

## Open Networks Project

### Flexibility Consultation 2020

***Q1 – Do you agree with our proposals within this consultation paper and if not, please provide us with any rationale and alternative proposals? This feedback can be generic to our proposals or provided on a product by product basis.***

Voltalis wishes to thank the ENA for this consultation. In its contribution, Voltalis underlines key elements that apply to residential Demand Response aggregation. It is based on more than ten years of experience of operating residential Demand Response capacities at scale in France as well as on a current deployment of its technology in the United Kingdom through the *Power of Homes* project funded by BEIS.

Voltalis agrees with the proposal as it is defined in the consultation paper, and welcomes the highlight about residential flexibility, as it is indeed a major source of flexibility for the power system. In the case of Demand Response aggregation, residential flexibility emits no CO<sub>2</sub> while being as reliable and reactive than thermal power plants.

Considering the specificities of residential flexibilities and Demand Response is indeed necessary. Approaches that work for industrial and non-DER assets are not applicable to DER aggregation, and would prevent the potential from residential flexibility from entering the market.

***Q9 – What challenges are flexibility providers currently facing in respect of baseline requirements?***

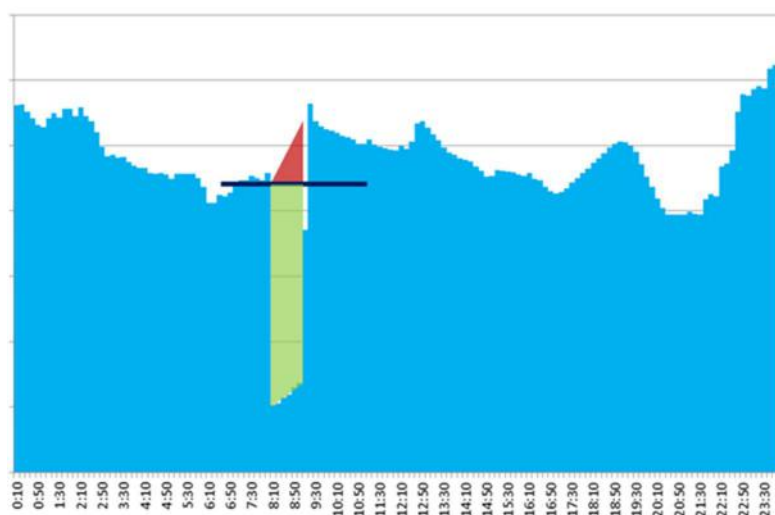
There are several challenges that must be taken into account in respect of baseline requirements for Demand Response aggregators in the residential and commercial sectors.

First, the main flexible load of residential and commercial aggregators in the UK is heating which is by nature thermosensitive and dependant on consumers' behaviours. As a result, the aggregated load varies significantly, both throughout the day and from one day to the next.

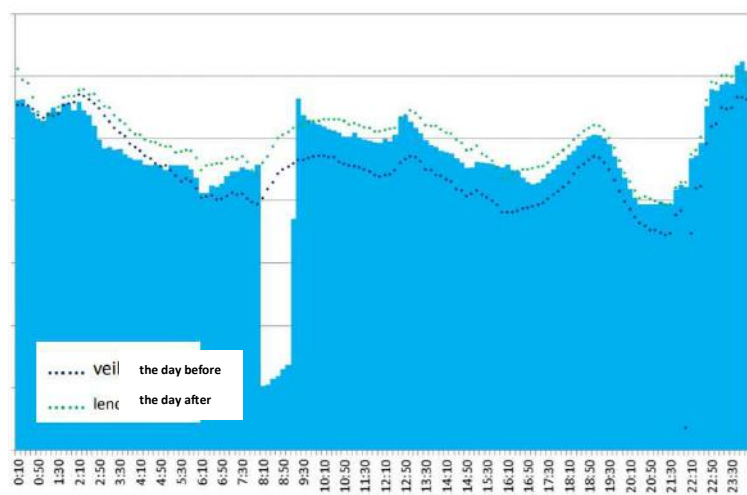
Secondly, aggregators of residential and commercial loads can perform frequent interruptions on each connected participant (up to several times a day). These short but frequent interruptions are the basis for the services they provide to the system and are, in the long run, necessary to unlock sustainable revenue streams and develop viable business models.

These two constraints mean that traditional baseline methodologies will not apply to Demand Response aggregation.

