

Written evidence submitted by Zenobē Energy Limited ('Zenobē Energy') (CGE0080)

About Zenobē Energy

Zenobē Energy is one of the UK's leading owner and operator of battery storage. We provide services to National Grid commercial EV operators, industrial and commercial businesses and network operators. We have built, own and operate over 73 MW of commissioned assets at nine sites across the UK. We are leading in the development of software to control and dispatch batteries to meet the requirements of our customers.

We are a key partner to National Grid and are contracted to supply numerous services including Fast Reserve, Frequency Control by Demand Management (FCDM), Firm Frequency Response and Capacity Market. We have also been integral in the roll-out of electric buses across the UK working closely with major operators such as Stagecoach, National Express and Go-Ahead on the electrification of bus depots and routes. Zenobē also reduces energy costs whilst improving reliability and environmental performance for power intensive businesses. In all of these applications, the development of software to improve the efficiency and meet our customers' requirements has been integral for the success of our business and the intelligent use of our renewable assets.

Zenobē Energy's submission

1. Zenobē welcomes the opportunity to respond to the Science and Technology Committee's inquiry into the technologies needed to meet the Clean Growth Strategy's ('the Strategy') emissions reduction targets.
2. We are committed to enabling the transition to a cleaner and more efficient electricity system through the intelligent use of storage. Zenobē works across the different key sectors for decarbonisation identified by BEIS, such as transport, industrial and commercial users and network operators.
3. This submission outlines our concerns regarding Ofgem's Charging Futures proposals which, as stated in Ofgem's 'minded to' decision, published on the 28 November 2018 will undermine the deployment of technologies designed to meet Clean Growth emissions reduction targets, including the roll-out of electric vehicles and further deployment of storage technologies.

Executive Summary

4. As a provider of 'new technology' and services to businesses, grid operators and the transport sector, Zenobē is a strong supporter of the Government's determination to 'leave our natural environment in a better condition than we found it' as stated in the Prime Minister's foreword to the Clean Growth Strategy.¹
5. However, we are concerned that the UK will not meet its fourth and fifth Carbon Budgets as outlined by the Committee on Climate Change² and confirmed by BEIS' *Updated Energy and Emissions Projections 2017*.³
6. We believe that, of all the sectors that the Strategy focusses on, decarbonising the transport sector and 'Delivering Clean, Smart, Flexible Power' should be the priority.
7. The outcome of the network infrastructure and the charging regime consultations will be either a barrier or a catalyst to both EV uptake and the delivery of a 'new' energy system. Therefore, we urge

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf

² <https://www.theccc.org.uk/wp-content/uploads/2018/01/CCC-Independent-Assessment-of-UKs-Clean-Growth-Strategy-2018.pdf>

³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671187/Updated_energy_and_emissions_projections_2017.pdf

Government to carry out a detailed impact assessment of the current Ofgem reforms on its environmental strategy and the Carbon Budgets.

8. Based upon our assessments of the impact of Ofgem's Charging Futures proposals on the deployment of 'flexible assets, such as batteries, the proposals will introduce higher costs, greater uncertainty and lower than expected deployment and use of low carbon technologies and renewables.

9. We believe that the Targeted Charging Reforms (TCR) proposals will undermine the UK's position as a global leader in the development and deployment of storage and renewable technologies, triggering the Carbon Budgets.

10. Ofgem has a statutory environmental duty. However, the impact assessment as set out in the Targeted Charging Review does not include target carbon criteria. Charging cannot be separate from government policy goals. It will encourage or discourage future investment decisions that could help meet the energy trilemma of keeping the lights on, at an affordable price, while decarbonising the power system.

11. Energy Act (2013)- Since the Energy Act received Royal Assent on 18 December 2013 and requires the Secretary of State to ensure that the carbon intensity of electricity generation in the United Kingdom is not greater than the upper end of the decarbonisation target range.

12. The Authority's principal objective remains the same but both the Secretary of State and Ofgem will be required to carry out their regulatory functions in a manner best calculated to further delivery of policy outcomes.

