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Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017

Summary

October 2018



Introduction

- The Third Energy Package tasks the Agency for the Cooperation of Energy Regulators ('the Agency') with monitoring the European internal markets for electricity and gas. Since 2012, the Agency has presented the results of its monitoring activities in the annual Market Monitoring Reports (MMRs), produced and published in cooperation with the Council of European Energy Regulators (CEER). This year's MMR consists of four

volumes, respectively on: the Electricity Wholesale Market, the Gas Wholesale Market, the Electricity and Gas Retail Markets, and Customer Protection and Empowerment. The MMR covers EU Member States and, for some topics, Norway, Switzerland and the Contracting Parties of the Energy Community. This summary provides an overview of the highlights of this year's MMR.

Gas wholesale markets

The European gas system is characterised by high overall levels of security of supply

- The EU gas system showed high levels of resilience in the face of unexpected events and climatic conditions in 2017. This is due to many markets having improved in terms of flexibility and liquidity and to the fact that the available infrastructure can guarantee gas supply, in most cases from multiple sources.
- Investments in infrastructure and regulatory measures (such as the establishment of reverse flow capability on interconnectors) are thus bearing fruit, and few bottlenecks remain. Average and peak utilisation ratios show that, on average, the European system delivers high levels of security of supply. This is further enhanced by higher levels of price transparency and greater choice that the gas hubs offer.
- Markets in the North-West Europe region tend to be the most competitive and resilient. A few Member States still depend on a single source, which hinders the development of a competitive gas wholesale market.

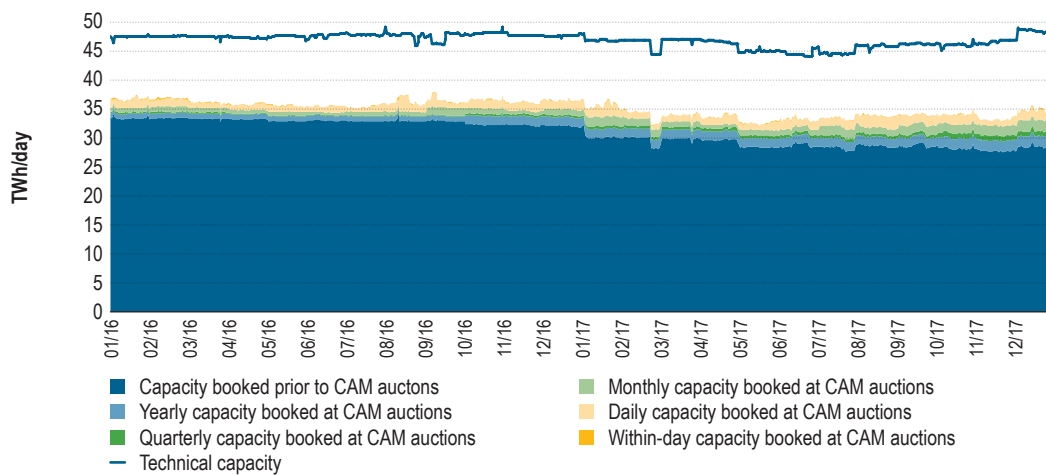
Gas markets are generally functioning better, but the gap between better functioning hubs and those without transparent trading venues continues to increase

- European gas wholesale markets continued to show increasing levels of convergence in 2017 in terms of both supply sourcing costs and gas hub prices¹. The average spread of supply sourcing costs between Member States was in most cases below 1 euro/MWh. A couple of years ago, spreads of 5 euros/MWh were common.
- The highest levels of price convergence were registered in the North-West European hubs due to similar market fundamentals, ease of access for upstream suppliers, high liquidity, relatively lower-priced cost of transportation capacity and surpluses of long-term contracted capacity and commodity. Price convergence in the Central and East Europe region has improved in recent years.

