



STOREGGA - HYDROGEN

Developing Regional
Hydrogen Hubs

26 November 2024

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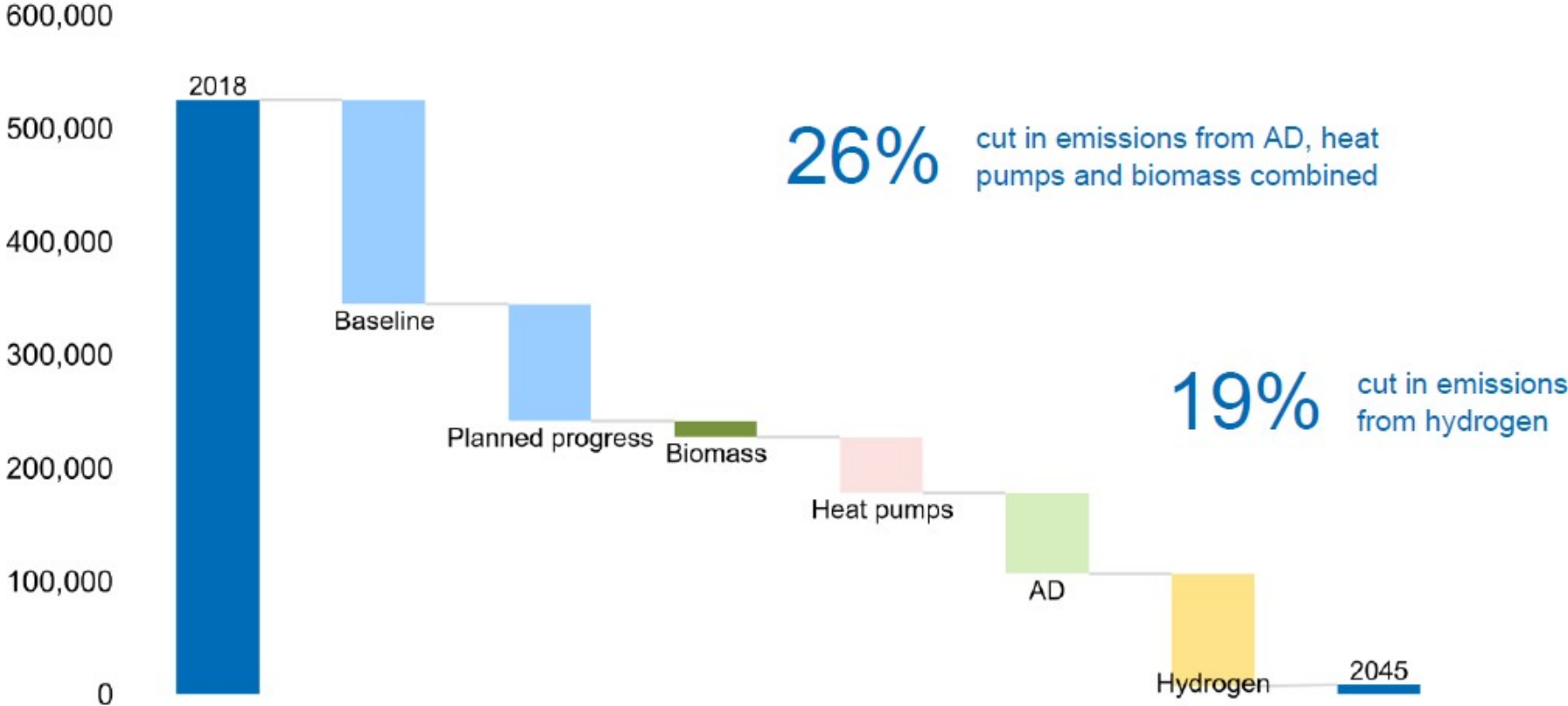
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Hydrogen's Energy Transition Role

Scotch Whisky Association's Pathway to Net Zero (2020)

Typical example of "Industrial Heat"

