

Dynamic Regulation to Enable Digitalisation of the Energy System

Public Consultation of the Council of
European Energy Regulators (CEER),
14.05.2019

Berlin, 14. May 2019. We greatly appreciate CEER's initiative to consult on its thinking with regard to Digitalisation of the Energy System and the needed regulatory framework to unlock the benefits which could be provided by digitalisation. Below are our responses to the consultation. bne members are committed to a modern and flexible electricity market design allowing for truly competitive solutions.

Link to CEER consultation paper:

<https://www.ceer.eu/documents/104400/-/-/8eee20f9-671e-6290-a544-4de02a10ad86>

Consultation questions and bne responses

1. What impact do you consider that digitalisation will have on the energy system and which are the most important?

First and foremost, digitalisation describes a technological change. In addition to the purely technical dimension, it also encompasses a multitude of other dimensions. From a technical point of view, digitalisation is the process of converting an analogue signal to a digital carrier system. Since the early 1990s, this change has been taking place more and more rapidly: computer performance, storage media and data transmission are becoming larger, faster and cheaper. Digitalisation has now found its way into almost all industries. It is therefore no coincidence that there is talk of a new industrial revolution - the "digital revolution". This revolution is accompanied by a profound cultural, social and economic change in circumstances that has far-reaching effects on every individual.



The complexity of digitalisation illustrates one of its typical consequences: Sectors that have had little or nothing to do with each other are converging. There are good reasons for this. In the past, energy business models were usually clearly defined in economic and legal terms. The value chain was more or less as follows: The electricity supplier buys electricity from the producer and delivers it to the consumer via the grid. This structure is linear; the interfaces at which the market players come into contact with other market partners are determinable and limited in number. The digital transformation in combination with the energy system transformation (power is no longer fully generated from centralized and conventional thermal power plants, but increasingly produced from a large number of variable renewable sources connected at distribution level) breaks through this linear structure.

Smart metering is becoming the core of the digital energy industry: Operating metering systems, particularly for most household and commercial customers (for industrial customers the case is slightly different), is changing from reading one data point once a year to managing large and constantly changing data clouds. The data streams need to be made available to third parties (companies such as energy service providers / aggregators / suppliers and others, prosumers and other final consumers).

For economic success of the digitalization in the energy sector, it is necessary to enable market actors to develop value-added services and create additional business opportunities. The basic challenge is this: Which economic advantages can be achieved by using the data streams in the core business of the market partners?

Network operators will benefit from new tools to manage their grids more efficiently and integrate increasing amounts of intermittent renewables into the system. In the long term, interaction between intelligent appliances, smart grids and home platforms will be key for unlocking consumption patterns based on automation and remote controls.

Obstacles related to the smart meter roll-out which need to be overcome include: **data privacy and cybersecurity concerns, lack of standardization and interoperability**, as well as **data access organized in an efficient and non-discriminatory way for all authorized parties and market actors**. Many of these challenges will only be mastered if the regulatory framework is fit for purpose and all types of data are covered by consistent and appropriate regulation. In this context, we strongly welcome CEER's consultation on the topic of digitalisation.

2. What are your views on the changes for the energy system highlighted in this chapter and are these the most relevant?

Generally speaking, bne agrees with CEER's perspective on digitalisation. We also believe that digitalisation has the potential to enhance productivity of the current energy system, offers the opportunity to develop new products and services, including greater variety of pricing models, and also may disrupt and transform the way the sector transacts.

a. **Increases the productivity of the existing system;**

bne supports the views presented in Chapter 2.1.1.

b. **Enables new products and services that alter electricity demand; and**

bne supports the views presented in Chapter 2.1.2.

c. **Brings new digital marketplaces that transform the way the sector transacts?**

bne supports the views presented in Chapter 2.1.3.

3. In your view, what are the most important value propositions for consumers, which should be prioritised?

bne fully agrees with the consultation paper's assessment that it is important to distinguish between different consumer categories, as indeed the level and possibility of engagement differs vastly between large industrial consumers, small and medium size businesses and household consumers.

With respect to household consumers, we agree with the analysis that the value proposition basically relies on either cost savings, convenience, choice, consumer participation or some form of combination of these four elements. Overall, we also agree with the description of issues and challenges related to these elements.

