

## The importance of free formation of prices in the European wholesale electricity market

An EFET Discussion Paper – June 2016

### Introduction and basic concepts

EFET believes that the electricity system in Europe is at a turning point. Collectively, we have reached an **unprecedented level of liberalisation and integration of the whole electricity sector across Europe**. At the same time patterns of generation and supply are changing. Generation sources are increasingly renewable and decentralised.

Through all of this the wholesale market in electricity as a commodity, established in most of Europe already by the end of the last century, remains an essential foundation for effective competition in electricity supply. It facilitates market entry and exit, enables risk management by producers, suppliers and consumers through forward trading, and ideally will inform all investment and divestment decisions. Supply competition at the wholesale level underpins retail competition, which in turn guarantees customer choice, product innovation and variety, and improved efficiency.

The key signal coming from the market is the price. **Only undistorted prices give an accurate signal for dispatch on the one hand, and for investment and divestment on the other hand**. With an increasing share of intermittent power generation in the European energy mix, precise price signals are more needed than ever to ensure the reactivity of market participants' dispatch decisions to rapidly

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<sup>1</sup> The European Federation of Energy Traders (EFET) promotes and facilitates European energy trading in open, transparent, sustainable and liquid wholesale markets, unhindered by national borders or other undue obstacles. We currently represent more than 100 energy trading companies, active in over 28 European countries. For more information, visit our website at [www.efet.org](http://www.efet.org)

changing demand and supply conditions. This massive penetration of intermittent generation will also need to be accompanied by investments in peak generation units, storage solutions and demand-side management. Only accurate price signals will allow market participants to identify the need and timing of such investments, alongside more traditional investment in generation and transmission capacity.

**Energy prices should be allowed to reflect the true value of scarcity during times of system stress and high demand for power; similarly, when energy is in abundance prices should be allowed to reflect the value of displacing that generation and even go negative** – which would give signals for storage operators/investments if they are not caused by out of the market reasons. Likewise, the volatility of energy prices, when not induced by flows in the market design – e.g. lack of transparency, excessive reserve margins, or any other distortion to price formation – is a sign that the market reacts appropriately and fast to demand and supply signals.

Despite significant progress in the opening and integration of electricity markets over the past two decades, truly free formation of prices remains an unattained objective in all Member States so far. To improve this situation, EFET believes that the following questions ought to be tackled:

- Ensuring the equal treatment of all participants in the wholesale market (RES-E, auto-generation/auto-storage, traditional generation, demand, and storage)
- Doing away with regulatory price limits (caps and floors)
- Ensuring that cross-border flows are not discriminated against internal flows
- Improving transparency of infrastructure use
- Doing away with regulatory or technical interventions aimed at avoiding scarcity or surplus pricing
- Ensuring efficient pricing of operating reserve
- Clarifying the rules governing concomitant scarcity situations in neighbouring Member States
- Clarifying the rules governing market suspensions
- Enforcing anti-trust provisions and monitoring market abuse in a way that does not create barriers for the free formation of prices

## 1. Ensuring the equal treatment of all participants in the wholesale market

Like many sectors in the world economy, the European energy markets have suffered from the economic downturn since 2007. To make sure that the sector survives this difficult time and the efforts to complete the internal electricity market have not been in vain, serious reform is needed. **The time has come to do away with privileges, old and new, and to guarantee a level-playing field to all market participants**, irrespective of their location, the technology they use, and the type of product or service they provide.

A critical review of measures favouring specific technologies or preventing challengers – including on the demand and storage side – to enter the market should be launched. Beyond the question of fair competition, preferential treatment of certain market participants via operational or financial privileges can lead to inefficient dispatch decisions. A non-privileged approach to the generation dispatch is of utmost importance to ensure an efficient use of energy sources and guarantees delivery of energy at the lowest price to end-consumers.

In the particular case electricity produced from renewable energy sources (RES-E), current priority dispatch arrangements, where they still exist, do not incentivise RES-E producers to moderate their own output efficiently, driving market prices down in the event of low demand and favourable climatic conditions. Low or negative prices, when they occur, should arise naturally on the system rather than through the operation of market-distorting privileges and subsidies available to certain operators who are shielded from the price signal (though influencing it) and maintain their output throughout periods of surplus. Lessons learnt in relation to such arrangements for RES-E (a) should be remembered when discussing future arrangements for the promotion of demand-side response (b).

### a. Treatment of electricity produced from renewable energy sources (RES-E)

The emergence of renewable power generation since the 2000s has largely developed separately from the operation of the wholesale energy market. This situation has undermined the efficiency of the European carbon market, the current national framework in many Member States detracting from, rather than contributing to, the completion of a single European market in electricity. We believe that the central instrument to encourage support in investment in low-carbon technology should be **the EU Emissions Trading System (ETS). It promotes the most cost-efficient form of abatement and does not distort the internal energy market.** The

fact that the price signal in the EU ETS has been weak over the past years has only served to support the proliferation of a wide range of national renewable support schemes. Therefore, the focus should be on structural reform of the EU ETS to ensure it regains relevance as the primary means for supporting low-carbon technology. On this point, see our contribution to the reflexion on the need for further reform of the ETS Directive, together with our support for the Market Stability Reserve proposal<sup>1</sup> and our Discussion Paper on tackling overlapping climate action policies<sup>2</sup>.

