East Coast Hydrogen

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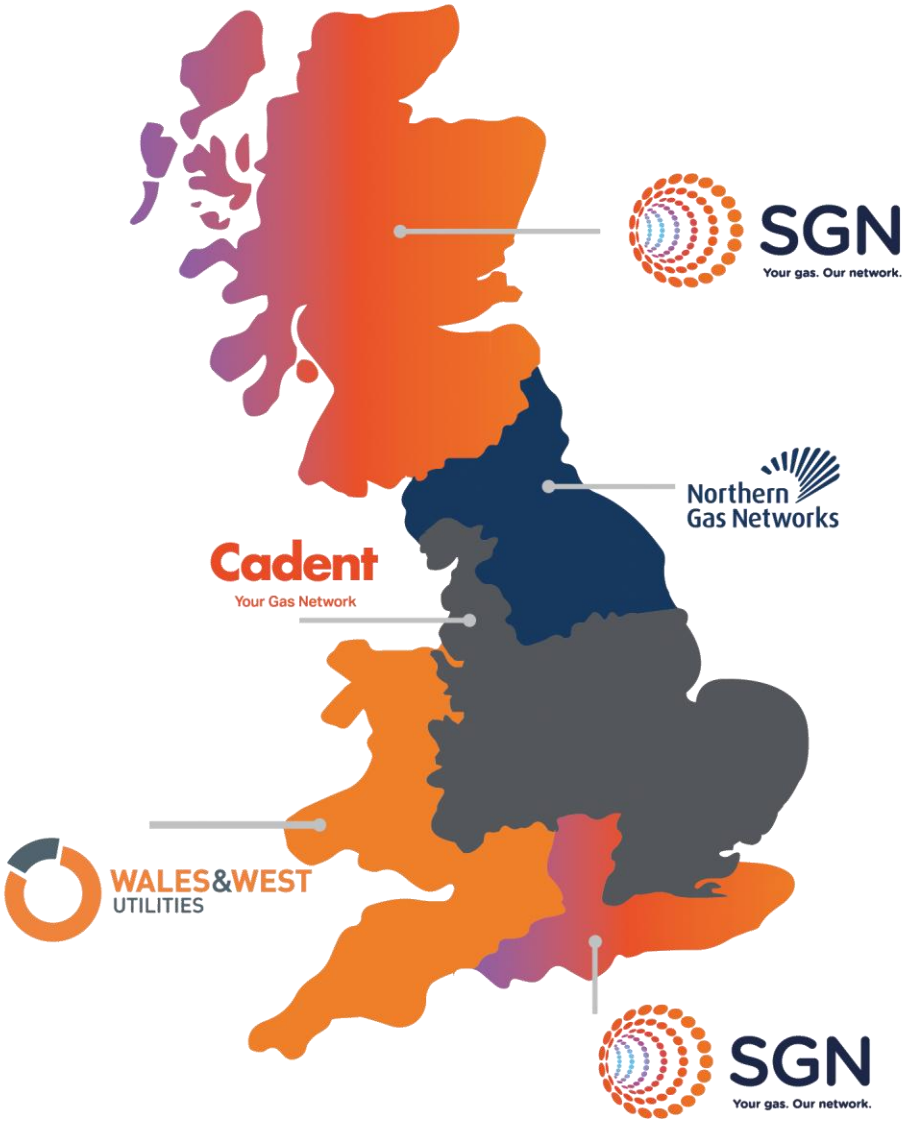
Northern Gas Networks