- Day-ahead price spreads between many hub pairs in 2017 were often below cross-border transportation tariffs, indicating high levels of market integration. This trend is more evident when price spreads are compared with daily transportation tariffs than in relation to yearly transportation tariffs. In those instances where spreads exceeded tariffs, market integration tends to be incomplete.
- Many suppliers who bought long-term transportation capacity find themselves over-contracted. Faced with this sunk cost, they tend to place bids reflecting the short-run marginal costs of transporting gas. This has helped to strengthen hub price convergence. Furthermore, increased gas sourcing diversification and more widespread use of gas hubs foster competition between producers.
- TTF and NBP continued to be the EU's best-functioning hubs in 2017. TTF and NBP distinguish themselves from the other hubs mainly because of the higher development of their forward markets (e.g. traded volumes on the curve, longer trading horizon and tighter bid-ask spreads).
- There is ongoing hub specialisation, especially for forward transactions. Market participants are migrating to TTF for forward trading and hedging, while most of their transactions at other hubs are carried out on the spot and the near-curve markets.
- The differences between better functioning hubs (mostly in North-West Europe) and those without transparent trading venues have continued to increase. While there were notable positive developments in the Iberian and Baltic regions, other Member States, where a trading venue with a transparent price mechanism is either absent or not visible during many trading days of the year, continued to fall behind better performers. However, more market zones and Member States were engaged in integration efforts.

- The Energy Community Contracting Parties still showed very limited hub trading activity in 2017 and tended to have less gas sourcing diversity and higher upstream concentration levels than most EU Member States.
- The Gas Network Codes are contributing to market functioning, especially in Member States with well-functioning or improving gas wholesale markets
- The implementation of the Capacity Allocation Mechanism Network Code (CAM NC) is gradually having positive effects on the booking levels of transportation capacity and market functioning, especially with respect to shorter-term capacity products, as Figure 1 shows. However, most transportation capacity is still assigned under long-term legacy contracts booked before the CAM NC implementation, although their share is decreasing. Capacity contracts concluded before the end of 2015 amounted to 93% of total booked capacities in 2016, decreasing to 84% in 2017.
- Figure 1 also shows that, even though gas consumption is increasing, absolute capacity booking levels tended to be lower in 2017 than in 2016, while overall technical capacity increased over the same period.
- The commercial management of EU Interconnection Points is gradually incorporating short-term market fundamentals and price signals provided by hubs. In addition to the CAM NC, the implementation of the Balancing Network Code (BAL NC) and of the Congestion Management Procedures Guidelines (CMP GLs) are contributing to this trend. However, the utilisation ratios of Interconnection Points in 2017 still largely reflected historical contractual terms and the level of integration among interconnected markets. Important differences persisted between Interconnection Points and trading zones; Member States with well-functioning or improving gas markets benefit the most from the implementation of the Network Codes

Figure 1: Overview of booking platforms aggregated entry and exit capacity bookings – 2016–2017 (TWh/day)



Source: ACER based on PRISMA, GSA, RBP and ENTSOG.

Notes: PRISMA covers products auctioned in 2015, 2016 and 2017; GSA 2016 and 2017 while RBP from May 2017.

Electricity wholesale markets

In 2017, average day-ahead (DA) electricity wholesale prices increased in most of Europe. Scope for further price convergence remains

- In 2017, average DA electricity prices increased in all bidding zones, except in the Bulgarian, Baltic and Polish markets.
- Price spikes reappeared in 2016, and persisted in 2017. During some of the periods of price spikes in 2017, several Member States unilaterally decided to restrict electricity exports, which are inefficient and not allowed under current legislation except in emergency situations.
- Price differentials of more than 10 euros/MWh persisted on several borders, e.g. between the German/Austrian/Luxembourgish bidding zone and five of its neighbouring countries, and on all British borders.

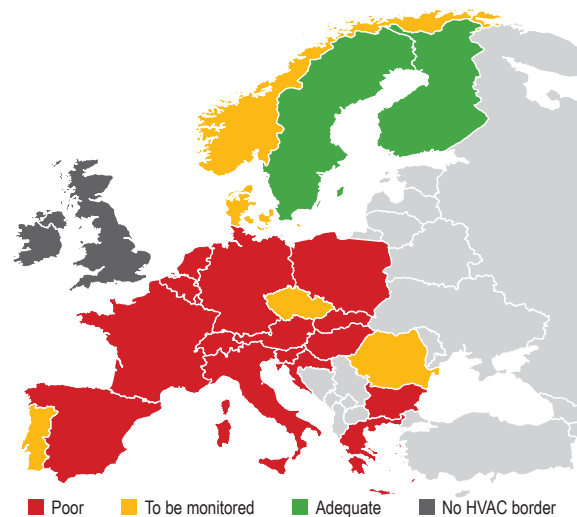
The level of efficiency in the use of available cross-border capacity in the DA timeframe remained high. There is still significant scope for improvements in the use of capacity in the intraday (ID) and balancing timeframes