A fundamental reflexion on the viability of RES-E support as it exists nowadays should be launched<sup>3</sup>. The diversity of renewable support schemes currently in place in many Member States is no longer compatible with the completion of the single electricity market if they come in conflict with the EU ETS price signal on the one hand, and depress energy prices on the other hand. Therefore, new EU legislation in this field is needed to make that clear.

Specifically, we believe that **operational and connection privileges** should be reviewed:

- Balancing responsibility needs to apply to all types of generation, including renewables;
- Priority dispatch and priority grid access for renewables need to be abandoned where they still exist:
  - Flows should follow prices and not be prioritised based on feed-in of specific technologies
  - RES generators should be subject to the same connection procedures and costs as other generators
  - Congestion management mechanism should be market based

<sup>1</sup> See the EFET comments to the ETS Directive review proposal of 15 July 2015, available at: [http://www.efet.org/Cms\\_Data/Contents/EFET/Folders/Documents/EnergyMarkets/RE/~contents/DSX25ZBLUJM\\_PUCUQ/EFET-comments-ETS-directive-review-proposal.pdf](http://www.efet.org/Cms_Data/Contents/EFET/Folders/Documents/EnergyMarkets/RE/~contents/DSX25ZBLUJM_PUCUQ/EFET-comments-ETS-directive-review-proposal.pdf).

<sup>2</sup> See EFET Discussion Paper on tackling overlapping climate action policies of 18 January 2016, available at: [http://www.efet.org/Cms\\_Data/Contents/EFET/Folders/Documents/EnergyMarkets/RE/~contents/AR52M5NJ6JS\\_N87T9/EFET-on-overlapping-policies-EU-ETS.pdf](http://www.efet.org/Cms_Data/Contents/EFET/Folders/Documents/EnergyMarkets/RE/~contents/AR52M5NJ6JS_N87T9/EFET-on-overlapping-policies-EU-ETS.pdf).

<sup>3</sup> See elaborate thought on the subject in the EFET response to the European Commission consultation in preparation of the review of the Renewable Energy Directive of 5 February 2016, available at: [http://www.efet.org/Cms\\_Data/Contents/EFET/Folders/Documents/EnergyMarkets/RE/~contents/JM525YQSN39\\_YUKSM/EFET-response-to-REDII-consultation.pdf](http://www.efet.org/Cms_Data/Contents/EFET/Folders/Documents/EnergyMarkets/RE/~contents/JM525YQSN39_YUKSM/EFET-response-to-REDII-consultation.pdf).

Beyond these operational aspects, a thorough review of **the financial support** enjoyed by RES-E producers needs to be launched. This includes:

- Phasing out of fixed feed-in tariffs, as they effectively segregate renewable generators from participating in the market
- Ensuring the cross-border validity of renewable electricity attributes, for entitlement to financial support when the underlying power is imported / exported across borders. For example, more could be done to allow the use of Guarantees of Origin as a mechanism for trading renewable attributes of electricity across borders
- Transposing the financing of renewable support schemes, as well as other climate action policies, taxes and levies from the electricity bills to the state budget, so as to align private incentives and socially optimal investment signals and reduce the cost for RES-E and demand-side response development and “behind the meter” investments – all this being also valid for support for electricity generation from nuclear and fossil fuels

Finally, a **clear strategy for the phase-out of direct financial support for renewables**, based on the maturity and economics of technologies, facilitated through a move to more competitive allocation of support should be sketched for the horizon 2030:

- There should be more focus on enhancing and strengthening the carbon price signal in the EU ETS as the most effective and efficient way of incentivising investment in low-carbon electricity and on decreasing the cost of support schemes, thus allowing for a truly market-driven energy transition
- More awareness should be raised on the transfer effects between the carbon price and the RES-E support scheme – as a stronger carbon price will be largely passed through the wholesale power price (in most cases set by the marginal cost of carbon-intensive thermal unit), renewables could then get sufficient remuneration through this price signal as they would not have to surrender emission allowances for their production. The net effect of this shift on final consumers will be neutral or even positive due to efficiency gains and lower administrative costs

b. Treatment of auto-generation and auto-storage (electricity produced by or stored in assets “behind the meter”)

The price signal for consumers, or so-called ‘prosumers’, to invest in generation and/or storage “behind the meter” and operate such assets is the retail tariff. At present, the exponential rise in network charges, taxes and levies encourages consumers to invest in “behind the meter” solutions to bypass the electricity bill. These private initiatives, often financed by public funds, lead to uneconomic decisions when total system costs are considered. This is causing overall inefficiencies and has the undesirable distributional effect that costs are passed from prosumers to consumers that are not willing or able to invest and operate assets “behind the meter”.

