

Decision Pathway – Energy service - Carbon Reduction Projects

Appendix A2 – Energy Procurement

Issue

1. Although work is in hand to reduce energy use on the Corporate Estate, there will always be an irreducible minimum demand. With the electrification of heating and vehicles, this residual demand will shift towards a higher proportion of electricity use versus gas. Together, these factors require a significant decarbonisation of the Council’s electricity supply in order to achieve Carbon Neutrality by 2025.

Recommendation

2. The Energy Service is developing a long-term strategy to make use of zero-carbon locally generated electricity via the ‘Sleeved Pool’ mechanism. As an interim step towards this, it is recommended that:
 - a. The Council’s own renewable electricity generation is redirected for use in Council buildings.
 - b. The electricity supply arrangements for City Hall are optimised to make best use of battery storage, in order to reduce grid demand and supply costs.
 - c. New contracting arrangements are set up to allow the Council to start to procure locally-generated zero-carbon electricity, ahead of the development of the Sleeved Pool system.

Timing

3. The current electricity supply contract for larger sites¹ has been renewed to June 2021. These sites would be the target population for supply from the Council’s own renewable energy systems and local generators.
4. The electricity supply contract for City Hall has been separated from the main supply contract in preparation for migrating this supply to a tariff structure more suited to optimising a storage battery. The current contract also expires in June 2021.

Background

5. The Council’s total electricity demand is just over 47 GWh/yr². At 2020 greenhouse gas conversion factors³, this demand is responsible for creating nearly 12,000 tonnes of CO_{2e} emissions per year⁴.
6. For the February Cabinet report:
7. In addition to the heat decarbonisation and energy efficiency measures outlined above, the Energy Service is also seeking ways to secure zero-carbon locally generated electricity supplies. A low carbon electricity supply will become increasingly more important as electrically-based heating displaces natural gas, whilst supporting local organisations in developing renewable energy systems in and around Bristol supports the Council’s wider Social Values objectives.
8. The energy service is seeking approval to:
9. Set up a ‘Sleeved’ Power Purchase Agreement (PPA) to route zero-carbon electricity generated from the Council’s own renewable energy systems to Council sites. This would replace the current export PPA, and also replace the conventional grid supply arrangement in place under the Energy Service’s Dynamic

¹ Half-Hourly supplies

² 2019 pre-Covid demand, including streetlighting

³ <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020>

⁴ Including emissions from Transmission/Distribution losses

Purchasing System (DPS) for the larger electricity consuming sites on the Council estate (these are better matched to generation capacity).

10. Set up a separate supply arrangement for City Hall with a tariff structure that allows greater flexibility in making use of the storage battery, coupled with services to optimise the use and operation of this battery.
11. Develop the 'Sleeved Pool' procurement mechanism, which is intended to allow renewable energy generators to supply Council buildings, to a pilot stage.
12. Set up interim arrangements with generators to allow either direct supply to nominated Council buildings, and/or participation in the Sleeved Pool pilot. This will require setting up 'Back-to-Back' coupled PPAs, which would involve long-term supply contracts directly with generators for their zero-carbon electricity, and recurring contracts with licensed electricity suppliers to manage distribution of this to Council sites. The proposal is to create a new Dynamic Purchasing System for Generators, which will allow a bank of pre-approved local generators to enter in to supply arrangements either to nominated Council sites, or in to the Sleeved Pool as this is developed.