European Engine Power Plants Association

Position Paper:

EUGINE – Response to German BMWi Greenbook Consultation on the electricity market

Executive Summary

The biggest challenge of European electricity markets with a high share of intermitting renewable energy, such as Germany, will be the real-time balancing of demand and supply. To provide the necessary flexibility of the system, considerable investments will be necessary. EUGINE regards a market-based pricing system, which follows a number of principles including a balancing responsibilty for all suppliers of electricity to the market, as best suitable basis for such investments. Following these principles can best be done by a system outlined in the Greenbook as EOM 2.0.

Introduction to EUGINE

EUGINE is the voice of Europe's engine power plants industry and the centre of knowledge for engine power plant technology and electricity market design. Our association contributes to the development of an affordable, reliable, modern and sustainable European energy system. Its members are the leading European manufacturers of engine power.

Our aim is to bring the view of the EUGINE members into the energy discussion and we are committed to cooperating closely with all stakeholders in the European energy community.

The European Power System

In recent years, a European policy approach has been developed to address climate change, energy affordability and energy supply security. As a consequence of this policy approach, a transition of the energy system is taking place in the European Union from conventional power generation towards increased shares of electricity produced from renewable energy sources. This organic transition has created new features and challenges for the overall power system.

Electricity produced by wind and solar is by nature intermittent, depending on whether the sun is shining and wind is blowing. As a result, increased volatility in the production of electricity is introduced into the system as well as increased production forecast errors. This means that planning and balancing become more challenging for system operators.

EUGINE

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www.eugine.eu

European Engine Power Plants Association
President
Kari Hietanen
Secretary General
Ralf Wezel

Brussels Office
Diamant Building
Boulevard A. Reyers 80
1030 Brussels, Belgium
Phone +32 (0)2 706-8297
Fax +32 (0)2 706-8210
gaetan.claeys@eugine.eu

Head Office
Lyoner Str. 18
60528 Frankfurt am Main
Germany
Phone +49 (0)69 6603-1936
Fax +49 (0)69 6603-2936
info@eugine.eu

The European energy system today does not suffer from a shortage in overall supply capacities, nor will it in the medium term. The real challenge of the next years will be the 'flexibility issue': the balancing of production and consumption of electricity in real time. In order to meet and counter this challenge, the power system of the future requires increased flexibility. Flexibility can come from a variety of sources such as flexible generation, demand side response or storage. The 'Flexibility Challenge' technically can be met by engine power plants but they need appropriate market mechanisms to be economically competitive and able to provide their valuable solutions.

To utilize flexibility currently available in the system and attract new investments in flexible solutions, flexibility must be rewarded by the market. Unfortunately, the current electricity market mechanisms were not designed to handle the growing unpredictable variations in electricity supply and do not provide enough incentives for flexibility. Therefore the design of the power market mechanisms has to be adjusted to foster the development of flexible solutions and meet the flexibility challenge.

EUGINE electricity market design principles

Price signals must continue to be the main driver for market participants' day-to-day operational and longer-term investment decisions. EUGINE considers that there are a number of principles that make markets "fit for purpose" for delivering flexibility, so that they send efficient price signals to participants. These principles are:

1. All participants offering electricity to the market should have balancing responsibilities

2. Market-based balancing arrangements should be at the centre of the market to set efficient incentives for trading and investment, and include

    a. an 'imbalance charge' that reflects the full costs for balancing the system and

    b. a 'utilisation fee' based on 'pay-as-cleared' marginal prices.

3. Reserves should be procured on a short-term basis to increase efficiency and reinforce the market-based pricing mechanism in balancing arrangements.

By implementing these principles a market design is created that can deliver a secure and reliable system at lowest overall costs. Such market will create the required incentives to attract new investments in flexible solutions and make best use of flexibility currently available in the system but not utilized.

Market based balancing arrangements

EUGINE believes the pricing method for balancing energy should be based on a marginal pay-as-cleared pricing methodology. Such methodology, which would set the clearing price for all simultaneously needed balancing capacities on the level of the highest marginal price, has the following advantages compared to the existing pay-as-bid procedure:

- It encourages self-balancing and drives liquidity in intra-day and spot markets, and
- It provides correct incentives to invest in flexible capacity and demand-side response, and to offer balancing energy and reserve services.

The imbalance settlement prices should provide strong incentives on market participants to balance their own position ahead of gate closure. They should reflect the full costs of balancing the system in real time. Reserve contracts used to pre-contract balancing capacity, typically provide for two payments – an availability fee (paid in all periods) and a utilisation fee (paid in periods when the plant is dispatched). To reflect the full costs of balancing, both reserve utilisation fees and availability fees need to be fully reflected in balancing energy prices.