- Energy policy in general, should stimulate efficient markets at wholesale and retail levels. “Behind the meter assets” or auto-generation/auto-storage should not be a goal in itself. Instead consumers should receive the right price signal so they can choose whether they want to invest in own electricity generation, storage, measures for energy efficiency and/or market their demand response capabilities.
- The fundamental approach to solve the issue would be to require that “behind the meter” generation and storage is measured and settled separately, in principal the same way as other local and central generation and storage is treated. In this way, it is ensured that all generation and storage facilities (irrespective of their point of feeding into the system) get the same price signal. RES support (if applicable) should be independent of RES generation being “behind the meter” or being directly connected to the grid.

Beyond these principles, and considering the growing importance of “behind the meter” investment, a review of all financial aid and how it is pass through onto end-customers will be needed in order to promote a sane developments of new clean technologies at the lowest possible cost for the whole system, including:

- Restructure the transmission tariff in such way that it incentivises grid users to use the grid in such way that total grid costs remain as low as possible.
- Abolish or reduce taxes and levies charged on electricity consumption as far as possible.

c. Treatment of demand

Fundamentally, EFET believes that the best way to get full value out of the market is to ensure the optimal functioning of the market with as little constraints as possible. **All parties that can bring liquidity and value to the market should be allowed to participate freely and on a level-playing field.** As such, if demand response providers can bring value to the market, they should be welcomed. However, the promotion of their role should be based on actual added value, and not introduce new, restrictive market regulation for the purpose of artificially creating room for them.

The value of flexible capacity is continuously changing based on varying prices in all segments of the wholesale market and depends on the specific aspects of each individual case. **Therefore EFET strongly supports bilateral arrangements between the parties involved.** The result of such free negotiations are the best assurance that the energy is valued correctly, market participants are not adversely impacted by the actions of the demand response providers and market prices are not distorted by a regulated price. An agreement between two parties on the price of the energy that is to be exchanged is a cornerstone of the market and from which policy makers should not deviate.

EFET believes that **retail competition should be the basic driver to ensure that demand-side flexibility is being exploited** (in those cases where demand-side flexibility has a value). A business model, where a third-party aggregator is exploiting flexibility on behalf of a consumer (or a generator) and in parallel to a retail supplier supplying electrical energy to that consumer (respectively to an off-taker taking the electrical energy from the generator), does not need to be ruled out. In that case however, considering that consumers, third-party aggregators, suppliers and balancing responsible parties are all market actors that operate in the contestable (non-regulated) market, it is important they enter into bilateral arrangements, and in particular arrangements on financial compensation, on the basis of free negotiations.

In theory, if a retail supplier does not allow end-consumer to value their flexibility correctly through an independent demand response aggregator, end-consumers can switch supplier. It is however patent that the current level of energy prices (and hence the limited valuation of flexible capacity on the market), combined with a sub-optimal level of competition in retail markets in most parts of Europe, do not currently set the conditions that facilitate end-customers' ability to leverage their power of choice or incentivise retail suppliers to either enter the business of demand-response management or contract such services from independent demand aggregators. **Decision makers should focus on sharpening energy price signals at wholesale level and improve the conditions of retail competition.** And if a market participant

behaves in bad faith on a structural basis, this could be ground for a regulatory intervention by competition authorities, especially in cases where market dominance is present. Other regulatory and/or technical obstacles to the participation of third-party aggregators to the energy market on a level-playing field with other market participants should of course be removed.

## 2. Doing away with regulated price limits

**Explicit and implicit regulated price caps and floors should be removed.** This is a firm commitment of a number of European governments<sup>4</sup>. Regulated price caps serve no other purpose than shielding end-consumers from unexpected price caps. This, however, comes with the assumption that end-consumers would be fully exposed to volatility in the market. Decision-makers should not be scared of increased price volatility and the occurrence of price spikes. **Natural volatility of the markets does not lead to higher risks for the system or higher prices for end consumers**, provided that these customers are fully aware of market risks and are able to use the appropriate hedging instruments available, or to outsource these activities.

It is indeed important to note the **complementary role of future/forward products and hedging practices** (including of optional products, already available with the existing market design as any other type of energy products) **for limiting the impact of price spikes occurring in the short-term markets**. Meanwhile, most electricity is bought and sold in forward markets and we would normally expect projections of tighter supply-demand conditions to incentivise more forward contracting. Trading of more sophisticated forwards and options will flourish after volatility is seen to transpire in the market. In any case, only a very small proportion of total demand is affected by price spikes and these costs are faced by supply businesses rather than being seen by customers themselves.

