

POLICY BRIEF

Priorities for the Market Design Initiative: What's Missing? What's Most Important?

March 2016

Introduction

The European Commission's Market Design Initiative (MDI) aspires to ensure that the electricity market is fit to deliver current EU climate and energy policies in the most secure and cost-effective manner. This brief summarizes a series of recent papers¹ in which we have sought to highlight the most pressing issues the Commission should be addressing, along with a range of possible courses of action.

The market design of the Internal Energy Market (IEM) has in many respects not yet been fully implemented across the EU. An integrated market, operated and governed seamlessly across regions, and ultimately across the EU, remains the best hope for achieving climate objectives securely, in a timely fashion and at an affordable cost. There is no fundamental reason why the market envisioned in the Third Energy Package cannot be made to function effectively as decarbonisation of the sector proceeds. **Forward-looking refinement and more aggressive implementation of the IEM, including network planning and governance, should therefore remain high priorities.** This offers a practical way forward during the transition. We should continue to assess critically the robustness of the current market model and, if and when appropriate, consider a more fundamental re-design. In the meantime, however, we should avoid needlessly paralysing the sector with even greater uncertainty, thereby forestalling the transition away from the legacy high-carbon, inflexible resource portfolio.

We focus on three dimensions of the market that must be properly addressed in this important window of opportunity. They are:

1. Investment and security of supply
2. Demand-side market participation
3. Market governance

Investment and Security of Supply

Much has been made of concerns regarding the ability of the current market design to support the investment needed to deliver an acceptable standard of supply security. Concerns are also raised about the ability to rely on the current market structure to support needed investment in zero-carbon resources. In both cases the discussions have been plagued by misinformation and misdiagnosis. "Solutions" have been advanced to problems that may not even exist or, where they do exist, that will only increase costs and undermine progress. At the same time, there are real and urgent problems that have yet to receive sufficient attention. This section examines both of these concerns.

Getting the sums right

Market prices are too low to support new investment because there is enough or more than enough reliable capacity in the market to meet recognized resource adequacy standards, not because the market design is flawed or because of the short-run production costs of renewables or other specific resources. This is compounded by an oversupply of old, inflexible baseload plant that is incompatible with the emerging needs of the system. This is true across the EU, with some local pockets

1 These papers include: Roberts, J. and Skillings, S. (2015, November) *The Market Design Initiative: Towards Better Governance of EU Energy Markets*. <https://www.raponline.org/document/download/id/7885>; Buck, M., Hogan, M., and Redl, C. (2015, November) *The Market Design Initiative and Path Dependency: Smart retirement of old, high-carbon, inflexible capacity as a prerequisite for a successful market design*. http://www.agora-energiewende.de/fileadmin/Projekte/2015/Smart-Retirement/Agora_RAP_Smart-Retirement-and-MDI-Background.pdf; Baker, P., and Hogan, M. (2016, March). *The Market Design Initiative: Enabling Demand-Side Markets*. <http://www.raponline.org/document/download/id/8055>.

of concern that have little or no correlation to member state boundaries. **There is a critical need for truly regional, independent, integrated resource adequacy assessment processes based on a common standard of evidence and state-of-the-art analytical methods to clarify what is actually needed to deliver security of supply at a reasonable cost.** The assessments must consider resource capabilities and must account fairly for all resources, including interconnection, storage, demand response and energy efficiency.

Path dependency and smart retirement

The quantity of reliable generating capacity alone is no longer an efficient measure of resource adequacy, if it ever was. As the reliable quantity of variable capacity grows, meeting the balance of resource adequacy needs with a fleet overpopulated by old, inflexible baseload plants will become prohibitively expensive. Responses to the unstable investment climate have in many cases been to concoct schemes simply to pay more for capacity, when what is urgently needed is the permanent withdrawal of the legacy of surplus baseload capacity. **A “smart retirement” policy framework is needed to restore financial stability to the sector, increase the value of investments in flexible mid-merit resources, and lower the long-term costs of the low-carbon transition.** Simply tinkering with the market design will not suffice.

Smart intervention

While it is a common misconception that the energy market is designed to price energy at short-run production cost, or that it is not designed to value security of supply, intervention may still be warranted to underpin confidence in the market's ability, directly or indirectly,² to drive needed investment. Interventions to support investment should accelerate rather than obstruct the transition to a more suitable mix of resource capabilities. Out-of-market capacity auctions or strategic reserve schemes that fail to differentiate amongst resources based on their operational characteristics, or that dilute the market's ability to do so, will undermine market structure, increase costs, and delay the transformation. **There is a range of options available to reinforce the functioning of the energy and balancing services markets, from removal of price distortions to energy-based administrative mechanisms.**³ Implementation of such measures should be a pre-requisite for the consideration of additional, out-of-market schemes.