Chris Verity
Hydrogen Senior Projects Manager

Northern Gas Networks
Cadent
Your Gas Network
national gas transmission

Who we are

Northern Gas Networks



We provide energy to 6.8 million people and businesses

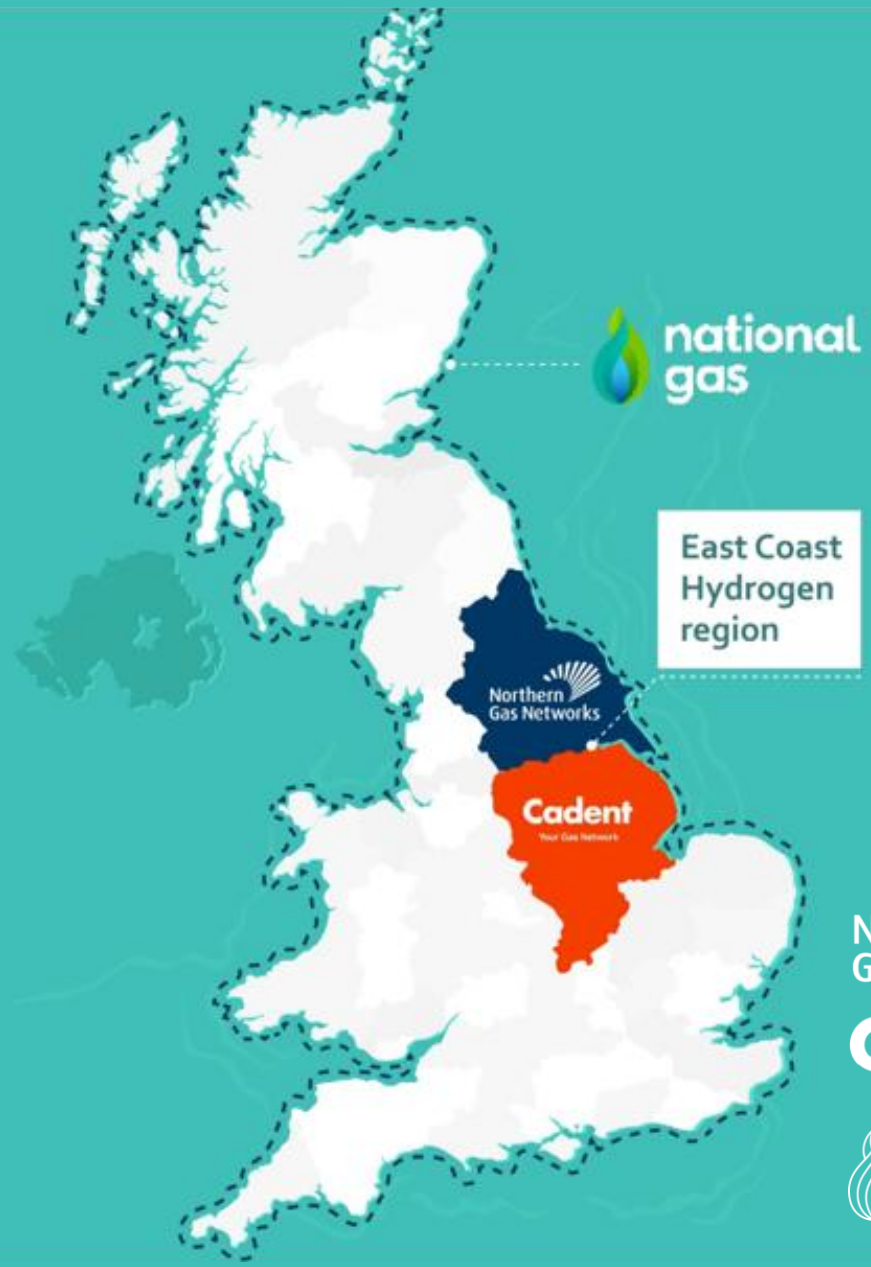
Our region spans 25,000km^2 from the Scottish borders to The Humber and to Northern Cumbria.

37,000km is the length of pipe that we own – the equivalent distance from Leeds to Australia and back again

we are the network

East Coast Hydrogen

A plan to connect hydrogen production and storage with industrial users in our region



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What's new in terms of regulation and funding

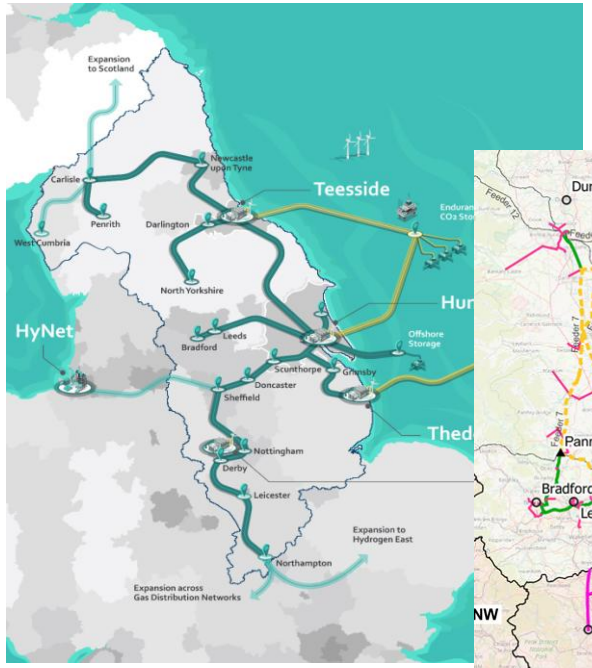
The Government's commitment to grow the low-carbon hydrogen economy is significant

- DESNZ Hydrogen Strategy Delivery Update – Dec
- DESNZ Hydrogen Transport and Storage networks Pathway -Dec
- NIC 2nd National Infrastructure Assessment -Oct
- DESNZ Hydrogen transport and Storage Business Model Consultation -Dec
- DESNZ Hydrogen to Power Consultation Dec
- DESNZ Policy Decision on Hydrogen Blending in the Distibution network
- DESNZ Policy and Strategy for Energy Policy for Net Zero Feb 24
- Committee for Climate Change and Royal Society Reports