The political acceptability of price spikes is therefore rather an issue of serious analysis of the problem in the media and in political circles if all participants learn how to hedge their risks or contract services to help them to do so. The reality is that **average bills over the whole year are the most important point for consumers**. The fact that market participants may financially benefit from tight peak periods should not hide the fact that they do operate at a loss in other periods. As long as

<sup>4</sup> In their Joint Declaration for Regional Cooperation on Security of Supply in the Framework of the Internal Energy Market of 8 June 2015, twelve European governments stressed that they “*will not restrict cross-border trade of electricity including in times of high prices reflecting market scarcity and [they] will follow EU-regulations on cross-border trade also with respect to ensuring secure system operation*”, and that they “*will allow flexible prices; [they] will particularly not introduce legal price caps and [they] will avoid that national measures have the effect of indirect price caps*” (available at: <http://www.benelux.int/files/4414/3375/5898/Jointdeclaration.pdf>).



customer prices over the year remain stable, and system security and generation (and load) adequacy are preserved, there should be no undue public intervention on the standard functioning of the market by way of price limits.

Some price limits may however need to be introduced by market operators (power exchanges) for technical reasons, e.g. to set a limit for price-taking orders and for collateral calculation. Such limits should be reviewed to a level that does not interfere with market forces in setting the price and that does not undermine the incentives for market participants to balance their positions. Such limits should also be harmonised, as per the requirements of the Capacity Allocation and Congestion Management (CACM) Regulation<sup>5</sup>.

### 3. Ensuring that cross-border transactions are not subject to discriminatory practices favouring internal flows

As required by the 2009/714 Regulation, **congestion problems on the European transmission network should be addressed with non-discriminatory market-based solutions** that give efficient economic signals to the market participants and transmission system operators involved<sup>6</sup>. This requirement is further detailed in the Congestion Management Guideline annexed to the Regulation. Beyond the legal obligation, transparent and non-discriminatory management by TSOs of congestion and capacity allocation at interconnection points remains paramount to allow the free formation of prices.

Discriminatory congestion management practices which favour national transactions, such as over-cautious cross-border capacity availability calculations, conservative allocation of forward transmission rights and lack of firmness of these rights, or national feed-in arrangements over equivalent transactions arranged across borders should be abandoned. In practice, this means that the maximum capacity of the interconnections and/or the transmission networks affecting cross-border flows shall be made available to market participants, in compliance with safety standards of secure network operation. This includes:

- Allocation of the maximum available capacity in the forward timeframe by way of fully financially firm transmission rights: as we saw previously, firm forward

<sup>5</sup> Article 40.1 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management requires the Nominated Electricity Market Operators (NEMOs) to start a process in 2017 to “propose harmonised maximum and minimum clearing prices” both for the day-ahead and intra-day markets. The Regulation also requires that: “the proposal shall take into account an estimation of the value of lost load.”

<sup>6</sup> Article 16.1 of the Regulation (EC) 714/2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003.

cross-border capacity rights provide an important hedge from price spikes which would be reflected in the price spreads between bidding zones

- Swift entry into force of more efficient transmission capacity allocation solutions in the day-ahead timeframe – implementation of flow-based capacity calculation in day-ahead throughout Europe in a fully transparent manner
- Open access to explicit and implicit cross-border intraday trading, with intraday gate closures times closer to delivery and allocation methods allowing market participants to book the necessary capacity to trade across borders and to match their needs – with gate closure time not more than one hour before real time and first-come first-served explicit access until the full target model coupling the various bidding zones and allowing for both standard and non-standard products is in place; in bidding zones where day-ahead flow-based capacity allocation applies, there should be a clear roadmap for a swift transition toward flow-based calculation for intraday capacities
- Efficient and transparent, market-based cross-border congestion management by TSOs

#### 4. Improving transparency regarding the availability and use of infrastructure

Any lack of transparency concerning the availability and use of infrastructure, potentially discriminatory access to transmission and storage, and ineffective or insufficient unbundling should be eradicated. The timely publication of fundamental data or variations of such data by TSOs, especially concerning the availability and use of transmission capacity, is vital to ensure that the right price signals reach market participants.

The lack of transparency in the use of infrastructure is of particular relevance in complex capacity allocation mechanisms such as flow-based market coupling. Providing **greater transparency by making publicly available ex-ante more information on flow-based parameters as well as on network changes impacting these flow-based parameters** will help build confidence and foster the development of market participants' knowledge of the current market drivers. Inputs to the flow-based coupling algorithm such as Critical Branches/Critical Outages (CBCO) explicit IDs, Remaining Available Margins (RAM), Power Transfer Distribution Factors (PTDF) matrices by hour, including maximum import and export limits, and Generation Shift Keys (GSK) by hour by Control Area are all **price-sensitive information**. Such information forms the basis of market participants' decisions to enter into transactions in wholesale energy products.

The fact that the data mentioned above is not yet publicly available results in a lack of visibility for market participants on how changes will affect the flow-based domain. It is important to note that the lack of transparency makes it extremely difficult for market participants to forecast the flow-based domain beyond day-ahead, which has a significantly negative impact on the efficiency of the forward market<sup>7</sup>.

