

ETZ's Hydrogen Campus & Green Hydrogen Test & Demonstration Facilities

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An overview of North East Scotland's strengths



Oil & gas infrastructure and expertise



Net Zero Technology Centre



Integrated energy supply chain



Energy Transition Zone



Underwater engineering and technology



Industry-focused universities & FE college



Ongoing Energy Transition projects



Port infrastructure and capability

A region with the right credentials and a strong track record of delivery to embrace a low carbon energy future

REGIONAL IN FOCUS, GLOBAL IN OUTLOOK

ETZ Ltd will reposition the North East of Scotland as a **globally recognised integrated energy cluster focussed on the delivery of net zero**, and develop a long-term international industry base that delivers sustainable jobs and growth for Scotland and UK.

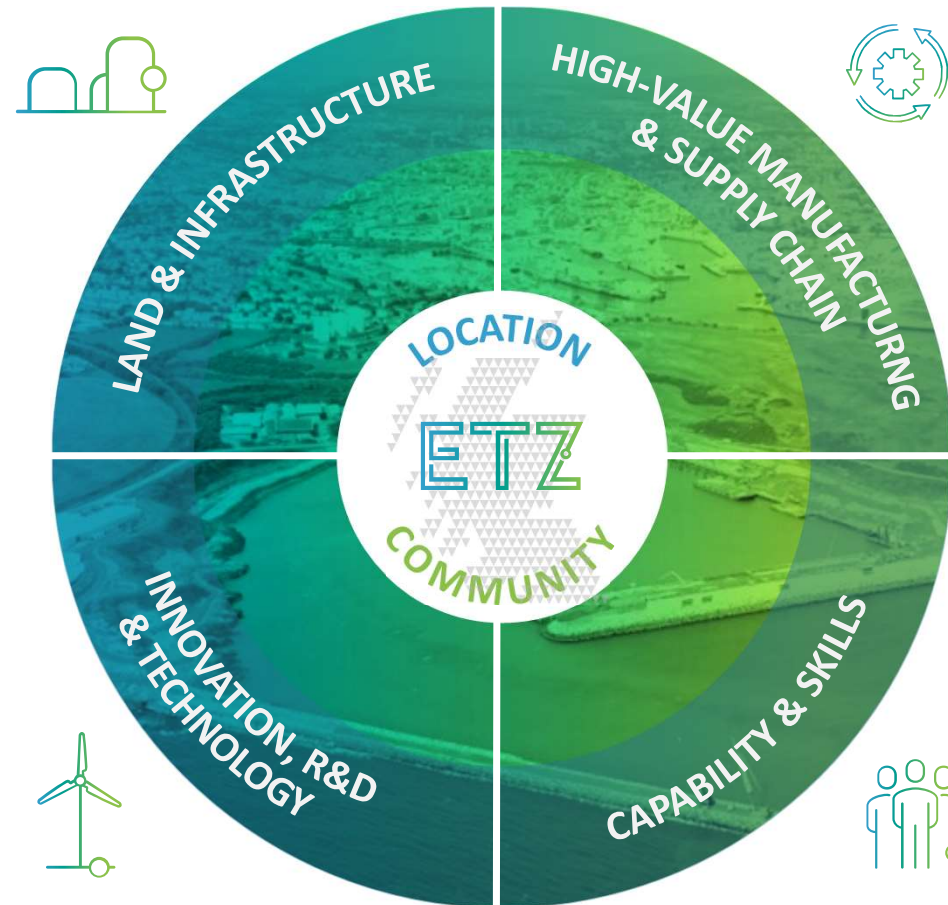


ETZ Focus areas

Regional catalyst and Energy Transition Zone



- Leverage the £400M Aberdeen South Harbour (ASH) Investment
- Deliver campus model within the Energy Transition Zone
- Pathway to Net Zero operation by 2030 and embed Net Zero
- Enable offshore wind and hydrogen high value manufacturing
- Deliver green space enhancements and community facilities
- Home of National Floating Wind Innovation Centre (FLOWIC)
- Site of proposed Green Hydrogen Test and Demonstration Facilities (GHTDF)
- Energy Incubator & Scale-up Hub to support green start-ups and scale-ups (EISH)



