Bristol Energy Smart System Transformation (BESST)

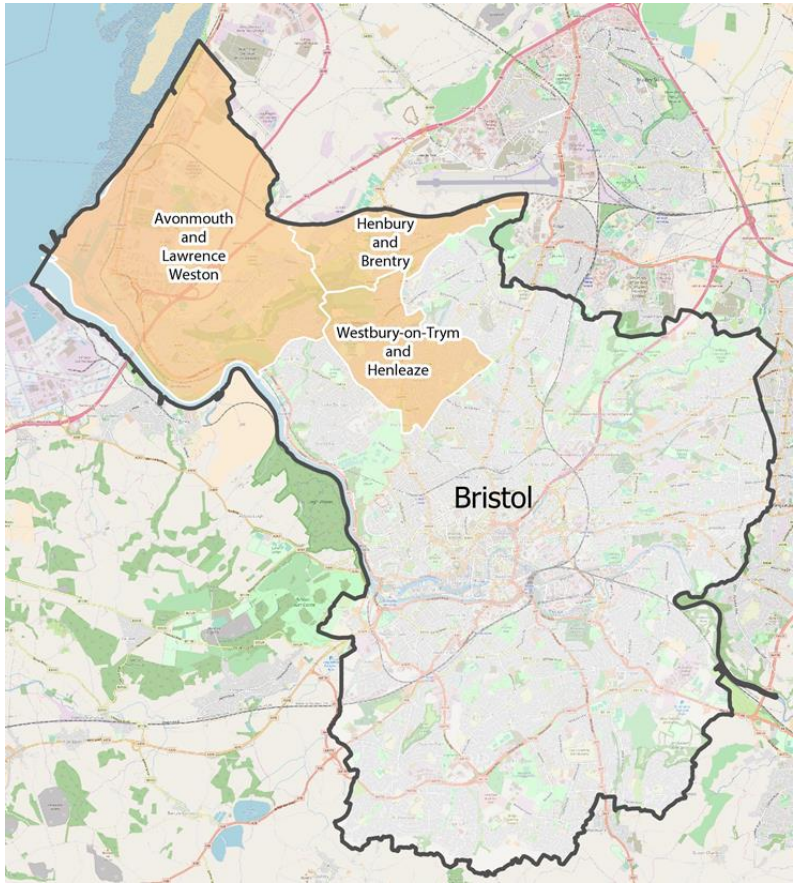
Project Overview

Industrial Strategy Challenge Fund: Prospering from the Energy Revolution

Bristol Energy Smart System Transformation (BESST)

The project's goal is to create clusters of smart energy businesses and homes, digitally integrated within a local energy system platform, that will enable the delivery of innovative energy and transport service propositions.

The project is intended to demonstrate how public private investment in replicable local solutions, using digital technology, could transform the UK's energy system to deliver reductions in carbon, pollution and fuel poverty in a healthier more sustainable society.



Innovate UK funded Design Bid

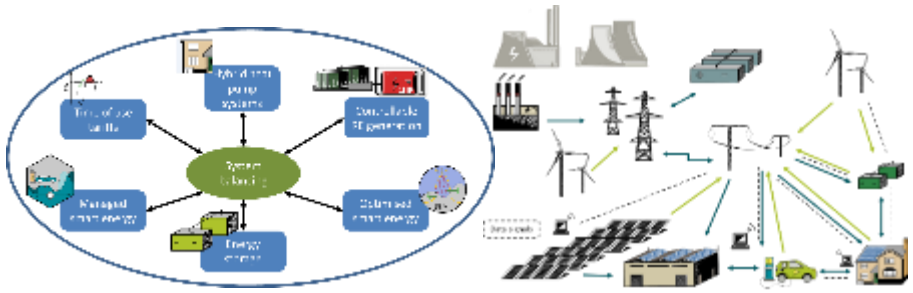
6 month project – initial design

- We have brought together multi-disciplinary consortium to work together to integrate existing technology and commercial offerings to reach a tipping point and unleash mainstream adoption of local energy system offerings.
- The design phase focus is on engaging with both customers and the new smart energy supply chain actors, to validate the value propositions and confirm the technical, commercial and regulatory architecture.
- Innovate have announced an additional £2mn in funding available in summer 2019 for successful initial design projects to go into detailed design stage.

Customer models to explore

Disruption in the energy markets have created new opportunities

Requirement for renewables and storage



Opening up new commercial models

Local supply balancing

Demand side response

Peer-to-peer, energy clubs and local generation tariffs

- As generation moves from ‘centralised’ to ‘decentralised and digitised’ flexibility, the ability to store or control power, will be increasingly valuable.
- Bristol Energy and its partners are developing and testing the innovative propositions to capitalise from this shift, including dynamic and local generation tariffs, generator linked PPAs, energy and transport service models, energy efficiency and optimisation, flexibility services, energy as a service and local energy markets.

