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DP152 ‘Consumption on Smart Polyphase Electricity Meters’ Request for information responses

About this document

This document contains the full collated responses received to the DP152 Request for information.

Summary of the proposal

What is the issue?

Polyphase meters are electrical meters used for measuring three phase electricity supply. Polyphase meters are sometimes used in scenarios where each phase is used for a specific purpose e.g., for heating and/or Electric Vehicle (EV) charging. Separate phase consumption data provides Suppliers the opportunity to offer innovative propositions which allow the customer to be billed at different rates for each phase/purpose.

Currently smart polyphase meters only provide profile consumption data as a combined value across the three phases. Therefore, the tariffs offered to those consumers who have polyphase metering equipment is applied to the cumulative consumption of all three phases combined, rather than individual phase data.

Some polyphase electricity meters support the measurement of consumption on each phase, however, the Smart Energy Code (SEC) does not currently support functionality that would allow this individual phase data to be retrieved, where it is available.

The current arrangements severely limit the opportunity to provide support to consumers around their energy efficiency choices which they could do if their consumption figures were provided at a more granular level.

What is the solution?

The Proposed Solution is yet to be determined, however, the Proposer is seeking to allow DCC Users to have the ability to interrogate polyphase metering equipment and to be able to read consumption data at each phase.

The Proposer would like the following requirements to be met:

- Allow consumers to obtain consumption data, across meter phases.
- Allow Suppliers to opportunity to deliver smart tariffs, by using the ability to read phase data.

Question 1: Do SEC Parties see a benefit in having the ability to read separate consumption data, on each phase of a polyphase meter?

Polyphase meters contain independent measuring elements, allowing consumed energy to be measured in up to four wires. Currently polyphase meters only provide consumption data combined across the phases.

Question 1			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party	Yes	We believe that this modification will provide us with the ability to understand balance across phases for a multiphase customer, to identify and proactively work with customers to balance demand and reduce network losses and the ability to model down to phase for network planning.
SSE	Small Supplier	Yes	If net zero ambitions are to be met, customers will need to understand their energy data more and more. Currently, customers with a polyphase meter are unable to obtain any useful data from their meters – in a pilot we carried out, some customers highlighted that they would prefer to keep 3 separate meters to be able to see the data rather than one combined 3-phase meter because the meters were used to monitor different elements of usage (e.g. different parts of a building). This ability will be critical as electric vehicles and Time of Use tariffs become more popular. Without this ability to obtain a full picture of the data, we risk damaging the reputation of smart metering. Additionally, the lack of capability may hinder supplier rollout progression, acting as a barrier in an already challenging environment. Commercially, this change would also reduce the instances where we need to install multiple single-phase meters into premises where a polyphase meter could be used.
British Gas	Large Supplier	Yes	This enables the use of multi rate tariffs and provides clear consumption and costs for each register.
geo (Green Energy Options)	Other SEC Party	Yes	It would be beneficial to distinguish the per-phase consumption, tariff and debt data information and make this available on the HAN and through the DCC infrastructure.

Question 1			
Respondent	Category	Response	Rationale
EDF	Large Supplier	Yes	As noted in the proposal suppliers are looking to provide smart energy use cases for heating and EV charging solutions. EDF is actively pursuing a strategy of low carbon electricity generation and optimised use by customers, promoting the installation of EV chargers and EV tariffs. While polyphase residential supplies only make up a small proportion of installations, the option of more flexible per phase recording of consumption would allow for future innovation in this area.
Drax Group	Small Supplier	Yes	Currently smart polyphase meters only provide a combined value of consumption data across the 3 phases, rather than reading individual phases, which is severely limiting the ability of Suppliers and innovators to develop smarter tariffs and products that would enable consumers to become more engaged with their consumption behaviours and better understand their energy use. Giving consumers more control over their energy use, and visibility of consumption on each phase, makes it easier for them to alter their behaviour and supports greater energy efficiency.

Question 2: As the rollout progresses, what percentage of your customers do you estimate will require a SMETS2+ polyphase meter and over what timescale?

As more and more consumers install solar panels, heat pump heating/cooling, EV charging there is potential for demand to rise for polyphase meters to be installed.