Smart support of renewables investment

It is unrealistic to expect to rely on “the market”—however designed—to drive investment in zero-carbon generation at the pace envisioned between 2020 and 2030. One reason is that the market will likely continue to be largely or completely saturated with existing production capacity through at least the middle of the next decade. Another is that ETS allowance prices are projected, even in the best case, to remain well below the level needed to sustain the required level of investment. Yet another is the lag in development of the kind of flexibility, particularly on the demand side, needed to integrate very high shares of variable resources strictly on a market basis. Rather than contorting the market design in a futile attempt to move to purely “market”-driven investment in renewables, **targeted support for renewables must continue beyond 2020, albeit in ways that will require such resources to be more responsive to market conditions.** As variable renewables reach higher market shares, these can include auctions, transitioning from production-based to investment-based support, and a measured introduction of balancing responsibility.

Demand-Side Market Participation

Existing market arrangements are unlikely to deliver anywhere near to the full economic potential for demand flexibility. Accurate and timely price information reflecting the full value of energy and grid services is often obscured from market stakeholders. Prevailing wholesale market rules and practices routinely prevent, discourage, or ignore the potential for demand participation. As a result, market participants best placed to search out and underwrite the most economic options for flexibility have little incentive or opportunity to do so.

Better market information

The role wholesale market pricing can play in shaping demand in response to increasingly variable supply is a

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- 2 A healthy energy market's primary role in driving investment lies in the incentives it provides for market participants to hedge their exposure through forward commercial arrangements.
 - 3 See IAEE, *Economics of Energy & Environmental Policy* (2013, Vol. 2, no. 2), “Electricity Scarcity Pricing Through Operating Reserves,” William W. Hogan, Harvard University; see also Section 2 of https://www.swissgrid.ch/dam/swissgrid/future/energy_strategy/consultation_paper_en.pdf.

subject of lively debate, but the absence of timely and fully value-reflective pricing ensures that it will play little or no role at all. The MDI should lay out **a series of measures—including sharper balancing market pricing and the lifting of price caps and floors—to ensure wholesale prices accurately reflect the underlying temporal value of energy and reserves** as they fluctuate with growing frequency between conditions of scarcity and oversupply. This will align the commercial incentives of large wholesale customers with immediate as well as expected future market conditions. In addition suppliers, aggregators, equipment manufacturers and technology companies will be able to tap into the value of responding to increasingly variable supply. This will enable them to compete by offering consumers attractive new products and services that exploit rapidly changing conditions in the market.

Close Coupling of Power, Heat and Transport Strategies

Decarbonisation of the heat & transport sectors must be intimately linked with power decarbonisation. **With levels of electrification in these sectors likely to increase substantially, time-varying pricing should be phased in as the default option for these services** to promote responsive end-use. Given the likelihood of retail consumer resistance to actively managing electric consumption, “smart” heat & transport services will play a crucial role. It will be important, therefore, to **consider appliance standards as well as tax incentives or other deployment strategies**. Where other low-carbon pathways are adopted that involve electricity production as a byproduct, such as district heating, **the use of energy storage to decouple delivery of the primary energy service from electricity production should be encouraged**.

Jump-starting the rest of the market

While deployment of interval metering technology creates important functionality, it is likely that additional steps are required to overcome the inertia—in some cases, the active obstruction—that has kept potentially responsive demand on the sidelines. Given the implicit, and sometimes explicit exclusion of demand from various segments of the market in some Member States, the MDI should **establish a legislated right for all consumers to participate in all wholesale power markets**. As there is often limited or no opportunity for willing customers to access advantageous pricing, **suppliers could be required, as a condition of their license,**

to offer all customers a time-varying tariff option that meaningfully captures the difference in the value of supply between surplus and scarce hours, with **strict limits on standing or demand charges**. To familiarize suppliers and consumers with the use of demand response as a valuable resource, **a modest supplier obligation should be considered as an early-stage measure**, given the importance of demand activation to a cost-effective transition.

