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The EU internal electricity market: Done forever?

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ABSTRACT

Taking a quarter-century to build Europe's internal market for electricity may seem an incredibly long journey. The aim of achieving a European-wide market might be reached, but we went through – and should continue to go through – a process subject to many adverse dynamics. The EU internal market may derail greatly in the coming years from the effects of a massive push for renewables, as well as a growing decentralization of the production–consumption loop. Moreover, a serious concern is the risk of a definitive fragmentation of the European electricity market due to uncoordinated national moves with respect to renewable support and capacity mechanisms.

1. Introduction

It took us a while to build an EU internal market for electricity. According to the Single European Act strategy of Commission President Jacques Delors, signed in 1986, it should have been implemented back in … 1992 – but that turned out to be only the first chapter of a 25-year – still on-going – process.

Electricity sector liberalization started in the UK, followed by Norway, from the premise that while networks are natural monopolies requiring regulatory control, generation and trade are potentially competitive activities. The European liberalization process had been set out to simultaneously target two goals, i.e. first, to achieve competitive prices through the play of market forces, and second, to achieve a unified energy market and thus contribute to the "ever closer Union" that also will be conducive to ensure secure energy supplies.

Much has been achieved since the early 1990s. Wholesale and retail markets are liberalized; the eligibility of customers is mandatory with a general increase in the choice of suppliers and tariffs (ACER/CEER, 2012). Even though there are still significant differences between Member States in terms of electricity generation structure, in general, we no longer have a patchwork of closed national energy systems, each with a national-only company controlling the entire electricity sector (EC, 2012). However, certain anti-market arrangements, such as ill-designed regulated end-user prices, still prevail in many countries.

EU officials claim that a first version of this European-wide power market should work by 2015 – while we also know that this market is only going to implement the "old" goal of 1996, i.e. of the first EU Internal Electricity Market Directive.[1] So one might wonder whether this will be the end of the journey, or just a coffee break? The EU's internal electricity market is already seriously challenged by two waves of disruptive innovations – the renewable energy sources and the smartening of the energy system's interactions. It is also challenged by exogenous shocks like the economic and financial crises, the Fukushima accident, or the flooding of cheap gas and cheap coal as a consequence of the US shale gas revolution. Accordingly, the goal of building a cohesive set of market arrangements in the EU cannot stop today or tomorrow and we already know that what we need will be of a different nature than in the 1990s.

This paper argues that existing regulation – once fully implemented – adds up to a "European market", even though many market arrangements differ from the perfect textbook case (Stoft, 2002; Kirschen and Strbac, 2004) (Section 2). However, since the initial power sector reform draft has neither been conceived for systems with a massive penetration of renewables, nor for a decentralization of the production–consumption loop, there is, thus, a need to revisit regulatory practice in the whole spectrum of market and network arrangements (Section 3). This obvious need to adapt market design and regulation to "unforeseen" developments, however, is not the only challenge. What currently is becoming a growing concern is the risk of a deep fragmentation of

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[1] Directive 96/92/EC 'concerning common rules for the internal market in electricity'.

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the European electricity market due to uncoordinated national policy initiatives in the areas of renewable support and capacity mechanisms (Section 4).

2. Europe's single electricity market: done by 2015?

Taking a quarter-century (from 1990 to 2015) to build Europe's internal market for electricity may seem an incredibly long journey as well as an example of the EU's inability to accomplish serious industry reforms. But we should remember that no other "federal-style" government of a major country (such as the US, Canada, Brazil, Russia, India or China) has achieved an internal, continent-wide, open market for electricity so far.

There are many good reasons why Europe has been so slow with the liberalization of its electricity sector, as discussed in-depth in Glachant (2013). This market project aimed to open up national monopolies' territories to foreigners, and that of course was a radical project that inevitably triggered huge and fierce opposition. Second, there was no wave of disruptive technological innovation – unlike in the case of telecoms – to challenge the incumbent energy giants. Third, electricity is a difficult product to trade as it requires hundreds of technical, legal and economic rules and standards to be agreed on before it becomes tradable. Electricity is, after all, not more than a coordinated flow of electrons inside the millions of metallic wires of a gigantic interconnected network. Thus, electricity was for decades considered to be a typical "anti-market" product, best suited to natural or franchised monopolies. In fact, it has been the revolution in the ICT sector that enabled new market arrangements in the electricity industry. New information and communication technologies gave us the tools to register every move of electricity generators and consumers alike – and so permitting one generator and one consumer to trade bilaterally in a market in parallel to the electron flow variations. The fourth reason is that the various national arrangements historically developed between industry players and public authorities cannot easily be merged at the EU level into a common scheme of interoperable markets.