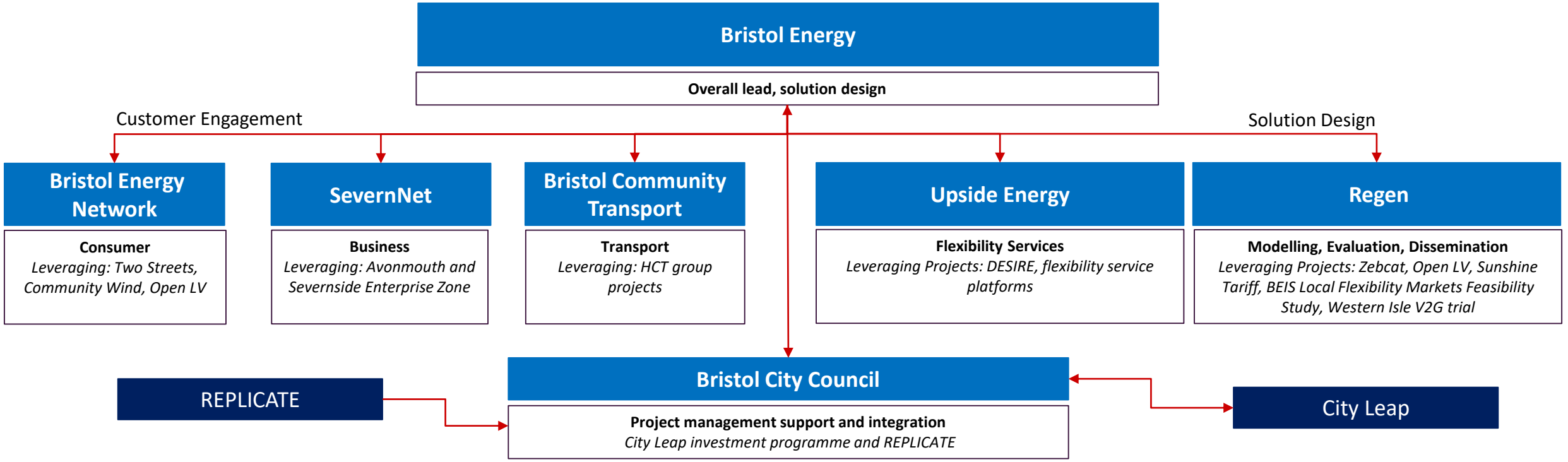
Key research & design challenges to be addressed

- How to accelerate the adoption of new technology using customer centric delivery models for power, heat and transport services
- How to ensure solutions deliver value to energy customers and offer sufficient consumer protection
- Definition of new energy and transport services that offer a sustainable value share between consumers, energy providers and asset owners/generators
- Identifying and overcoming regulatory and other market barriers
- Understanding how linking energy demand to local generation, and incorporating new demand for electricity for heat and transport, within a flexibility platform, could enable flexibility trading to provide energy system services
- Specification of the functional and technical architecture and smart energy system components including the digital platforms needed to integrate smart technology

Project Objectives

Objective	Method
Increase the deployment of local renewable generation technologies	• Ensuring that additional value is obtained by low carbon generators through local generation tariffs and innovative PPAs • Improving the utilisation of on-site generation • Improving local supply/demand balancing to reduce grid traffic
Improve the balancing of local demand and generation to free-up network capacity and reduce grid connection costs for generators	• Providing aggregated network and grid flexibility services • Supporting the deployment of energy storage and dynamic time of use tariffs to reduce peak demand
Address fuel poverty and energy justice issues by providing a means for less affluent householders and small businesses to access low carbon and smart energy technologies and energy service products	• Working with and through community groups to target vulnerable customers • Providing affordable integrated heat, electricity and transport solutions • Encouraging energy efficiency and smart energy use
Help meet Bristol and the UK's carbon and pollution emissions targets	• Reducing overall energy demand through efficiency and energy optimisation measures • Supporting the deployment of energy generation and energy storage solutions to reduce the use of fossil fuels • Enabling use of low emission transportation for local residents and businesses • Increasing the electrification of heat by supporting the roll-out of heat pump technology

BESST Partners and Project Structure



Collaborators and contributors

- Energy System Catapult
- Technology Integrators
- Community energy and business consumers
- Investors, supply chain and technology providers coming through City Leap