Making these elements public would enable market participants to identify and understand elements having a direct impact on the formation of wholesale prices and is vital to avoid that market participants take suboptimal dispatch decisions.

#### 5. Doing away with regulatory and technical interventions in price formation aimed at averting scarcity or masking surpluses

EFET believes that prices should reflect the reality of supply and demand of electricity in a transparent manner, both in terms of time and location. Increasing the efficiency of the market will improve price signals in wholesale markets during episodes of scarcity or surplus. This will ensure that all types of capacity (generation, demand and storage) can properly be used and valued based on a level-playing field. Making the market more efficient will result in a more efficient use of capacities and therefore translate into lower prices overall, which better reflect the match between supply and demand.

Artificial interventions aimed at suppressing prices signalling scarcity or surplus should be avoided. **In particular, remedial actions as well as other topological measures initiated by system operators should in no case be taken on the basis of price levels**, but solely on technical network considerations. Indeed, the mission of TSOs is to operate the grid at safe conditions, while staying neutral to price signals. No price information should be considered in the capacity calculation process.

With the rollout of flow-based market coupling in the CWE region, the specific problem of technical interventions in price formation has become increasingly acute. On the one hand, this new capacity calculation methodology legitimises the introduction of unspecified “external constraints” in the capacity calculation algorithm, which has the potential to limit available transmission capacities and alter market results. On the other hand, lacking transparency on the use of critical branches and margins in the algorithm gives ample room to TSOs to overly restrict the flow-based

<sup>7</sup> See the EFET/Eurelectric/MPP letter to the CWE regulators of 11 May 2016 calling for improved transparency on flow-based market coupling algorithm parameters, available at: [http://www.efet.org/Cms\\_Data/Contents/EFET/Folders/Documents/EnergyMarkets/ElectPosPapers/~contents/S2\\_92PTSAC4NXCCXW/20160505-Transparency-FBMC-MPP-EFET-EUREL.pdf](http://www.efet.org/Cms_Data/Contents/EFET/Folders/Documents/EnergyMarkets/ElectPosPapers/~contents/S2_92PTSAC4NXCCXW/20160505-Transparency-FBMC-MPP-EFET-EUREL.pdf).

usable under satisfactory security conditions. Possibly worse, recent events show that interventions by TSOs in the flow-based domain by use of remedial actions can be triggered by price levels on the market<sup>8</sup>. Removing external constraints from capacity calculation methodologies and providing full transparency on the use of transmission network elements and their impact on market prices will provide confidence to the market that TSOs stick to their role of neutral market operators and do not unduly restrict the free formation of prices.

## 6. Ensuring efficient pricing of operating reserve and efficient imbalance settlement

To ensure against physical scarcity (see section 8) the TSO will call on a number of options including primary, secondary and tertiary reserve. Transparent, market-based pricing of reserves is key to set the right price signal that will be passed on to other timeframes up until forward markets.

Harmonised balancing markets across borders will help to create regional balancing zones and avoid inefficiencies from different balancing rules in neighbouring systems. As part of the harmonisation, and in order to facilitate visibility and consistency of pricing between different timeframes of the market, TSO should draw up common rules for the payment of balancing services and the settlement of imbalances. The cost of activating balancing energy reflects the real-time value of the TSO actions when activating reserves<sup>9</sup>. It is important that the latter are priced appropriately in the market. In case the cost of activating balancing energy is not identifiable (e.g. market suspension), a proxy such as the value of lost load (VoLL) could be used instead (see section 8 for more details). Payments for balancing services and imbalance prices must deliver economically efficient incentives for balance responsible parties to adjust their positions in the intraday market as close to real time as possible.

Thus the following principles should be implemented in the reform of the European balancing market:

- Uniform pricing between BSPs (energy activation) and BRPs (imbalance price)
- Single price for long/ short imbalances

<sup>8</sup> See the EFET memo on the use of remedial actions in a flow-based environment dated 5 May 2016, available at:

[https://www.entsoe.eu/Documents/Network%20codes%20documents/Implementation/stakeholder\\_committees/2016\\_05\\_11/EFET\\_memo\\_BE\\_price\\_intervention\\_05052016.pdf](https://www.entsoe.eu/Documents/Network%20codes%20documents/Implementation/stakeholder_committees/2016_05_11/EFET_memo_BE_price_intervention_05052016.pdf).

<sup>9</sup> See notably Article 54 of the draft Electricity Balancing Guideline, which foresees in that settlement principles will (a) establish adequate economic signals which reflect the imbalance situation; and (b) ensure that imbalances are settled at a price that reflects the real-time value of energy.

