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DEMAND RESPONSE FOR EUROPE

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# Demand response participation in Finnish electricity markets
# Recommendations for the draft legislation (HE 318/2022)

*This contribution is provided to the Finnish Parliament by Voltalis Finland Oy for DR4EU, pan-European coalition of companies developing DR in more than twenty countries in Europe and beyond, including Finland.*

## 1. Benefits for retailers and consumers to have DR in electricity markets

The draft legislation contains provisions to allow the participation of demand response (DR) in all electricity markets, as an alternative to generation - in particular, in Chapter 10a regarding aggregation. These provisions are to transpose the framework established by the so-called *Clean energy package (CEP)*, particularly the Directive (EU)2019/944 and its article 17 *Demand response through aggregation.*

However, one slight but critical alteration of this framework was mistakenly introduced, possibly unintentionally, which would lead to infringe the directive, and deprive Finland of all the benefits of DR.

This provision is to be found in the 1st paragraph of Section 72a (p. 145). We respectfully recommend to rectify this as follows, in order to align with the Directive, namely its article 17 (4), and the goal set by article 17(1) to establish a level-playing field between DR and generation in all electricity markets. Conversely, as the draft stands, the Finnish legislation would radically impede any development of DR, to the detriment of all Finnish consumers.

Indeed, as the introductory report rightfully highlights, DR participation in electricity markets is a very efficient way to empower consumers to contribute to the efficiency of electricity markets (at wholesale level, hence mainly through aggregation). In particular, as mentioned page 41, *"if the operating model of independent aggregation brings new flexible resources to the electricity market, it can lower the costs of all electricity users at lower market prices",* by avoiding the need for too expensive generation.

This is one of the key benefits of having DR participate in electricity markets as an alternative to generation: demand reduction will be offered in the same wholesale markets as electricity production, as an alternative; both will compete and the market will select the cheapest bids. Hence, as soon as DR bids are cheaper than (more expensive) generation, DR will be selected by the market, thus reducing wholesale prices, so that all electricity retailers will buy cheaper in the market.

Thus, DR will benefit all retailers, market-wide. And ultimately, retailers can transfer these benefits to their customers, so that all consumers will benefit from DR.

The directive allows Member States to take these benefits into account, as per its article 17(4); and so does the Finnish draft legislation in its Section 72a. Unfortunately, this is where a change was introduced which need be corrected, because as is, it does not comply with the Directive and would turn out to be deadly for DR in Finland – to the detriment of all Finnish retailers, and all Finnish customers.

## 2. Sharing the benefits of DR equally among suppliers and consumers

In the directive, the possibility to take into account the benefits of DR for all retailers and consumers relates to the definition of a financial compensation paid to the suppliers of participating consumers. Then, as the directive puts it, "*the aggregators or participating customers may be required to contribute to such compensation but only where and to the extent that the benefits to all suppliers, customers and their balance responsible parties do not exceed the direct costs incurred*."

In other words, when suppliers benefit from DR more than it costs them, i.e. DR entails a net benefit to all suppliers, no more money should be paid by DR. Indeed, charging DR when it is beneficial to all would reduce DR activity hence limit those benefits to all. Yet, a compensation may be paid *to* the specific suppliers of participating consumers, but this should not be paid *by* DR, since DR entails a net benefit for suppliers overall.

Then the solution is to have all suppliers pay this compensation together, given they all capture the benefits of DR reducing the market prices, hence their sourcing costs.

This solution is provided for by the Directive, which allows the burden of the compensation be spread among various "*electricity undertakings*" and not charged only to, say, DR aggregators. Should the compensation be charged only to DR, this would create a barrier to DR participation in the market, and a distortion in the competition with producers, both consequences that are prohibited by the directive (articles 17(1) & 17(4)). Indeed, this would impede DR and thus drastically reduce benefits of DR for all suppliers and customers.

As mentioned in the sentence of the directive quoted above from article 17(4), DR may be requested to contribute to the compensation payment only when and to the extent that benefits for all would exceed costs. This provision ensures that DR will never create a net cost for suppliers:

- in general, DR will be used when market prices are high, and thus it will create huge benefits by reducing these high market prices (as mentioned in the report to the Finnish Parliament[1]);
- and if ever DR exceptionally occurred during periods of low prices, when these benefits turned out not to exceed costs, then DR could be charged for the difference, leaving no net cost.

