THE SITE
Trent Basin Blueprint Development Site
PHASE 1
PHASES 2 & 3
INFORMED BY...
Creative Energy Homes: showcase of innovative energy efficient solutions for sustainable homes & communities
**iSEC: intelligent Smart Energy Community**

**ELECTRICITY:** Micro-Smart Grid  
With DSM technology

**HEAT:** Low Temperature Heat Network

**monitoring & control**

- micro-generation
- energy storage  
  Batteries, thermal, hydrogen

**Green Close**

- weather
- energy use
- power utilisation
- occupancy
1. Currently NO business model in the UK for community energy that does not require additional subsidy

2. SCENe will develop a ‘subsidy free’ commercial model for new build residential developments

3. The demonstration integrates a new supply chain in a real commercial development, with consumer choice, at scale

4. Results will be disseminated as Business Model Templates that can be used by any developer or ESCO in the UK
SCENe will demonstrate scalable ESCO services

Potential to integrate other value streams such as assisted living, health care and security
ERA Funded Energy Hubs – Generation, Storage & Use (people)
Community Battery
Located on Trent Lane Adjacent to Local Sub Station
Includes: Distribution boards, ring main and Substation + Energy Centre – SCADA server,
Community PV

Urban Solar Farm

Apartment Wall PV

Power Network Nodes

Rent a Roof
European Union
European Structural and Investment Funds

HEAT NETWORK

Diagram showing a heat network with solar collectors, bi-directional heat exchanger, auxiliary heating unit, heating network, and distributed heat storage.
Community Energy Battery – 2.1MWh (largest in Europe)
Installation - January 2018
Energising - March 2018
Grid connection – April 2018
Tesla 2.1MWh Battery - 500kW inverter

Low Voltage Distribution Panels

Enclosure - Security and Acoustic Fencing

Energy Centre Sub Station
Consumer Engagement

Smart Speaker

Smart Phones

Tablets
3D Community Interaction Model
GO ULTRA LOW NOTTINGHAM
Innovative steps to get 8,000 additional electric and hybrid vehicles on to Nottingham roads
Our ecosystem of partners is looking to develop a new set of offerings using innovative V2G solutions such as dedicated and intelligent parking, loyalty programmes through new data patterns and inside airport individually targeted information. The project will demonstrate the value of this offering via six case studies with a view of scaling deployment across the country and Internationally.
Not for profit

Proud to be different from other energy companies.

As a not for profit company, we like to do energy differently.

Launched by Nottingham City Council, our mission is to provide low cost energy to all households. No private shareholders. No director bonuses. Just low and competitive energy tariffs. Because we know that no-one wants to overpay for their gas and electricity we work hard to keep our prices low and competitive to help our customers save money on their energy bills.

As the UK’s first local authority owned energy supply company, we set ourselves apart from the ‘Big Six’ and many other private sector energy companies.

We make it easy to switch to Robin Hood Energy, we keep customers on a low price when they renew with us and don’t apply exit fees if they decide to leave their account early. Our entire switching process is designed to help residential and commercial customers nationwide save on their energy bills.
Community Energy Data

Design and installation of the cloud based data acquisition platform for real time monitoring platform for performance evaluation and informed control of home thermal/electricity energy generation, distribution, utilisation and storage across the CES at home (x120) and community scales (community batteries and thermal stores)
DATA SETS

• Design of the cloud based data acquisition platform for real time monitoring and control of home

• Data set will also include indoor environmental data (temperature, humidity and CO2) in addition to local weather data. Installation and commissioning of the monitoring system will be carried out such that each home has a local hub with data storage communicating to a network of EnOcean energy harvesting wireless sensors

• Local hubs will communicate with a dedicated community energy server located in the energy centre via fibre optic cables and then to cloud storage for the CES via broadband

• Data sets will be cleaned and presented through the web based data visualisation platform for the individual home hubs and for the community energy hub

• Real time and historical trend values for savings of energy, carbon and cost will be evaluated to optimise home and community energy utilisation
Monitoring - Community

GRID

Battery

Site Weather Station

Temperature
Humidity
Wind speed/direction
Rainfall

Solar irradiance

kWh

°C

Thermal Store
Monitoring - Home

Temperatures

Relative Humidity

Carbon Dioxide

Occupancy

Electrical Energy
- Total Electricity
- Circuits
- Significant Appliances

Thermal Energy
- Hot Water
- Space Heating

CLOUD SERVER

Energy Centre
CONSTRUCTION & ENERGY REVOLUTION

We need to innovate & do things differently!

Wells & Edison had the foresight over 100 years ago....

“I find it incredible that there will not be a sweeping revolution in the methods of building during the next century. A few energetic men might at any time set out to alter this.”

- H G Wells, Anticipations, 1902

“You see, we should make use of the forces of nature and should obtain all our power in this way. Sunshine is a form of energy, wind and sea currents are manifestations of this energy. Do we make use of them? Oh no! We burn forests and coal, like tenants burning down our front door for heating. We live like wild settlers and not as though these resources belong to us.”

- Thomas A.Edison, 1916