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Our reference: Origami Response to Ofgem CLASS Consultation

Your reference: Regulatory treatment of CLASS as a balancing service in RIIO-ED2 network price control

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23 March 2020

Dear Ofgem Flexibility,

Origami would like to thank Ofgem for the opportunity to respond to the Regulatory treatment of CLASS as a balancing service in RIIO-ED2 network price control. Origami welcomes the inclusion of CLASS assets as participants in balancing services in the price control.

Origami is at the leading edge of the market as it enables the participation of distributed assets in the provision of a variety of flexibility services. We encourage the development and continual growth of the competitive market to provide innovative network solutions and deliver value to the consumer.

Origami notes the involvement of monopoly DNOs in competitive markets must be carefully regulated and implemented to ensure a level playing field for all market actors and is encouraged by Ofgem's preferred approach to ensure delivery of CLASS services through a competitive market auction.

I am pleased to include Origami's response to the individual questions within the CLASS consultation in the attached Appendix.

Yours faithfully

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Origami

POWER OVER ENERGY

Appendix 1
Ofgem Consultation

Regulatory treatment of CLASS as a balancing service in RIIO-ED2

20 March 2020

DEADLINE for submission: 23 March 2020

Regulatory options

Q1. Are there other options we should have considered? Please provide the reasons for your suggestion.

Origami considers the optioneering assessment is sufficient; however, Origami would like to understand whether Ofgem has considered including Independent Distribution Network Operators (IDNOs) in the provision of CLASS services and, if not, why have IDNOs been omitted?

Options Assessment

Q2. Do you agree that market-based mechanisms can provide the most efficient incentive for CLASS participation in balancing services?

Whilst Origami agrees that market-based mechanisms can provide an efficient incentive for CLASS participation in balancing services, Origami would like to highlight a number of points that should be considered in the implementation of the process.

Origami believes the use of CLASS assets to deliver system services is no different to third party assets that have been funded on one basis and are repurposed to deliver system services. Therefore, Origami believe there is no competitive advantage if CLASS assets are used to deliver system services. Origami does consider that special attention should be given to assets which provide CLASS services in the RIIO business plan submissions: these assets should not be allowed to be upgraded or refurbished to better provide CLASS services as a load based investment, rather these assets should be subject to replacement under non-load drivers only (unless the load driver Is not related to or dependant on the provision of CLASS services).

Whilst Origami agrees DNOs should be able to provide CLASS services to the ESO, the provision of such services should not be prioritised over the DNOs licence obligations and responsibilities. As such, Origami considers a prioritised and tiered approach should be mandated in the provision of services by DNOs:

1. DNOs should prioritise the use of CLASS assets for the resolution of network issues and to maintain network security, e.g. to maintain voltage levels within statutory limits and to Improve the quality of supply to customers;
2. DNOs should prioritise the use of CLASS assets to alleviate customer constraints and provide additional headroom for generation and / or demand customers where practicable; and
3. If there is no requirement for either of the above, DNOs may use CLASS assets in the provision of services to the ESO through the open competitive market.

If the above is maintained/enforced under licence requirements (and other obligations) this will not only mitigate conflict between commercial activities of the DNO and its licensee responsibilities but will increase competition in the open competitive market.

Q3. What is your view on DNOs' sharing profits with consumers, even if this means consumers are also exposed to DNOs' losses (including how this might affect DNOs' competitive behaviour noting this is different to other providers of balancing services)?

Origami agrees that a profit/loss share with consumers will provide benefit to the consumer whilst incentivising DNOs to participate in CLASS where the market prices for the provision of the services are favourable. Similarly, there would be an incentive to DNOs to not offer CLASS services where the market prices are unfavourable. However, Origami realises that DNOs may be willing to accept different levels

of risk than the consumer which may lead to unfavourable returns and higher risks to the consumer than they would normally accept. Origami also considers that the DNO has a statutory responsibility to operate a safe and reliable system. There Is a possibility that this may lead to conflict of DNO roles and responsibilities where the DNO may enter an unfavourable bid in CLASS auctions to fulfil its other licence responsibilities where the DNO may have alternative means of meeting these.

