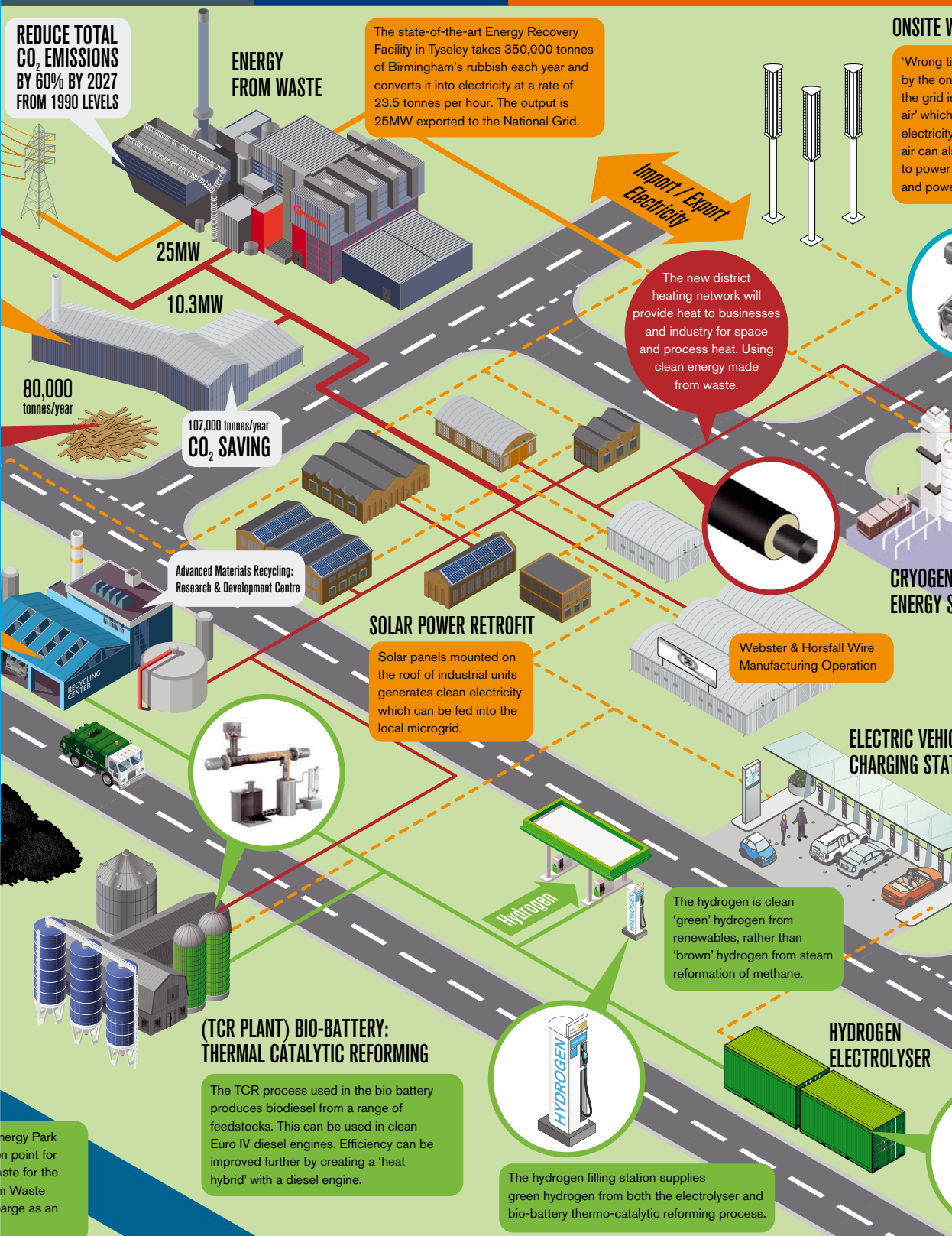


# AN ENERGY INNOVATION PARK FOR BIRMINGHAM

# TYSELEY ENERGY



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# TYSELEY ENERGY PARK

INVESTMENT TO DATE

**£47 million**

INTO A 10MW WASTE WOOD BIOMASS PLANT

Tyseley Energy Park (TEP) in Birmingham is the energy-waste hub for the City of Birmingham. It is located on the site of Webster and Horsfall Limited, one of Birmingham's oldest manufacturing companies, best known as the manufacturer of the first transatlantic telegraph cable in 1866.

## HOW IT WORKS

**As part of a drive towards green industry in the city, the next generation of waste reprocessing technologies will use clean energy to power advanced processes to support Birmingham City Council's ambitions to become the best city nationally at recovering green energy from waste.**

TEP has already seen £47 million investment into a 10MW waste wood biomass power plant, which supplies the development site with renewable electricity. This provides the foundations for a decentralised controllable Distributed Energy System in this location.