Balanced scenario - emissions reduction by measure

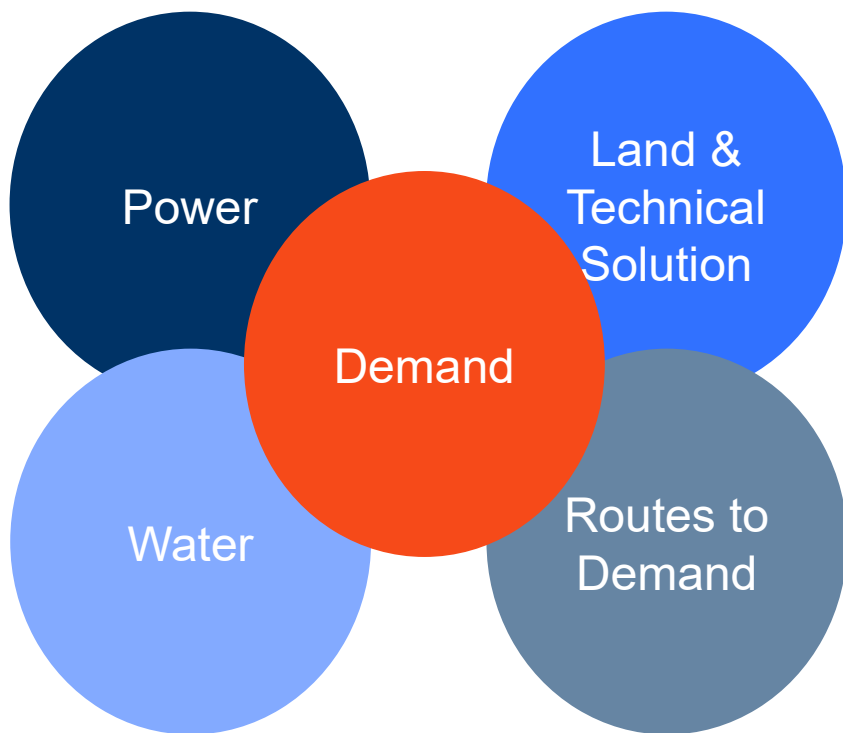


Minimise demand through efficiency. Electrify where possible. Fuel switch remainder.

Ref: Scotch whisky pathway to net zero – Report for Scotch Whisky Association, Ricardo, Issue 3, May 2020

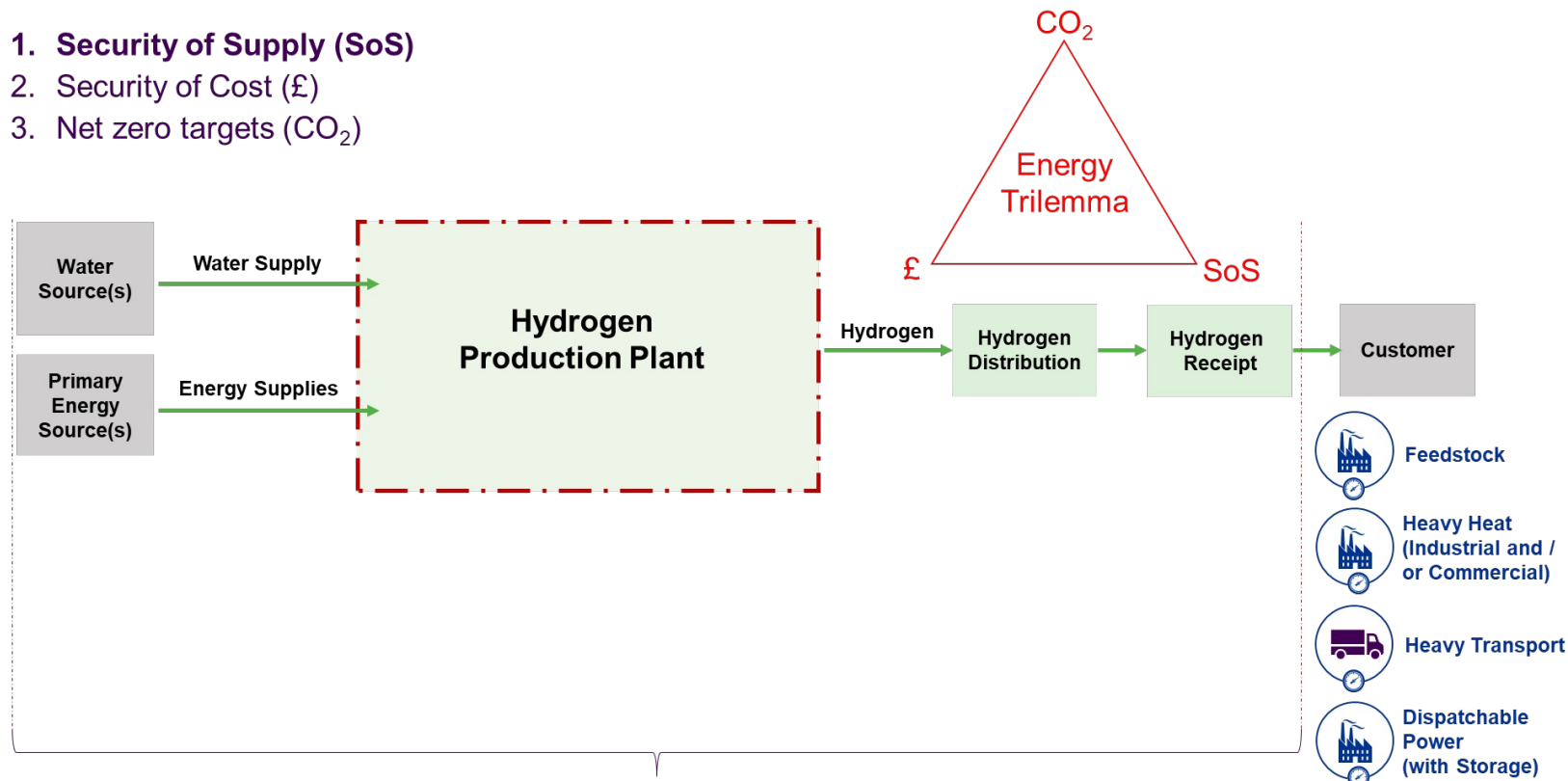
Hydrogen Project Requirements: Customer & Developer