13. However, the outcomes of the Ofgem consultations do not align with the Smart Systems and Flexibility Plan, the Clean Growth Strategy, the Carbon Budget or the Climate Change Act. And therefore we believe Ofgem mandate needs to be amended to meet the environmental criteria.

Zenobē's Recommendations

14. The Authority's (Ofgem's) principal objective remains the same but both the Secretary of State and Ofgem will be required to carry out their regulatory functions in a manner best calculated to further delivery of policy outcomes. However, as previously highlighted, the outcomes of the consultations do not align with the Smart Systems and Flexibility Plan, the Clean Growth Strategy, the Carbon Budget or the Climate Change Act.

15. Therefore we believe Parliament needs to give Ofgem a mandate to meet specific environmental targets. There is an urgent need for Parliament to clarify and emphasise Ofgem's role regarding environmental impacts. The regulator should protect vulnerable consumers without triggering Carbon Budgets targets or jeopardising the Industrial Strategy for other sectors like transport and renewables infrastructure. Ofgem current mandate is updated and not fit for purpose. Protecting 'consumers interest' notion has changed over time. Ten years ago the energy sector's main priorities were affordability and reliability. Today, the energy system plays a wider role with direct implications on industrial strategy, transport sector, and most importantly it is crucial to tackling climate change.

16. Ofgem Charging Futures proposals need to align with: the BEIS Industrial Strategy, the Clean Growth Strategy, the UK's renewables and low carbon targets, and the Government's objectives to deliver the electrification of heat and transport. This includes the Government's desire to put the UK at the forefront of electric vehicle deployment as announced at the recent Zero Emission Vehicle Summit. We believe that more consideration of these environmental requirements needs to be addressed in the Charging Future proposals and the consequences of meeting or falling short of these environmental requirements must be prioritised as part of the consultations.

17. Given that the transport sector is responsible for 24% of carbon emissions, we believe that the decarbonisation of this sector requires concerted focus. Ofgem's Charging Futures proposals threaten to undermine the deployment of technologies such as electric vehicles which will help to decarbonise the sector.

Zenobē believes that greater impetus, funds and overall weight need to be allocated to the ‘Delivering Clean, Smart, Flexible Power’ and the ‘Accelerating the Shift to Low Carbon Transport’ key areas.

Delivering a Clean, Smart, Flexible Power & Charging Futures Reforms

18. We welcome the Government’s objective to electrify different sectors of the economy such as transport, heat and industrial processes. But the increasing demand for electricity needs to come from renewable sources and not polluting generation. The UK needs to accelerate the uptake of renewable energy to compensate for the ‘nuclear gap’.

19. Renewable onsite generation and storage can help reduce carbon emissions and reduce network infrastructure costs. We have evidence that Ofgem proposals will reduce cost incentives by as much as 96% thereby negatively impacting investment in renewable energy infrastructure and related behind the meter connections.

20. The piecemeal manner of storage-related reforms and numerous consultations have increased uncertainty and detrimentally affected the current investment climate in these assets affecting the degree of investment in flexible assets in the UK system. Ofgem should carry out impact assessments of all the current reforms and ensure that all proposals are considered holistically. In the interim, we urge BEIS to assess the impact of all the current inter-related Ofgem reforms and the effect they will have on the deployment of technologies designed to reduce emissions. We also strongly believe that full implementation of the Targeted Charging Review should be delayed until 2023 to allow for sufficient time for these reviews to take place.

The Shift to Low Carbon Transport – How to accelerate the uptake of EVs

21. The transport sector is responsible for more than 24% of carbon emissions. The technologies and strategies are available, but progress has been slow. The total greenhouse gas emissions from transport were 168 million tonnes in 2016, i.e. 6 million tonnes increase relative to 2013 figures.⁴ To achieve 2030 carbon targets, transport needs to require a reduction of 44% emissions from 2016.

22. The Committee on Climate Change (CCC) stated that the speed of installing charging points, something overseen by central and local government, will have to vastly improve to cope with the demand. The CCC recommends that the government ban the sale of new petrol and diesel cars by 2030.

23. Zenobē Energy having developed the battery control software, installed and commissioned the first battery and charger combination of its kind in the UK at Guildford Park & Ride, operated by Stagecoach. The nine ADL/BYD buses on the route were deployed with ULEB funding and the support of Guildford Borough Council and Surrey Council.

