
CEER Public Consultation on Dynamic Regulation to Enable Digitalisation of
the Energy System

Contact details and treatment of confidential responses (367)

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Please, mark the box if you wish your response to be treaded as confidential. (4970)

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If you wish your reponse to be treated as confidential (4971)

CEER Public Consultation on Dynamic Regulation to Enable Digitalisation of the Energy System (368)

1. What impact do you consider that digitalisation will have on the energy system and which are the most important? (4972)

Type: (T/text-long)

- Introduction

The European Utility Telecom Council would like to raise the attention of the CEER to underlying digital infrastructure required to continuously enable digitalisation of the energy system.

The European Utilities Telecom Council (EUTC) is a non-profit organization delivering education, collaboration, best practices and thought leadership in telecommunication technology to utilities, other critical infrastructure providers and regulators, ensuring efficient, secure, sustainable and affordable smart infrastructure solutions.

EUTC membership is comprised of major gas and electricity transmission and distribution companies from across Europe plus vendor partners representing telecommunications suppliers focused on utility telecoms provision.

- The European Energy ambitions and goals necessitate a good and reliable communication infrastructure. In addition to the implications of digitalization for consumers various developments such as the increasing influx of renewable energy as well as the ambitions expressed in the Winter Package all have in common that reliable data about input, throughput and output of energy throughout the entire energy grid is needed. Without reliable data the foreseen role for energy consumers is not achievable. Reliable data is essential for realization of the ambitions expressed in the Winter Package, the same applies to transformation of the grids into Smart Grids. Having correct and trustworthy data available at the right place at the right moment is essential for all these developments. The EUTC believes that much more attention should be given to the quality of the underlying infrastructure which enables data communication. In line with paragraph 1.1 the EUTC would like to draw the attention of the CEER to reliable communication infrastructures as an important “enabler required to unlock the benefits of digitalization” and in particular the necessity of access to dedicated spectrum for utility purposes.

- Requirements for a reliable communication infrastructure

The transformation of energy utilities as a result of digitalization and automation has resulted in an increased dependency on connectivity. The emerging smart grid as well as the obligation to introduce smart

metering are fundamental for the efficiency and sustainability of the energy system. The fundamental role of digital connectivity for the core business of grid management means that assurance of connectivity has an increasing strategic value for utilities. These developments translate into requirements for the associated communication infrastructures of utilities.

Utilities throughout Europe have used all types of communication infrastructures (fixed, wireless, satellite) either through services offered by commercial operators or by organizing the connectivity themselves. Practically every known communication technology is used somewhere by at least one utility.

Control over the telecommunication infrastructure is one of the most important requirements utilities have. After all if the communication infrastructure plays such a pivotal role in the management, support and control of the energy system it is necessary to be in control of that specific element, hence the necessity to be in control over the communication infrastructure.

There are many different ways (and associated levels of) control can be achieved. For fixed communications ownership and management of a fiber optic infrastructure is often (but not always) used. The majority of wireless communication used until recent years has been based on services offered by commercial operators. Often these wireless services were not (yet) as important for the utility as the wired services used. As indicated the latter were often organized and managed by the utility themselves. The recent developments also lead to greater expectations of communication with (numerous and often decentralized) assets which are connected through wireless communication, hence more control over these wireless services is required. Experiences with using wireless services from commercial operators has taught utilities that the interests of the utilities are not always the prevalent interest, choices made by operators can seriously affect the long term interests of utilities (changes in QoS, phasing out of technologies (3G and GPRS for example). It is for these reasons that utilities in Europe wish to have direct access to spectrum. Other critical services in society (emergency services, meteorology, railways, etc.) already have such direct access, some utilities in Europa have such access (often very limited amounts of spectrum), the majority of the European utilities do not have such access.

