EUROPEAN COMMISSION

Directorate-General for Energy
Directorate-General for Communications Networks, Content and Technology

WORKSHOP
DATA DRIVEN ENERGY SERVICES
HOW TO ENGAGE CONSUMERS

CONCLUSIONS

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The workshop on "**Data Driven Energy Services – how to engage consumers"** took place in Brussels on January 21st, and it was jointly organized by the European Commission (namely DG ENERGY and DG CONNECT), AIOTI, ENTSOE and INOENERGY[1].

The **aim** of the workshop was to explore what is happening at household level in the field of energy services. More specifically, the workshop aimed at showcasing the experiences of H2020 projects and their approach to the GDPR requirements; understanding how to engage consumers in the new energy solutions, hearing the views of the Energy Communities on the possibilities opened by the Clean Energy Package, and the role played by IT companies compared to the energy companies in providing these services.

With 120 people attending and a fully booked room, the event gathered an audience consisting of representatives of DSOs, Energy communities, consumers associations, EU funded projects trialling consumers engagement in energy services as well as commercial platforms providing digitalized energy services. In three sessions, experiences gained by these actors were discussed, identifying challenges and opportunities concerning consumers' engagement in data driven energy services.

The workshop confirmed important trends such as digitalization changing the way energy market players are interacting with consumers. In this context, novel business models should be developed to engage customers in the wide energy market promoting a consumer-oriented framework that provide monetary rewards (without excluding non-monetary such as green behavior) for value provided to the system, and help build an online community of likeminded actors in order to increase the use of renewable resources in the energy mix.

Despite all the efforts, it was recognized that **for the time being we are not managing to engage consumers in a big enough scale and beyond the initial phase of interest**. What was common to those who have succeeded at engaging consumers (be it R&I projects or commercially viable start-ups) was the fact of thinking, from the beginning, what does the consumer want. In this context, should we reformulate the question "which kind of data do we need?" to "which kind of data can we collect according to the GDPR"?

[1] This event built on previous seminars organised by the European Commission on blockchain and energy:
- "ADVANCED AND INTEROPERABLE DIGITAL BUSINESS-TO-BUSINESS PLATFORMS FOR SMART FACTORIES AND ENERGY", 16 October 2018
- "OPEN MARKETPLACES TO SPUR INNOVATIVE ENERGY SERVICES", 22 October 2018
- "OPEN ENERGY MARKETPLACES AND THE ENABLING TECHNOLOGIES", 8 March 2019
- "DIGITAL ENERGY MARKETPLACES", 17 September 2019

In the context of the energy transition, the new role of a DSO as a system integrator was emphasized. In addition, a second level of the energy transition was strongly highlighted: the construction of a data layer or framework covering the handling, processing and governance of all energy-related data.

Participants requested future programmes of the European Commission to support data platforms and recognized the need to support a cross-sector approach, especially mobility, energy and urban environments to reach the Green Deal objectives.

The European Commission has taken note of these messages. They will be considered as input in the preparation of the coming Horizon Europe calls, and they will feed in relevant policy discussions on both Green Deal and Europe Fit for the Digital Age.

Finally, linked to this workshop and within the series of **Open Energy Marketplaces and services events** that took place during the last year and a half **AIOTI, ENTSO-E and EIT InnoEnergy are preparing a POV that addresses topics raised and discussed during the workshops** such as the following:

- What are the gaps, scale-up needs and the state of the play of the enabling technologies?
- What is an open energy market place and how regulation could support the development of such a concept into reality?

The paper focusses on fundamental building blocks necessary to unlock open energy marketplaces and provide the context and recommendation for the next steps in the efforts currently undertaken. Thus, it does not aim at presenting information on the existing blockchain technologies, summarizing the past years technological evolution, or listing the use cases and the associated challenges.
The paper is expected to be released by June 2020 and will contain input by additional stakeholders.

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ANNEX: DETAILED ACCOUNT OF THE EVENT

"The European energy system is going through an increasing decentralization and decarbonisation process. In this context, digitalization and access to data are key enablers, as they unlock opportunities across the value chain, providing actors new opportunities." The opening of ***Hans van Steen,*** the acting director of DG ENERGY Directorate C - Renewables, Research and Innovation, Energy Efficiency – started the discussion and was reinforced by the ***INNOENERGY Education Director Frank Gielen***: "The energy transition towards distributed renewable energy resources (DERs) will not happen without digitalization and without the consumers engagement. We need to identify what are the potential business models behind the new data driven energy services."

The **morning discussion** aimed at exploring the **challenges related to the active participation of consumers in current Energy and Digital policy framework**. Distributed energy resources create opportunities for the energy markets players. In this context, **how can smart consumers, with access to DERs assets, contribute to the value chain of the system flexibility?**
One of the main considerations was that, in order to shape a well-functioning market with smart consumers and new services, it should be taken into account that: "the integration of different resource types by different vendors on energy cloud platforms implies huge challenges, especially the technical implementation (smart meter, interoperability), legal implementation (privacy) and an enabling regulatory framework". ***(Mr. Schneidewindt, Energy Democracy)***

The World Café session focused on the potential of cross-sector services in involving the energy consumers. In this context, opportunities and challenges were explored. More specifically:

Table1: The potential of combining Energy & Mobility services.