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Demand Led. Viable RTM. Reverse engineered. Phases or buildout to Hub Capacity

1. Security of Supply (SoS)
2. Security of Cost (£)
3. Net zero targets (CO₂)



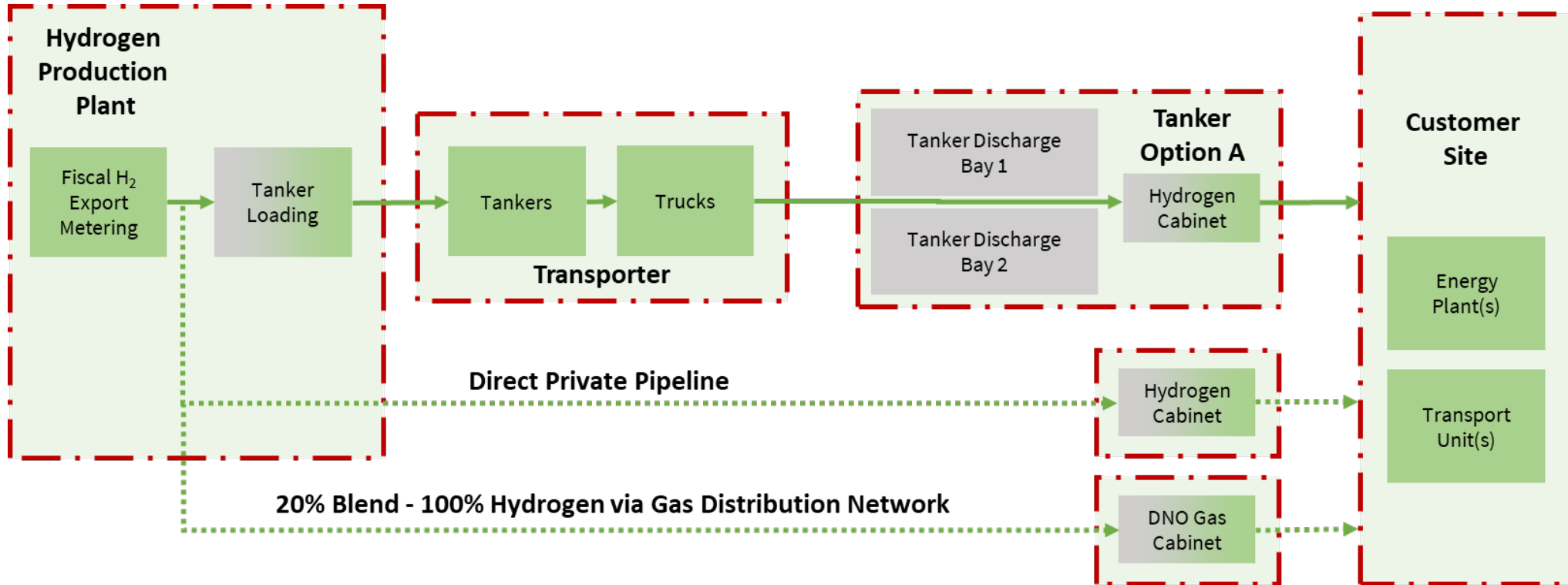
Developer responsible for full chain solution – thus “reverse engineering” is key