- Thanks to DA market coupling, the level of efficiency in the use of interconnectors in this timeframe increased from approximately 60% in 2010 to 86% in 2017, although it has remained almost unchanged since 2014. The extension of market coupling to all European borders would yield additional benefits of more than 200 million euros per year.
- Compared to the DA timeframe, the level of efficiency in the utilisation of cross-zonal capacity in the ID timeframe remains low (50%), but is expected to increase following the recent go-live of Single Intraday Coupling (SIDC).
- Projects initiated in recent years to increase the exchange of balancing services across borders continued to bear fruit in 2017. Despite these improvements, large disparities in balancing energy and balancing capacity prices persisted in Europe in 2017.

In 2017, the low level of cross-zonal capacity made available for trading remained the main barrier to market integration, as it was still significantly below the 'benchmark capacity', i.e. the maximum capacity that could be made available to the market while preserving operational security

- On average, only 49% of the benchmark capacity in High-Voltage Alternating Current (HVAC) interconnectors was made available for trading in 2017. Figure 2 provides a visual representation of how far countries were from making the full benchmark capacity available for trading on HVAC interconnectors.

Figure 2: National performance according to the level of cross-zonal capacity made available for trading compared to benchmark capacity on HVAC interconnectors in Europe – 2015–2017



Source: NRAs, ENTSO-E and ACER calculations (2018).

Note: The cause of poor performance for a given country may either come from this country or (often) from neighbouring ones. Performance was assessed by comparing cross-zonal capacity made available for trading with benchmark capacity on HVAC (high-voltage alternating current) borders in 2016, and by price convergence in the 2015–2017 period. For more details on the scoring methodology, please consult the MMR. The Italian performance is assessed for the Italy North border. Great Britain and Ireland (SEM) do not have HVAC borders, and are therefore depicted in dark grey. No information was available for Estonia, Latvia, or Lithuania, and these countries are depicted in grey.

- The following findings suggest that congestions are not properly addressed by the current bidding zone configuration in most of continental Europe:
 - The low level of cross-zonal capacity made available for trading and the fact that structural congestions are located most of the time within bidding zones. For instance, in the Central-West Europe (CWE) region, 86% of congestions in 2017 related to intra-zonal critical network elements.
 - The intensive application of remedial actions to address congestions in several jurisdictions. During the 2015–2017 period, the highest remedial action costs were recorded in Spain, Germany, Portugal and Great Britain, with annual averages of 2.3, 1.7, 1.7 and 1.2 euros per MWh of demand, respectively.
- Intra-zonal exchanges remain disproportionately prioritised over cross-zonal ones. For example, in 2017, the share of capacity made available for cross-zonal trade in critical network elements in the CWE region was, on average, only 13% of their maximum capacity, whereas the remaining 87% was largely 'consumed' by flows resulting from internal exchanges.

- The gross benefits from implementing the Agency’s recommendations on capacity calculation (included in the Agency’s Recommendation No 02/2016) throughout Europe are estimated at more than 1 billion euros per year in 2017. In fact, Figure 3 shows that any step to remove the discrimination of cross-border exchanges would yield significant welfare benefits.

While DA markets are generally assessed to be liquid, scope remains for improving the liquidity of forward and ID markets in Europe