- Key questions: Which kind of consumers' data is necessary to exchange? How the data exchange should be shaped? What are the information consumers are willing to share voluntarily? What would be the potential rewards to better engage them in the energy services? How the value added for consumers can be translated in a monetary benefit?
- Main Highlights:
    - The landscape is becoming more complex since more actors are involved.
    - Data are essential to allow the energy system to be fully operable: they should be available to all the actors (TSOs, DSOs, consumers ..) to allow them to exploit their activities.
    - On this basis, different kind of data should be available to serve different purposes. As an example, data are needed not only to manage real time congestion but they should also be available in the longer term to forecast the consumers' behaviors.
    - With that said, one further consideration should be taken into account: The question "which kind of data do we need?" should be reformulated in "which kind of data can we collect according to the GDPR"?

Table2: The potential of combining Energy and Health services at household level.

- Key questions: The emergence of the new services (including energy) will favor the energy transition. How can we work on it?
- Main Highlights:
    - Smart home, healthy living and smart energy (linked to home comfort) have a potential of mutual benefits despite distinct ecosystems.

- Smart energy services may benefit from health sector with respect to the way of data handling: on the chosen 2 tier approach for handling personal data both for personal use and for professional health and care givers.
- Energy data as substitute of data obtained through dedicated sensors could decrease the data acquisition cost of the health solution. Energy data could be valuable for health.

Table3: Whether and how non-energy companies are interested in including energy systems in their business models.

- Key questions: How to mobilize citizens for renewables? How to reach people for self-consumption offer? Energy communities: what is the optimal interface between energy players and citizens?
- Main Highlights:
  - The discussion rapidly moved to bundling but consumer associations mentioned that it is not always the most wanted solution.
  - Can we wait for the perfect solution before engaging with customers? This is not an option since the early adopters should be reached first, especially due to a need of transparency.
  - Data access: Smart meters ok but accessing the data is still an issue (same problem for many years now).
  - Interoperability
  - Energy communities are considered the driver to mobilize people. Ongoing discussion on implementing the CEP vs tariffs.

The session on **collecting feedback from the users**, raised the question on what is the energy users perspective concerning energy services. According to the ***project Clear 2.0*** findings, "Data driven energy services are a too complex concept for most of the people, while their main preoccupation is being able to pay the bill at the end of the month. In addition, on average, families and consumers loose fast their interest in the energy efficiency. **What we need are automate solutions able to last for years**." ***IOTA*** continued: "We should start with **building consensus of the problem to be solved from a citizen point of view.** We should focus on benefits of new digital services and users experience to overcome the expected friction of end-consumer on boarding". In addition, according to Siemens, to satisfy what the customers wants, we need to work on the technology requirements: all automatic, self-installing and standardized. Finally, REScoop.eu highlighted another relevant aspect to build new energy consumer-centric services: "The only currency a cooperative has is trust. Cooperatives should build **trust first** and then move to Energy".

During the Panel Discussion on **System Integration**, the panellists and the audience had the chance to debate around: **what are the innovations needed to succeed in consumer engagement? What architectures and topologies are needed to drive the energy transition and benefit consumers? What is the role of innovators and start-ups to accelerate the transformation process?**

With the energy transition the new role of a DSO as a system integrator has been emphasized. This requires a new system approach for the grid edge but may also change the relationship with the consumer. The ecosystems of the future will connect and combine services in a more radical manner – and this happens already today.

In addition, a second level of the energy transition has been strongly highlighted: the construction of a data layer or framework covering the handling, processing and governance of all energy-related data. Key aspects of a data infrastructure include an exchange layer, access to data that would entail data sharing beyond the energy sector. As it was mentioned beforehand, the smart meter as a data collector have a low acceptance, rather perceived as a tax though it is an important system component.

Mr. Kullig (Elering), as a representative of a TSO, called for a "**European Data Access Alliance that ensures smooth and harmonized data access and data flow across European countries**". In the Netherlands, discussions have started on a data coalition to discuss elements of data governance and building blocks of a data layer, per sector but also transversal.

Mr. Boultadakis (European Dynamics), as the INTERRFACE coordinator, supports the transition through new architecture design for the cooperation between TSO and DSO – a technical design which would support a more active role of consumers in the future.

Success of small and innovative entrepreneurs largely depends on the mobilisation of customers to scale their business, especially in B2C markets, which requires close interaction and targeted marketing strategy.
The success of ***PowerPers*** as a small innovative company in the Netherlands largely depends on a growing community supporting better utilization and use of renewable energy. As explained by ***Mr Falch***, "**the network between local communities and neighbors appear to be the key for the identity and acceptance of the services, which focus on a SW for P2P energy services".**

With a smart thermostat, the company TADO has entered the B2C market for smart home and comfort services. ***Mr. Kühne***r explained, "**the growth of an App community could be very dynamic, though market penetration of comfort services at home are slowly developing – due to the complex and fragmented landscape of smart home technology"**. Common to both young companies, **success strongly depends on an ecosystem behind the SW or App services offered,** which requires them to look for business beyond consumer markets, i.e. in B2B2C segment, which requires them to seek partnerships with established players.

Guidance was given to possible future programmes of the European Commission to support data platforms able to compete with dominant internet players from US and Asia, and at the same time allowing blossoming of small marketplaces. For this, the concept of a federated data or cloud infrastructure should be supported, it should favour open standards and open APIs and avoid building new sectoral silos or monopolies and allowing competition from local communities.

For the proposed Green Deal as a priority for the 'von der Leyen' Commission, panellists reckon to support a cross-sector approach, especially mobility, energy and urban environments. Targets for future large pilots or testbeds to leverage interoperability across local marketplaces and national borders and adapt the regulatory frameworks across different policy streams of the Commission.