The second development phase will see the creation of the UK's first low and zero carbon refuelling station. This will include a range of fuels that will reduce emissions including hydrogen, Compressed Natural Gas, Commercial Scale Electric Chargers and Biodiesel.

The third phase is to scale up the ERA funded TCR facility and introduce other technologies to deliver an energy from waste facility capable of delivering renewable heat, electricity and biomethane linked to city wide grid infrastructure.

In the final development stage, the University of Birmingham will create an innovation hub to help companies successfully engage with the revolution that is taking place in transport, energy and the circular economy.

A future phase of development will see the scale up of the ERA funded TCR facility and will introduce other technologies to deliver an energy from waste facility.

### Thermocatalytic Reforming (TCR) technology

ERA's role in Tyseley is through our partnership with the University of Birmingham. We are investing in the University's R&D activities to support the transformation of more complex waste streams into energy at Tyseley. One of the ways in which we are doing this is through investment in a Thermo-catalytic Reformer (TCR).

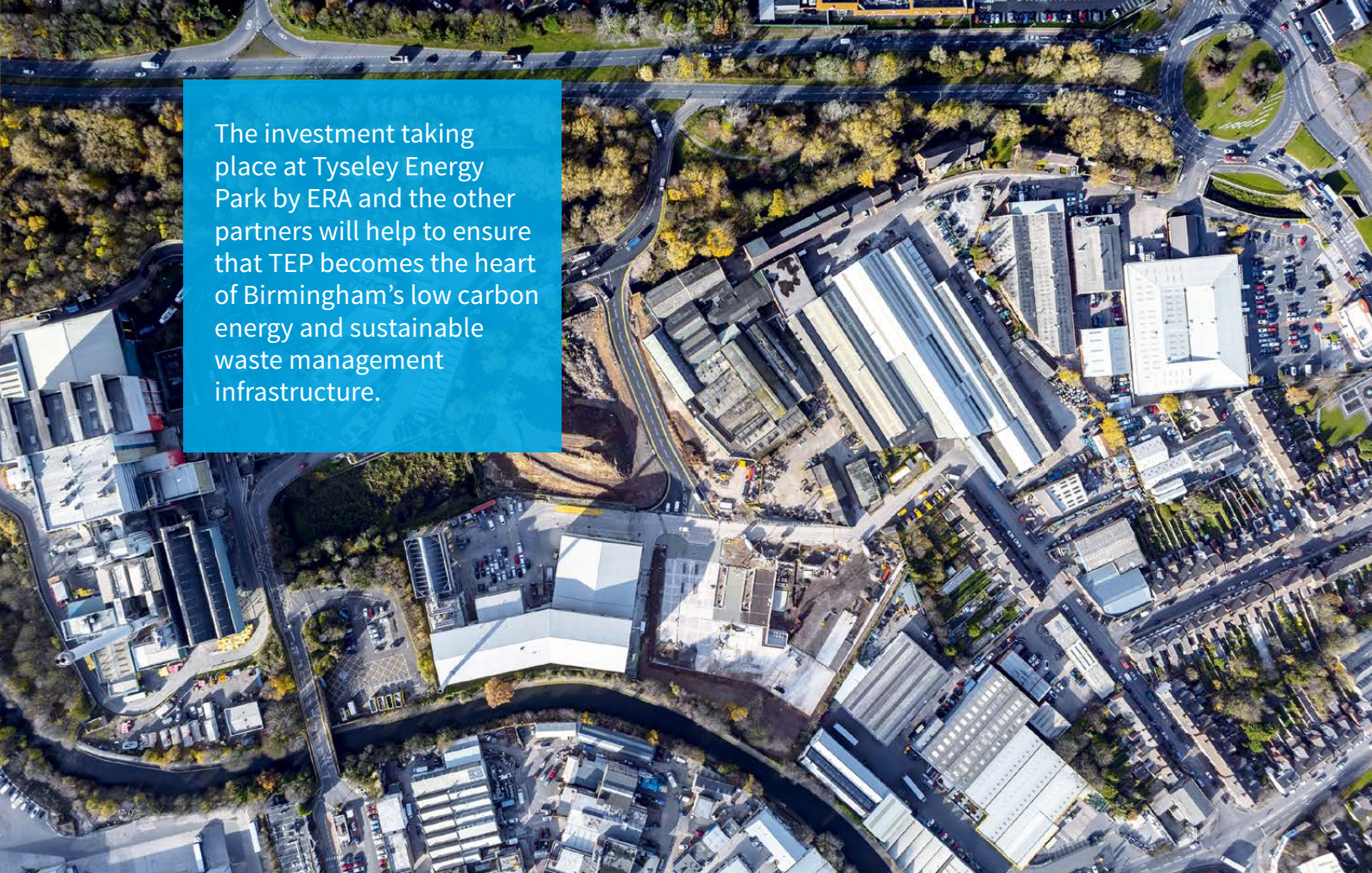
Developed by University of Birmingham's partner - the Fraunhofer Institute for Environmental, Safety, and Energy Technology (UMSICHT), the innovative thermo-catalytic reforming (TCR) technology for biomass residue and other carbon-rich waste streams.

