

Operational Metering Working Group Summary

Session 3

18th November 2022

Participants

Calum McCarroll	National Grid ESO
Edward Farley	National Grid ESO
Andrew Wainwright	National Grid ESO
Leon Walker	National Grid ESO
William Gratton	National Grid ESO
Callum Wright	National Grid ESO
Deepak Lala	National Grid ESO
William Goldsmith	EV Energy
Daniel Krause	Tesla
Mark Hamilton	SMS
Eamonn Bell	SMS
Sarah Honan	ADE
Christopher Day	Elexon
Ian Nicoll	Elexon
Alastair Martin	Flexitricity
Neil O'Loughlin	Flexitrcity
Dan Williams	Kraken Flex
Charlotte Johnson	Kraken Flex
Stef Peeters	Centrica
Sebastian Blake	Octopus Energy
Chris Horne	My Energi
Wassim Boutoutaou	British Gas

Introduction

Calum McCarroll (CM) welcomed everyone to the Working Group and participants introduced themselves.

CM set out the purpose of the session.

Agenda items included:

- Refresher on previous Working Group sessions and progress update
- Confirming the proposed metering standards and ESO opening up to Trial proposals
- Inviting industry to put forwards trial ideas
- Presentation and discussion on EV.Energy's trial proposal
- Presentation and discussion on Octopus Energy's trial proposal
- Round up and open invite to proposal trial ideas

Refresher and Progress Update

Ed Farley (EF) gave a progress update to the working group:

1. The Power Responsive working group was formed with industry to agree how best to assess, trial and agree new Balancing Mechanism Operational Metering standards that work for all industry participants and enable new forms of flexibility to enter the market.
2. For operational metering, we referenced different options for refining our existing standards which included the ESO outlining new, more proportionate standards at the sub-asset level and placing the onus on aggregators to meet the standard at BMU level.
3. In July the working group was asked to come forward with ideas for trials and/or methodologies for overcoming the operational metering barriers that was both achievable with current technologies, economical for suppliers/aggregators alike and that didn't impact system operations.
4. Power Responsive issued a confidential survey to working group members to understand the capability of existing metering for domestic assets today.
5. Since July's meeting, two trial proposals have been put forward to the ESO by EV.Energy and Octopus Energy.
6. The ESO have agreed parameters that trials must sit within and will publish them in November 2022 as an official invitation to stakeholders to propose trial ideas.

Working Group Survey Results

In July, Power Responsive issued a survey to the working group members which looked to give a better understanding of existing flexible assets capabilities to ensure any proposed standards were achievable.

Will Gratton (WGr) presented the survey responses that were collected since the July meeting.

Survey Questions

1. What is the estimated total volume of all your aggregated assets behind the boundary meter?
2. Please list all the aggregated asset types you will have available to dispatch this year.
3. If you are using a mixed asset type portfolio, please share what percentage each asset type makes up of your total aggregated volume (that will be available to dispatch this year).
4. What is the current range of metering standards (i.e. latency/read times) your (behind the boundary) asset level meters can provide?
5. What percentage of the behind the boundary meter assets in your portfolio have operational meters fitted? E.g., domestic batteries/EV charge points.
6. Please list your other current and perceived future barriers for entry into the BM.

Results Summary

- Responses from 6 providers with a total of 724 MW of behind the meter assets available today.
- 99% of this volume came from EV charge points.
- Asset level metering not available for all providers, however 90% of the total volume had some level of asset metering.
- Asset level metering capability varies, especially around the read frequency and latency. Some meet MIR standards, others don't.
- Current or future barriers highlighted for entry into BM
 - Data burden from meter read frequency
 - Access or utilisation of boundary point metering for Operational metering
 - HH settlement required for any sites delivering in the BM

Discussion on COP11 Standards and MIR Requirements

Alastair Martin (AM) raised an initial point that where metering is required to meet standards, there is a cost. In particular, the Measuring Instrument Regulations (MIR), previously Measuring Instrument Directive (MID), should not be a requirement for operational or ancillary services metering, nor should it be dictated by ESO in any circumstance. MIR compliance determines, among other things, whether a meter can be used to calculate energy for billing, and it should be within BEIS' remit whether it should be required for ancillary services. AM and Iain Nicoll (IN) advised that they have had discussions with BEIS about this but there isn't a firm timeline for declaring whether ancillary services metering must be MIR-compliant.

Sarah Honan (SH) supported the points made on MIR and asked whether the working group could add weight to the importance of this task with BEIS. Callum Wright (CW) supported this idea and advised that ESO could pick it up as part of regular conversations with BEIS.