Right use cases

- Molecules for feedstock and hard to electrify use cases
- Well designed and located electrolysis providing “Grid Relief”

Fuel switching of “Heavy Heat” and “Heavy Transport”

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Distribution options:

- Compressed hydrogen tube trailers (circa 300-500bar)
- Private Pipeline
- Use of Gas Distribution Network, subject to GS(M)R change

DESNZ requirement for no risk taking intermediary

Cromarty Hydrogen

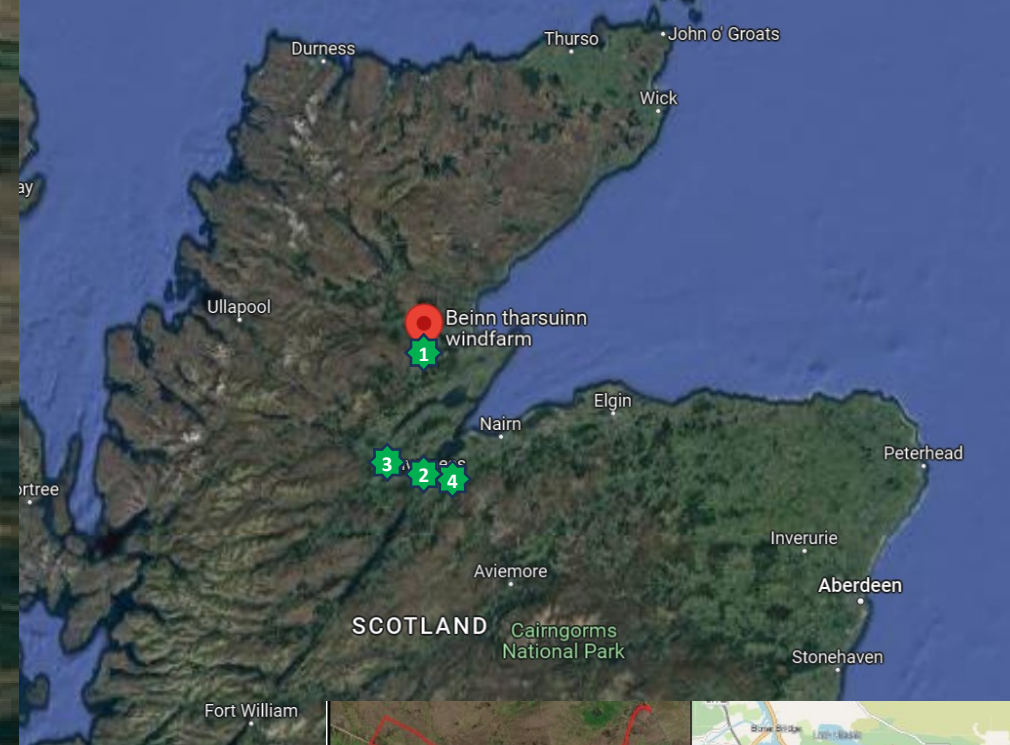
- Phase 1 Developer : ScottishPower (51%) & Storegga (49%)
- Phase 1 15MW electrolyser capacity (10.6MW of Hydrogen) operational within 2027.
- Location: Beinn Tharsuinn Windfarm, Alness due to existing Grid Connection - 29 MW's of Renewable Generation Capacity
- Offtake Strategy: Portfolio focused on Net Zero for Distilling Sector
- Hydrogen Distribution: Road haul via compressed hydrogen trailers

- Storegga developing Phase 2 via Site 2 and Site 3 for which HAR2 applications were submitted in April 2024

- 50MW at Site 2 with pipeline to anchor offtaker;
- 35MW at Site 3 with pipeline to anchor offtaker.