- Attract inward investment for high value manufacturing
- Supporting infrastructure for emerging hydrogen production, storage and distribution business
- Just Transition supply chain pathway & Energy Transition challenge fund
- Internationalisation of offshore engineering, manufactured products
- Work with the local community to deliver inclusive job opportunities
- Deliver the National Energy Skills Accelerator (NESA) and Just Transition pilot programme
- Scotland's first Advanced Manufacturing Skills Hub (AMSH) – Just Transition Funding

Energy Transition Projects Key

- ScotWind leasing areas
- ⚙️ Existing windfarm
- Z ETZ
- CO₂ Storage Sites
- Existing Pipeline
- ⋯ Future Pipeline

North East Scotland current & future energy transition projects

Aberdeen City current & future hydrogen projects

This detailed map of Aberdeen City highlights several key hydrogen projects and infrastructure:

- TECA Electrolyser:** Producing 350kg H₂ / day.
- Kittybrewster HRS:** Producing 360kg H₂ / day.
- ACHES HRS:** Producing 130kg H₂ / day.
- BP/ACC - Aberdeen Hydrogen Hub (2024):** A central hub for hydrogen production and distribution.
- ERM Dolphyn Project (2025):** A future hydrogen project.
- Vattenfall HT1 Project (2025):** A future hydrogen project.
- Energy Transition Zone Hydrogen Campus:** A designated area for hydrogen-related activities, marked with a green 'Z' icon.

This regional map illustrates the broader energy transition landscape in North East Scotland, including:

- Windfarms:** Stroma, Buchan, Marramwind, Broadshore, Moray West, Moray East, Beatrice, Caledonia, Hywind Scotland, EOWDC, Cluaran Deas Ear, Seagreen Phase 1, Berwick Bank, and Inch Cape.
- CO₂ Storage Sites:** Acorn CO₂ Storage Site and East Mey Storage Site.
- Pipelines:** Atlantic Pipeline, Goldeneye Pipeline, and Miller Gas Pipeline.
- Hydrogen Infrastructure:** Acorn Hydrogen Project, Aberdeen Vision Hydrogen Pipeline, and the Aberdeen Energy Transition Zone (ETZ).
- Other Key Locations:** Buckie, Fraserburgh, St Fergus, Peterhead, Aberdeen, Morven, Bellrock, Cumhachd Ri Teachd, and CampionWind.
- Scale:** The map includes distance markers at 20km, 60km, 100km, and 140km.

ENERGY TRANSITION ZONE



Aberdeen South Harbour

Marine Gateway

A specialised cluster of activity centred around the £400 million **Aberdeen South Harbour**, primarily targeting high-value manufacturing opportunities.



Energy Transition Campuses

- A **Hydrogen Campus**, to provide infrastructure that supports **Green Hydrogen Test & Demonstration Facilities**, production projects and high value manufacturing opportunities.
- An **Offshore Wind Campus**, centred around the **National Floating Wind Innovation Centre** and brownfield land to the east of Altens.
- A **Skills Campus**, centred around NESCoI, including the **Energy Transition Skills Academy**, a Net-Zero Exemplar development that provides Energy Transition pathways for future apprentices.
- An **Innovation Campus**, centred around the new-build **Energy Incubator & Scale-up Hub** that supports green start-ups.



- Being developed as an **industry collaboration**. Operational **4Q 2025**.



- In partnership with **ORE-Catapult**. Operational **June 2023**.