- Market-based price for balancing energy (an obligation complemented with secondary trading does not qualify as market-based)
  - Marginal pricing for energy activation
  - Efficient imbalance prices based on the marginal cost of balancing the system, including the marginal opportunity cost of curtailing load where relevant.
7. Clarifying the rules governing concomitant scarcity situations in neighbouring Member States

EFET observes that under well-functioning market conditions with remaining margins, scarcity situations are governed by a number of basic market rules at European level, according to the Target Model currently being implemented, namely that:

- scarcity is expressed through market prices,
- cross-border energy flows follow these energy prices, so that lower priced markets export to higher priced markets, and
- imports/exports may not be curtailed for scarcity reasons, unless in case of emergency situations or Force Majeure.

As such, a scarcity situation does not mean that the market will not perform its duties, and standard market rules should guarantee the functioning of the energy markets and the contribution of all relevant capacities to security of supply if no market suspension, interconnection curtailment/outage or out-of-market measures are taken or incurred by the TSOs.

It should nonetheless be taken into account that security of electricity supply largely remains a matter of national competence according to Directive 2005/89/CE. Dealing with scarcity situations involves a level of threat to security of supply, which may lead national authorities and TSOs to deviate from the normal operation of the energy markets. There is therefore no full guarantee that in times of scarcity, import/export transmission capacity will be available and that allocated rights will not be curtailed<sup>10</sup>.

Indeed, current national network codes, but also all future or existing EU network codes/binding Guidelines contain “fall back” modes allowing TSOs to suspend part or all of the market rules in case of Emergency Situations or Force Majeure, such as the curtailment of allocated cross-zonal capacity in Article 72 of Capacity Allocation and Congestion Management (CACM) Guideline. Article 34.2-4 of the draft Emergency and Restoration (E&R) network code foresees the development of “rules and

<sup>10</sup> We refer to the events of September 2003 and November 2006 as examples of situations where the normal operation of the market and/or network was not guaranteed anymore.

conditions for the suspension of market activities [by the TSOs] *at least* in situations where prolongation of market activities would worsen the conditions of the Transmission System being in Emergency State.”<sup>11</sup> This article and Article 72 of the CACM Guideline, with their vague formulations and lack of proper definition of the situations at stake could trigger premature market suspensions or excessive out-of-market actions.

These elements, which may be justified for system security reasons, nevertheless show that a unilateral suspension of basic market rules by one or several TSOs is not to be excluded in cases of system stress or emergency situation.

The clarification of the rules applicable to the management of scarcity and emergency situations, at national and European level, is thus highly needed when considering cross-border contributions to security of supply.

#### 8. Clarifying the rules governing market suspensions

Once actual physical scarcity (beyond the activation of operating reserves) materialises, the electric system is in a state of emergency. At this point – and not before, as we saw above – it is unavoidable that TSOs intervene to avoid a complete black out. There is however a clear risk that such actions will have a dampening effect on prices. There is even a risk that TSOs will “suspend the market” in such extreme scarcity situations.

It is crucial that in (extreme) scarcity situations, power prices are not dampened and individual imbalances remain being settled. Such settlement principles are also mentioned in Article 39 of the Network Code on Emergency and Restoration (draft version, dated 4 May 2016).

In order to avoid a dilution of the power price, it is necessary that any intervention be accompanied with a proper administrative correction of the relevant power price. In principle, **the value of the intervention taken should be reflected in the price**<sup>12</sup>.

<sup>11</sup> At European level, the Emergency and Restoration network code (NC ER), which is critical to the debate on cross-border security of supply and the coordination of CMs, allows for individual TSOs to suspend market activities (such as market coupling or import/exports) at any time in case of “Emergency Situation” – a concept that still lacks a harmonised definition in European legislation and raises concerns that scarcity prices may not materialise in case of scarcity related emergency events like brown-outs lacks. The ACER opinion on this network code clearly mentions the lack of ambitions in this field and the possible impacts on cross-border security of supply and generation adequacy. We believe that TSOs should let markets work in order to signal scarcity (at least in day-ahead) and that setting up a CM in addition to energy markets would not improve security of supply if cross-border energy markets themselves are not allowed to work efficiently in day-ahead and intraday.

<sup>12</sup> See also the IEA Report “Repowering Markets”, 2016. On page 112 reference is made to the following statement by FERC: “When the system operator is unable to meet system needs, it applies administrative pricing rules [...]. Ideally these prices would reflect the valuation consumers place on avoiding involuntary load curtailment. Under such conditions prices should rise, inducing performance of existing supply resources and

Normally this should apply to the imbalance price, if such interventions are taken in real time operation. Interventions for longer periods or preventive interventions should ideally not take place at all, under the assumption that the market is best suited to tackle scarcity challenges most efficiently. However, it may be impossible in practice to avoid such interventions taking place.