- 2021 Feasibility Study outlined multi-site, multi-Phase build out to 300MW.

- Expansion options at Site 2 and Site 3;
- Assessing power connections for Site 4.



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Cromarty Phase 1 Project Status - Summary

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- Land Agreements
 - 1 Land owner - Exclusivity Agreement in place. Option / Lease progressed
- Planning
 - Application submitted October 23 & Validated January 24
 - Determination expected early 2025
- Hydrogen Production Plant
 - FEED based on 3x5MW containerised PEM electrolyser
 - ISBL split between FEED / EPC and OEM utilising Iberdrola's experience and leverage to optimise cost
- Customers Transport & Distribution Strategy
 - HSA being finalized
 - Customer site solutions design scopes being developed
 - Logistics Request for Information held

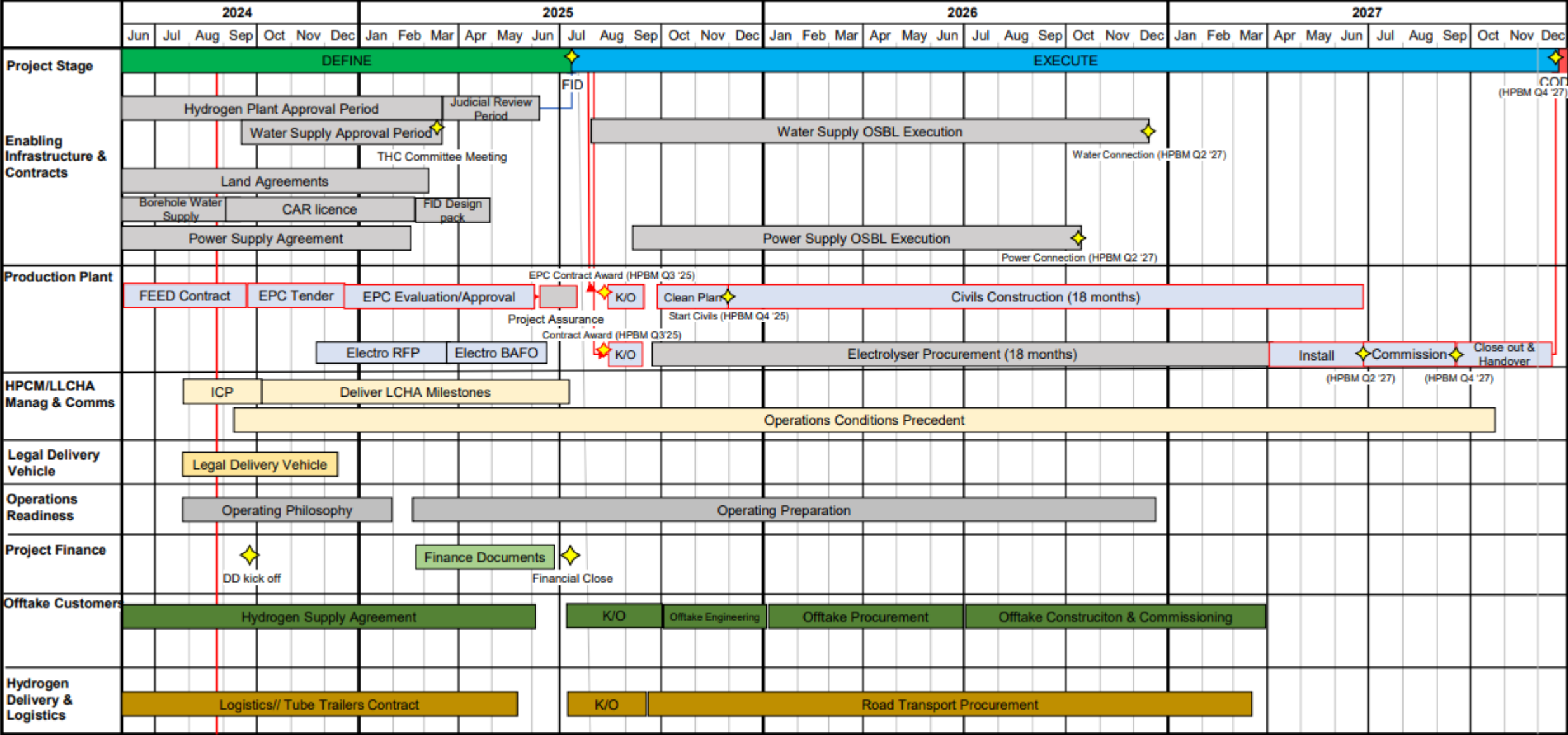


<https://www.cromartyhydrogenproject.co.uk/>

- Energy Supply
 - 29MW of behind the meter power available
 - Additional grid connection availability using the ScottishPower portfolio (8TWh's)
- Water Supply
 - Boreholes drilling completed and SEPA tests currently ongoing

Cromarty Phase 1 Project Timeline Schedule

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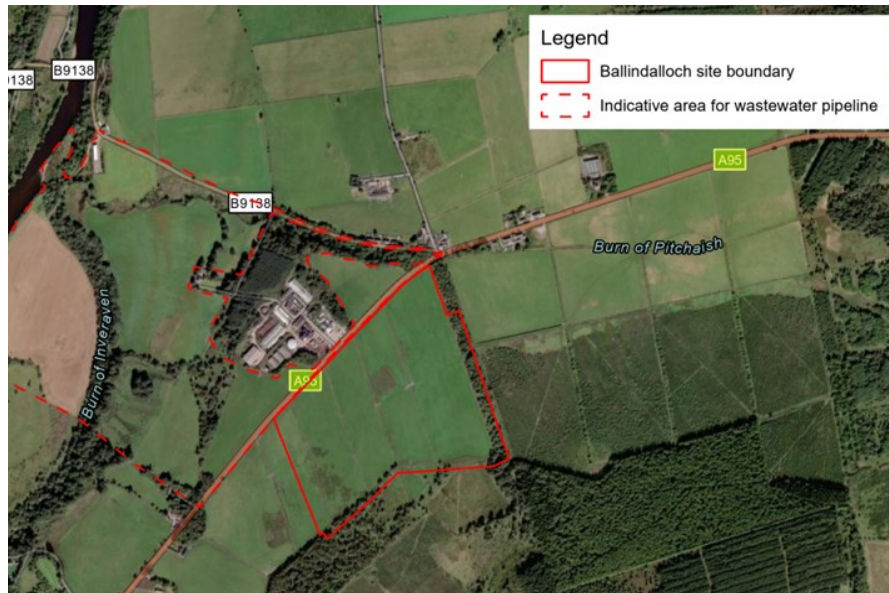


Speyside Hydrogen

