



Facilitating a Hydrogen Ecosystem

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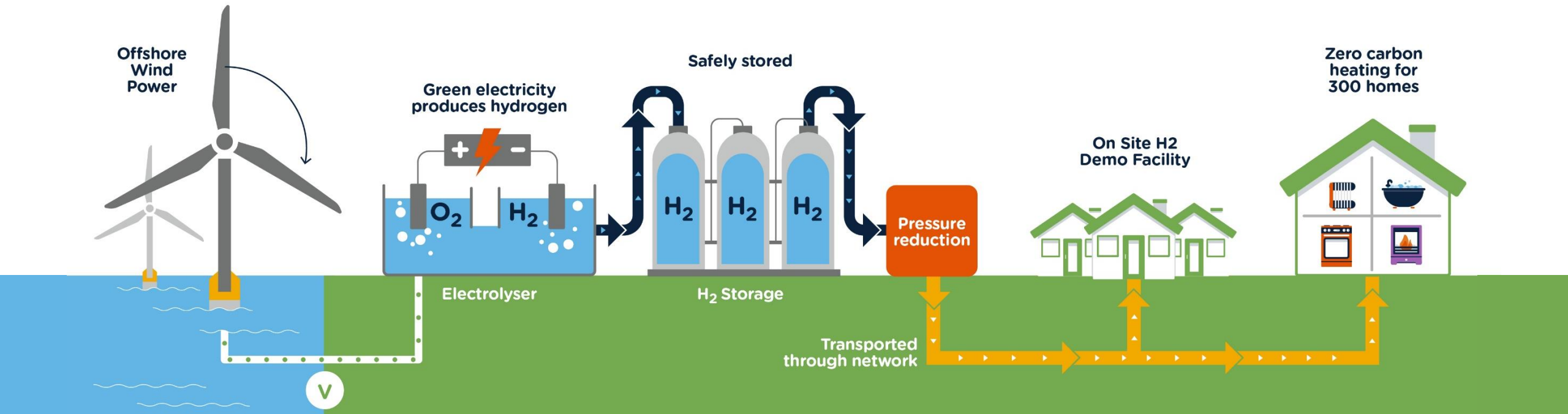
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SGN

Your gas. Our network.

H100 Fife – demonstrating green hydrogen to customers



H100 Fife will provide technical and consumer evidence to support government policy decisions on heat decarbonisation

2020

Funding from shareholders,
Ofgem and Scottish
Government secured

2021

Planning and
consent

2022/3

Procurement and
construction

2024/5

Delivering zero carbon
heat/green hydrogen
to customers

LTS Futures: repurposing the local transmission system to hydrogen

1. Determine the suitability of the materials in the network for hydrogen.

2. Validate the operational strategy for operating a hydrogen network, identifying any differences from operating a natural gas network.

3. Understanding the suitability of wayleaves and communication with landowners

4. Develop the skills and competencies, and procedures, for managing, operating and maintaining assets in a hydrogen network