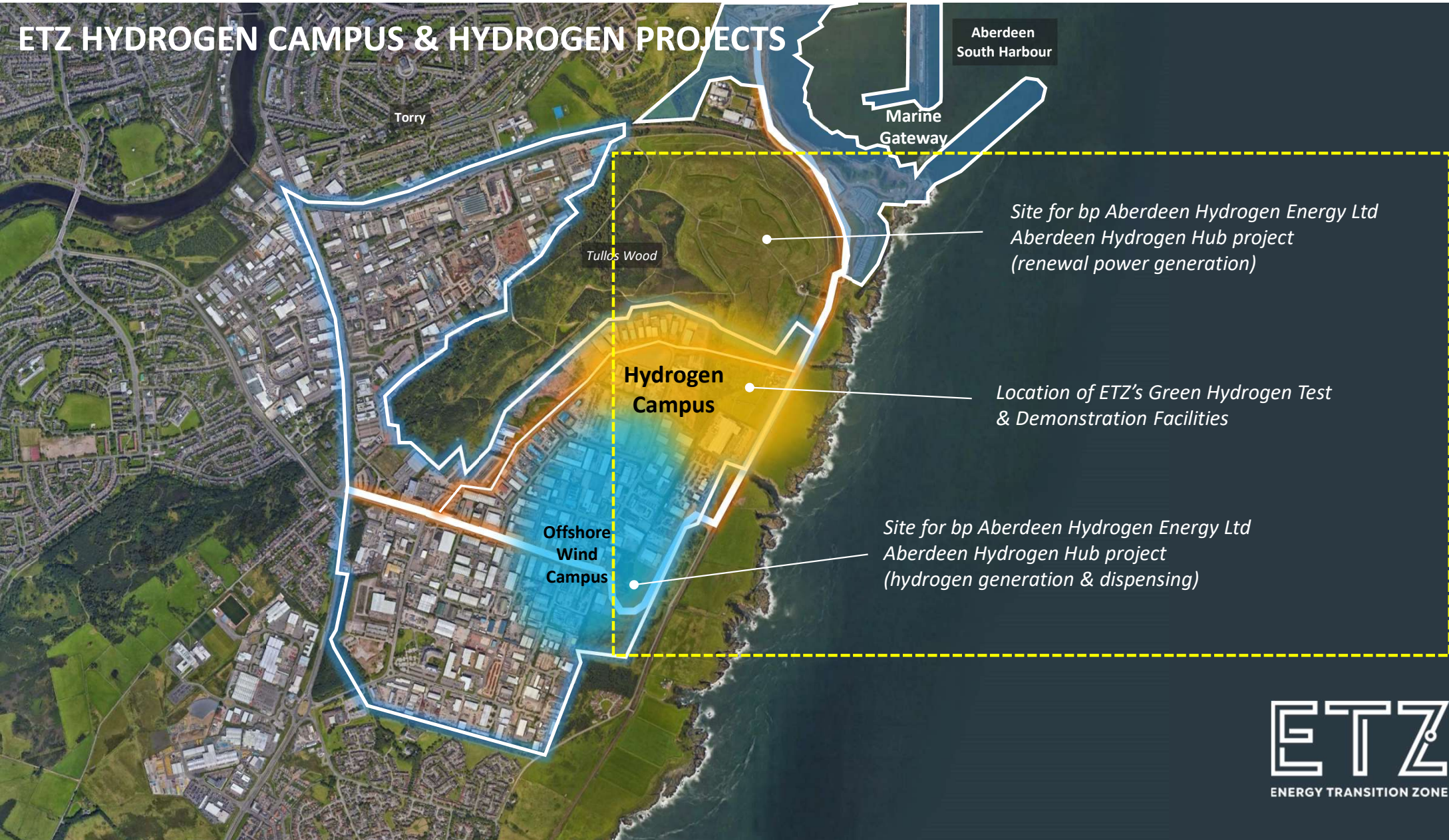


- In partnership with **NESCoI**. Operational **3Q 2024**.



- In partnership with **bp** & **Scottish Enterprise**. Operational **4Q 2024**.