A more appropriate solution is indicated by previous arrangements to incentivise the ESO as the proposed solution may not be the most appropriate one. Origami considers that a scaled/varied profit and loss share may be more appropriate where the DNO and consumer would share equal risk within a set tolerance band. Any profits outside of this tolerance band would be borne entirely by the consumer whilst, conversely, any losses outside of the tolerance band would be borne entirely by the DNO. In this mechanism the DNO is still incentivised for offering CLASS services where the market price Is favourable and penalised for offering CLASS services where they are not whilst providing additional consumer protection for large losses and limitations on allowed profit margins obtained by the DNO.

Origami considers it important Ofgem maintains, encourages and develops a competitive market (with appropriate rules of engagement and contracts between market actors) for the provision of services to the ESO for all market actors which provides value to the end consumer. As such, DNOs should be mandated to offer CLASS services only through market-driven auction processes and timescales to provide the best value to consumers whilst utilising the available flexibility to provide system services. Origami believes DNOs should not be able to offer CLASS services through bilateral agreements outside of normal market auctions (and timescales) as this could result in services being purchased at prices that could well be above those in a competitive market which is not in the best interests of consumers. Further, open competitive auctions provides a fair and liquid market for all participants without the distortion created by bilateral contracts.

Q4. How might limits on charges to the ESO in DRS9 affect investment and utilisation signals for CLASS?

Origami considers the use of CLASS for ESO services is a relatively immature process; as such, cost assumptions applied at the beginning of a price control period may not be fully accurate when considering the real cost which DNOs will bear in procuring equipment and delivering the services. Further, Origami identifies that only one DNO has participated in the provision of CLASS services in RIIO-ED1 (ENWL) and this represents a small proportion of the whole market. Cost assumptions used to set prices for the provision of CLASS services based on real data from the only actively participating DNO could include cost efficiencies that have been developed over the integration of CLASS services by the DNO over the previous price control period. Such prices may then present limited or negative returns for other DNOs which may have to develop capabilities to deliver CLASS services whilst allowing the forecasted returns only for the DNO which is already participating in the market.

Similarly, the price setting mechanism has significant scope to distort the market and affect the competitiveness of individual DNOs. For example, if price setting ensured the average DNOs achieves a satisfactory return on investment then the DNO already participating in the market may receive a significant return on investment in comparison to other DNOs. Further, the costs to deliver the services for each DNO may vary from the Ofgem assumptions that could also lead to variations in returns. This would not be in the interest of DNOs and/or consumers.

Origami also considers that efficiencies in the delivery of CLASS services by DNOs over time (led by the development of understanding; technology improvements, etc.) could lead to lower costs of delivery and higher profit margins for the DNOs than predicted. This would not be in the interests of consumers.

Given the above, Origami does not believe that a DRS9 approach is in the best interests of consumers and/or the market.

Q5. Do you agree that requiring CLASS in the price control would not promote efficient investment signals in CLASS and could distort competitive outcomes?

Origami considers this method would prove difficult to implement appropriately for a number of reasons, including the uncertainty in relation to the following areas;

- the participation level of individual DNOs and the effect on the competitive market;
- the costs associated with plant and equipment (see response to Q4 above);
- the level of demand available over the ED2 period;
- the certainty of income from CLASS services;
- the viability of the business case for individual substations; and
- the effect of CLASS services on system security, stability and reliability.

Given the above, Origami does not believe that a price control approach is in the best interests of DNOs, consumers and/or the market.

Q6. Do you have evidence CLASS could affect the likelihood of system reliability issues?

Whilst Origami does not have evidence that CLASS could affect the likelihood of system reliability issues, Origami notes the following observations/insights.