4. In your view, will digitalisation lead to more consumer participation in energy markets? Please provide your reasoning.

In principle, we agree with the assessment and analysis presented in the consultation paper. Technological innovations and digitalisation are likely to stimulate consumers' interest and desire to actively engage and participate in energy markets. However, this is neither a causal relation nor a sure-fire success.

Especially, if consumers need help from 3rd-party service providers in order to realize any of the above mentioned benefits, they will not give consent to access their data if they are not well informed about the benefits of doing so. Equally important to technological innovations are **information campaigns to consumers** explaining the benefits and advantages of the new services available. In addition, **trust of consumers** in the new services **must be build**. In that respect, the public sector could lead by positive example and take a role model function.

5. What are the key enablers needed to unlock the benefits of digitalisation for consumers?

- **An enabling smart grid infrastructure / smart meters with appropriate functionalities and the availability of real-time metering data:**

Smart meters are an enabling technology that can be used to provide services that may result in a wide range of benefits for all parties across the electricity supply chain, including consumers. Advances in metering technology, and the energy products and services this technology enables, can give consumers more choice and control. With the right technology, information and price signals, consumers are better able to decide how and when they use electricity, and manage the costs of those decisions.

Common minimum functionalities as defined by the European Commission in 2012 (2012/148/EU) need to be implemented on national level. In addition, those functionalities need to be refined further, based on a **reasonable balance between cybersecurity considerations; standardization and interoperability needs and market-driven technological developments while bearing in mind the costs and principles of proportionality.**

In addition, it is important to bear in mind that different customer groups (even within the main categories of industrial, commercial and residential customers there are differences!) have different possibilities to participate in the energy market. This means that different offers are needed, e.g. smart meters have to be able to meet different requirements by offering differentiated technologies. The German example of “one-size-fits-all” is not an ideal approach since sufficient functions have to be available in order to be able to make a suitable offer (which currently is not the case). Key is a possible differentiation according to usability for different customer groups.

- **Effective Unbundling:**

If DSOs are involved, appropriate unbundling will be essential. A true level-playing field should prevent cross-subsidization of energy supply or energy service activities by means of using profits or information advantages from regulated business activities as this leads to market distortions. Such unfair practices are extremely hard to control, even more so in Germany with the high number of not fully unbundled business entities. Currently, more than 90% of DSOs in Germany are not fully unbundled due to the high de-minimus threshold (– in the case of electricity that is 800 out of 875!). Most important is at least operational unbundling without any exemptions since violation of informational unbundling is extremely difficult to prove in court.

- **Market-driven electricity prices:**

For producers and consumers to react increasingly flexible to the intermittent supply of electricity from renewable energy sources, it will be essential to allow for market price signals as undistorted as possible.

- **An innovation friendly regulatory framework:**

An agile approach to regulation is a critical enabler of innovation. There is the need to ensure that existing regulatory frameworks evolve so that they do not hamper the development of technology or new business models. Furthermore, there is the need to ensure that where emerging technologies or business models create regulatory grey spaces, that regulators respond with new governance frameworks that address the issue, that business can practically apply and that can keep pace with technological development.

The regulatory framework needs to ensure well-functioning markets. This in particular means that all market players should compete on a level playing field, that freedom of contract should be respected and that technology neutrality needs to be respected. It also means that a stable regulatory framework which focuses on defining enforceable principles must be preferred over detailed and prescriptive rules.

6. What are the main risks for consumers arising from digitalisation of the energy sector?

- **Being able to navigate complex markets:**

Greater variety of (bundled) products and (personalized) services means more complexity that needs to be navigated by the consumer. Simple price comparison tools will not be sufficient anymore. However, we do not think that this is necessarily an issue. On the contrary, this shows that there is innovation in the market and competitive advantages are created – which is positive. From our market-driven perspective and experience, we strongly caution to aim for a fully regulated and pre-defined comparability of products, as this in the end would mean that companies will be forced to limit their offers to standard products, thereby discouraging – or even worse, entirely preventing – innovation.

Key in our view is that:

- Contractual terms and conditions are fully transparent and easily understandable by the consumer. They also need to be communicated in a transparent way.
- The terminology used in a bundled product offer, contract and bill is fully consistent, as it should be the case with any single product.