we are the network

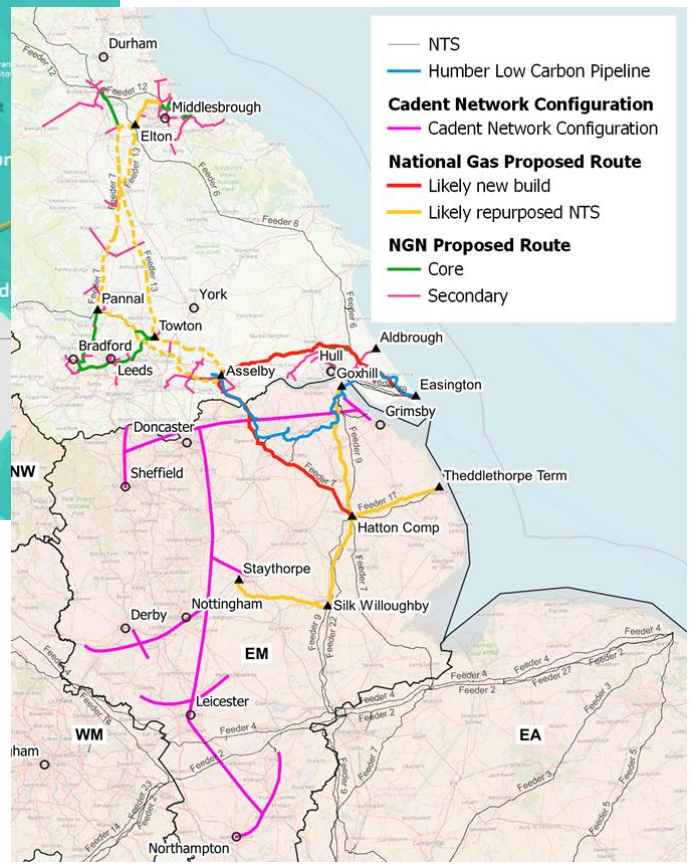
Project Phases

East Coast Hydrogen is a long term project that will be carried out in multiple, discrete phases to decarbonise industrial processes and domestic heating in the East Coast region.



Feasibility Study

Pre-Feed Study



Phase 1 - Feasibility Study (2021)

Definition of the strategic business case for East Coast Hydrogen

Phase 2 (2022 – 2026)

Delivery Plan , **Completion of Pre-FEED**, FEED Study and hydrogen production development

Phase 3 (2024 – 2030)

Hydrogen transmission system development and initial hydrogen distribution system

Phase 4 (2028 – 2037)

Town Pilots urban conversion and expansion of transmission and distribution networks

East Coast Hydrogen Consortium members who have signed Letters of Support and/or provided H2 forecasts

East Coast Hydrogen

Cross-value chain
Hydrogen value chain participants

bp, VPI, EQUANS, SIEMENS energy, EAST CO2AST CLUSTER, sse Thermal, DelpHYnus, equinor, STATERA BALANCING THE GRID, kellas MIDSTREAM

Upstream
Hydrogen production

BOC A Member of The Linde Group, ITM POWER Energy Storage | Clean Fuel, CPH2 CLEAN POWER HYDROGEN, ecOnergy Powering renewables., CHINOOK HYDROGEN, uniper, ECO ENERGY WORLD, HiiROC, PHILLIPS 66

Downstream
Sector-specific utilisation

AGGREGATE INDUSTRIES, TRITON POWER, LIBERTY, ROLLS ROYCE, KNAUF, MERCIA POWER RESPONSE, FORTERRA, Boots, University of Nottingham UK | CHINA | MALAYSIA, 2 sisters Food Group, Nestlé, SOLENIS Strong bonds. Trusted solutions., sembcorp, GUARDIAN GLASS See what's possible, MOLSON COORS beverage company, Lenzing Innovative by nature, PREMIER FOODS, H+H PARTNERS IN WALL BUILDING, University of Sheffield, SOFIDEL, Vaillant, TOYOTA, inVivo, Groupe Soufflet, BritishSugar, BEATSON CLARK DELIVERING THE DIFFERENCE, Singleton Birch, ALSTOM mobility by nature, Enertek International, Hanson HEIDELBERGCEMENT Group, PEPSICO, CRANSWICK plc Great British Taste, Loughborough University, SAINT-GOBAIN, Samworth Brothers QUALITY FOODS, ArdaghGlassPackaging

Midstream
Transportation and storage

centrica storage, Navigator

Local stakeholders
Regional and local partners

MIDLANDS ENGINE, TEES VALLEY COMBINED AUTHORITY, Greater Lincolnshire Local Enterprise Partnership, North East Local Enterprise Partnership, D2N2 Derby Derbyshire Nottingham Nottinghamshire, EMDC EAST MIDLANDS DEVELOPMENT COMPANY, West Yorkshire Combined Authority, CATCH

63 of the 68 stakeholders who have committed Letters of Support and/or provided H_2 forecasts have approved to show their logos above.

Delivery Plan

Connect hydrogen supply with hydrogen demand across multiple customers commencing with industrials fuel switching to hydrogen