Several successive packages have then been needed to get (near to) all EU countries to implement compatible market arrangements. These include the European Commission's three energy packages (adopted in 1996, 2003 and 2009, respectively) with the third[2] calling for effective unbundling of generation and supply interests from the network and increased transparency of retail markets. Plus the establishment of an Agency for the Cooperation of Energy Regulators (ACER) in order to ensure effective coordination between national regulatory authorities and to take decisions on cross-border issues. As well as the establishment of a European Network for Transmission System Operators (ENTSO-E) pushing all grid operators to cooperate and to develop common commercial and technical codes or security standards. Moreover, a supplementary Infrastructure Package[3] (adopted in 2013) defines rules to identify "*projects of common interest*" (PCIs) for infrastructures within a number of key trans-European energy corridors and areas.

If today we ask ourselves whether these existing arrangements – once fully implemented – add up to a "European market", the answer is yes. Whereas in the old times, trade across borders of areas controlled by different transmission system operators (TSOs) was mostly guided by security rather than economic considerations (Newbery, 2009), we today have a set of national, day-ahead wholesale markets that are mostly connected by implicit access given to physical interconnections from the trade floor. Any bid accepted in an exchange is simultaneously taken into account by the other exchanges and by the TSOs that manage the interconnections in between. Whenever there is significant congestion in the network, the European market splits into smaller regional or national markets until the congestion is ended. Second, we have more and more intraday and "real-time" arrangements by which offers of capacity and energy services also cross the borders of electrical zones. Third, the network is itself becoming more and more Europeanized. New grid operation codes are being conceived at EU level, and a common strategic planning of the EU grid is taking place under the "*Ten Year Network Development Plans*" adopted bi-annually by ENTSO-E. The set of PCIs is also due to adapt our infrastructures better to the internal market's needs.

Having said all this, it is nevertheless true that many anti-market arrangements still survive in too many European countries. At the *wholesale level*, byzantine market arrangements can add up to a "re-regulated access regime", not only in France and Spain, but in the UK too in light of its new nuclear power program (UK Government, 2013). At the *retail level*, national governments have typically been reluctant to eliminate regulated end-user tariffs (de Suzzoni, 2009; ERGEG, 2010), which, however, discourage consumers from searching for alternative suppliers and, even more consequential, might prevent their exposure to more elaborate price signals. Unfair competition arises if these tariffs are not even aligned with wholesale prices and instead establish values deliberately below the minimum levels needed to cover the cost of energy (plus the regulated charges, which include also network tariffs, subsidies to renewables, taxes, et cetera). It may result in billions of euros of "tariff deficits", as is notably the case in Spain already in the range of €25 billion (Marañón and Morata, 2011). Moreover, insufficient unbundling of distribution companies can be a serious obstacle to competition (Davies and Waddams Price, 2007; Nikogosian and Veith, 2011, and references therein) given that DSOs shall act as "*entry gates to retail markets […] making them an important influence on the level of competition as well*" (CEER, 2013).

The degree of market liberalization and competition still varies significantly across the EU and there is consensus about "room for more competition in power markets" (Lowe, 2011). National distortions have significant effects, but they cannot entirely block the internal market's functioning. However imperfect the EU's internal market may be, there can be no doubt that we now are very near to the market target set in 1986.

3. Europe's single electricity market: but also done forever?

It is far from guaranteed that this late internal market for energy will work forever. The many national compromises that have been realigned and harmonized in successive EU compromises dealt with the past, and aimed at opening up an EU market as conceived in the 1990s. However, many unforeseen but dramatic changes happened during the past 20 years. And these shifts from the initial power reform draft are not at the periphery of the system. They are at its core. We might call them the "major sins" of our EU market and network reform. Their actual number is heavily debated. Let say five to seven.

What we now live in the EU is not the former "common market – yes; common energy policy – never" which was framing the European policy for twenty years after 1986. We now stand in a common energy policy frame designed at the EU level in 2007, when the European Council decided in Berlin to go for it. To this end, in 2009, a set of Directives, well-known today as "20–20–20

[2] Directive 2009/72/EC 'concerning common rules for the internal market in electricity'; Regulation 714/2009 'on conditions for access to the network for cross-border exchanges in electricity'; and Regulation 713/2009 'establishing an Agency for the Cooperation of Energy Regulators'.

[3] Regulation 347/2013 'on guidelines for trans-European energy infrastructure'.