Under these conditions, the consumer should be able to take an informed decision.

- **Data privacy & Data security:**

Digitalisation of services leads service providers to process an ever increasing amount of data. Ensuring data privacy and protection is key and needs to be embraced by any energy market party or system operator. The recently adopted Data protection regulation (GDPR) provides a useful framework from this perspective. Protection of privacy is one important aspect of a secure infrastructure; another extremely important aspect is data security – also referred to as cybersecurity. However, "safety and security at all costs" should not inhibit

innovation altogether. Regulators should therefore strive for a reasonable balance between security, costs and time to implement.

- **Avoid lock-in by proprietary systems that are not interoperable with other systems:**

Interoperability is one of the most critical aspects in a digitized economy and a not to be underestimated risk consists of consumers being locked-in by proprietary systems that are not able to communicate with other systems.

- **Avoid social upheavals as a result of energy transition & digitalisation:**

For the social acceptability of the energy transition enabled by digitalisation (as digitalisation is not a goal or end in itself, but rather a tool to support overarching goals such as decarbonization and competitive markets) it will be of utmost importance to avoid disproportional disadvantages by the digital divide. Equally important, the overall system must be kept fair to all customers, especially for those who cannot or wish not to take an active part in the market.

7. What would a “whole energy system” approach look like – would this unlock more benefits of the digitalisation of the energy system?

A “whole energy system” approach would support sector integration and apply digitalisation to enable services and bundled products, which may include electricity, heating & cooling as well as transport. For example, there are considerable efficiency potentials which could be exploited, if the consumption-dependent measurement and billing of heating, hot water and cold water costs for private and commercial properties (e.g. apartment buildings, office buildings, business premises or industrial parks) could be combined with digitalized electricity and gas metering.

8. Do you agree with the analysis presented here on the key areas in which energy regulators should focus?

In general, we applaud CEER for this work. The presented document is both, quite complete and extremely relevant regarding the challenges related to the digitization of the system. Furthermore, the document raises the right questions for regulators to provide appropriate answers for. As CEER points out, the key challenge for regulators will be to ensure that policy and regulation does not create an unjustified barrier to innovation while continuing to empower and protect consumers during the transition.

9. Which of the specific draft proposals should regulators pursue? Which should they not undertake? In both cases, please explain the reasoning for your answer. Bearing in mind that resources will not allow progress on all actions by regulators simultaneously, please indicate your top 5 priorities for action by regulators in the near term.

We would suggest focussing on the following topics and draft proposals:

- **Draft regulatory proposals 1 and 2 on data availability:**

On March 20th, 2019 European Energy Retailers (EER) and ESMIG jointly organized a [workshop](#) on access to energy data to discuss what the current barriers are and how they can be overcome. The presentations and discussions revealed that the current regulatory environment on national level is not yet suited for an efficient introduction of energy / flexibility management. For example, in some countries there are delays in the access of consumption data by retailers of up to a week. Moreover, in self-consumption facilities retailers receive the consumption data but not the generation data. Therefore, retailers and other service providers cannot offer to consumers tailored services to enable actionable information. It will be crucial to define processes and procedures for sharing measurement data with all authorized energy market participants in an open and non-discriminatory manner. In case of deficiencies, it helps if the regulatory authority is imposing sanctions.

- **Draft regulatory proposals 7 and 9 on network tariffs:**

The **structure of network tariffs is key** when transitioning to and achieving a future-proof energy system with high shares of renewable energy, enormous flexibility needs and crucial sectors such as transport and heating & cooling being electrified and decarbonized: The network tariff structure makes or breaks new business models!

Historically, tariff structures in most EU Member States depend on the consumed volume (volumetric charges > EUR/kWh). As consumed volume traditionally was correlated with capacity, the tariff structure used to reflect the users' imposed costs to the grid. However, with the introduction of prosumers and larger peak demand requirements from e.g. electric heating and electric vehicles, costs imposed on the grid are less and less linked to consumed volume.