The following type of interventions can be distinguished:

- Activation of a Strategic Reserve: the impact of the activation of a Strategic Reserves on power prices is not straightforward as it depends on the specific design<sup>13</sup>. The idea of Strategic Reserve models is that this reserve is kept out of the market and is used as an insurance in case the energy market does not deliver security of supply. This means that the Strategic Reserve is activated, otherwise load shedding would have been necessary<sup>14</sup>. Therefore, the value of lost load (VoLL) reflects the market value of such activation.
- Under-frequency automatic load shedding: the most extreme type of intervention is the automatic, under-frequency load shedding, normally starting at a frequency of 49 Hz. This is described in Article 15 of the Network Code on Emergency and Restoration (draft version, dated 4 May 2016). If such load shedding is performed and was driven by scarcity, then the imbalance price must be set at the VoLL. Normally, automatic load shedding is performed in different steps. One could consider that the relevant VoLL for each step has a higher value that could then be used in the setting of the imbalance price.<sup>15</sup>

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encouraging load to reduce consumption so that the system operator would not need to administratively curtail load to maintain reliability. A failure to properly reflect in market prices the value of reliability to consumers and operators' actions taken to ensure reliability can lead to inefficient prices in the energy and ancillary services markets leading to inefficient system utilization, and muted investment signals [...]."

<sup>13</sup> In Sweden, the decision to activate (to dispatch) the Strategic Reserve is taken at the day-ahead stage if demand and supply cannot be cleared in the day-ahead market. In such case the reserve price is added to the balancing energy price with an offer price of the highest price already offered. In Belgium, in case of activation of the Strategic Reserve, the imbalance price is set at EUR 4500/MWh. In both cases, scarcity prices are suppressed and the rules need to be changed. The Strategic Reserve that is currently being implemented in Germany, is designed in such way that actual activation will be done in real time. In this case, the proposal is to set the imbalance price at a level of two times the cap price of the intraday market (for shortages) and zero (for surpluses). This proposal (with an asymmetric price) is clearly intended to impose a financial penalty and does not reflect the value of the intervention.

<sup>14</sup> In Belgium, the activation of the strategic reserve is subject to an economic assessment of the TSO in day-ahead, which opens the door to the TSO activating the strategic reserve even if no real scarcity is observable but if the TSO considers it will be economically more efficient to activate it rather than let the market function when it still can. This is obviously a flawed design as the strategic reserve could be activated and sold without real justification. If used opportunistically by governments, TSOs or regulators, strategic reserves have the potential to distort prices. TSOs should remain a neutral actor and should not intervene in the day-ahead market based on a price signal.

<sup>15</sup> In their recent reform of imbalance prices, the UK (GB) included the costs of disconnection actions in imbalance prices in line with VOLL. Previously, the cost of demand reductions (e.g. voltage reductions, i.e. brownouts; or firm disconnections, i.e. blackouts) were not included in the calculation of the imbalance prices, thereby shielding partied from facing the full costs that such actions impose on the system, The VOLL has been administratively set at £3000 / MWh rising to £6000/MWh by 2018/19.

- Any other intervention by the TSO: there may be a range of alternative measures that TSOs could take (or might be forced to take) in order to prevent frequency dropping to such low values as 49 Hz when load is automatically shed<sup>16</sup>. It is of primary importance that more clarity is provided on such emergency decisions to avoid unnecessary activation of such measures. However, it is also important to ensure that if such measures are taken, the market is not distorted, which means, as explained above, that the imbalance price (or any other relevant market price) is adapted to reflect the value of the measures taken.
9. Enforcing anti-trust provisions and monitoring market abuse in a way that does not create barriers for the free formation of prices

The last challenge to ensure that prices can freely fluctuate is the appropriate enforcement of anti-trust provisions – at national and European levels – and monitoring by regulators of potential physical and short-term market abuse – according to the Regulation on Energy Market Integrity and Transparency (REMIT) and the Market Abuse Regulation (MAR). Before elaborating this issue, it must be underlined that the importance of competition law and market abuse legislation is acknowledged by the market and that market participants fully respect and obey to these legislations. EFET has been a primary sponsor of transparent and lawful conduct of trading activities in the market since its inception. This section of the paper points to the enforcement of anti-trust provisions and to the exercise of market abuse monitoring activities, or - better phrased - the perception in the market of how the above mentioned pieces of legislation and regulation are applied might have the undesirable effect of preventing scarcity prices to materialise.

a. Enforcement of anti-trust provisions

Competition law aims to avoid that dominant market participants abuse their market power e.g. by excessive pricing or capacity withholding. An excessive price may constitute an exploitative abuse or an exclusionary abuse<sup>17</sup>. Often, when discussing scarcity pricing, the focus is on exploitative pricing, i.e. direct exploitation of market power, where the dominant market participant charges a high price. However, one could also imagine predatory abuse in times of scarcity, where the dominant market participant offers capacity at low prices during scarcity times with the aim to gain

<sup>16</sup> A recent example is the measure in August 2015 that obliged Polish industrial consumers to reduce their consumption during several hours. This intervention obviously suppressed the wholesale price, which was not corrected.