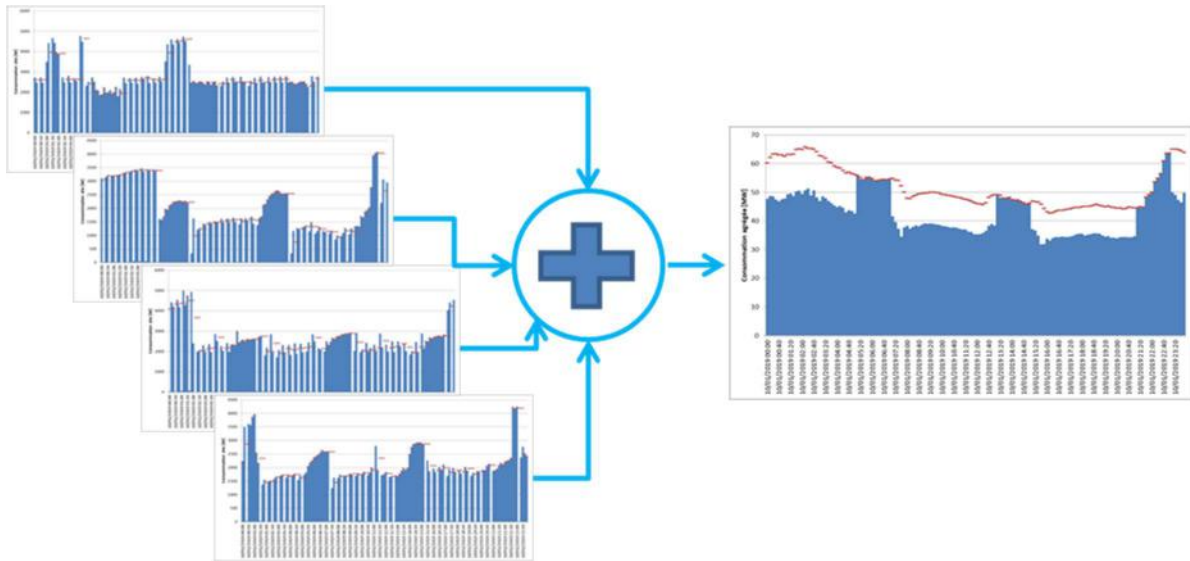
The figure below shows how a baseline methodology that assumes a fixed or stable load will fail to accurately represent the baseline: in this case, the baseline during the load shedding event is the straight black line, which fails to take into account the fact that power consumption would have increased during the interruption.



The figure below illustrates that the consumption from a past day is not a fair baseline either. In addition, it is important to note that baselines based on historical data will need to take into account the fact that past consumption might have already been curtailed, skewing the computation.



Because interruptions are kept short in the residential sector, a fair approach is to compute one baseline for each participating asset by taking as a reference the consumption just before the interruption. The aggregated baseline is then simply the sum of all the single baselines:



***Q10 – Open Networks Project will consider if differing DER types such as demand turn up, storage, generation etc should be subject to different methodologies. Do you feel this would be a fair outcome for providers or, would a simple one-size fits all approach encourage more participation?***

Different technologies have different specificities and constraints, meaning that a unique baselining methodology would not apply to all DER types. We highlighted in Q9 the specificities of residential Demand Response aggregation and why a one-size fits all approach would most likely excludes it from the market.

Because each DER technology is different and can choose to provide a wide range of services to the system, it is also important that each flexibility provider is the one that is able to choose the baseline methodology that best suits its needs and constraints.

***Q11 – Are there any other key aspects Open Networks should consider when investigating potential methodologies?***

Fair baseline methodologies can efficiently rely on the data gathered by the aggregator when needed. This allows for the most accurate estimation of an aggregated group of residential and commercial assets.

This is the case in France for the participation of load shedding to the wholesale market.

Such data can easily be audited by the System Operator to guarantee its integrity.

***Q17 – Do you have any ideas on how we might better engage and encourage participation of residential flexibility in flexibility service provision? Can you identify any barriers that might currently exist, along with potential solutions?***

Even though the potential for residential Demand Response is significant (around 20 GW) in the United Kingdom, it is very easy to keep that potential away from the market if several key points are not properly addressed.

- 1) Markets must accept residential flexibilities, as well as the ability for flexibility aggregators to stack revenue, not only from local flexibilities but also national markets such as the Capacity Market and, when Demand Response aggregation will be able to participate in it, the wholesale day ahead market. It is our understanding that revenue stacking is already taken into account by the ENA in the implementation of the Open Network project.
- 2) A fair baselining methodology, as we highlight in questions 9, 10 and 11 of this consultation.
- 3) The right for aggregator to use their own data – and to allow for the aggregator’s metering equipment situated ‘behind’ the defined boundary point to be used for settlement – as we highlight in question 9.
- 4) Unlike industrial Demand Response aggregators, residential flexibility providers may enter the markets with small capacities and grow it over time. This means that any unnecessary entry costs or heavy registration process may not be sustainable for them in the early stages of deployment and simply prevent them from accessing the markets in the long run.
- 5) Even though Voltalis recognises the value of local flexibility, sourcing flexible capacities on very small areas makes it more difficult for aggregators to have enough flexibility to participate, especially in the early stages of development. As such, a balance may be necessary in terms of the size of the area where local flexibility is procured by the DSO.