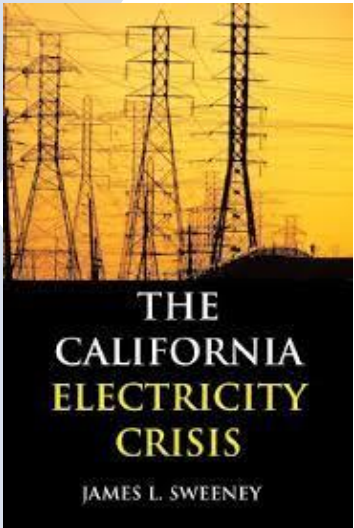
- Distinguish between **short-term crisis management** and **long-term market reform**, ensuring wartime interventions are proportionate and reversible.
- **The single energy market has shown resilience → reject actions which weaken it** in the short/long-term.
- This is a **gas supply crisis** → short-term interventions must be evaluated as to their **impact on aggregate European gas demand**. Policies which significantly increase demand cannot be left unanswered.
- The **Iberian cap** on the price of gas used for power generation should have been **prohibited**.
- **EU approach** to common challenges must be prioritised to preserve the benefits of the internal energy market for all states and market participants.





CURRENT MARKET DESIGN INCENTIVES AND EFFICIENCY

- In a **net-zero world**, **single market integration/completion** will become even more important in reaching climate and security of supply goals at least cost.
- The short-run efficiency of the power market should not be compromised by the introduction of long-term physical contracts. **Hence clearly distinguish physical and financial hedging.**
- **Private financial hedging of electricity prices is a good idea before prices rise**; however in the middle of the crisis it is likely to be bad value.
- Longer run → good arguments for **signing long-term price hedging contracts** with new generators to provide **price stability and certainty** to electricity consumers and to **lower the cost of capital** faced by investors in generation.
- When considering emergency measures under **Article 122 TFEU**, the Commission and Member States should **refrain from adopting measures that could have long-term impact** on the energy markets.



FUTURE CHALLENGES

- **Better coordination between Member States** can be achieved through the **National Energy and Climate Plans (NECPs)**.
- Give attention to **taxes** and the **Carbon Border Adjustment Mechanism** to reduce unnecessary distortions and protect European industry from unfair competition.
- **Accelerate investment** in renewables, nuclear, storage and interconnection.
- **Permitting of both RES** and associated **network capacity** should be prioritised and must be accompanied by a coordination of **grid development and consumption scenarios**.
- Commission could make proposals to rapidly **increase new agents' (e.g. demand flexibility, energy communities) contribution** to addressing the current crisis.
- **Sector coupling** between power, heating and transport will be a reality by 2050. **Attempts to separate the price of energy** between these three sectors **should not be done at wholesale level** and will be increasingly difficult at retail level.