- Only one DNO has participated in the provision of CLASS services to date and it is uncertain why other DNOs have not participated or if their decision was driven by commercial considerations, a lack of capability or a network risk associated with the provision of CLASS services.
- Ofgem believes there is unlikely to be a large participation in CLASS services by DNOs but there is no consideration of the potential risk to system stability if there was widespread delivery of CLASS services. Origami would like to highlight three use cases that are worthy of further consideration by Ofgem;
  - If CLASS assets were delivering one CLASS service and there was a system stress event, there would be a reduced ability or no ability of those CLASS assets to provide automated voltage reduction to support system stability. As such, the provision of CLASS services on a widespread basis could remove an intermittent step between mitigation by market-provided services and customer disconnection. Customer disconnection may be less likely should CLASS services provide only a small proportion of the competitive market or none at all and the remaining CLASS assets (and non-CLASS assets) were held to support automated voltage reduction.
  - If CLASS assets delivered CLASS services by tripping one transformer to increase the circuit impedance, there is a small risk of customer interruption in the primary substation. If there is widespread participation of such CLASS assets, there is a high risk that one CLASS asset could trip coincident with a fault on the local distribution system which could trip the transformer and the downstream load could be lost with consequent customer disconnections.
  - the effect of CLASS service delivery could possibly lead to large voltage variances at the extremities of the low voltage network where there is limited/no network monitoring. Systems

connected at this voltage which are susceptible to voltage changes/steps may be damaged or have an earlier onset end of life.

Q7. Do you have evidence competition is currently being distorted or impeded by the participation of CLASS? Do you agree with our assessment that it is unlikely DNOs have or would have market power in future, and the reasons we have provided in Appendix 2?

Whilst Origami does not have evidence that competition is currently being distorted or impeded by the participation of CLASS, Origami notes the following observations/insights.

- Ofgem's report states that ENWL (currently providing up to 75MW of CLASS services in the market) has a market share of 1.6% for secondary FFR and 13% for Firm FR.
- Initial projections (2014-15) were that ENWL would be able to offer up to 105MW whilst it is estimated that by 2027 all DNOs could collectively be able to offer approximately 1.34GW to 1.75GW.
- ENWL represents ~5% of the DNO market for CLASS services (assuming all capacity was enabled and participated). The potential market position of the DNOs could collectively exercise significant market power as summarised In Table 1 which illustrates the potential market share of all DNOs should ENWL represent 5%, 10% and 20% of the total DNO capability.

Table 1 - Total DNO capability potential market share for services

Service	***ENWL is 5% of DNO Capability***	***ENWL is 10% of DNO Capability***	***ENWL is 20% of DNO Capability***
Secondary FFR	(1.6% x 20) = **32%**	(1.6% x 10) = 16%	(1.6% x 5) = 8%
Firm FR	(13% x 20) = **260%**	(13% x 10) = **130%**	(13% x 5) = **65%**

- Table 1 shows;
  - the DNOs (collectively) would hold a significant market share for Secondary FFR if ENWL represented 5% of the DNO Capability for that service.
  - the DNOs (collectively) would hold a significant market share for Firm FR if ENWL represented 20% of the DNO Capability for that service and one or more DNOs would likely dominate the market with the opportunity to exercise significant market power. This would be worrying for any market but could significantly distort these markets, leading to competitors withdrawing from the market, less competition in the market and potentially higher prices for consumers.

Q8. What information could the DNO have privileged access to that that could offer it an unfair advantage in balancing services provision? How might this change in future if the DNO and ESO increasingly coordinate?

Whilst DNOs have privileged access to information about their network, Origami does not consider this to provide an unfair advantage in the existing balancing service provision. It Is noted that DNOs may be able to predict transmission system imbalances due to changes in their own boundary transfers with the Transmission Operator but this is only part of what drives transmission imbalances and so should not present a significant advantage over other market actors.