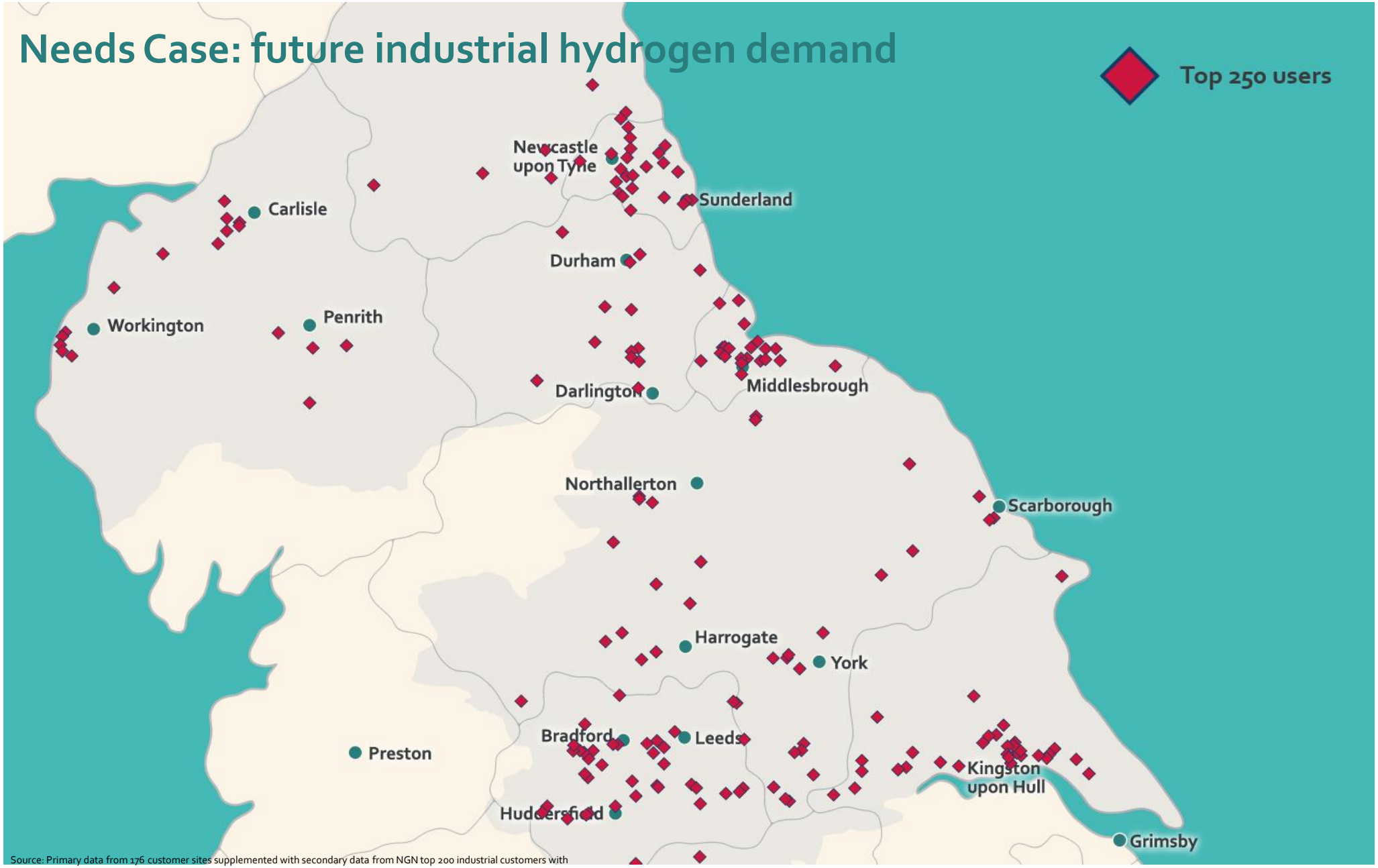
Transport hydrogen through repurposed and new build pipelines to industrial users first, with further potential to supply domestic users through town pilot

Build resilience with the interconnectivity of the Humber and Teesside industrial clusters and storage facilities across the East Coast Hydrogen region

Support efficient market growth by balancing supply and demand and enabling connections across the East Coast Hydrogen region

Note: Network configuration includes new build and repurposed pipelines and is indicative and subject to change

Needs Case: future industrial hydrogen demand



Source: Primary data from 176 customer sites supplemented with secondary data from NGN top 200 industrial customers with applied assumptions

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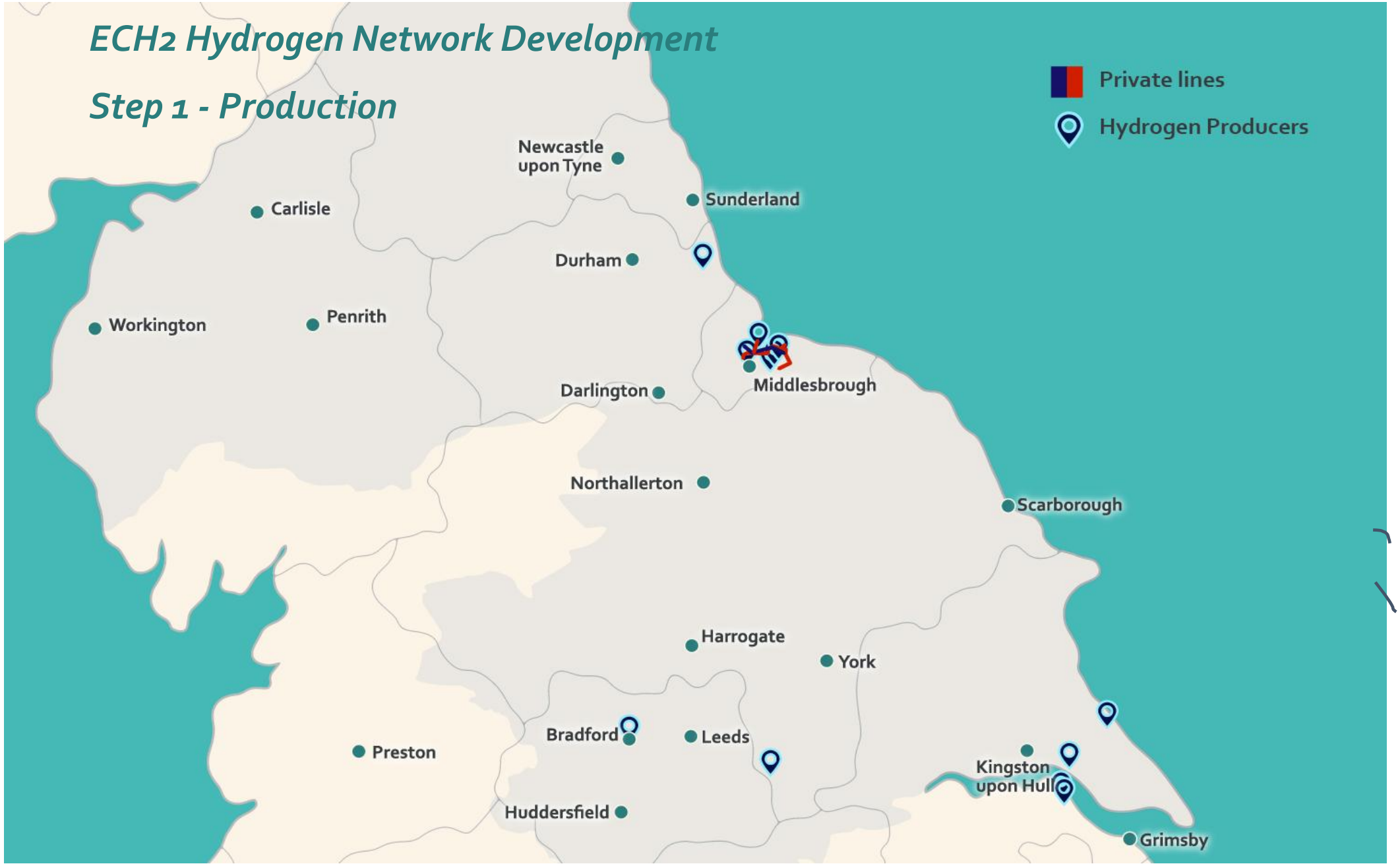
ECH2 Hydrogen Network Development

