Getting the market framework right for efficient demand response aggregation

Florence School of Regulation

Marion Labatut
Director Policy issues - EURELECTRIC
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To develop both implicit and explicit demand response further...

Ensure that electricity bills are not overly burdened with taxes and levies...

Digitalization and automation

Accelerate electrification of transport and H&C to increase the demand side flexibility potential

Demand response aggregation business models

Source: DNV GL on behalf of EURELECTRIC
Aggregators as integral electricity market players - balancing responsibility is key

The imbalance issue may be solved...

- ... through a transfer of energy between the supplier and the aggregator (or its BRPs) before DR is activated
- ... through ex-post correction of imbalance volumes

Getting the regulatory framework right for independent aggregators: solving the “bulk energy”
Getting the regulatory framework right for independent aggregators: solving the “bulk energy issue”

Supplier is compensated by Aggregator for bulk energy withdrawn by Aggregator

With sufficiently high prices in ID and B markets, Aggregator can create profits efficiently.

Economically efficient DR activation is the sustainable pathway of DR business models

Economically efficient DR activation

Economically inefficient DR activation

Source: DNV GL on behalf of EURELECTRIC
Assessment of DR activations in Intraday markets

| Source: DNV GL on behalf of EURELECTRIC |

- 1 MW of DR activated between 228 to 590 times with price >40 €/MWh
- Impact on supplier in the range of 7k – 30k €/year if sourcing costs estimated at D-1 and 7k-18k if sourcing costs estimated at average baseload price
- There is a margin for aggregators beyond the “compensation” of sourcing costs

Recommendations

- Increase the potential of DR and its attractiveness for consumers
  - Ensure that policy support costs are not only borne by electricity consumers
  - Ensure that electrification is accelerated through the CEP and the Mobility Package

- Welcome the introduction of a high level framework in the Clean Energy Package
  - Key role of both implicit and explicit DR
  - Access of DR to all markets on a level playing field with generation
  - Aggregators can access consumers without consent of suppliers
  - Compensation of suppliers by aggregators for the sourced energy, MS to set the most adequate rules
  - Balancing responsibility for aggregators and mechanisms to neutralize the effect on other BRPs
  - Assess whether a very detailed network code is necessary
There are different models to address “bulk energy issue”

Degree of and responsibility for compensation for the bulk energy issue

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<tr>
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<th>Supplier</th>
<th>Aggregator</th>
<th>Flexible consumer</th>
<th>Full compensation based on broad cost socialisation</th>
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<tbody>
<tr>
<td>Economic efficiency</td>
<td>-</td>
<td>+</td>
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<td>Sourcing costs paid</td>
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<td>Distributional effect on retailers</td>
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Source: DNV GL on behalf of EURELECTRIC

Background

The newly drafted EU Electricity Directive (called “Clean energy for all package”, COM(2016) 864 final/2) includes provisions to promote Demand Response activated by Independent Aggregators:

**Article 17 Demand response**

3. Member States shall ensure that their regulatory framework encourages the participation of aggregators in the retail market and that it contains at least the following elements:
(a) the right for each aggregator to enter the market without consent from other market participants;
(d) aggregators shall not be required to pay compensation to suppliers or generators;

4. [...] Member States may exceptionally allow compensation payments between aggregators and balance responsible parties. [...] that [...] must be limited to situations where one market participant induces imbalances to another market participant resulting in a financial cost.
Understanding the proposed model: “Imbalance Issue”

Unless the imbalance is physically corrected, Supplier is obliged to pay for imbalance to the System Operator by its customers.

Aggregator is always balance responsible as any other market participant.

Implementation models: Solution A for “Imbalance Issue”
Contractual “template” would help ensure a level playing field

1. Fair allocation of the shifted electricity between BRPs— all market players should bear the same responsibilities (level playing field)
2. Financial adjustment mechanism ensuring that suppliers are compensated for the electricity they source and inject
3. Adequate communication between aggregators and the BRP/supplier. Supplier should not bear undue imbalances.

Dynamic Pricing – Finland
Dynamic Pricing – Estonia

- Electricity price depends partly on price fluctuations in the electricity exchange.
- Price changes in the power exchange will have only a minimal effect on your electricity bill.
- You have some control over what you spend on electricity.

**Fixed-term contract** (6 months, 12 months, or 24 months):

- No monthly fee.

**Open-ended contract**:

- The price changes with the movements of the power exchange.
- No monthly fee.

Eurelectric