Origami identifies that future arrangements between the DNO (DSO) and ESO may present DNOs with a competitive advantage over other market actors. Where there is conflict between ESO requirements and DNO requirements, the ESO and DNO will have to act together (under a defined arrangement) to resolve the conflict e.g. an excess of localised distributed generation causes a constraint on the DNO system at the same time that the ESO requires additional generation to balance the transmission system. In such circumstances there may be an inherent incentive for the DNO to resolve the issues with the ESO by preventing market actors to deliver services and Instead offering DNO commercial services to the ESO to resolve the issue. Although it is unlikely this will significantly distort the competitive market, it should be considered in the implementation and further development of CLASS in the next price control period.

Q9. What measures would you consider effective and proportionate to ensure that privileged information the DNO has access to is not used inappropriately to benefit the commercial performance of CLASS?

Origami would consider it appropriate to separate the parts of the DNO business that would deal with DSO responsibilities and conflict resolution and the commercial entity that would be responsible for the provision of CLASS services to the ESO. Origami identifies that there may be some difficulties in prioritising the use of assets which can be used for CLASS between different parts of the DNO business. As part of the response to Q2, Origami proposed a tiered arrangement for the prioritised utilisation of CLASS assets. To manage conflict between parts of the business, CLASS assets should only be released for the provision of CLASS services in the competitive market if they are not required for the purposes described in priority 1 and 2 categories in Q2.

Part of the overall deliverables for the Open Networks Project, being undertaken by the Energy Networks Association, is to identify conflicts in commercial arrangements, service conflicts, and conflicts of interest. The project aims to understand these conflicts and how to appropriately manage them as distributed services develop and DSOs become established. Therefore, it Is important that the regulation of CLASS takes account and implements the findings from this project (as well as other innovation projects which look at the development of distributed services and/or the progression form DNO to DSO).

Q10. In what other ways do you think DNOs could take advantage of their DNO role in the context of providing balancing services with CLASS?

As described in response to Q2, Origami believes DNOs should prioritise the use of CLASS assets. Origami considers a prioritised and tiered approach should be mandated in the provision of services by the DNO:

1. The DNO should prioritise the use of CLASS assets for the resolution of network issues and to maintain network security, e.g. to maintain voltage levels within statutory limits and to Improve the quality of supply to customers;
2. The DNO should prioritise the use of CLASS assets to alleviate customer constraints and provide additional headroom for generation and / or demand customers where practicable; and
3. If there is no requirement for either of the above, the DNO may use CLASS assets in the provision of services to the ESO through the open competitive market.

If the above is maintained/enforced under licence requirements and other obligations then this will not only mitigate conflict between commercial activities of the DNO and its licensee responsibilities but increasing competition in the competitive market.

Q11. How far do you think existing safeguards (including licence obligations and competition law) against DNOs taking advantage of their DNO role in the context of participating in the balancing markets with CLASS are sufficient?

Origami considers that the current safeguards are appropriate but not fully sufficient. The tiered prioritisation of CLASS services (discussed in response to Q2) will aid the current safeguards. Additionally, the clear and regulated separation of DNO activities/parts of the business would further avoid conflicts and unfair advantages.

Q12. What additional measures would be effective and proportionate to address actual or perceived risks of DNOs taking advantage of their DNO role?

Origami deems that the implementation of the points discussed under Q11 will serve as effective measures to mitigate actual or perceived risks of DNOs taking advantage of their DNO role.

Q13. Are there other specific effects to competition that are relevant to our decision? What effects would these have on consumers?

In the event that there is a large scale uptake in the provision of CLASS services this could not only have an effect on the level of participation of third parties in the competitive market, but also the imbalance positions of suppliers (and other parties). The undertaking of CLASS services to reduce system voltage and subsequently system demand may lead to variances in forecast demand of suppliers versus actual demand; particularly where these suppliers (and other third parties) have large portfolios of customers. This may result in imbalance charges to these parties; however, these may conversely be beneficial to the supplier as the imbalance will be favourable in the circumstance that CLASS is required to reduce demand by the ESO i.e. supplier demand is less than forecast providing ESO benefit and generator output is less than forecast providing benefit to the ESO. The reduction of voltage on the system may also produce generator imbalances (dependant on generator settings), the effect on the output of distributed generators connected downstream should be analysed and considered.