Step 1 - Production



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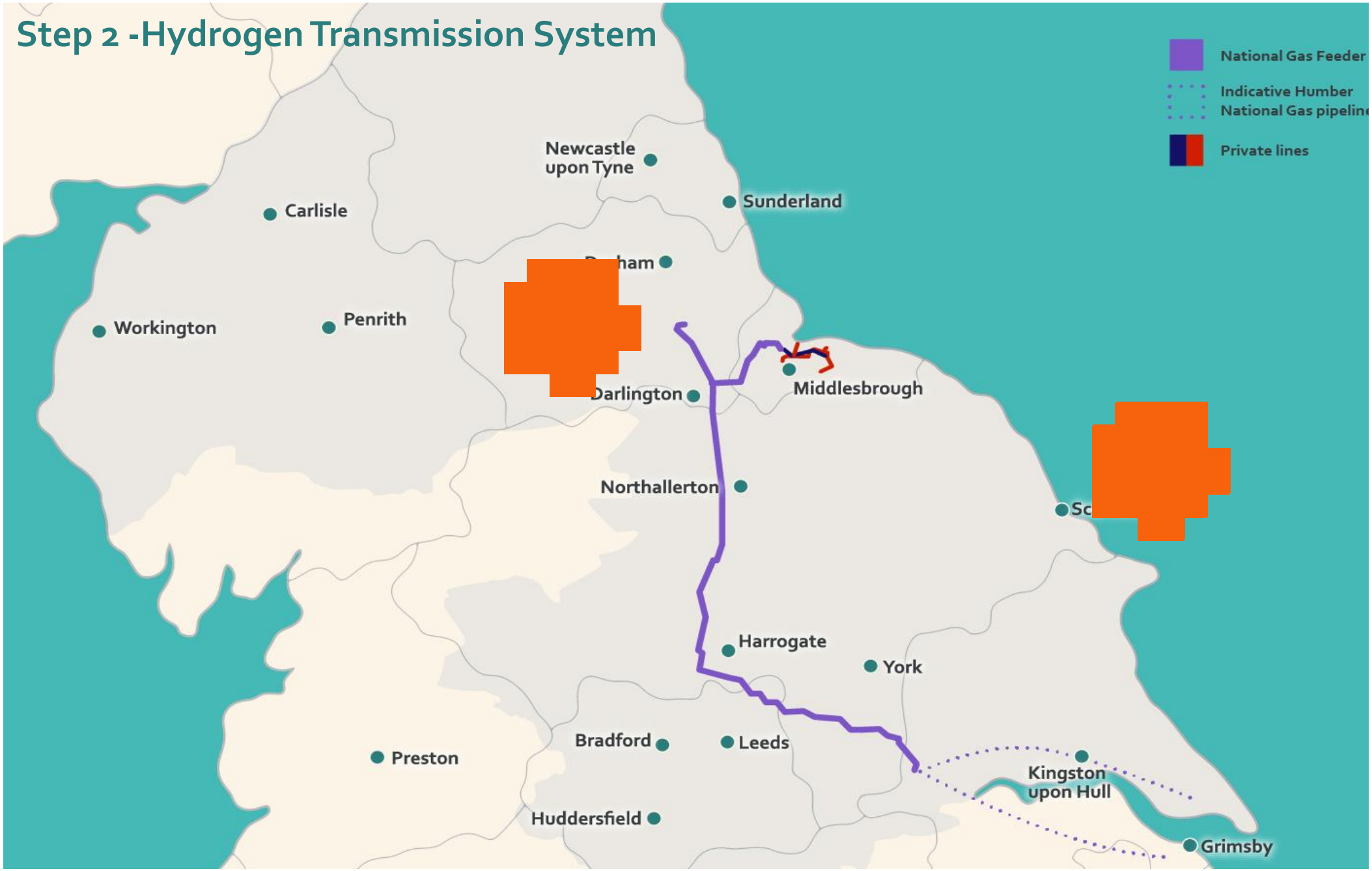
Step 2 -Hydrogen Transmission System