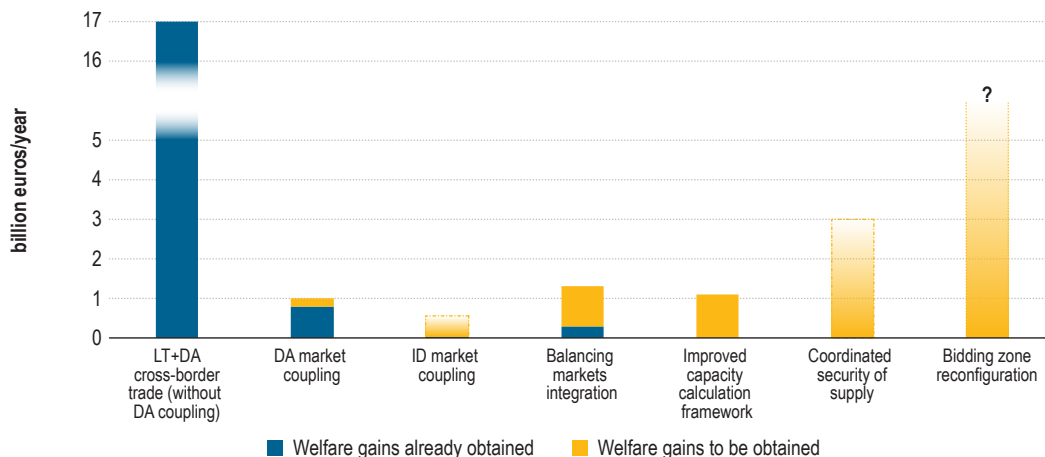
- The combined analysis of churn factors and bid-ask spreads confirms that forward markets’ liquidity in Europe remained modest or low in 2017, with the main exceptions being Germany/Austria/Luxembourg, followed by France, the Nordic region and Great Britain.
- No direct correlation between the size of the bidding zones and forward markets liquidity can be established. While the largest biggest bidding zone in Europe (Germany/Austria/Luxembourg) records the highest level of liquidity in forward markets, other large bidding zones (e.g. Spain or Poland) record low liquidity levels. Furthermore, in some geographical areas with relatively small bidding zones, e.g. in the Nordic area, the level of forward market liquidity is among the highest in Europe.
- As far as ID markets are concerned, the upward trend in liquidity observed in recent years in most countries continued in 2017. In markets with continuous trading, more than 50% of volumes were traded during the last trading hour, i.e. usually between 120 and 60 minutes before delivery.

- A relatively late release of cross-zonal capacity for ID trading would risk isolating national ID markets during trading hours with relatively high liquidity, e.g. more than one third of this liquidity would remain unshared across borders if the release of ID capacity were to take place on all borders at 22:00 on the day before delivery.

Uncoordinated national adequacy assessments underestimate the contribution of interconnectors to security of supply.

- A patchwork of different, uncoordinated national Capacity Mechanisms (CMs) continued to operate throughout Europe in 2017. The costs related to CMs amounted to more than 2 billion euros in Europe in 2017. In some Member States, these costs currently represent a noticeable share of wholesale energy prices, e.g. in Ireland, where they represented 33% of the average DA wholesale energy prices in 2017 and, to a lesser extent, in Greece (6%), France (5%) and Spain (3%).
- One third of the national resource adequacy assessments, often used as a basis for the decision to implement a CM, persisted in ignoring the contribution of interconnectors. According to independent estimates, assessing and ensuring adequacy at the pan-European level would yield benefits of approximately 3 billion euros annually.

Figure 3: Social welfare* benefits already obtained and to be obtained from various actions intended to further integrate the Internal Electricity Market (billion euros/year)



Source: ENTSO-E, NRAs, NEMOs, Vulcanus and ACER calculations.

Note: *Gross benefits. The faded colour for some categories indicates that the welfare gains rely on third-party estimates and/or are subject to considerable uncertainty.

Energy retail markets, consumer protection and empowerment

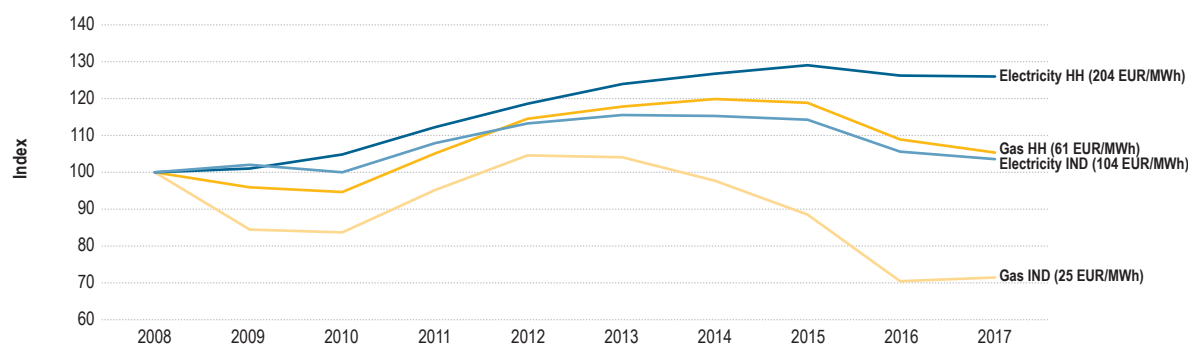
Retail

- In 2017, average energy retail prices for households in the EU decreased for the second consecutive year, but were still higher than in 2008. Over recent years, the overall decrease was more pronounced for industrial consumers than for households, and was more pronounced for gas than for electricity. For example, electricity prices for industrial consumers in 2017 reached levels similar to those of 2008 (see Figure 4), whereas gas prices for the same segment of consumers decreased by a third compared to 2008.