- Dedicated spectrum bands for utilities

Frequencies in the 450-470 MHz spectrum band are already used by some utilities as they are very suitable for utilities operations. These bands offer an ideal compromise between coverage and the limited bandwidth requirements of the critically important utility applications. A harmonised European spectrum allocation for utilities will facilitate synergies between utilities, bring industrial benefits, facilitate cross-border coordination, increase security of supply and lower energy costs to consumers. Simultaneously harmonised spectrum will help achieving the overarching goal to have a trusted mission-critical communication infrastructure supporting overall digitalization of the energy system, including digitalization in the consumer interest as well developments in the energy grids such as the smart meter roll-out, smart grid developments and facilitating increasing influx of renewable energy.

Dedicated spectrum for utilities helps achieving the best possible underlying infrastructure for supporting

the digitalization of the energy system.

The above introduction is deliberately kept brief, the EUTC is more than willing to provide the CEER with more in-depth explanation of the necessity and requirements concerning the communication infrastructure supporting digitalization.

2. What are your views on the changes for the energy system highlighted in chapter 2 of the consultation paper: a. Increases the productivity of the existing system; b. Enables new products and services that alter electricity demand; and c. Brings new digital marketplaces that transform the way the sector transacts? And are these the most relevant? (4973)

Type: (T/text-long)

Digitalisation of the energy sector offers many opportunities for increases in the operational efficiency of the existing and new grid infrastructure. Thermal efficiency may be gained by improved load balancing and electricity generation and consumption within a smaller geographical area offers an opportunity to reduce transmission losses (if done correctly). Existing electrical infrastructure assets may have their serviceable lives extended by more closely monitoring their condition – saving on costly, often untimely and disruptive replacements. Additionally, monitoring and control to a highly granular level at the edges of the grid (an area where little or no visibility currently exists) has the potential for dynamic ratings of plant – potentially avoiding upgrades to substations and overhead lines and the associated impact to the visual environment. The ability to control demand very rapidly across a large population has the potential to offset some of the dynamic elements introduced to generating capacity through the adoption of large scale solar and wind capability. This demand side control would typically take place via connected domestic appliances – especially refrigeration systems, air-conditioning compressors, washing machines and dryers. The dynamic control of electric vehicle charging systems could also offer a significant degree of control over high power charging cycles. In terms of transactions by energy users, it is possible that digitalization will facilitate more active participation in trading by end users and co-operatives. However, as with smart meter deployments, technology must be implemented which allows participation to take place autonomously (many smart meter users are initially very interested to observe the variations in consumption during the day but the novelty soon wears off). The financial benefits of being actively involved in transactions currently might not be sufficient enough to encourage consumer and prosumers to monitor energy usage on an hour by hour basis during their busy daily lives.

3. In your view, what are the most important value propositions for consumers, which should be prioritised? (4974)

Type: (T/text-long)

The ability to introduce and incentivize grid-friendly behavior, and as such requiring coordination of domestic appliances (in particular EV charging and heat pumps). This will require the integration of domestic appliances into the overall digitalized energy network with the ability of the energy supplier to remotely activate certain devices (with the agreement of their owners). Note that these types of systems (although less sophisticated) worked very effectively in the 1970s and 1980s – when electric storage heaters became popular along with insulated water heaters which were operated at off-peak night time tariffs via use of radio tele-switches or timers. The success of these systems was down to the simplicity of their operation, no inconvenience to the end user and visible savings in energy bills. Future time of use systems will need to be equally straightforward in their use if they are to gain widespread adoption.

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

Please provide your reasoning. (4975)

Type: (T/text-long)

As indicated in the response to question 3, consumer engagement will crucially depend upon the simplicity of engagement (for instance by the introduction of smart phone apps which will seamlessly monitor and switch suppliers, consumption and storage) – without manual intervention from users. Very few members of society are likely to have more than a passing interest in constantly monitoring their energy usage.

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

(4976)

Type: (T/text-long)

In addition to the availability of simple, automated systems suggested above, a more fully integrated smart metering network would be an enabler and would encourage consumers to engage more fully. Many consumers have had smart meters installed in the last decade but are not really seeing benefits which are as significant as they would have hoped. There are major differences between European States on the implementation of smart metering which have diluted some of the possible benefits. Digitalisation needs to address these issues and provide clearly identified benefits for consumers.

