Appendix 3: Case studies

Battery storage

Asda, Newquay – The retailer has installed battery storage at its Newquay store to provide cost savings and improving operational resilience with 2 hours of uninterruptable power supply.

Thornton Science Park, University of Chester – The University has used battery storage as part of locally controlling power in its new major research and innovation hub developed in 2017. The "microgrid", which will be the first of its kind at a UK university campus, will play a key role in the energy centre's mission to be a demonstration environment, where innovative energy technologies can be developed and tested.

UK Power Networks, Hemsby, near Great Yarmouth – UKPN installed 200kWh Lithium -Ion battery at an electricity substation site in Hemsby in 2013. This was a demonstrator project to look at the benefits for the local grid.

Multiple-site commercial investment across the UK - Battery storage systems are being deployed at 10 solar farms around Britain owned by infrastructure investor Ancala Partners with plans to have 185MW of battery storage by the end of 2018. The portfolio, which was installed with the help of storage provider Anesco, can store 12MWh of power and has a maximum output of 11MW. As well as being used to store surplus energy from the sites until it is needed, the batteries will also provide balancing and frequency response services to National Grid.

Ground Source Heat Pump

West Suffolk House, Bury St Edmunds - West Suffolk has experience of investing in this technology with the development of West Suffolk House. The building is heated and cooled using an open loop system where water is extracted from wells close by in the ground, and the low grade heat stored in the water compressed and transferred via a pipework system running through each floor plate.

Combined Heat and Power (CHP)

Various sites in West Suffolk, Abbeycroft Leisure Trust - West Suffolk's leisure partner, Abbeycroft Leisure Trust (ACL), has installed Combined Heat and Power (CHP at two of its facilities, Bury and Haverhill Leisure Centres, and is in the process of completing a third installation at Newmarket Leisure Centre. The technology provider/operator, Eurosite, funds the installation and operation, buying the gas from ACL, generating and selling heat and electricity which it then sells back to the Trust. The technology delivers cost and energy efficiency savings for ACL and the financial model creates sufficient surplus to fund the capital and running costs at commercial rates of return for Eurosite over a 15 year contract.

Hybrid Combined Heat and Power (CHP) and Heat Pump technologies

Alder Hay Hospital, Liverpool – completed in 2015, the heating and cooling system for the new Alder Hay Hospital uses both Ground Source Heat Pumps (GSHP) served by wells in the ground and Combined Heat and Power to generate heat and power. The GSHP system takes some of the surplus heat generated from the CHP unit which is then discharged into the round using the wells to provide greater system efficiencies as well as a heat store. This greatly increases the energy efficiency and financial savings from the whole system.

Dumfries and Galloway Royal Infirmary, Dumfries – the new hospital is being heated, cooled and predominantly powered by a combination of ground source heat pump and Combined Heat and Power technologies.