Question 2			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party		We install three phase service cables as standard for all new and upgraded connections and therefore as time goes on we expect to see a large number of these devices.
SSE	Small Supplier		[Confidential information omitted] We anticipate that this will increase perhaps by 10% as business start to adopt more technologies, including time of use tariffs or electric vehicles
British Gas	Large Supplier	Yes	[Confidential information omitted]
geo (Green Energy Options)	Other SEC Party	No	
EDF	Large Supplier	Yes	EDF is now installing polyphase meters for customers with residential and SME sites. We are unable to say at this stage what the demand for enhanced SMETS2+ polyphase meters with per phase recording and DCC read transfer will be but if adopted, would investigate the new opportunities enabled.
Drax Group	Small Supplier		A significant percentage of our customers already require a SMETS2+ polyphase meter - approx. 45-50% of those supplied by Haven Power and around 20-25% of those supplied by Opus Energy. We would expect these percentages to increase as the rollout progresses, but it's difficult to predict by how much

Question 3: Do you believe this will provide a business benefit to you? If possible are you able to provide a rough order of magnitude (RoM) of the business benefit at this stage?

The intent of this Draft Proposal is to expand the existing Service Request Responses to include consumption values from each phase. This will potentially require DCC System changes to include new Service Responses and potentially new Service Requests. Consequently, this may also require some SEC Parties systems to detect if the response payload is the existing single or new multi-phase response and parse accordingly.

Question 3			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party	Yes	We believe we will benefit from this modification however we are unable to provide a RoM value at this stage.
SSE	Small Supplier		At the moment, we are unable to quantify a financial benefit as this is not yet easily identifiable, however, there is a clear benefit for the customer in being able to retrieve this data to understand their energy usage, as well as simplifying business metering set-ups by requiring only one meter instead of multiple.
British Gas	Large Supplier	TBC	Enables us to offer Smart meters to more customer groups, aiding smart meters install volumes/mandate. Allows compliance with NRO obligation
geo (Green Energy Options)	Other SEC Party	Yes	This is difficult to quantify at this stage if there is a business benefit to geo. However, continuing to innovate and help consumers understand and manage their energy spend, whilst also reducing their carbon emissions, can only be seen as a benefit to the smart meter programme.
EDF	Large Supplier	Yes	EDF sees a business benefit in the additional functionality for future smart energy use tariff products. EDF is unable to quantify the magnitude of the benefit at this stage.
Drax Group	Small Supplier	Yes	We are not able to provide a RoM at this stage. However, we believe DP152 will provide a business benefit to both us and the third-party developers we work with. We want to develop new products and tariffs to help our customers become more engaged with their energy use, manage their consumption

Question 3			
Respondent	Category	Response	Rationale
			and decarbonise. This will become even more important with the electrification of heat and, in particular, the increase in EV charging.

Question 4: Do you believe it would be beneficial for the solution to include the ability for Suppliers to set price tariffs per phase?

Question 4			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party	Yes	We install three phase service cables as standard for all new and upgraded connections We expect suppliers to offer three phase meters and tariffs to benefit customers.
SSE	Small Supplier	Yes	We consider this would be helpful for future advancements, such as increased EV usage which may require separate phases/pricing for charging purposes. This would increase flexibility for customers, giving them more control over their energy usage.
British Gas	Large Supplier	Yes	This would be required to support customers currently on multi rate tariffs (upon non smart to smart device replacements) and those without a gas supply using electric hot water and storage heating
geo (Green Energy Options)	Other SEC Party	Yes	Yes, this would seem sensible to have a tariff per phase, again to foster market innovation and competition, and the adoption of greener technologies, for example, EVs and heat pumps.
EDF	Large Supplier	Yes	As loads are likely to be still single phase type loads in a residential or SME polyphase setting for EV charging or small scale heating and cooling systems, EDF sees value in being able to set a time-based and phase based rate for consumption. If SMEs use larger appliances, such as 3 phase motor driven heat pumps, then the ability to set per phase rates would not be relevant and the current cumulative read rate would naturally prevail.
Drax Group	Small Supplier	Yes	If Suppliers can provide innovative propositions which allow the customer to be billed at different rates for each purpose, it becomes engaging for the customer and maximises their opportunity to save money.

Question 5: Do you believe it would be beneficial for the solution to replicate existing pre-payment functionality per phase?

There are currently no prepayment polyphase meters available, however, if domestic adoption of polyphase metering is likely to increase then prepayment functionality may also be required to meet the needs of all consumers.