24. Nearly 1 million passenger journeys are made on Guildford’s Park & Ride service each year with the buses covering approximately 150 miles per day. The replacement of the diesel buses with electric buses introduces vehicles that have higher specifications with at seat USB charging, free wi-fi, electronic signage, amongst other things, considerably improving the passengers’ travel experience.

25. Zenobē’s solution benefitted the operator and the city by reducing the cost of the infrastructure by approximately 80% and providing other local operational benefits including utilising the battery to provide local grid support and flexibility when not in use to support the bus operations.

⁴ Source: Ricardo AEA/BEIS (NAEI)

26. Combined, the nine buses will reach 650,000 tonnes of CO2 savings the first year, Zenobē is committed to only buy renewable sources of energy bringing this number to more than a million tonnes of CO2 savings.
27. This new application of flexible battery technology has been a success at Guildford, and many other major operators are working with Zenobe to review the benefits of installing similar systems at other depots across the UK where the development of EV bus fleets is held back by local grid constraints.
28. The Charging Futures reforms will penalise users with behind the meter generation. Bus operators will have to wait for months to have a grid reinforcement (in this case 12 months compared to 4 months for onsite generation) and pay significantly more. That cost will be passed to the consumers and will be a barrier for the uptake of EVs. EVs charging stations and the public fleet will face the same problem.
29. Ofgem should carry out more engagement with future stakeholders. In this example, as the electrification of buses increases bus operators will become one of the largest electricity consumers; however, they are not currently focused on electricity costs as their energy is provided by diesel.
30. The proposed Charging Futures reforms will reduce the ability of Zenobe to optimise the software that it has developed for the bus operators as it will be restricted in the utilisation of the 'spare capacity' of the battery to provide grid services and thereby also reduce the bus operators' electricity costs. This will make the cost and operation of electric vehicles less attractive and more onerous and is likely to increase the cost of bus operation which will have to be passed on to the customers through higher tariffs, potentially having an impact on bus usage.
31. We recognise that it is difficult for Ofgem to anticipate and model any proposed changes in charging on users that are likely become major users in the short term of electricity and they have not taken into consideration the impact of the TCR on this key sector of future electricity usage. We have raised this with Ofgem and note that this key transport sector is being encouraged to utilise zero-emission vehicles and supported by government to do so. We invite Ofgem to reconsider these assumptions with the evidence that we have provided to them.

Conclusions

32. Governments' ambitions to tackle Climate Change and support the necessary infrastructure to deliver a low cost and carbon energy system are under threat. By extension, the deployment of technologies to tackle climate change is also under threat.
33. Since the Energy Act received Royal Assent on 18 December 2013 this requires the Secretary of State to ensure that the carbon intensity of electricity generation in the United Kingdom is not greater than the upper end of the decarbonisation target range.
34. The Authority's (GEMA /Ofgem) principal objective remains the same, but both the Secretary of State and Ofgem will be required to carry out their regulatory functions in a manner best calculated to further delivery of policy outcomes.
35. However, as previously highlighted, the outcomes of Ofgem's consultations do not align with the Smart Systems and Flexibility Plan, the Clean Growth Strategy, the Carbon Budget or the Climate Change Act and in the future the ULEV strategy. Therefore, we believe it needs to be amended to meet the environmental criteria.
36. We therefore strongly believe Ofgem's various reforms and the TCR proposals will not only undermine the UK's position as a world leader in storage technologies and EV solutions but also serve to undermine the UK's wider decarbonisation efforts.
37. We urge the Government to reconsider the environmental impact of the TCR and other related Ofgem reforms to ensure the UK remains compliant with its Carbon Budget targets and international environmental obligations.

38. We urge BEIS to carry out an impact assessment of all of the current inter-related Ofgem reforms and the impact they will have on the deployment of low carbon technologies such as battery storage.

39. We strongly advocate that full implementation of the TCR is delayed until 2023 to allow time for Ofgem and BEIS to review it and other related reforms and to ensure that all affected parties are granted sufficient time to implement any expected changes.

May 2019