For example, PV systems and batteries allow grid users to react to the way electricity supplied through the grid is priced. PV enables consumers to self-produce energy and thereby lowers the net energy need from the grid, while batteries enable self-producers to regulate both their grid energy flows and capacity parameters. These developments contrast the recent past, in which network tariff design did not matter much as low-voltage consumers had few substitutes for grid-supplied electricity.

The new situation implies a challenge on historic network tariff structures in **that users are not always paying the costs that they inflict on the grid, while instead socializing this cost on the grid users leading to discrimination**. This may be the case for resources that are exempted from network tariffs but still impose costs on the grid through e.g. reverse flows or continued reliance on the grid in some periods (as infrastructure costs are mainly driven by the topology of the network and by capacity). On the other hand, **network tariff structures which address the cost socialization problem should not prohibit self-consumption** (as this

is an important pillar of the future energy system!). Though, one aspect in the whole discussion should not be neglected: the grid infrastructure still needs to be financed!

In addition to the discrimination / cost socialization problem, there are other challenges which need to be addressed in the network tariff design discussion: In terms of sector coupling and electrification (> transport, > heating & cooling), **high volumetric charges discriminate the use of electricity against oil and gas**. There is a systemic disadvantage in price which hampers the electrification of those sectors and thereby, prevents decarbonization.

In terms of flexibility, high volumetric charges can also be problematic as they prevent increased consumption which for example could help to absorb electricity in times of oversupply by RES (for example heating water with electricity). Rigid fixed capacity charges can also pose challenges to flexibility needs. In Germany for example, those providing demand-side flexibility may face higher network tariffs as the regime is incentivizing consumers to maintain a flat consumption profile, often removing any business case for demand response.

We strongly encourage NRAs to review network tariffs to ensure they are fit for the future while making sure that all consumers are paying a fair contribution towards the fixed costs of the system.

In addition, we also strongly encourage NRAs to **end the practice of individual network tariff and price structures of distribution network operators**. Consequent and consistent standardization (at the very least at Member State level) is needed in order to be able to collect and process the required data for all kind of offers towards the end consumers. Digital data provision on part of the DSO should not only focus on the consumer, but all market parties. They should be able to receive the required data in a standardized, digital format (and not in pdf-format as it is currently the practice in Germany of 1.600 gas and electricity network operators that publish their individual network charges in all types of pdf-formats using their own style and layout on their homepages!).

- **Draft regulatory proposal 10 on market based procurement of flexibility services by DSOs:**

Distribution System Operators (DSOs) are facing many challenges in adapting to the new reality of a highly digitalized, decarbonized and decentralized energy system. The main challenge is the occurrence of grid constraints / local congestion. Historically, congestion at the distribution level has been dealt with through planned upgrades of distribution system components. Such upgrades however, on the one hand are quite costly and on the other hand, cannot follow the fast uptake of distributed energy resources (DERs) in the distribution network in all cases. Therefore, active congestion management is becoming increasingly important.

The **use of flexibility** – i.e. adjusting the demand profiles to the supply peaks in renewable generation – **can help DSOs to prevent local congestion and avoid power quality problems**. In the short-term, flexibility can help releasing pressure on the distribution network and in the long-term, flexibility can serve as an alternative to network reinforcement when it is more cost-efficient than traditional reinforcement measures. These overall developments and the suggested use of flexibility put the role of the DSO in accessing

flexibility services and the needed update of accompanying regulatory frameworks into the spotlight.

We fully support a regulatory framework that allows and incentivize DSOs to procure flexibility services through the market: Crucial is the question how tools and principles to enable flexibility use at the distribution level go hand in hand with **neutrality on part of the DSO**. Since, in order to avoid market distortions, it remains essential that DSOs are neutral when performing their tasks and are sufficiently unbundled from the interests of flexibility providers.

In addition, it will be crucial to **set flexibility product standards** for the low voltage distribution network **at the very least on Member State level**. Especially in Germany with 900 DSOs (and some of them being extremely small), it won't be an efficient solution to end up with each DSO defining its own product and qualification rules. Small-scale and patchwork structures create serious entry barriers for market participants, including high transaction costs and other business process risks. For reasons of efficiency and market liquidity, creating sufficiently large DSO areas for operating flexibility markets will be crucial. In particular in Germany with its special DSO structure, it must be ensured that sufficiently large areas for flexibility procurement are bundled and merged, so that prices can be formed efficiently and no market power problems arise.