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Land & Technical Solution

- **DESNZ HAR2** – Shortlisting outcome expected ‘Autumn’ ’24.
- **Land** – positive engagement and necessary agreements progressing
- **70 MWe** electrolyser capacity. Buildout to 200MW via Phase 2 and 3 at Site 2
- **Electrolyser OEM Selection** – completed Q1 ‘24 with design based upon specific product (PEM). OEM providing FEED support and engaged. Supply contract negotiation started.
- **Production Facility FEED** – Contractor selected (Tier 1 EPC) and early work started.
- **Operating Philosophy** – O&M and Transport Delivery philosophy development and market engagement underway.
- **Planning & EIA** – Mott MacDonald completing EIA, survey work nearing completion. 1st Pre-Application Consultation event completed; 2nd event late November for Planning Application Q1 ‘25.



Project will be located off the A95 in Marypark, Ballindalloch

Public Consultation Feedback

Water

Safety (H₂ and Road transport)

Site selection

Visual impact

Community Benefits

Speyside Hydrogen

Power

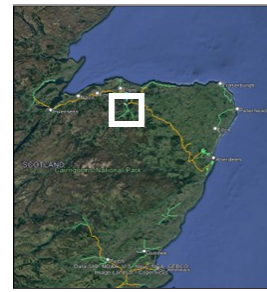
- **Power** – will be supplied from the grid at substation located ~3km from site; connection agreement signed for 90 MVA and SHEPD progressing.
- **Power Purchase Agreement** – PPA Heads of Terms being finalised. Private wire discussions ongoing