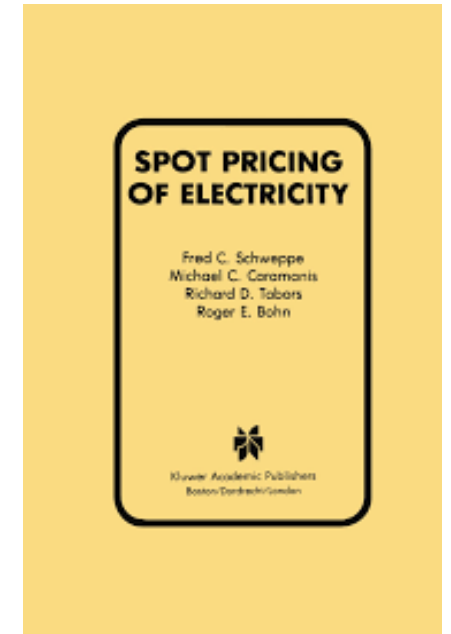
NECP
2021 - 2030

draft version

courtesy translation provided
by the European Commission

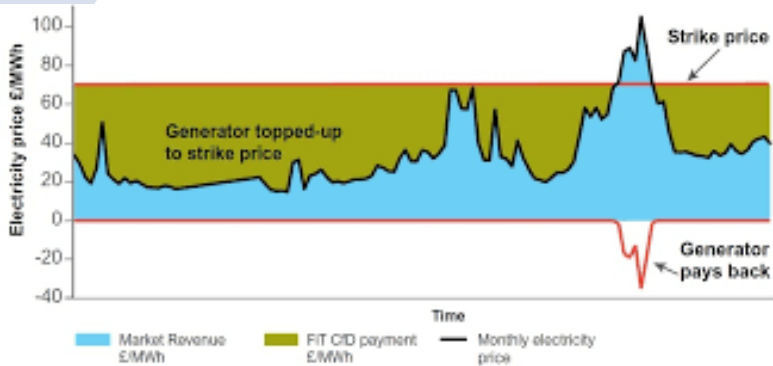
WHOLESALE MARKET - KEEP MARKET DESIGN ISSUES IN PERSPECTIVE

- Distinguish **pure market design elements** vs. **complementary mechanisms** aimed to address remaining market failures.
- **Monitoring demand, supply and anti-competitive behaviour** are more important than changes to electricity market design.
- Moving to **pay-as-bid auction from pay-as-clear** reduces economic efficiency, without much impact on average price paid → not recommended.
- Now is **not the right time to move to US market design**. Its net benefits in delivering Europe's ambitious energy and climate goals are unproven and not easy to quantify.
- Nodal pricing is not the solution to the current crisis BUT **better locational signals** and **long-term incentives to invest in transmission and renewables** should be encouraged.



TWO SHORT-RUN MARKETS Vs HYBRID MARKETS

- **Two short-run markets** – one for *on demand* and one for *as available* power – raise difficult issues whereby market efficiency will almost certainly be reduced, potentially substantially. Such a **solution should be rejected**.
- While two short-run market solutions make little sense today, they make **even less sense in the long-term** when power, heat and transport fuel markets will be fully integrated.
- **Hybrid market solutions** which concentrate on locking in low long-term (often government-backed) contract prices for new low-carbon generation, while continuing with shorter-term private contracting for fossil fuel generation, **make more sense**.
- **Long-term corporate, retailer or government power purchase agreements (PPAs)**, often in the form of fixed price **contracts for differences (CfDs)** for an extensive period (15 years or more), can be sensible financial instruments.





DEALING WITH EXCESS GENERATOR PROFITS

- Sensible measures to **recoup excess generator profits** – where these exist – are essential to address concerns about **economic justice**.
- This is best done through **non-discriminatory profits taxes** which target excess profits and do not blunt incentives to efficient dispatch. Profits taxes should be targeted on **inframarginal rents** wherever possible.
- **High profits tax rates** are preferable to arbitrary price caps on certain types of generators.
- **Excess profit taxes should be directly recycled to consumer bills** and direct income support in order to finance bill reductions and hence mitigate the inflationary effects of high average wholesale market prices.
- **Positional rents from renewables** can be extracted **via site auctions** (e.g. for access to the seabed), **auctions for long term PPAs**, and profits taxes.
- However, **excess profits taxes** should be imposed for no longer than necessary, due to their impact on long-run innovation incentives, particularly towards new entrants.





THE USE OF PPAs (1/3)

- **Auction-based competitive PPAs** to bring forth new investment can lower costs of low carbon generation.
- Auctions for long-term PPAs **combined with existing short-run power markets** can lead to a **desirable hybrid market arrangement**, with competition *for* the market in combination with competition *in* the market.
- The signing of **retrospective PPAs** with existing generators is simply a way of smoothing payments at private sector discount rates. This should be a matter of **national preferences**.
- **Corporate PPAs** make sense for companies that are long-lived.
- **Retailer PPAs** make sense for large incumbent retailers with relatively stable customer bases. **Secondary markets for PPAs** and additional risk regulation for retailers is likely to grow this market.
- **Corporate and retailer PPAs** will become increasingly desirable in the future as a way of diversifying the contract terms of the PPAs signed.





THE USE OF PPAs (2/3)

- **Government PPAs have been successful in driving down the cost of capital, particularly for emerging technologies** and where retailer or corporate PPAs are not competitive or available in sufficient quantity.
- **Well-designed Government PPAs can significantly improve on older support schemes such as feed-in tariffs**, if they provide incentives for technologies to participate in short-term markets.
- The **UK's Low Carbon Contracts Company (LCCC)** provides an example of the **legal entity that governments could create**.
- Where used, government PPAs should ensure that **electricity consumers benefit from lower prices** when strike prices are below market prices.