The Bristol Energy Proposition

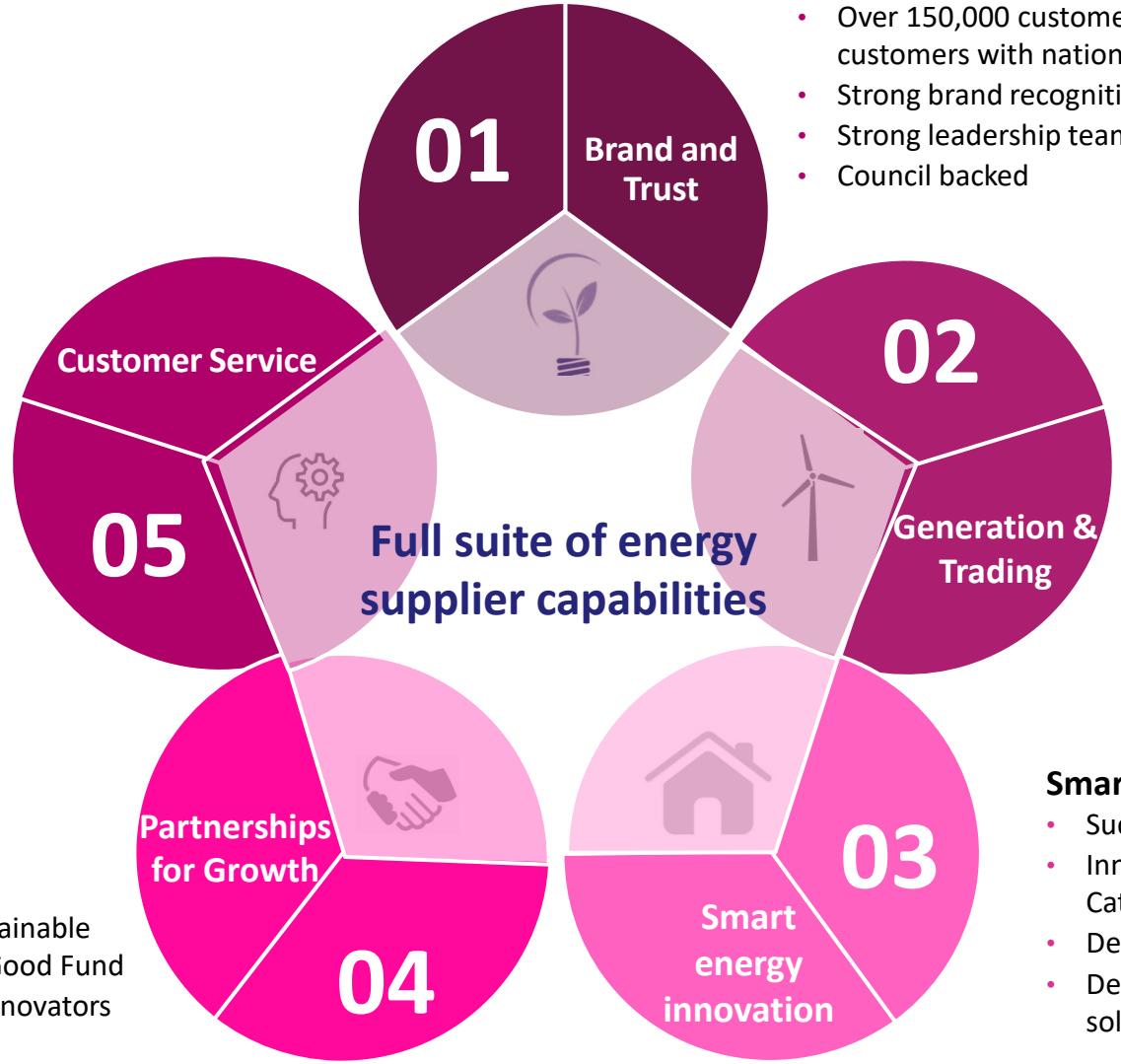
INDUSTRIAL STRATEGY

Full service energy supplier

- Over 150,000 customer meter points and over 2500 business customers with national coverage
- Strong brand recognition as a force for social good
- Strong leadership team with a wealth of industry experience
- Council backed

Excellent Customer Service

- 4* on Uswitch and TrustPilot
- Top 10 from Citizen's Advice
- Multi-channel (face to face, telephony and digital channels with a cutting edge app/platform launching imminently



Generation and Trading

- PPA agreements with over 40 generators – many of them community owned
- Fuel mix over 50% green and innovative green gas product
- Pricing, Forecasting, Origination & Trading Expertise
- Strong risk management in place

Partnerships for Growth

- Proven partnerships
- Launching Big Issue Tariff
- Strong ties with Centre for Sustainable Energy and delivering on Fuel Good Fund
- Working with market leading innovators such as Upside Energy and Eliq

Smart energy innovation

- Successful Innovate PFER Design Project
- Innovative Heat Plan trial with Energy Service Catapult
- Development of energy care tariff
- Developing pilot for large scale deployment of solar PV/battery in domestic properties

BRISTOL energy