5. Defining the role of LTS in a hydrogen system transformation.

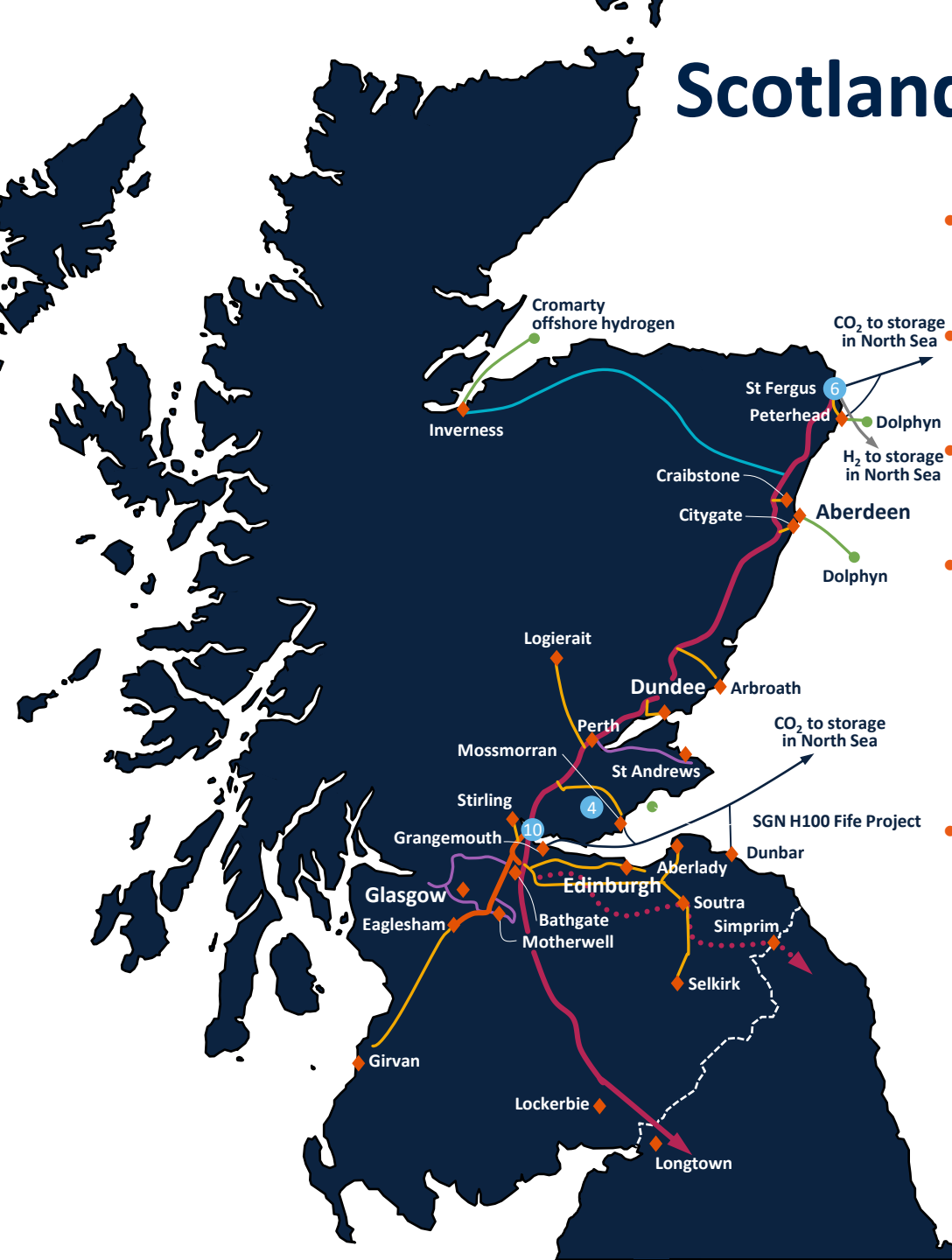


Scotland's Renewable Resources

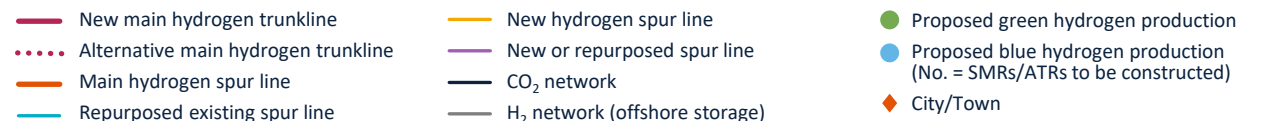
- 9GW operational onshore wind
- 20GW target by 2030 supported by existing pipeline of 12GW in development
- 10GW of offshore wind projects operational, under construction or in development
- 28GW in Scotwind leasing round and 5.5GW in Innovation and Targeted Oil & Gas (INTOG) leasing round
- 85% of UK hydro-electricity capacity
- Bioenergy, energy from waste and PV
- Tidal