ETZ HYDROGEN CAMPUS & HYDROGEN PROJECTS



Aberdeen South Harbour

Marine Gateway

Torry

Tullos Wood

Hydrogen Campus

Offshore Wind Campus

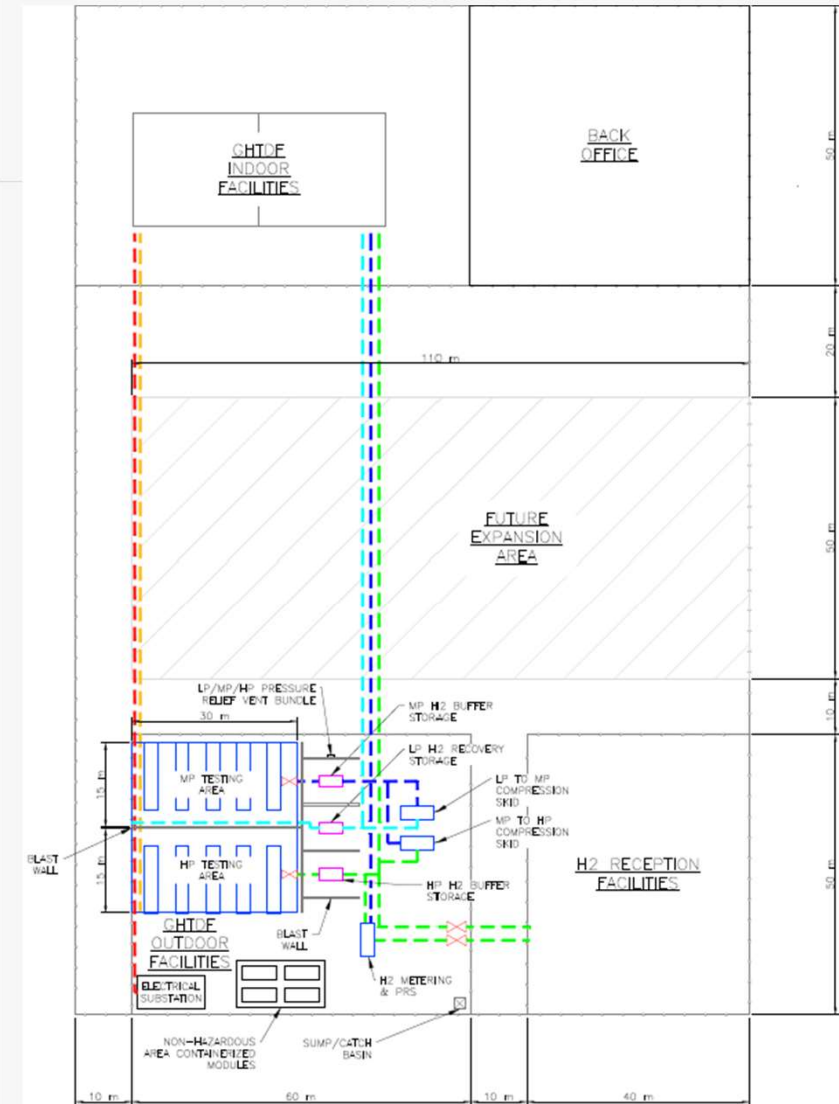
Site for bp Aberdeen Hydrogen Energy Ltd Aberdeen Hydrogen Hub project (renewal power generation)

Location of ETZ's Green Hydrogen Test & Demonstration Facilities

Site for bp Aberdeen Hydrogen Energy Ltd Aberdeen Hydrogen Hub project (hydrogen generation & dispensing)

Concept Design

- Enabled by “coupling” facilities with local green hydrogen production project/s (operational end 2025)
- **“On demand” hydrogen** for testing industrial equipment
- Flexibility of design is key
- Organic growth led by industry need
- “Back office” to provide hydrogen expertise support to new companies / projects e.g. safety, planning, legal



