



European Union
European Regional
Development Fund



Department for
Business, Energy
& Industrial Strategy



The University
Of Sheffield.
**Energy
Institute.**

Translational
Energy
Research
Centre.

The Translational Energy Research Centre

Research Facilities and Expertise at the Translational Energy Research Centre (TERC)

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Research Themes at TERC

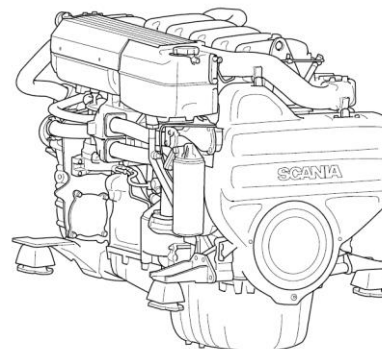
- hydrogen
- renewable energy
- decarbonisation of conventional energy
- carbon capture, utilisation and storage
- energy efficiency



- bioenergy
- energy storage
- sustainable and zero-carbon fuels, including aviation fuels
- smart grids

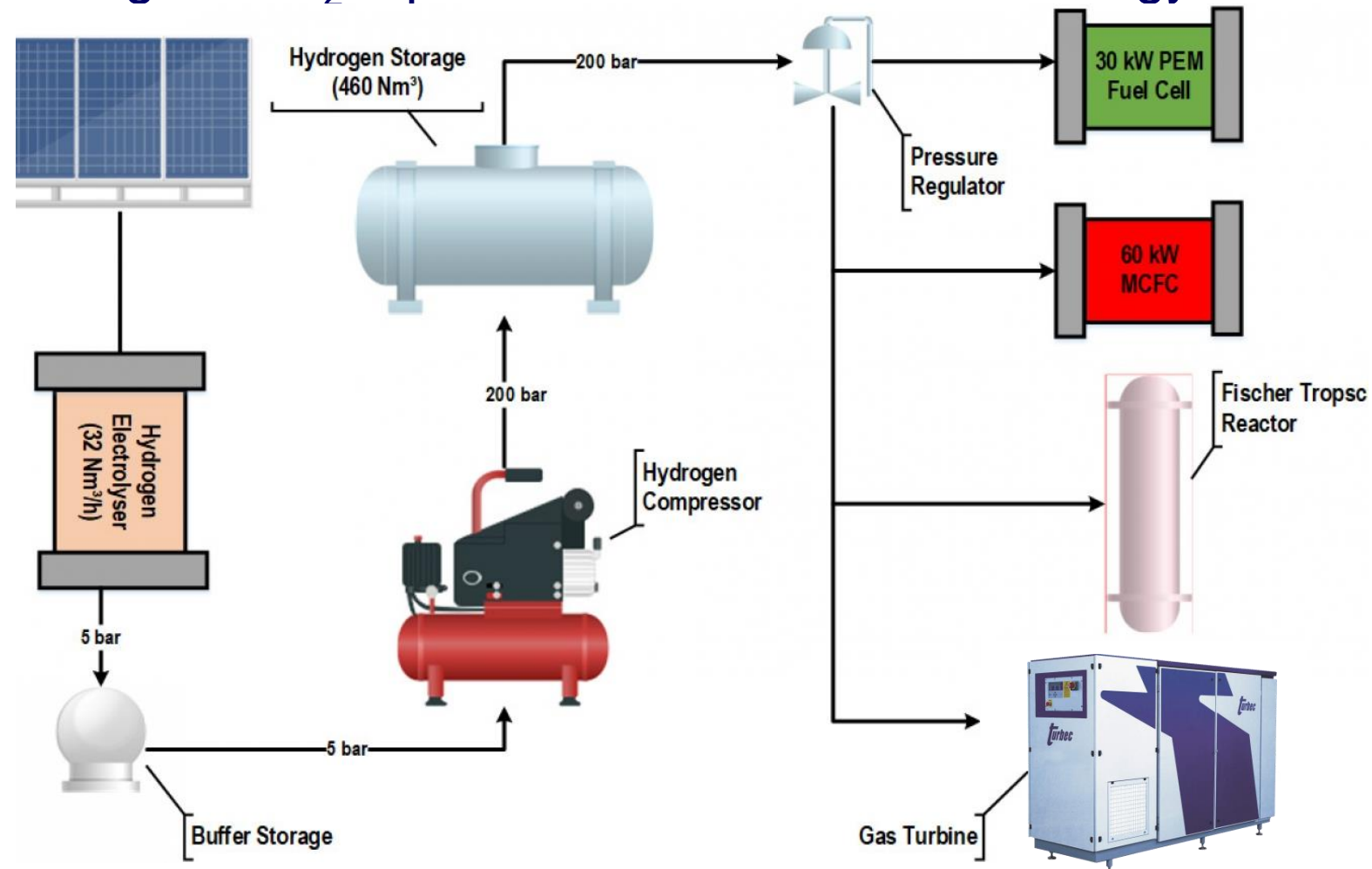
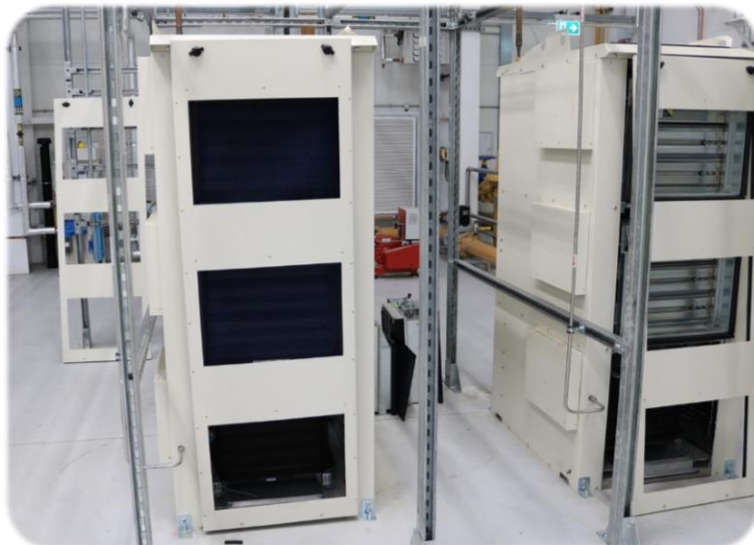
Bioenergy

- Biomass and biowaste fuels: high-grade virgin woods and lower quality wastes (Medium Combustion Plant Directive compliant)
- Solid, liquid and gaseous fuels
- Combustion and gasification



Hydrogen

- Hydrogen electrolyser to produce green H_2 – powered with renewable energy from the solar panels on the roof
- PEM fuel cell
- H_2 -fuelled micro-gas turbine





Carbon Capture

- Conventional, solvent-based absorption using packed columns (1 tonne/day pilot-scale rig)
- Next generation, process intensified rotating packed bed
- Molten carbonate fuel cell – to capture CO₂ and produce electrical energy simultaneously



Sustainable Fuels & Low-Carbon Technologies

- Power to Liquid (PtL) pilot plant with Fischer-Tropsch and RWGS
- Shock tube
- APU – auxiliary power unit
- Energy storage and smart energy management system
- Sustainable aviation fuels characterisation laboratory
- sCO₂ heat exchanger test bed

