15/01/2023

Sympower contribution to the public consultation by the Greek RA on the proposal of ADMIE on the amendment of the Balancing Market Regulation methodologies for participation in the European PICASSO platform

Sympower is a flexibility service provider that helps customers adapt successfully towards the energy transition. By combining proprietary software and hardware, we provide an end-to-end solution that offers real-time monitoring and balancing of electricity supply and demand.
We operate in the Greek market (mFFR UP) with demand-side assets that we aggregate.

This contribution refers to the amendment of the Balancing Market Regulation methodologies for participation in the European PICASSO platform.

General comments

Sympower welcome the future participation of Greece to the European platforms. It will bring more harmonisation across markets and strengthen the European grid.

Nevertheless, we believe reviewing the Balancing Market Regulation methodologies to ensure the participation in the PICASSO platform should have been the occasion to bring further improvements to the rules, allowing for easier participation of demand-side assets and aggregators to balancing markets.

Indeed, the methodology currently used to calculate aFRR-activated energy is not technology agnostic and discourages demand-side assets participation.

Context

The way Demand Response works is very different from generation. A generator may provide aFRR and this is directly visible looking at the meter of the plant. When it comes to Demand Response, if you measure the response just at the boundary meter from the DSO, the response from the small flexible controllable assets can be drowned out by "noise" from random changes in consumption by other loads (i.e. there are assets without any flexibility that cannot adjust their consumption. These assets may fluctuate, turn on/off freely, without an Aggregator being able to do anything about it.). If you only allow metering at the site boundary, then such sites are either prevented from participating altogether, or wrongly subjected to non-delivery penalties and imbalance charges, despite delivering the required response correctly.

Recommendation

Based on its experience in Greece and other European markets, Sympower would like to propose a few options to support demand-side assets participation.

1. **The use of submeters should be allowed**

As previously stated, often the DR on a customer's site comes from a small number of controllable assets, with most of the loads on the site not being involved. This is particularly the case when providing more technically challenging services, such as FCR, aFRR, and mFRR, where most loads will be incapable of providing the necessary response as single resources (i.e. not in an aggregated pool). The measurement errors caused by these not involved and uncontrolled loads can be reduced by sub-metering closer to the controlled assets. Or by sub-metering the major uncontrolled loads, and then using differencing to remove their contributions.

- The rules should state that any response delivered on the site must not be systematically counteracted by changes elsewhere. This rule can then be enforced by either:

    1. Requesting single-line diagrams of sub-metered sites, so that it is clear whether there are other loads on the site similar to the sub-metered ones.

    2. Performing statistical checks using data from the boundary meter. During a dispatch on a normal site, you would expect to see the same size of response on both the sub-meter and the boundary meter. The boundary meter measurement of the response will be a lot noisier (and hence not suitable for settlement of individual events), but when assessed over multiple events, on average the response should be the same, without any bias. On a site that's attempting a fraudulent approach, the boundary metre will not show the expected response.

While allowing sub-metres does necessitate some effort in compliance monitoring, we consider that the benefits from broader participation and reduced errors would vastly outweigh these costs.

For example, **France** allowed the use of submetering data collected by the aggregator for those consumers without smart metres; to this end, a procedure was defined allowing the TSO to audit and certify the aggregator so as to allow the use of their data. France is also considering the possibility to use submetering in other circumstances, at this stage under a pilot framework. The European Network Code on Demand Response, currently under discussion, also allows the use of submeters. We believe that changing the balancing market rules should be an opportunity for allowing the use of submeters.

2. **Information BSPs sent to IPTO's SCADA systems.**

Sympower's proposal is that BSPs could send two live measurements to the TSO.

1. the aFRR_controllable_power which is the aggregated value of all the assets that are measured and can provide aFRR services. This would mean that:
$Net\_Power_{e,i} = aFRR\_controllable\_power_{e,i}$

2. the aggregated remaining power that a BSP cannot control - ARP (Aggregated Remaining Power), from which the Aggregated Remaining Energy can be defined:
$ARE_{e,i} = ARP_{e,i}/60$

3. **The activated aFRR Energy could be calculated for BSPs, based only on the Net_Energy (e,i) values, which will represent:**

   - $aFRR\_PBE\_UP_{e,i} = Net\_Energy_{e,i} - \left[INSTmFRR_{e,t}/15 \ - ARE_{e,i}\right]$

4. **The TSO could audit the BSP on a monthly basis in order to verify that the measurements sent are correct in a way similar to the process described in paragraph 5.3 of the methodology "Υπολογισμός Φορτίου Αναφοράς"**

The methodology that we propose to implement could look as follows:

- For every Market Period (PTU) of 15 minutes, the following parameters are calculated

  aFRR controllable energy : $Net\_Energy_{e,t} = \sum_{i=1}^{15}\{ Net\_Energy_{e,i}\}$

  Aggregated Remaining Energy : $ARE_{e,t} = \sum_{i=1}^{15}\{ ARE_{e,i}\}$

  Aggregated Facility-level Energy: $AFE_{e,t} = Net\_Energy_{e,t} + ARE_{e,t}$

- For a given PTU of 15 minutes, the deviation DEV(t) is calculated:
  $DEV_t = AFE_{e,t} - MQ_t$,
  where MQ_t is the aggregated official facility-level measurements.

- For every day D of the month the Average Portfolio Consumption is calculated:
  $APC_d = \sum_{t=1}^{96}\{ AFE_{e,t}\}/T$

- For every day D, the quality factor is:
  $QF_d = 1 - \frac{\sqrt{\sum_{t=1}^{96}\{ DEV_t^{\,2}\}/T}}{max\{ APC_{d'}0{,}1\}}$

- For all the days in the month of audit, M the monthly quality factor is:

  $QF_m = \sum_d\{QF_d\}/N$,
  where N is the number of days in the given month m.
- If $QF_m \geq 95\%$,, then the audit is successful. If a DR portfolio that provides aFRR does not comply for 3 months in a shifting window of 6 months, then the same consequences apply as described in article 5.3 of the current methodology: "Υπολογισμός Φορτίου Αναφοράς"

Conclusion

Demand Response can play a key role in the Energy transition of Greece towards a net-zero future. The regulatory framework is changing all across Europe as well as in our country. However, the proposed methodologies to calculate aFRR activated energy are not supporting

the development of Demand Response, contradicting the European trend (e.g future network code, revised Electricity market design directive).

Our analysis stresses out that the inaccuracy in the methodology is not harming BSP and Independent aggregators only, but also IPTO. In cases where assets - not relevant to Demand Response - are altering their consumption in the same direction as an activation, IPTO will have to compensate the parties for services that were actually not provided.

We would be happy to provide you with more data and further analysis supporting our case.