Ensuring market access

Demand aggregation will be essential in bringing the benefits of wholesale market participation to residential and small commercial consumers. Unhindered access to the wholesale power markets for new entrants and non-traditional market players will also drive innovation and motivate change within large incumbent suppliers. Network regulation needs to **ensure that demand response can compete on an equal footing with generation, that the roles and responsibilities of market participants are appropriately defined and that both existing and new market participants are treated equitably**. In addition, **the right of customers to choose their service provider must be upheld**, as does the ability of independent service providers to contract with a supplier's customer without needing to first seek that supplier's agreement. Independent market monitors can play an important role in this regard.

Data security and privacy

Cultivating consumer trust from the outset will be critical. **Standards for regulation must ensure customer data are collected and held securely, and that individuals retain control of access to their own data**. To promote competitive entry and spur innovation, **data collection and management should be entrusted to an independent, regulated entity; market actors with commercial interests at stake, including DSOs, must not be placed in a favored position**.

Towards more sophisticated system interfaces

As the role of demand response grows it will become important to **align market information in real time with conditions both on the wholesale market and in the local distribution market**. Developing and delivering more sophisticated market information will necessitate innovation and learning by doing; the MDI should promote this through **R&D programs, EU support for pilot projects, provision of guidelines and creation of forums for sharing of best practice**.

Market Governance

An Energy Union governance process that ensures delivery of the National Energy and Climate Plans (NECPs) will be an important tool for delivering Energy Union objectives. Governance of energy markets themselves is a specialized function and a critical success factor for the MDI. The institutional framework for oversight and monitoring of competition, for planning and delivery of critical market outcomes, and for establishing and enforcing market rules, must be fit for purpose. **Getting market governance right means having in place a robust institutional and regulatory framework that better aligns the IEM and decarbonisation agendas. This framework must be based on the key principles of good governance, namely transparency, accountability and legitimacy.**

Ensuring policy coherence

Despite the clear interdependency between energy and climate issues, there is currently a lack of coherence between the market framework and the delivery of climate policy objectives. The Commission has stated that the 2030 targets mean that changes to the electricity system in favor of decarbonisation will have to intensify. It is therefore necessary to **ensure that IEM governance arrangements embed Efficiency First principles and the delivery of EU-level climate objectives, in particular the delivery of the binding EU renewable energy target.**

ENTSO-E should be obligated to ensure that the Ten-Year Network Development Plan, Scenario Outlook & Adequacy Forecast and Network Codes are consistent with delivery of market integration and, to the extent possible, with long-term EU climate commitments. This must involve fair treatment of and accounting for all resources, including energy efficiency and demand response. The regulatory framework should be revised to **align TSO & DSO profitability with their performance in facilitating climate and energy policy delivery**, including greater system flexibility, energy efficiency and smart network investment.

Robust institutional framework

Despite good progress made under the Third Energy Package and in the development of the Network Codes, we are far from achieving an ideal level of market integration, where resources can be exploited across a wide geographic footprint such that consumer needs and

policy objectives are met at least overall cost. The MDI can improve institutional structures to facilitate better resource sharing between Member States. **The Infrastructure & Security of Supply Regulations should be revised to require Member States to take energy efficiency, demand response, and interconnection fully into account in their resource adequacy assessments and network development plans.** Consideration should be given to an institutional framework for system operation that is fully capable and truly independent of any single member state government or of actors with a commercial interest at stake. There is good experience to draw upon internationally with regional independent system operators (RISOs) and similar arrangements.⁴ **The MDI should consider how best to provide this regional and ultimately European operational function in a manner suitable to the European context.**

Independent oversight and enforcement

NRAs will play a crucial role in delivering policy objectives. **Member States must be pressed to provide NRAs with adequate resources and to do more to ensure their independence from government.** Lack of effective competition continues to be an issue in many European regions and a barrier to successful implementation of the IEM, due to largely ineffective attention from national competition authorities and despite the adoption of REMIT.⁴ The use of independent experts to monitor and report frequently on market competitiveness has been very effective elsewhere. **The MDI should establish independent market monitors to assess and report regularly on the state of market competition. Finally, ACER's scope of authority and resources should be expanded as appropriate to ensure effective oversight and accountability of regional institutions and independence of NRAs, and to ensure that market monitoring feeds appropriately into the broader Energy Union Governance process.**

- 4 The U.S. Western region is adopting an Energy Imbalance Market that delivers most of the benefits of a RISO but in a structure that may be better suited to the European context.
- 5 Regulation (EU) No 1227/2011 Regulation (EU) No. 1227/2011 of the European Parliament and of the Council on wholesale energy market integrity and transparency.

