Consultation Design note CCMD

Reaction by COGEN Vlaanderen

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0 Context of this document

On December 9th 2022, Elia organised the 4th Working Group Consumer Centric Market Design (CCMD). This working group introduced the market consultation for the CCMD Design Note (Dec 19th 2022 – Jan 20th 2023).

This document consists of the input of COGEN Vlaanderen VZW to this design note.

1 Need for an adapted Market model

COGEN Vlaanderen supports the vision of Elia that the market model of the future should enhance the participation of consumers to the market functioning. The energy transition obliges society to maximise and to facilitate the development of electricity generation from intermittent sources like wind and solar.

To cope with increasing intermittency, sector coupling will play an important role to help a good functioning electricity market. Sector coupling enables the temporarily storage excess of electricity injection into another energy vector (heat, chemical, mechanical,…) and the security of electricity supply at times of shortage of intermittent electricity generation. Cogeneration couples the fuel system as an energy vector with the electricity system and local heating systems (high, medium and low temperature). It can complement power-to-heat solutions that couple the (renewable) electricity vector to heating systems in an efficient way but relaying on the availability of sufficient electricity supply.

Current market model is based on a logic that the electricity system can be managed and balanced by focussing on “high volume assets” and large market players that can handle the efforts of linking to a single, complex platform operated by Elia. Smaller energy applications were not requested to contribute to the system needs and didn’t see value in making the efforts needed to connect to the existing platform: only (tens of) megawatts were of concern to operate the system and participate actively to the market. In the financial world, the current market model is to be compared to the investment sector, in which large project developers and investors (e.g. banks) find added value and in which transactions are time consuming and complex.

With the growths of intermittent, decentralised electricity generation and the electrification of sectors (mobility, heating, industry, chemical processes,…), the number of players and assets that influence the electricity sector increases dramatically. As a consequence, more and more assets/players will need to participate to the management and the balancing of the electricity system. They need to become “active market participants”. This means that the market model must enable development of value proposals and platforms that allow end users to participate actively to the value chain, even if it only concerns kilowatts. This requires a market model with simple participation rules and a high potential for digitalisation and automation, something equivalent to the evolution in the financial sector. The CCMD with the logic of Exchange of Energy Blocks at BRP level as an individual correction mechanism has the potential to become the equivalent to debit cards and banking apps in the financial world. It aims at the ability to handle lots of small transactions and full participation of individuals.

2 Remark linked to 4.3 of the design note

Chapter 4 of the design note deals with the evolution in the Transfer of Energy mechanism. Item 4.3 clarifies the assumption that the need for confidentially should be lifted to remove the current barriers linked to aggregated correction. **COGEN Vlaanderen agrees with this assumption**.

Aggregation of flexibility from various assets helped in opening the market of the balancing services mFRR, aFRR and FCR to producers and consumers without daily scheduling and direct connection to the operating system of Elia. In the beginning, these market player were not fully aware of the potential of demand side response at their site. The typical supply contracts at that time were based on energy prices that were averaged over time and assumed that changes in the offtake behaviour that was not influenced by day-ahead and balancing market values. For an aggregator, a lot of promotion, education, analysis and convincing was required to obtain a growing volume of aggregated flexibility at end-user level. Developing the software and hardware to bring the detected and developed flexibility to the market, required investments and a start-up mentality. Opening the market for aggregated flexibility also required to invest time in the development of the products and the market access, and entering in competition with the existing (dominant) service providers. To protect the efforts (and first earnings) of FSP's (e.g. aggregators), confidentiality about the identified, "newly developed" flexibility sources was needed to balance the market power of existing, vertically integrated market players.