The TCR uses an improved pyrolysis technology to transform various kinds of biomass into synthesis gas, charcoal and oil of diesel quality, effectively using over 70% of the energy in the biomass.

TCR is designed to process a wide range of waste or residual biomass including:

- Agricultural & forestry residue (for example, animal manure, straws and husks, and waste wood)
- Industrial biomass residues (for example, brewer's spent grain, oil mill residue, paper sludges, plastics and composite wastes)
- Municipal organic wastes (for example, sewage sludge from water treatment plants, organic wastes, plant pruning and composting materials, organic waste fractions from municipal solid waste)

The TCR process converts the biomass into high quality syngas, biooil, biochar and water.



The investment taking place at Tyseley Energy Park by ERA and the other partners will help to ensure that TEP becomes the heart of Birmingham's low carbon energy and sustainable waste management infrastructure.

## THE IMPACT

The investment taking place at Tyseley Energy Park by ERA and the other partners will help to ensure that TEP becomes the heart of Birmingham's low carbon energy and sustainable waste management infrastructure.

An energy-from-waste plant situated besides TEP already converts 350,000 tonnes of municipal waste into power, producing 25MW of electricity with the potential to generate significant heat for distribution in support of the Council's ambitions for district heating across the city.

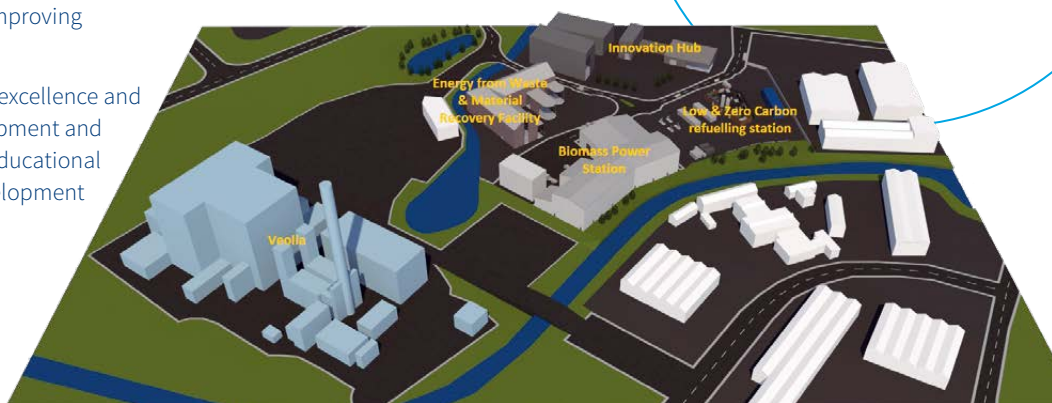
Other sources of power will be generated from renewable sources including a biomass plant, solar panels, and silent wind turbines. The low and zero carbon refuelling station on Tyseley Energy Park will be unmanned with 24/7 refuelling available. Refuelling facilities at TEP will include hydrogen, compressed natural gas, biodiesel and electrical charging options.

The site owners, Webster and Horsfall, and their tenants, are already able to use the green energy generated from the site to power their manufacturing and business operations, reducing costs and improving sustainability.

TEP will also become a centre of excellence and an exemplar for research, development and learning with new laboratories, educational facilities and a research and development centre planned for the future.



The low and zero carbon refuelling station on Tyseley Energy Park will be unmanned with 24/7 refuelling available



## ABOUT US

ERA is an Innovate UK funded programme within Midlands Innovation. ERA involves a consortium of eight midlands based research intensive universities, together with the British Geological Survey, who are harnessing the Midlands' combined research excellence and industry expertise to play a critical role in tackling some of the biggest energy challenges facing the UK. The recent addition of Keele and Cranfield universities to the Midlands Innovation partnership, further strengthens ERA's research capability.

## CONTACT US

ERA welcomes engagement with research, industry and policy-makers across the energy sector.

For more information visit:

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🐦 @EnergyRA

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£60m  
Innovate UK  
investment

Over  
40  
industrial  
partners

£120m  
industrial  
co-investment

More than  
1,000  
researchers

9  
partners

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