Consumer protection

- In almost all Member States there is a Supplier of Last Resort (SoLR) mechanism for both electricity and gas. A SoLR is used to replace a failing supplier. In the rare event that a SoLR is called on to replace a supplier that loses its license, the price for energy that consumers pay tends to be higher than the one charged under their previous contract. This implies that supply through the SoLR should be of minimum duration, and consumers should switch quickly to a regular supplier. In many Member States, the SoLR mechanism also performs

Figure 4: Trends in final energy prices for household and industrial consumers in the EU (index, 2008=100)



Source: ACER calculations based on Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption), Band IE: 20,000–70,000 MWh (industrial electricity consumption), Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption – (29 May 2018)).

Note: Prices in nominal terms.

- Over the 2015–2017 period, lower wholesale energy prices and lower retailers' mark-ups contributed most to falling average household retail energy prices in the EU.
 - In 2017, the share of the energy component in electricity and gas retail prices declined for the fifth consecutive year, accounting for around a third (35%) of electricity bills and slightly less than half (49%) of gas bills, while the remainder consisted of non-contestable charges, i.e. network costs, taxes, levies and other charges. Over this five-year period, the relative importance of the charges to finance subsidies to renewable energy has more than doubled, with their share in the final electricity retail price increasing from 6% in 2012 to 14% in 2017.
 - Household electricity retail prices in the Energy Community Contracting Parties increased for the fourth consecutive year, while household gas prices decreased for the fourth consecutive year, apart from Ukraine, where household gas retail prices increased by more than 170% over the same period.
- other activities (e.g. protection of inactive consumers). In some Member States, large shares of households are supplied by SoLRs. This raises questions as to why so many household consumers either remain inactive or need protection. Therefore, in designing a SoLR mechanism, care should be taken that it does not prevent or discourage consumers from engaging in the liberalised market and, possibly, promote and encourage such engagement.
- Similarly to 2016, in 2017, disconnection rates for non-payment rarely exceeded 1%, although in a few Member States this rate still reached up to 7%. Consumers cannot be disconnected without being given a minimum notice period, usually between three weeks and two months.
 - In 2017, the share of energy-poor consumers in some Member States reached 10% for both gas and electricity; hence, energy poverty needs to be an important point of attention in these Member States.

- The Energy Efficiency Directive (EED)² lists the few important information items to be included in the electricity and gas bills. In most Member States, however, information provided on bills in 2017 included, on average, ten different categories. It is recommended that bills provide consumers with only essential information that empowers them, and that other relevant, detailed information be made available through different communication channels where possible.
- In order to exercise their right to switch supplier, consumers must rely on a smooth switching process, including the availability of comparison tools. Most Member States meet the switching targets established by the Third Package in terms of maximum switching time (three weeks) and of the maximum time by when the final bill is received after switching (six weeks), and some Member States even outperform those targets. The ACER-CEER 'Bridge to 2025' conclusions document³ recommended that the technical supplier switching process be completed within 24 hours on any working day by 2025. Given the mass roll-out of IT in recent years, this target could be achieved by an earlier date.
- According to the Electricity Directive, Member States should roll out electricity smart meters to 80% of consumers by 2020 unless the result of a cost-benefit analysis is negative. The roll-out of smart meters by the end of 2017 had reached more than 50 per cent of household customers in 9 Member States. The roll-out of gas smart meters is still limited, with only 5 Member States having commenced.
- The introduction of smart meters impacts retail markets which are evolving. Smart meter-related offers for retail clients are emerging in an increasing number of Member States. Options include time-of-use contracts, with intra-day/weekdays/weekend energy price differentiation, or real-time or hourly energy pricing contracts.
- In almost all Member States, the National Regulatory Authorities (NRA) is responsible for handling complaints, but in half of the cases, the NRA only forwards complaints to another body. In 2017, the main share of consumer complaints received by NRAs for both electricity and gas related to invoicing, contracts and connection issues.

2 Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1399375464230&uri=CELEX:32012L0027>.

3 See: <http://www.acer.europa.eu/Media/Press%20releases/ACER%20PR-09-14.pdf>.



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