Scotland System Transformation - Feasibility



- North-East Network and Industrial Cluster Project – carried out by Wood plc.
- Detailed optioneering feasibility assessment of optimal strategic rollout plan of hydrogen across the Scottish Gas Networks
- Proposed distributed hydrogen production across Scotland transported by a new hydrogen transmission backbone
- This project has laid the foundations for system transformation and hydrogen conversion planning, which will cumulative in a full FEED, potentially funded through the net zero reopener – progression to readiness to take this step will require significant technical and commercial development work.
- This development work includes further supply and demand assessments, regional studies, Hydrogen Town Bid preparation, Pipeline Pre-FEEDs, Below 7-Bar planning and other relevant study work.



Scotland's Hydrogen Pathway



Green hydrogen projects

1. H100 Fife
2. Large scale green hydrogen ScotWind and other offshore wind
3. South-west hydrogen
4. Green hydrogen production for SIUs (our remote networks)



Blue/green hydrogen production

5. St Fergus
6. Grangemouth
7. Mossmorran



Hydrogen studies

8. LTS Futures
9. H2 Edinburgh and south-east Scotland study
10. H2 Tayside study
11. Hydrogen storage
12. HyScale LOHC feed
13. Whole system infrastructure outlook

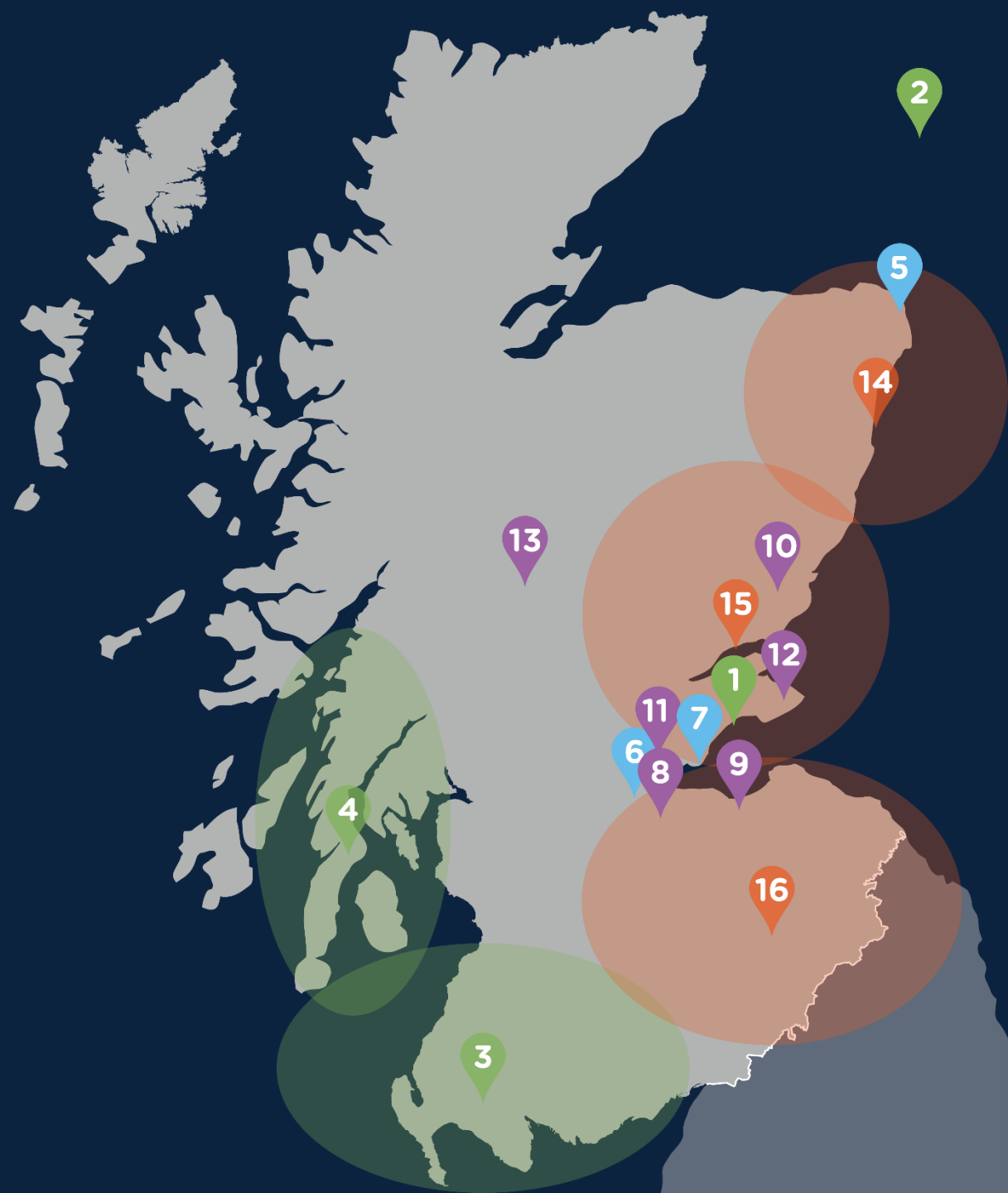


Pre-FEED projects

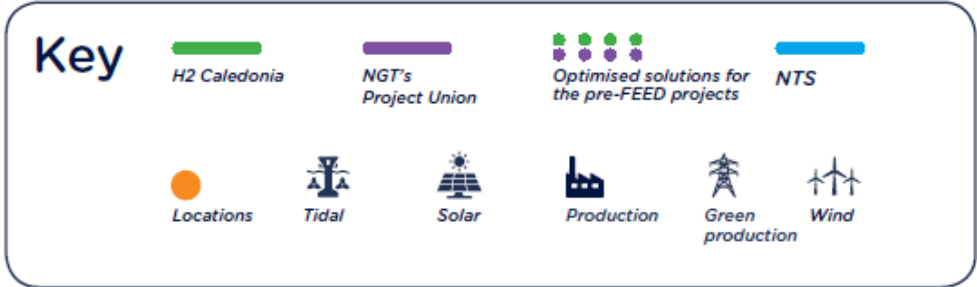
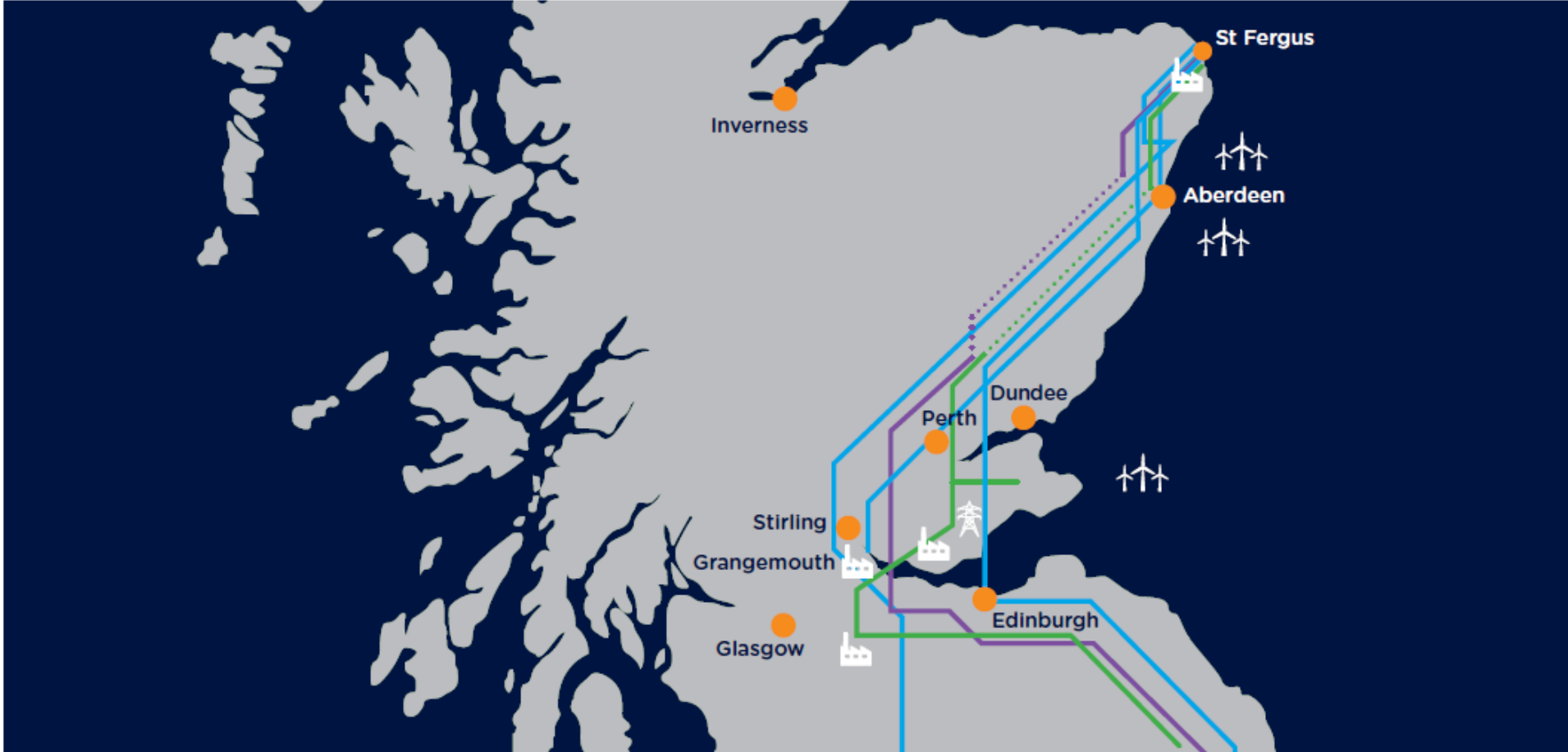
14. Aberdeen Vision
15. Fife and East Coast
16. Edinburgh/Central Belt