This solution[2], provided by the directive, solves all the concerns raised in the report (for instance in 5.1.4 page 54) regarding possible inequalities resulting from the costs of DR. Indeed, this approach ensures:

- individual suppliers are kept whole, because they receive a compensation for the volumes their customers do not consume thanks to DR;
- the burden of this compensation is fairly spread among all suppliers, given they all benefit from reduced wholesale market prices thanks to DR; thus, they all receive their fair share of the net benefit provided by DR, so that all suppliers, and ultimately all consumers, benefit equally;
- the net benefit is always positive, thanks to the safety net: in case it were negative, DR would pay for it, so that DR ends up never entailing any cost for any supplier nor any consumer.

Finally, it should be mentioned that, in practice, the financial compensation flows will be funnelled via the TSO, as part of the overall financial settlement process among market parties (including the "correction" of the balance position mentioned in section 72a). Indeed, and thanks to such other provisions of the Finnish law, the TSO will have all the data necessary to assess volumes of DR and calculate the amount of financial compensation to be paid or received by each supplier.

## 3. Recommended change in the wording of Section 72a, as per article 17(4) of the EU Directive

~~An independent aggregator must compensate~~ the costs incurred during the activation of the consumption flexibility implemented on the day ahead market, the intraday market or the balance management market ~~to~~ of its client~~s~~ can be compensated to the~~'s~~ open supplier or its balance responsible party. The compensation mechanism ~~can also~~ take~~s~~ into account the benefits of independent aggregators for other parties in the electricity market. However, the aggregators or participating customers may be required to contribute to such compensation but only where and to the extent that the benefits to all suppliers, customers and their balance responsible parties do not exceed the direct costs incurred.~~compensation for the benefit may not exceed the costs incurred by the customer's open supplier or balance sheet manager during the consumption flexibility activated by the independent aggregator~~.

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[1] For instance, page 41 quoted above, and page 47: "*Customers' consumption would probably be controlled at least mainly automatically by aggregators. In this case, for example, large demand peaks could even out, which would benefit all customers*".

[2] Perhaps, this was not fully taken into account in the preparatory works (such as in the Smart Grid Task Force) because those took place before the final negotiation of the Directive when this solution was adopted, and this may explain why it was but improperly reflected in the draft of section 72a.

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APPENDIX

## Analysis and discussion of the rationale for a possible financial compensation paid to suppliers of consumers participating to DR, and who should be liable to pay it

The EU directive provides for the participation of DR in all electricity markets as an alternative to generation, so as to reduce high prices by avoiding the need for expensive generation.

Indeed, when prices are high, it is good to find appliances that can be stopped, and this is the role of DR aggregators: they find consumers accepting their load be reduced sometimes, and they offer these load reductions, aggregated, in the wholesale market, "alongside producers" (art.17-1 of the directive).

As soon as DR bids are offered in the market alongside bids from production, the market will select the cheapest solution, so that DR will be selected when cheaper than generation. As a consequence, the market will settle at a lower price, which is the obvious result of enhanced competition.

Another consequence of this substitution of DR bids to electricity production, is that less electricity will be bought in the market. Therefore, less electricity will be produced. Of course, less electricity will be consumed too, because the aggregator will deliver DR, i.e. reduce consumption of many appliances[3].

Overall, DR provides for two useful consequences:

- DR reduces prices in the wholesale electricity market, so that retailers save on their purchases;
- DR reduces both generation and consumption, thus contributing to the overall system balance.

In doing so, DR entails a positive imbalance for those suppliers of consumers whose consumption Is reduced. Indeed, suppliers have bought more volumes in the market than they sell to consumers: suppliers have bought both production and DR volumes indistinctly; but they sell only those volumes of production, while DR volumes cannot be billed to consumers, given DR means consumption is reduced.

In a standard situation, i.e. without any DR in the market, market rules provide that positive imbalances be paid to suppliers by the TSO (Fingrid) as part of the settlement he is responsible for.

The European directive[4] allows to do the same when DR occurs, but it also allows Member States to choose another approach, as is proposed in the draft Finnish legislation[5]. In this approach, the balance position of suppliers is "corrected" so that they do not have any more a positive imbalance due to DR. On the one side, this looks straightforward, because it ensures the balance responsibility of the supplier is kept whole when DR occurs. On the other side, it means he is deprived of the payment of that positive imbalance by the TSO. This is where arises the issue of a possible "financial compensation" to be paid to suppliers, and the discussion regarding who should be liable to pay such "compensation".