In summary, MIR compliance should not be a prerequisite for operational metering, but instead ESO should take learnings from Code of Practice 11 which copies across the appropriate accuracy tolerances based on unit size from the existing CoPs.

Similarly, William Goldsmith (WG) raised a point about Smart Charge Point Regulations which govern the standards of metering which is required as standard in EV chargers. We should also look to consider any ESO operational metering requirements with this regulation and provide the necessary signals for more accurate metering to be developed in the supply chain. The current regulations suggest that EV chargers should be able to read at least once per second and within an accuracy of +/- 10%.

EV Energy Trial Proposal

Will Goldsmith (WG) from EV Energy presented a trial idea that would look to achieve the proposed operational metering standards.

EV Energy in partnership with Flexitricity wants to use P375 and COP11 compliant asset metering for electric vehicle charge points to provide the ESO control room with operational metering visibility to show what is happening within an aggregated EV charging portfolio in real time. Their Virtual Power Plant platform allows them to control consumers EV Chargers automatically whilst working to their desired charging requirements. This allows the remote dispatch of assets almost instantly and without input from the end consumer.

WG's thesis is the more frequently you sample the individual sub-assets within the BMU and the larger the aggregated group size, the more accurate your aggregated metering feed should be.

Variables within the trial will be:

- Changing the sub-asset read frequencies.
- The number of assets within the BMU.

The ESO hopes to validate the accuracy of the operational metering feed by comparing the operational metering data received in real time to the settlement data provided post-event.

In addition to trialling the ability to provide operational metering, WG also looks to build confidence in the accuracy of their power available signals that are used to provide forecasts and Physical Notifications to the ESO.

Discussion

- The working group gave positive feedback and agreed that the trials goals are aligned with those of the working group and the ESO.
- An additional question was raised by the group asking at what point an individual asset would be excluded from the operational metering feed due to a lack of response. The group agree that if the data from a single sub-asset does not refresh within a certain time frame it should be excluded from the feed. WG responded saying the trial would also look to explore what time limit you put on sub-assets data refresh before excluding them from the feed. This would likely be determined by

understanding at what point the aggregated data becomes inaccurate due to the sub-asset/s not sending readings.

- The trial will be progressed ahead of the next working group meeting.

Octopus Energy Trial Proposal

Sebastian Blake (SB) from Octopus Energy echoed the goals of EV Energy to establish an agreed approach to accessing the balancing mechanism using flexible domestic assets and explained that Octopus were growing their portfolio of controllable EV assets throughout the country, with over 1MW of total volume in some GSP Groups.

Octopus aims to use a similar approach to EV Energy to prove that operational metering standards can be met at an aggregate level, but notably their approach will look to utilise SMETS-2 boundary meters to provide operational metering data instead of asset meters attached directly to the flexible asset.

Due to the use of a boundary meter for settlement purposes there will be additional challenges and steps that Octopus will need to take to meet the requirements for both operational metering and settlement.

One challenge is that the metering data from a SMETS-2 will also include other 'noise' from the rest of the household which would need to be separated from the activity of the flexible asset during the settlement process as well as to submit accurate Physical Notifications. A proposed solution to this is to utilise P376 methodology as a baseline or PC1. Both options could be tested as part of the trial.

SB explained that their initial approach would be to poll the meter data at a frequency of once every 10 seconds using a device that attaches directly to the meter to send data readings more frequently than the existing accessible data that sends 30-minute metering data via the DCC once a day.

Discussion

- Will Goldsmith raised a question around how settlement would work if there were multiple flexible assets within the household such as an EV, Heat Pump or smart thermostat that are all controlled by different aggregators. Deducting the boundary meter data from the P376 or PC1 baseline would show the response from all flexible assets within settlement and make it impossible to determine which asset responded in what way and which aggregator that response should be linked to during settlement.
- WG raised a further question around the lack of interoperability if an aggregator plugs a polling device into the back of the SMETS-2 boundary meter which is only accessible by a single party. The concern is that it would stop other flexibility aggregators from also accessing the more frequent data reads that are required for participation in the Balancing Mechanism. The group concluded that this was a wider issue that would need to be discussed outside of the working group as it sits with BEIS & Ofgem to determine competition rules and regulations. This will not impact the ability for Octopus to run a trial using the proposed polling device at this moment in time.

Actions

- Circulate an official invite to trial to industry.
- Initiate trials with EV Energy and Octopus Energy.

Next meeting

12th January 2023