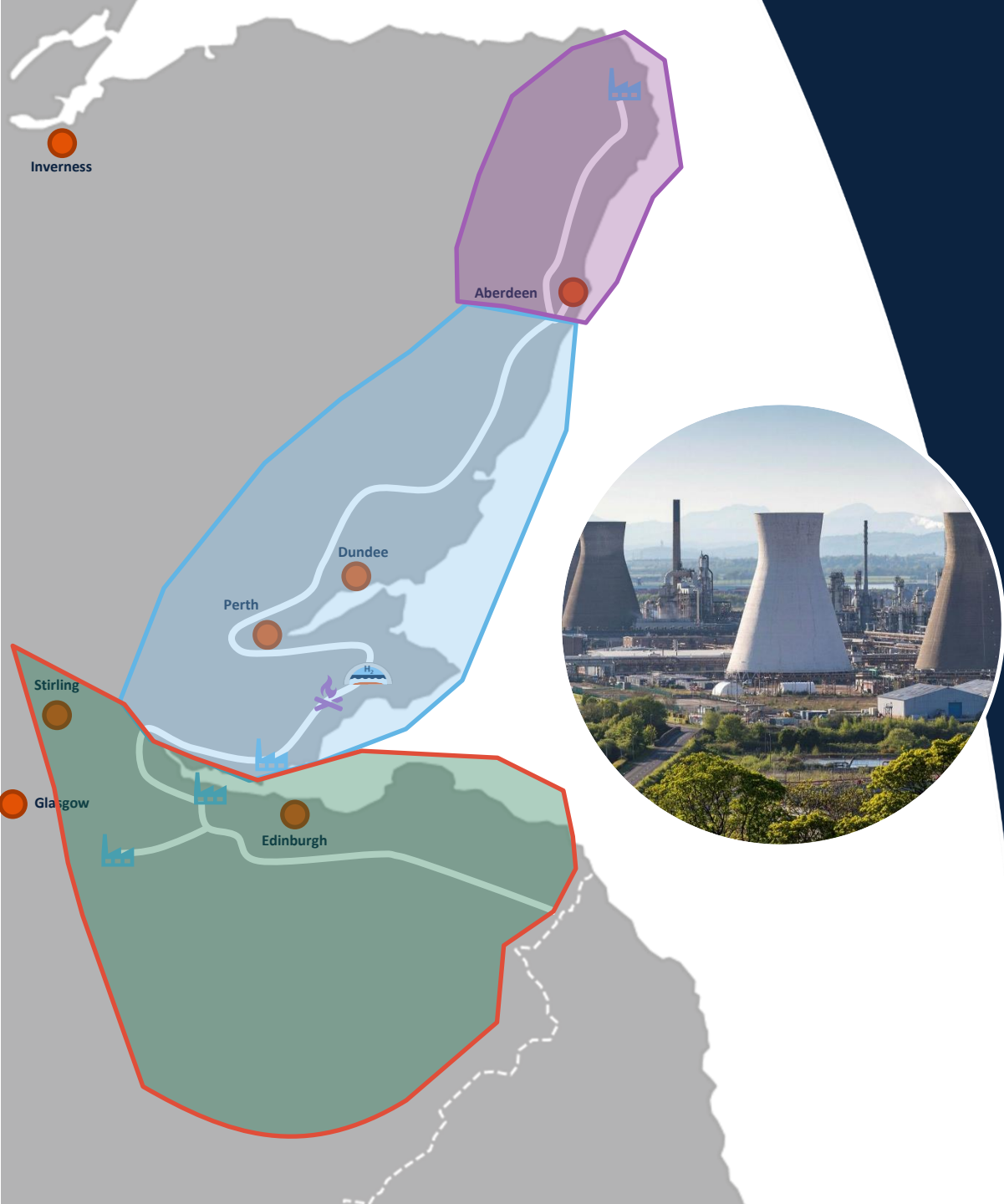
National studies

- Water study
- Just transition study



H2 Caledonia (Scotland)





Pre-FEED Key Project Outputs

- Building on feasibility study assessments, determine route corridor for new hydrogen transmission trunklines and spur lines connecting to strategic network locations, hydrogen production and hydrogen storage, minimising cost, environmental impact and overall constructability risk
- High level crossing assessment for road, rail, rivers etc.
- High level design requirements for above ground installation, piping infrastructure and any associated ancillary equipment required
- Costing and construction requirements for new required pipelines and infrastructure
- Project roadmap development integrating development timelines of hydrogen production, storage and conversion timelines informed by below 7 bar analysis
- Land acquisition and planning roadmap/strategy to inform FEED
- Targeted pre-FEED stakeholder engagement and stakeholder engagement strategy

Southern Pathway



Projects - Renewable hydrogen

- 1 Distributed green hydrogen opportunities
- 2 Possible solar, tidal and nuclear generation for green hydrogen production along with possible Hydrogen Storage
- 3 Green Hydrogen Import Opportunity

Projects - Low carbon hydrogen

- 4 Southampton Cluster - Blue Hydrogen Production at Fawley
- 5 Project Cavendish and H2 London - Blue hydrogen production at Grain
- 6 Potential Hydrogen Import from East Coast Cluster
- 7 Potential Hydrogen Import from Bristol/South Wales

Studies

- 8 Capital Hydrogen Study
- 9 Isle of Wight Study
- 10 Sussex Hydrogen Study
- 11 Servitudes and Wayleaves Study

Pre-FEED Projects

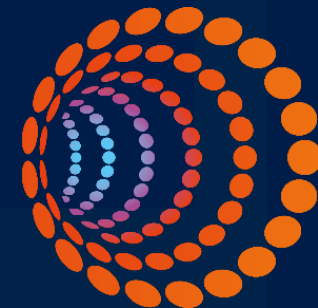
- 12 Southern Pre-FEED

Project H2 Connect pre-Feed



Thank you

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