The Directive allows Member States to establish such a compensation mechanism to offset such costs borne by suppliers or their balance responsible parties. Simultaneously, it forbids creating a barrier for DR participation in the market, and thus to charge compensation costs to DR aggregators. So who should be liable to pay such compensation? To solve this, the directive allows to take into account the benefits provided by DR aggregators to all suppliers by reducing wholesale prices, hence their sourcing costs.

Historically speaking, i.e. before the adoption of the directive, it was sometimes considered that the compensation should be paid by DR aggregators, and two arguments were used. Both these arguments

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[3] Should the aggregator fail to deliver the same volume as he sold, the difference would create an imbalance in the electricity system, exactly like a generator failing to deliver, so that they both bear the same responsibility for such imbalance, if any, as per article 5 and recital 15 of the Regulation (EU)2019/943 (see details in note 9 below).

[4] As per Recital 39 of the Directive (EU)2019/944, "*Member States should be free to choose […] models where imbalances are settled or where perimeter corrections are introduced*".

[5] As per the last sentence of the first paragraph in Chapter 10, Section 72a.

are mentioned in the report introducing the draft legislation, probably because they were raised during discussions in Finland before the directive was adopted; however, both these arguments have been ruled out by the directive, while it provided the solution based on benefits as already mentioned.

1°) The first argument was that DR creates an imbalance[6] for the suppliers of participating customers. Yet, as we just saw, such an imbalance would be positive when consumption is reduced by DR, so that DR does not entail a cost but a revenue for those suppliers; and the draft legislation suggests this imbalance be "corrected", so that no imbalance remains: such "imbalances" are not the reason for any compensation.

2°) The other argument was that electricity would be "*transferred*"[7] from the suppliers to the aggregators and "*the aggregators would offer this amount of electricity to the market without actually purchasing this electricity*" [8]. This argument is physically groundless, since DR is about reducing generation, i.e. not reselling electricity but avoiding both its generation and consumption, hence this electricity does not exist; therefore it cannot be transferred nor sold. In fact, DR is not relying on electricity generated by others, but providing an alternative by reducing consumption, so that electricity is neither sold nor produced.

The Clean Energy Package (CEP) ruled out both these arguments, but allows a compensation be paid to suppliers on a different ground, and provided this does not create a barrier for DR.

1°) Regarding imbalances, the CEP clarified that the aggregator is responsible for the imbalances it creates in the system (i.e. by failing to deliver the same volumes as sold[9], as any market party), not the imbalances for *other* market parties, which can be settled or corrected, as already mentioned[10].

2°) Regarding energy being transferred to the aggregators for them to sell, if ever this were true, it is obvious that aggregators should pay such energy, hence they should be the ones systematically liable in the compensation mechanism. However, as we saw, this argument is not true. And indeed, the Directive considers (a) that such a financial mechanism is not necessary, but simply an option for Member States; and (b) that the burden should not be systematically borne by aggregators, but can be shared among various "*electricity undertakings*", so as not to create a barrier for DR, as is prohibited by the Directive. The solution suggested by the Directive is to take into account the benefits entailed by DR to suppliers, so that DR would not be liable for any contribution to any financial compensation among suppliers. The (limited) exception when DR may be required to contribute is "*only where and to the extent that the benefits [entailed by DR to all suppliers] do not exceed [their] costs*"[11]. This is reflected in the amended wording we recommended in paragraph 3 of the present memo for Section 72a of Chapter 10a.

[6] As suggested in the report, page 38.
[7] As in 4.1.5 in the report, page 34.
[8] As mentioned in the report, page 39.
[9] Article 17-3 of the Directive mentions that DR aggregators are responsible for the imbalances they create in the electricity system, as per article 5 of the Regulation (EU)2019/943, which sets forth this same responsibility for all market parties. Then, recital 15 of the regulation clarifies the notion of "*imbalances they cause in the electricity system, representing the difference between the allocated volume and the final position in the market*", i.e. the difference between volumes delivered and sold.
[10] As explained in recital 39 of the Directive.
[11] As per article 17-4 of the Directive (EU)2019/944.