- **Draft regulatory proposal 6 and 7 on new market roles (intermediaries) and new business models:**

The integration of new market roles and business models requires a **fundamental rethinking of the regulatory framework**. If regulators only focus on the new market roles and business models, there is the danger of a “two-tier regulation” approach. Therefore, we would like to stress the current opportunity to evaluate the existing requirements and to limit the future development of the regulatory framework to those requirements that must be met by both, classical existing market roles as well as by new market roles or respectively classical and new business models. This ensures that a **balance** is struck **between responsibilities and opportunities for new and existing market roles alike**. The financing of the default role could serve as a good example to illustrate the issue (in case something goes wrong, such as a new market actor going out of business, there is someone assigned to take over the risks and protect consumers in case of failure, company bankruptcy, etc.): If the default role is clearly defined, this opens up opportunities for new and innovative market actors while the regulatory authority can adapt the regulatory framework step by step and there is no overregulation against unknown risks which might prevent new actors from entering the market to begin with. However, those actors profiting from the new opportunities should also contribute in a fair way to the financing of the default role.

- **Draft regulatory proposal 4 on cybersecurity:**

We fully agree that cybersecurity is fundamental and critical infrastructure should be protected as much as possible to avert most threats. However, in all security efforts a balance assessment between hazard potential and expenditure for the suggested security measures is needed. A general obligation that all operators of non-critical infrastructures have to fulfill the same security levels and duties as the operators of critical infrastructure (as

defined by the EU Directive on Security of Network and Information Systems and subsequent national regulation) is exaggerated and unreasonable, especially with regard to the overall costs and process-related delays in rolling-out new products and services. Obligations have to be designed according to the technologies in use and according to the potential risks involved. It will be important for national regulatory authorities to strengthen their expertise, skills and capability in the digital realm. However, as stated by CEER in its Cybersecurity Report published in October 2018, an excessively burdensome administrative approach should be avoided.

The following proposals seem less essential:

- **Draft regulatory proposal 3 on data privacy:**

We fully agree that data privacy is a fundamental issue. At the same time the EU has just adopted the General Data Protection Regulation (GDPR) which should tackle most of these concerns. Nonetheless, a meaningful examination of the applicability of data privacy and protection rules in specific industry areas or different sectors is required. Cooperation between different authorities is important and necessary, but not sufficient. Any general roll-out of data protection requirements must be critically examined for specific target groups. Digitalisation connects and interlinks areas that previously had nothing to do with each other. Institutions must review their proposals open-minded to see whether they may have negative effects due to “institutional unawareness” of the specific conditions in a certain sector or with specific user groups.

- **Draft regulatory proposal 5 on consumer protection regarding new products (from dynamic pricing to bundles):**

This is relevant and required by the Electricity Directive. We would agree that trying to maximize reliance on general consumer law will help. More cooperation between regulators across sectors is also crucial.

10. Do you have any other general observations to make on the topic of this consultation paper?

This CEER document is quite comprehensive and provides a relevant analysis of most key issues related to the digitalisation of the energy sector. The purpose of this document, however, and which concrete processes will result from it, could be specified in more detail. Some of the questions are extremely broad (“What impact do you consider that digitalisation will have on the energy system?”) and it is difficult to give exhaustive answers. Last but not least, it might be useful to link this work stream with the current discussions in the Smart Grid Task Force Expert Groups and in addition, with the study currently carried out by PWC and Tractebel on behalf of the European Commission an “Assessment and roadmap for the digital transformation of the energy sector towards an innovative internal energy market”.



Who we are: Bundesverband Neue Energiewirtschaft e.V. (bne) / Association of Energy Market Innovators – a strong voice for independent energy companies

Market, competition, innovation: bne and its members are committed to these three elements. After all, continuous development is the key to success in tomorrow's digital and renewable world of energy. For more than fifteen years, we have been representing the interests of grid-independent energy suppliers and energy service companies in Germany. Our members operate on all levels of the value chain: from electricity and gas distribution to smart energy and other services, right through to mobility. Making sure that new business models get a fair chance is at the core of our work.

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