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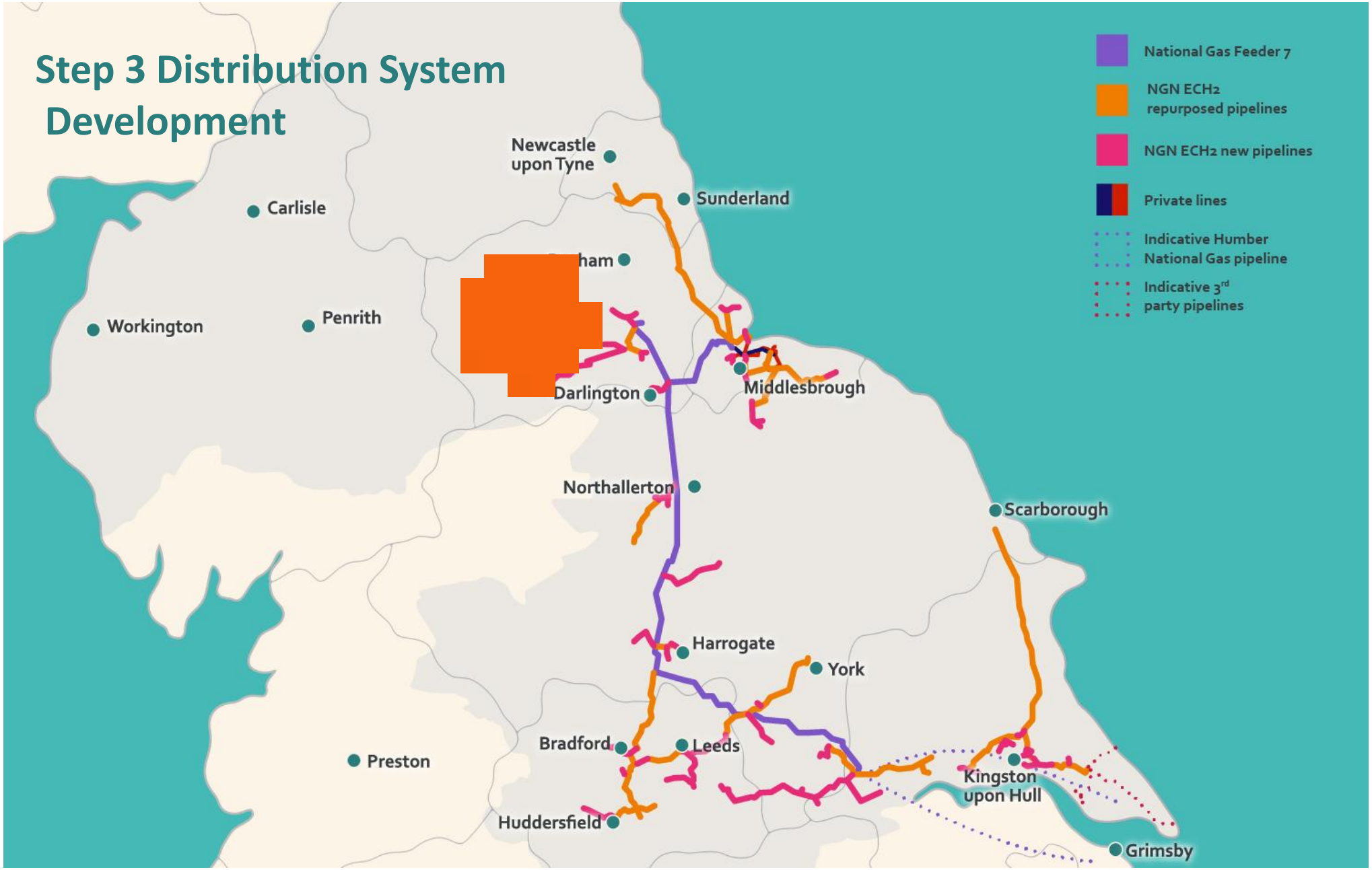
Step 3 Distribution System Development



