THE site at Tyseley will draw together a range of different energy technologies and vectors. The site will be the energy and waste nexus for the City of Birmingham, showing how novel energy technologies can form an innovative industrial ecology.

CRYOGENIC LIQUID AIR NETWORK

- The University of Birmingham has extensive expertise with clean cold technologies.
- Cryogenic energy storage systems are renewable and can save peak electricity by liquefying air, which involves compression and expansion processes. The cryogenic fluid has a very low temperature (-190°C) and is stored in a vessel. It is then pumped to a high pressure of 150 bar, where it is expanded and re-liquefied into a gas that is reheated, using either or both liquid and waste heat. This process can be used through a repeated process in a cycle to generate electricity.

HYDROGEN NETWORK

- Thermo Catalytic Reforming plant: produces hydrogen from a range of feedstocks and is an essential part of the hydrogen economy.
- Hydrogen is transported and then piped into a gas that is re-liquefied.
- Hydrogen supply chain: hydrogen and other gases are used in advanced industrial processes.
- Hydrogen may also be employed in advanced critical materials recycling processes.

NATURAL GAS NETWORK

- Bio-methane gas grid injection
- Filling stations: Liquid Natural Gas
- Natural Gas from the Grid is compressed for use in CNG powered vehicles

DISTRICT HEATING NETWORK

- Waste is turned into heat and power
- Heat provided to businesses and industry
- Connection with a Tyseley energy storage

SMART MICROGRID

- Import/Export Electricity
- Onsite Wind Power Generation
- Solar Power Microgrid
- Bio Power Plant

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PROJECT PARTNERS:

- The project is being developed by Webster & Horsfall and is supported by the Birmingham Energy Institute at the University of Birmingham.
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The City of Birmingham has ambitious plans to deliver carbon reductions, create a low carbon infrastructure and to mainstream heat or fuel use with waste.

**TYSELEY ENERGY PARK**

Tyseley Energy Park is the energy-waste nexus for the City of Birmingham. The new developments on Tyseley Energy Park will complement the existing businesses and supporting the regeneration of the area.

Tyseley Energy Park provides a logical place to deploy refuelling and charging station for a range of low carbon fuels. The hub available for refueling of electric and hydrogen vehicles, as well as refueling stations for compression liquefied natural gas. This enables the development of Tyseley Energy Park as an Energy Innovation Zone.

The hydrogen filling station supplies the refueling station on phase two which is strategically located between the city centre and Birmingham airport. Tyseley Energy Park provides a logical plan to develop refueling infrastructure for a range of low carbon fuels. This hub available for refueling of electric and hydrogen vehicles, as well as refueling stations for compression liquefied natural gas. This enables the development of Tyseley Energy Park as an Energy Innovation Zone.

**ENERGY INNOVATION ZONE**

**THE TYSELEY ENVIRONMENTAL ENTERPRISE DISTRICT WILL BE A CLEAN TECHNOLOGY HUB FOR THE CITY OF BIRMINGHAM WITH A LONG HISTORY OF INDUSTRY IN THIS AREA, THE REMAINING BUSINESSES SEEK NEW AND INNOVATIVE ENERGY SUPPLIES IN ORDER TO HELP THE REMAINING BUSINESSES STAY COMPETITIVE. IT IS AGAINST THAT BACKDROP OF TRANSFORMING INDUSTRIAL COMPETITIVENESS THAT THE VISION HAS BEEN CONCEIVED.**

Tyseley Energy Park is an extension of the Tyseley Environmental Enterprise District. Established in 2016, the Tyseley Environmental Enterprise District is one of the City of Birmingham’s oldest manufacturing companies. The Tyseley Environmental Enterprise District is the only industrial facility in the city for 180 years, and it was home to the first industrial site in the UK.

The investments of John Hambly in 1800 led to the development of dynamic steam springs, which made the internal combustion engine possible, and led the foundation of the company in 1800. The Tyseley Environmental Enterprise District is still a key strategic business for the company, which supplies energy to the world’s oil, gas and coal industries.

The development of Tyseley Energy Park, aided by employing an alternative low carbon energy fuels, helped to develop the company.

The new developments on Tyseley Energy Park will complement the existing businesses and supporting the regeneration of the area.

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