THE USE OF PPAs (3/3)

- **Legal barriers** to corporate PPAs have stemmed from certain **national legislation**. To remove them, the **Renewable Energy Directive** now contains some facilitating provisions that could be further reinforced.
- the **Commission can recommend the use of PPAs and make observations** on which types of PPAs have worked, but should **not recommend the use of a standard PPA contract** to cover a fixed proportion of all national output.
- If the EU wants to support government PPAs and facilitate their approval under state aid rules, it should **clarify the acceptable design features of these agreements in the state aid guidelines** for climate, environment protection and energy.
- Whether and to what extent Member States provide **long-term government-backed financial PPAs**, should be left to the **subsidiarity principle**, and depends on the preferences of individual Member States.





COMPLETING AND EXTENDING THE SINGLE MARKET IN ELECTRICITY AND GAS

- We should move to **complete and extend the single markets in gas and electricity** e.g. by:
 - Speeding up the **provision and use of two-way transfer capacity in gas and electricity.**
 - **Removing trade barriers in electricity with the UK, Switzerland and Morocco.** The **EUPHEMIA market** coupling algorithm could easily be extended to include these countries.
- Market design solutions should overall be compatible with **cross-border cooperation with non-EU countries.**
- Pay **attention to the standardisation of capacity mechanisms (CRMs) across Europe to prevent them from having anti-competitive effects**, in particular with respect to rules for the inclusion of interconnector capacity and the regulation of the value of lost load.





RETAIL MARKETS

THE NEED FOR DESIRABLE CHANGE

- **Wholesale must be reflected in retail prices at the margin.** Ensure that consumers have a strong incentive to reduce energy consumption, even while they may be receiving generous bill support.
- All countries must engage in **campaigns to reduce demand and have associated tariff settings** which encourage large reductions in consumption.
- Prosumers are to be encouraged to increase the use of photovoltaic panels, battery storage and electric heating system installation. **Large amounts of distributed installation can be done relatively quickly with beneficial aggregate demand and fiscal effects.**
- **Smart meters need to be used more effectively in an energy crisis** and more needs to be done to work towards **smarter contracts** (by companies with the encouragement of regulators and governments).



NZ 'Target 10' campaign
IEA, 2005, p.100.



COMBINING DEMAND REDUCTION AND EQUITABLE ENERGY BILLS

Increasing electricity price	Price 4			Block 4
	Price 3		Block 3	
	Price 2	Block 2		
	Price 1	Block 1		
Increasing quantity of electricity consumption				

- Governments should build **integrated welfare and energy data systems** that deliver effective and timely financial support to consumers.
- **Rising block tariffs** could be more generally applied to electricity at Member State level.
- **Retailers** need to design tariffs that allow customers to hedge market risk while encouraging **demand flexibility and energy conservation**.
- A possible solution is to encourage (or mandate) the development of retail contracts that **lock in part of the energy consumption at fixed prices while retaining some price variation on the margin** (e.g., through combining real-time pricing with financial difference payments for a fixed quantity of energy.)
- **Tariff models** can help stabilise bills by allocating the benefits (and costs) of fixed-price long-term contracts to all consumers or all of a particular group of consumers.

REGULATION OF RETAIL OFFERS



- **Need for stricter requirements on the financial position of suppliers**, including stress-testing and specification of minimum forward hedging requirements.
- Consumers must, to some extent, be **held responsible** for their choice of supplier but also have **ways of entering into a new contract on reasonable terms**, with the aim of encouraging longer-term contracting.
- Given that both **financial regulation and customer protection** come at a cost, finding the right **trade-off** should be a priority for national energy regulators.
- Good commercial practices corresponding to **national circumstances** should continue to be the preferred approach, while the requirements for **hedging of suppliers** should be reinforced via **harmonised EU legislation**.

THE MONITORING OF RETAIL'S EFFECTS ON THE WIDER SINGLE MARKET

- Market interventions which increase European wholesale market demand and or/have large detrimental cross-border effects should be prevented.
 - It is therefore to be welcomed that the EU has recently implemented regulations to **reduce gas and electricity demand** across Europe.
- Retail market interventions which differentially impact Member State **commercial and industrial prices** have competitive effects and should raise standard **state aid concerns**.



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