Since the last 4-5 years however, end-users themselves are becoming increasingly aware of their controllable offtake/injection and the flexibility they might bring to the market. At the same time, also the supply/injection contracts are more and more based on a day ahead price index (or sometimes even balancing prices) and include hedging clauses that allow for a "coordinated" or "market based" demand response. Unlocking flexibility includes more and more the end-user himself and the role of the aggregator is evolving towards "co-creator" and "facilitator", often chosen by the end-user himself. Cogenerations for example, are evaluating themselves the technical capabilities (and indirect costs) to operate at partial load or to include more start/stop actions in the daily operations. They start integrating heat buffering and other (electric) heat sources in their future developments and their business model. Aggregators are contracted as facilitators and service providers to automate and valorise

With the end-user sits more and more in the driving seat for the development of his own demand response. He includes both the supplier (and the linked BRP) and FSP (and the linked BRP) in the discussions. As a consequence, the need for confidentiality as foreseen in the current model op "Transfer of Energy" is becoming less important and could be lifted if it helps to simplify the valorisation of flexible offtake/injection.

3 Remark linked to 4.4 of the design note

Item 4.4 of the design note proposes two possible implementations for the settlement methodology (see figure 16 and 17 below). COGEN Vlaanderen is convinced that **only the "settlement methodology based on corrected metering" (figure 16) simplifies the access for small volumes of flexible offtake or injection to the market**.

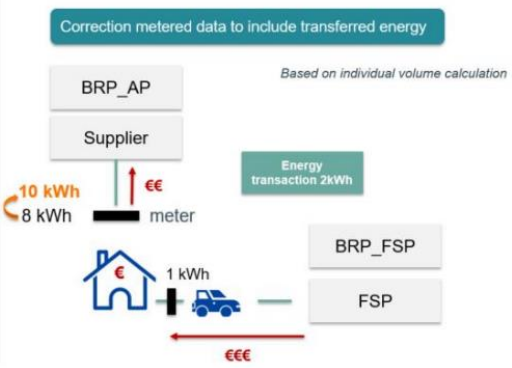

Figure 16 – illustration of 1st settlement methodology based on corrected metering

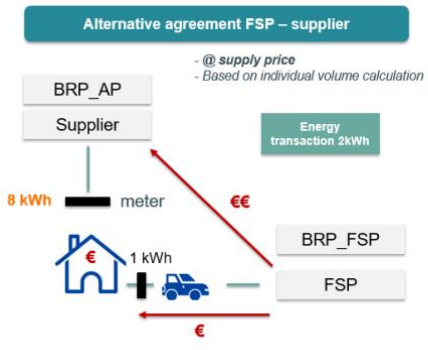

Figure 17 – Illustration of the second settlement methodology based on contractual agreement between FSP and supplier

As already explained above, the end-user becomes more and more aware of the flexibility he can develop in his offtake and injection behaviour. To develop explicit flexibility (often based on multiple assets), he will look for service providers that bring the product, the algorithms and platforms that offer him the best value in terms of information, dynamics, financial compensation, administration, emotion, satisfaction, etc… Aware of the need for flexibility linked to the energy transition and the volatility in short term energy prices (scarcity prices, negative prices,…), the end-user will want to discuss valorisation of both availability (capacity) and activation (energy) with the FSP. Based on his vision, his desire for comfort, his need for simplicity (or acceptance of complexity) and other elements, he will look for the ideal FSP value proposal. As a consequence, he will also discuss the supply contract with the supplier that suits him best to his needs to become an active end-user.

COGEN Vlaanderen is convinced that figure 16 suits best the valorisation of flexibility linked to cogeneration. A combined heat and power installation (CHP) couples a fuels system to both the electricity sector and a heating system. Storage of energy in a fuels system like (bio)gas, (bio)liquids or synthetic fuels based electrolysis can be set up on long term basis (e.g. weekly, seasonal). Storage of energy in a heating system can provide a time shift for multiple hours (even days) of both excess electricity injection (i.e. stopping cogeneration and/or start power-to-heat applications) and shortage of electricity supply (i.e. switching from a power-to-heat application to a heat supply from a CHP that supports the electricity system).

Figure 16 allows for the negotiation with the same FSP of valorisation of multiple assets (CHP, heat buffer, heat pump, e-boilers, steam recompression,…), both with respect to the availability (capacity contracts) and the energy component (activation of balancing capacity, impact on grid tariffs, impact on excise duties, make-or-buy decision based on fuel value and heat buffer, participation to day-ahead and intraday markets/free bids…). Such negotiation can include different logics and dynamics than those included in his contract with the Supplier. This would make figure 17 very difficult to operate and would certainly create confidentiality issues.

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