Question 5			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party		We believe that this question will be best answered by suppliers who understand pre-payment customer behaviour better than we do.
SSE	Small Supplier		SSE Energy Solutions does not supply domestic or prepayment customers and therefore does not have a view on this question.
British Gas	Large Supplier	Yes & No	It would benefit supplier in reclaiming debt without the need for a meter exchange if a customer was failing to pay their bills, saving both field costs and stranding costs. It may not be beneficial as those who use these devices usually require a large supply of energy and have the means to support this
geo (Green Energy Options)	Other SEC Party	Yes	Prepayment customers should not be left behind when it comes to benefitting from smart metering and any future innovations.
EDF	Large Supplier	No	EDF does not currently see any demand for pre-payment functionality in polyphase installations. To date the customers have been larger residential premises or SME business premises and these tend to use larger amounts of energy and be exclusively credit account customers who do not require or desire pre-payment solutions. While there may be some incremental adoption of smart polyphase meters as a result of tariff products that could make use of the per-phase recording and pricing, this will be largely from the existing cohort of sites that have access to 3-phase power. We do not believe that it would significantly drive demand for new 3 phase connections. This may change for new build housing where the developers shift from installing gas boilers for heating to heat pumps.

Question 5			
Respondent	Category	Response	Rationale
Drax Group	Small Supplier		We do not supply domestic consumers or prepayment meters, so are not well positioned to respond to this question.

Question 6: What benefits do you believe this SEC Draft Proposal will bring over and above Elexon's P375 asset metering change to the Balance and Settlement Code, other than allowing a unique tariff per phase?

BSC Proposal P375 proposes using Metering Equipment 'behind' the defined Boundary Point for Balancing Services ('behind the Meter'), for Settlement purposes rather than the Boundary Point Meter. This will allow balancing-related services on-site to be separated from imbalance-related activities, more accurately reflecting the balancing-energy volumes provided by the Balancing Service Provider (BSP).

Question 6			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party		We have no comments.
SSE	Small Supplier	SSE Energy Solutions understand that P375 will see data provided to the BSP but this data may not be available to the supplier. Whilst this existing modification could be developed further, we consider that this will be a more complicated option.	We consider that the DP152 proposal is not only about making different tariffs available per phase but mainly about providing visibility of this data to the end customer so that can be used to help change behaviours and manage energy more efficiently. We do not consider that the customer angle would be addressed via P375.
British Gas	Large Supplier	Yes	Enables customer to view the usage and costs associated with each rate period/register on the meter
geo (Green Energy Options)	Other SEC Party	No	
EDF	Large Supplier		

Question 6			
Respondent	Category	Response	Rationale
Drax Group	Small Supplier	We believe DP152 has the potential to increase consumer engagement with their energy consumption by offering more granular data on usage. It also opens up opportunities for Suppliers and innovators to develop products and tariffs which maximise the benefits of smart meters.	It would be prudent to ensure DP152 aligns with BSC P375, however our understanding of P375 is that it will look at metered volumes from a balancing perspective, whereas DP152 seeks to give consumers visibility of their individual phase data.

Question 7: Do you believe there is an industry benefit for this Draft Proposal to be developed further?

Question 7			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party	Yes	Further to our response in previous question we believe that this should be developed further.
SSE	Small Supplier	Yes	This proposal would complement the current ambitions highlighted by BEIS in their consultation on maximising consumer smart benefits as it would create a standard offering across industry for customers to further understand their energy usage. It would open up potential for further product and tariffs, and therefore encourage innovation and healthy competition in the market.
British Gas	Large Supplier	Yes	Further development will ascertain the likelihood of a solution being produced and if Polyphase smart meters can be offered
geo (Green Energy Options)	Other SEC Party	Yes	The rationale for developing this has been outlined in the previous responses to the questions above.
EDF	Large Supplier	Yes	EDF sees value in developing the proposal further and understanding the costs that would be imposed for the DCC to bring it to production.
Drax Group	Small Supplier	Yes	Innovative products and tariffs have the potential to act as an additional consumer incentive for smart meters, which will support Suppliers in delivering the post-2020 framework. With the deployment of EVs and electrification of heat, polyphase meters will become more prevalent in both the domestic and non-domestic market. DP152 has the potential to support this transition. Having the ability to help the consumer understand their consumption, and be charged separately for each phase, will support smart innovation and net zero commitments.

Question 8: Please provide any further comments you may have.

Question 8			
Respondent	Category	Response	Rationale
Western Power Distribution	Networks Party		None
SSE	Small Supplier		None
British Gas	Large Supplier		None
geo (Green Energy Options)	Other SEC Party		All the information provided per phase must be available on the HAN for IHDs, PPMIDs and CADs to utilise, including the capability to have per-phase ToU pricing.
EDF	Large Supplier		None
Drax Group	Small Supplier		None