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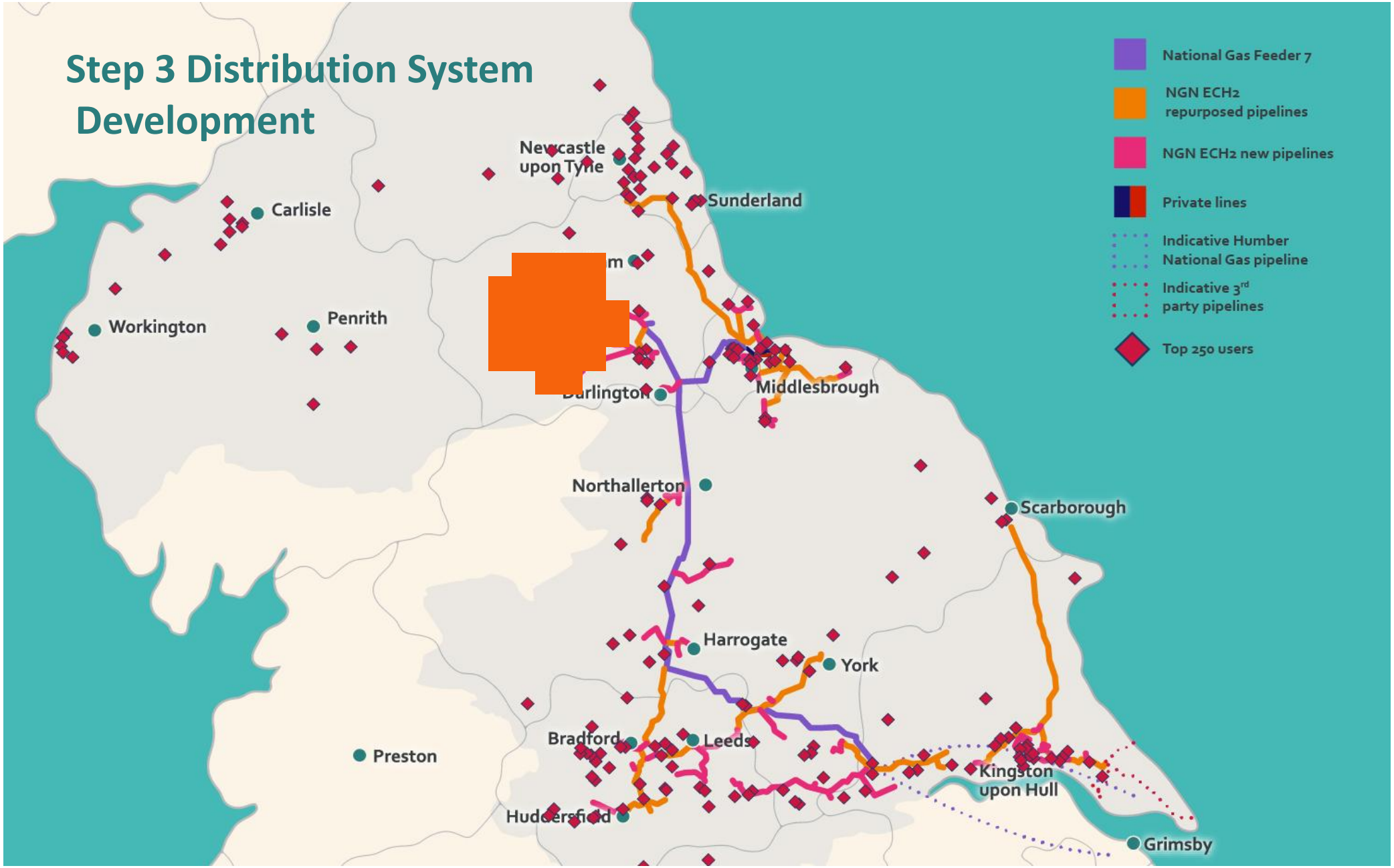
Step 3 Distribution System Development



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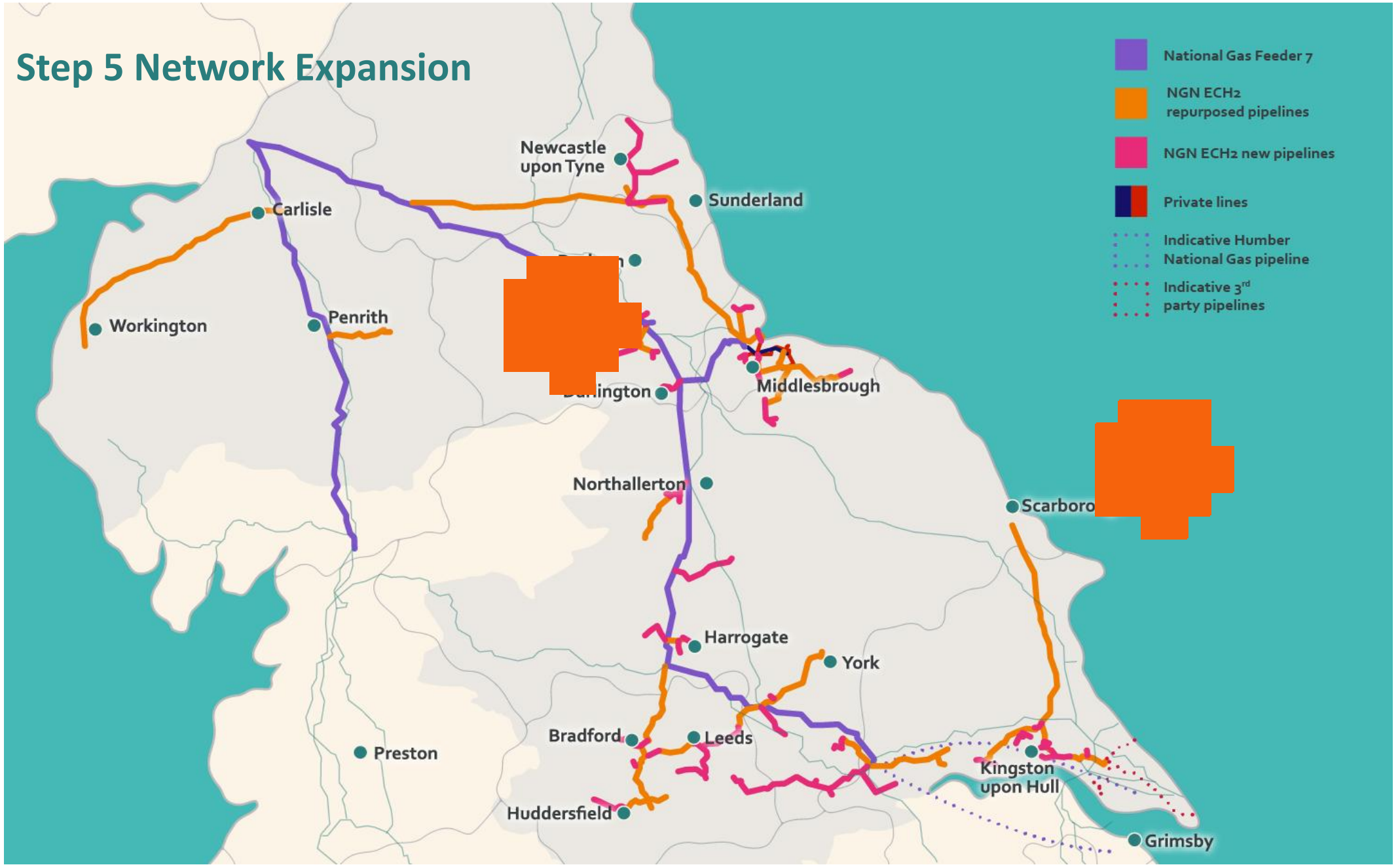
Step 5 Network Expansion