Phase 1: Testing Opportunities

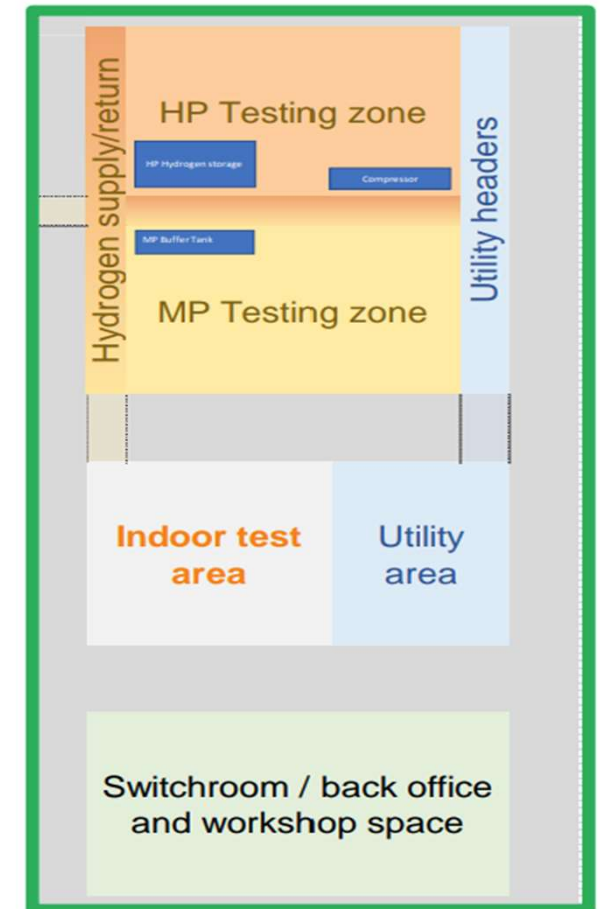


Testing Opportunities:

- Electrolyser performance testing
- Hydrogen quality testing e.g. fuel cell applications
- Valve testing
- Flow meter calibration and testing
- Testing of demonstrators –integration and coupling challenges

Concept Design:

- Outdoor Test Area
 - multiple test bays
 - allow for containerised solutions
- Indoor Test Area
 - for smaller equipment,
 - more controlled testing environment
 - flow loop/s
- Back Office
 - workshop and office space
 - technical and operational support





North East Scotland Hydrogen Ambition (NESH₂A) Steering Committee Overview

PROJECTS

- Aberdeen Hydrogen Hub



- Acorn CCS and Hydrogen



- Aberdeen Vision



- ERM Dolphyn



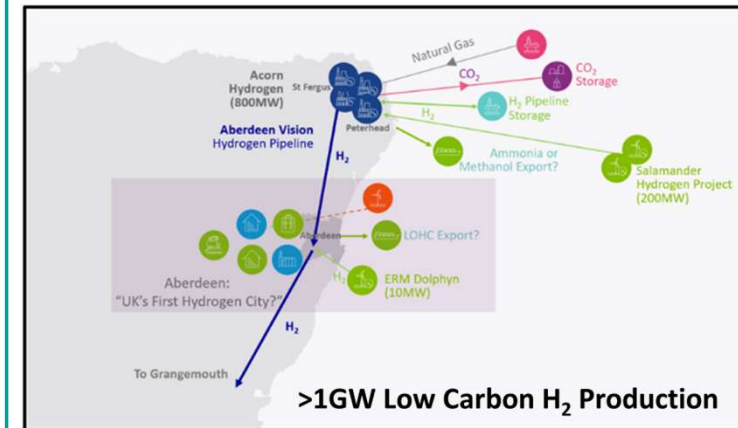
SUPPLY CHAIN, INNOVATION AND SKILLS DEVELOPMENT

- Hydrasun Hydrogen Skills Academy
- ETZ Green Hydrogen Test and Demonstration Facility
- ETZ Ltd Green and Blue Hydrogen Masterclasses



CURRENT FOCUS AREAS

- Establish a hydrogen economy in NE Scotland & grow low carbon hydrogen production to **>1GW** within a decade.
- Aggregating hydrogen demand.
- Improve awareness of the business opportunity.
- Develop a compelling investment proposition.





ETZ

NETZERO

ENERGY TRANSITION ZONE

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