Short term reserve procurement

Given the increasingly dynamic needs of the system, in EUGINE's view reserve procurement should take place as close to real-time as possible. This would have the following advantages:

- It would allow TSOs (and possibly also market participants) to procure reserves on a more dynamic basis, consistent with increasingly dynamic needs as the penetration of intermittent renewable generation increases.
- It would lower barriers to entry for and promote competition among flexibility providers, avoiding the potential market foreclosure associated with longer term contracting.
- It would create a liquid near-term reference price for flexibility, useful for the purposes of long-term hedging.

Shorter term reserve contracting should also make the availability fee allocation process much more straight-forward.

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EUGINE response to German BMWi Greenbook consultation

EUGINE welcomes the opportunity provided by the *Bundesministerium für Wirtschaft und Energie (BMWi)* to comment on its Greenbook consultation document "Ein Strommarkt für die Energiewende" and contribute to the debate on the future electricity market design in Germany, and specifically between an energy-only market (EOM) and capacity market (CM).

EUGINE agrees that the German energy system today does not suffer from a shortage in overall supply capacities. The German power system is the front runner in Europe with regards to energy delivery by renewable resources (mainly wind and solar). The challenge of the next years will be the 'flexibility issue': the balancing of production and consumption of electricity in real time. This balance has become more and more challenging due to the increasing amount of energy supplied by intermittent sources. In order to meet and counter this challenge, the German power system requires increased flexibility.

EUGINE's market design principles advocate an EOM as the most efficient means of delivering flexibility. We believe that EOMs with strong and cost-reflective price signals provide the correct incentives for market participants to invest in solutions providing the needed flexibility to the power system to integrate high levels of intermittent generation such as wind and solar PV in a cost efficient and secure manner.

The biggest market design challenge is to create incentives to attract new investments in flexible solutions (such as flexible power generation, storage, or demand side response) and utilize already existing flexibility in the market.

The "Sowieso" measures described in Part II of the Greenbook are a good step in the direction of creating incentives for flexibility. Though these measures are a step in the good direction, we would like to highlight following areas of improvement regarding market based balancing arrangements:

1. EUGINE recommends the use of a calculation methodology for the reBAP price based on a 'marginal pricing pay-as-cleared' principle (the price charged by the TSO to balancing responsible parties that are not in balance is based on the most expensive action taken by the TSO to resolve an imbalance). The current methodology of calculation uses an averaging formula, by dividing the net balancing costs by the net imbalance volume. EUGINE's proposal also aligns with ENTSO-E's (European Network of Transmission System Operators for Electricity) final draft of the Network Code on Electricity Balancing, part of the European Target Model blueprint to harmonize EU Member State electricity trading arrangements.

2. Currently, the availability fee, paid to providers of reserves, is recovered through network charges. Only the utilization fee of the reserve contracts is used for the calculation of the reBAP price. EUGINE considers that the full (availability and utilization fee) cost for procuring reserves by the TSO should be recovered from the Balancing Responsible Party that is not in balance.

3. We believe that a market-based pricing mechanism, using these market based balancing arrangement principles, will send sharper signals to market participants to balance their positions. This will create a stronger demand for flexibility, and therefore a higher reward for the providers of flexible solutions and strong incentives for new investments

Support for the EOM 2.0

The new era of heavy fluctuations on both sides of power markets (power demand but now also power supply) requires an adaptation of power systems. The electricity markets of the future should not only reward kilowatts generated, but also provide price signals for flexibility provided by flexible generation, storage and demand side response in order to boost investments. Capacity markets do not provide an adequate solution because they would continue to remunerate the power quantity available and not the flexibility of available power. Moreover, national capacity markets may lead to high additional costs for citizens, market distortions and a renationalisation of energy policy. This could even put the concept of the internal energy market into question.

Given the current level of energy production from intermittent renewable energy sources in the German power system, and the targeted expansion of these resources, the demand for flexibility will increase strongly over the next years. The electricity trading arrangements must be made “fit-for-purpose” to deliver the needed flexibility in a cost efficient and secure manner.

The “Sowieso” measures together with the EOM2.0 market design described in the Greenbook consultation document is the solution most in line with EUGINE’s market design principles. Together with our recommendations above, they would build a strong package to increase the value of flexibility in the German electricity market arrangements. We therefore recommend implementing these without undue delay.