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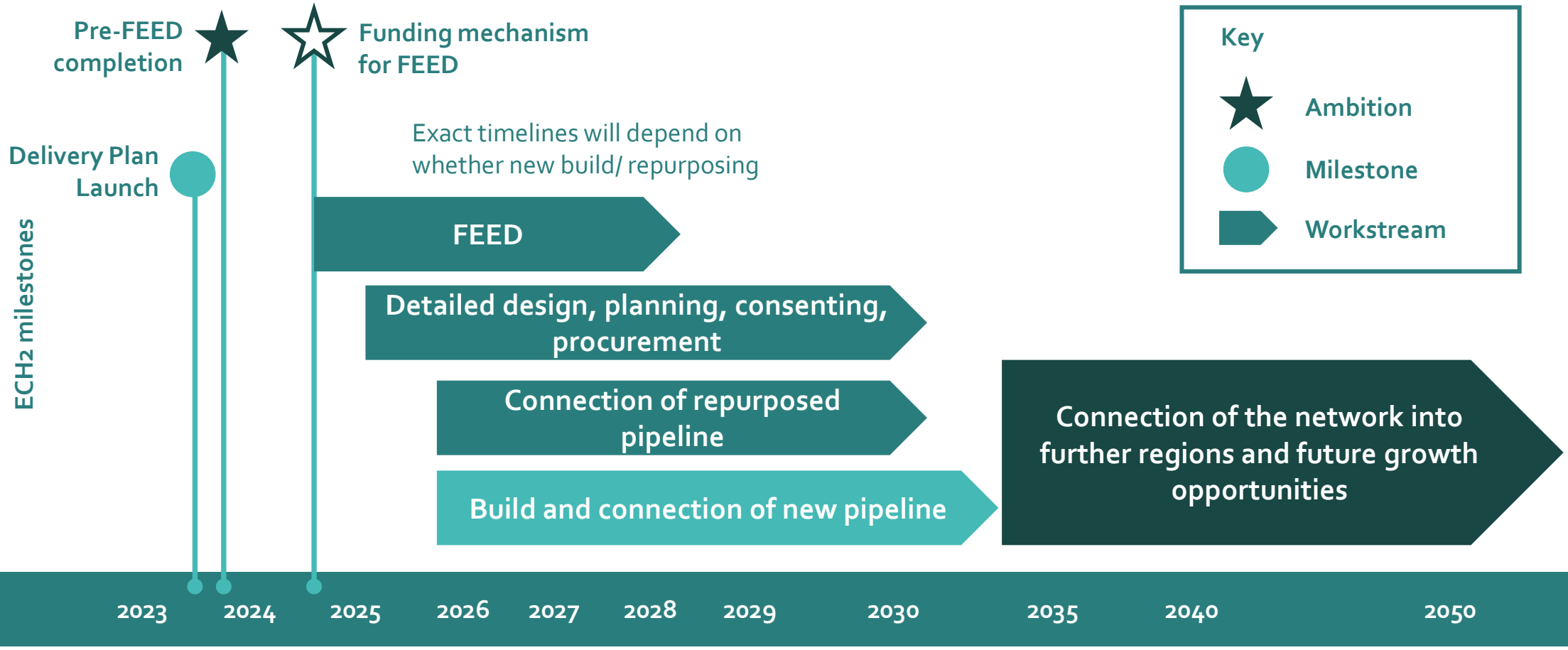
The next step for all networks is FEED; the target date for re-purposed transmission lines is 2028 with first new build phases live around 2030



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Download the delivery plan

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#eastcoasthydrogen, #hydrogenenergy, #netzero

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