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

(4977)

Type: (T/text-long)

There are several significant risks - firstly the increased amount of data being collected (even though apparently innocently) will concern many consumers with regard to privacy and their right to remain anonymous. This is closely connected with the small but real increase in risks associated with cyber security breaches and hacks. Secondly, if not carried out with sufficient care and attention, the increased digitalization of the grid risks the possibility of major outages on the network – and with a significantly more widely spread of responsibilities. I.e. if prosumer's behavior (and new third party facilitators of transaction) become increasingly influential in the grid overall then who will take ultimate responsibility for a highly secure, highly reliable grid with the levels of voltage and frequency stability which are currently enjoyed? Finally, the potential for new entrants to the energy trading markets who lack the expertise or credibility to sustain themselves in the long term is a risk. There is the potential for small on-line start ups to act as facilitators of trading but for them to rapidly get into financial difficulties leaving a large number of unfulfilled contracts and debts if they fail. (Note that this occasionally happens now with existing small-scale energy resellers)

7. What would a “whole energy system” approach look like – would this unlock more benefits of the digitalisation of the energy system? (4978)

Type: (T/text-long)

A whole energy system approach would include the increased use of electrical heating (either directly or via ground source heat pumps). Additionally storage in both grid scale batteries and vehicle mounted batteries is also an important facilitator. The possibility to use some oversupply of electricity for creation of hydrogen through electrolysis of water is also important – especially if it can be successfully mixed with natural gas (this has been demonstrated in several European countries). Incentives for grid-friendly behavior and demand side control via smart meters (either current or next generation) will be critical to maximise the efficient use of variable renewables and reduce base-load generating capacity to an absolute minimum.

8. Do you agree with the analysis presented here on the key areas in which energy regulators should focus? (4979)

Type: (T/text-long)

EUTC is broadly in agreement with the proposals presented with regard to the focus of energy regulators. We would comment that the importance of low cost energy and decarbonizing energy should not be at the expense of network reliability and availability – this will dictate that sufficiently robust, reliable and secure communications and IT systems are specified throughout in order that risks to supply reliability are mitigated (there is further comment on this critical element in the introductory section to EUTC’s response)

9.1 Which of the specific draft regulatory proposals should regulators pursue? Which should they not undertake? In both cases, please explain the reasoning for your answer. (4980)

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1. DSOs to focus on the quality of their network data and data on distributed energy resources connected to their networks within the relevant legal framework, to ensure they utilise data effectively where this will improve efficiency of their planning, operations and investment, and where necessary improve the accuracy of their records. It is important that network data collated is interoperable and the best institutional arrangements are determined for holding the data. Learn from those who move first in this area, for example through developing digital twins. (4981)

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2. Where new entrants (whether distributed resources or new retail business models) are at a competitive disadvantage through lack of access to industry data, consider how to level the playing field. For example, if it is difficult for storage to know where best to connect, or the extent to which revenues may be available in future from providing constraint management solutions, so DSOs should consider providing interactive maps and/or network data and models, without endangering security and avoiding any misuse potential. If it is difficult for new entrants to develop products due to lacking consumer data that incumbents already have for their customers, consider provision of aggregated or anonymised data, ensuring compliance with the GDPR and protection of commercially data of third parties. (4982)

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3. For data privacy and competition issues, energy regulators should work with the authorities

responsible for data protection and competition to ensure mutual understanding of the issues in the energy sector and to ensure energy companies adopt best practice. (4983)

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4. For cybersecurity, as a minimum, take forward the recommendations in the recent CEER report, including that:

- Even non-Operator of Essential Services (OES) actors should apply cybersecurity standards as close as possible to those of OES.
- NRAs should encourage meeting compliance with the Directive on Security of Network and Information Systems and provide support in transposing horizontal regulation into sector-specific best practices.
- NRAs need to be prepared to monitor and evaluate cybersecurity expenditure, particularly of regulated entities.
- Management in energy-sector entities, including NRAs, should provide clear guidance on cybersecurity governance, including, the proper place and role for the chief information security officer (CISO).
- TSOs/DSOs/Suppliers should have a cybersecurity strategy and they should set clear and effective cybersecurity measures prior embracing new technologies such as Cloud computing or systems for the handling of Big Data.
- CEER and ACER may promote cultural change through activities such as partnerships and awareness campaigns. (4984)