<sup>17</sup> Reference “Exploitative and Exclusionary Excessive Prices in EU Law”, Massimo Motta and Alexandre de Stree, June 2003, available at: [http://professorgeradin.blogs.com/professor\\_geradins\\_weblog/files/excessiveprices18122003.pdf](http://professorgeradin.blogs.com/professor_geradins_weblog/files/excessiveprices18122003.pdf).



market share or to prevent new entrants, such as demand-response providers, from entering the market.

It is by definition difficult for competition authorities or regulators to conclude whether high prices are caused by scarcity or by abusive behaviour. In addition, many (sometimes smaller) market participants could be pivotal (needed to meet total demand) in periods of scarcity and could thus be regarded as dominant.

Because (i) each market participant could be regarded as dominant and (ii) abusive behaviour is difficult to assess in times of scarcity, it cannot be excluded that market participants take an overly conservative approach to avoid any risks of penalties and thereby restrain from bidding at high pricing. As a result, scarcity prices might not materialise. The German Ministry of Economy has identified this problem (so-called *de facto mark-up prohibition*) and has issued the measure “Making supervision of abuse of dominant market positions more transparent” (one of the measures of the White Book for the implementation of the EOM2.0). The idea is that if the German competition authority would clarify its approach, market participants would no longer need to unduly restrain their bidding behaviour.

#### b. Market abuse monitoring

Limitations imposed on themselves by market participants linked to the monitoring by regulators of potential physical and short-term market abuse could have a similar, undesirable effect on the occurrence of scarcity prices.

Definitions of market manipulation in REMIT<sup>18</sup> and MAR (for energy derivatives considered financial instruments according to MiFID) cannot clarify in every detail what constitutes “market manipulation”. This uncertainty could have the same undesirable effect as highlighted above with anti-trust provision, with market participants taking an overly conservative approach to avoid any risk of penalties and

<sup>18</sup> Article 5 of REMIT defines market manipulation, among other, as “entering into any transaction or issuing any order to trade in wholesale energy products which: gives or is likely to give, false or misleading signals as to the supply of, demand for, or price of wholesale energy products; (or) secures or attempts to secure, by a person, or persons acting in collaboration, the price of one or several wholesale energy products at an artificial level, unless the person who entered into the transaction or issues the order to trade establishes that his reasons for doing so are legitimate and that that transaction or order to trade conforms to accepted market practices on the wholesale energy market concerned.” ACER interprets REMIT in its guidance to the national regulators and provides amongst others the following example for market manipulation: “Actions undertaken by persons that artificially cause prices to be at a level not justified by market forces of supply and demand, including actual availability of production, storage or transportation capacity, and demand (“physical withholding”): This is for example the practice where a market participant decides not to offer on the market all the available production, storage or transportation capacity, without justification and with the intention to shift the market price to higher levels, e.g. not offering on the market, without justification, a power plant whose marginal cost is lower than the spot prices, misusing infrastructure, transmission capacities, etc., that would result in abnormal high prices.”

thereby restraining their bidding behaviour. As a result, price formation would be distorted.

The apprehension of market participants of market monitoring according to REMIT and MAR, and a potential qualification of certain practices as market abuse even has a higher risk of undue distortion of prices than the enforcement of anti-trust provisions. Firstly, competition law provides for a condemnation of excessive prices. It is obviously difficult to quantify what excessive means, however it is accepted that a price is excessive if it is significantly above the effective competitive level. REMIT and the REMIT Guidance do not use the words “excessive” or “significant”. Instead REMIT uses the words “*price at an artificial level*”. Secondly, the scope of competition law is limited to abuse by firms in a dominant position. REMIT and MAR are not limited to market participants with market power and directly apply to all active market participants.

#### c. Suggestions

While legislation preventing market misconduct and abuse of dominant position is vital to ensure the free participation of all actors in the market on a level-playing field, its implementation should not lead to over-restrictions, some self-imposed, of market participants bidding behaviour. Competition authorities and energy regulators should therefore – in words and actions – make it clear that:

- All prices in the wholesale power market (forward, day-ahead and intraday prices with the exception of imbalance prices) reflect an expectation of future imbalance prices, where imbalance prices should be able to move up to the level of the VoLL in times of actual physical scarcity.
- Market participants with flexible capacity (either generators, storage operators or consumers with demand-side flexibility) when offering capacity, for example in the day ahead market, have opportunity costs when they expect that intraday and balancing prices might increase to higher levels and that such opportunity costs will be considered when offering capacity.
- Market participants with non-flexible capacity when offering capacity, for example in the day ahead market, face outage/imbalance risks as intraday and imbalance prices might spike after an outage of the capacity. Such risks will be considered when offering capacity.
- Offering capacity at times of (expected) scarcity at short run marginal costs (only costing of fuel and CO<sub>2</sub> costs) cannot be considered as rational behaviour and might (in case of dominant position) be considered predatory pricing.