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5. NRAs to monitor experience with new products and consider whether additional steps to empower or protect consumers are needed, and energy regulators to cooperate with other regulators through PEER to promote effective consumer protection. CEER to publish a summary of experience across Europe once there is sufficient experience to learn from, considering also lessons from telecoms and financial services markets where relevant. Particular attention is merited on distributional issues – whether some parts of society are being “left behind” by developments. (4985)

6. Regulators to consider best model for regulation of intermediaries including responsibility for balancing and, where applicable, capacity requirements where they are selling energy. Where not already in place, consider arrangements for a default supplier for inactive customers. (4986)

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7. As part of their regular processes, NRAs to review network tariffs to ensure they are fit for the future. Active customers who utilise new technology must receive cost-reflective signals reflecting the costs and benefits they bring to the network. All consumers, including those who are unable or choose not to engage, should pay a fair contribution towards the fixed costs of the system. (4987)

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8. Regulators to monitor development of platforms and new marketplaces and seek to establish adequate oversight and feedback from stakeholders. Where barriers are identified, regulators to promote a level playing field for alternative technologies. (4988)

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9. As part of their regular processes, NRAs to review network tariff regulation to remove capex bias and encourage the use of flexibility services where economic. CEER to monitor progress in implementing the recommendations of the Conclusions paper and collate best practices. (4989)

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10. DSOs to explore market-based procurement for flexibility services, considering use of a

flexibility marketplace where efficient and reviewing whether network tariffs send the right signals for network users. (4990)

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11. DSOs and TSOs to review product definitions for grid services which make most efficient use of the services that distributed resources are able to provide without unnecessary restrictions (such as high minimum size requirements), as far as practical consistent across markets. (4991)

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12. Regulators to review progress on TSO/DSO relationship in a more decentralised system and where necessary engage more closely in discussions to define respective responsibilities. (4992)

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13. NRAs to strengthen their expertise, skills and capability in the digital realm. (4993)

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14. Regulators develop best practice approaches to enable trials of new products and business models (“sandboxes”). CEER to provide a forum for exchange of learning from both EU-funded and national trials and studies and to feed back into the parameters for new trials. (4994)

Please explain your choices to the above question in the comment box below. (5420)

Type: (T/text-long)

EUTC is a membership driven organization with common interests in the betterment of communications infrastructure to support our member's core business activities. In this area we share best practice and expertise. Simultaneously many of our members are also member of other organizations as EDSO and Eurelectric, who are also likely to respond to this questionnaire which is why the EUTC refrains from answering this question.

9.2 Bearing in mind that resources will not allow progress on all actions simultaneously, please indicate your top 5 priorities for action by regulators in the near term. (5421)

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Rank #1:

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Rank #2:

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10. Do you have any other general observations to make on the topic of this consultation paper? (5610)

Type: (T/text-long)

This consultation is a timely reminder that a significant paradigm shift in energy generation and consumption is happening right now – the like of which has never been seen in over 100 years of mass adoption of electricity as a way to power industry, transport, IT systems and domestic activities. The changes are essential if we are to keep the effects of climate change to a minimum. Opportunities will emerge for new entrants to the energy market. Some additional risks will arise which need to be tackled collectively in order to maintain reliability of energy supply – without which the wellbeing of citizens and GDP of our collective economies would severely impacted. Some utility companies are clear ‘thought leaders’ and have already begun the journey to digitalization and are tackling the challenges in projects within their research facilities. Other utilities are further behind but will benefit from the experience of the first movers.

EUTC’s members will play a pivotal role in digitalization of the energy sector and would welcome further engagement with CEER on this critical subject.