Water

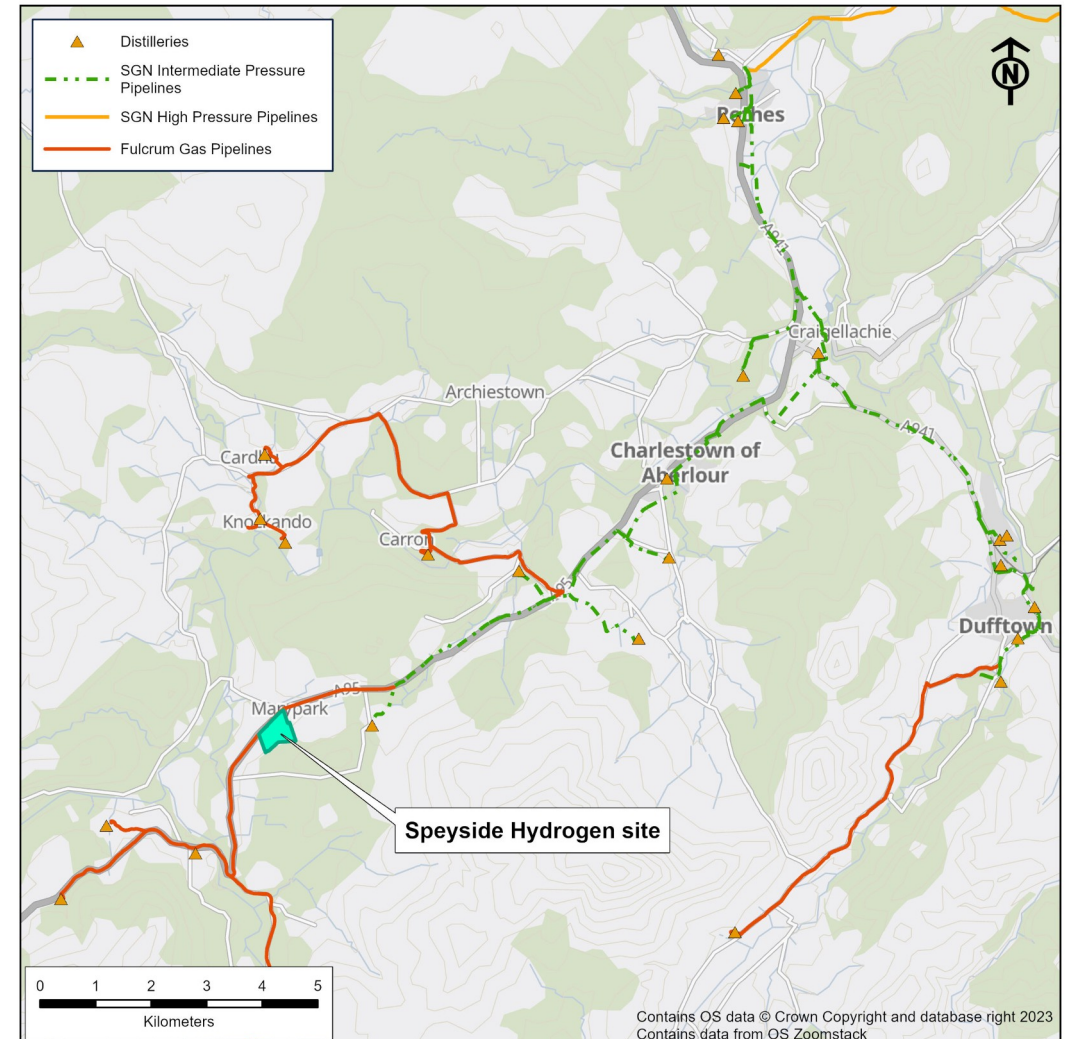
- **Water** – 500m³/day site requirement, groundwater borehole supply
- **Water-efficient design choices** - air cooling; considering multi-source approach including rainwater harvesting and storage for resilience and climate change adaptation.

Routes to Demand

- **Hydrogen transport** – all export initially via tube trailers. Hydrasun completing trailer and loading configuration review. Time and Motion Study planned with haulier/consultant.
- **Pipeline option** – close proximity to gas pipeline enabling distribution via new or existing pipelines (latter subject to change to Gas Safety Management Regulations (GSMR))



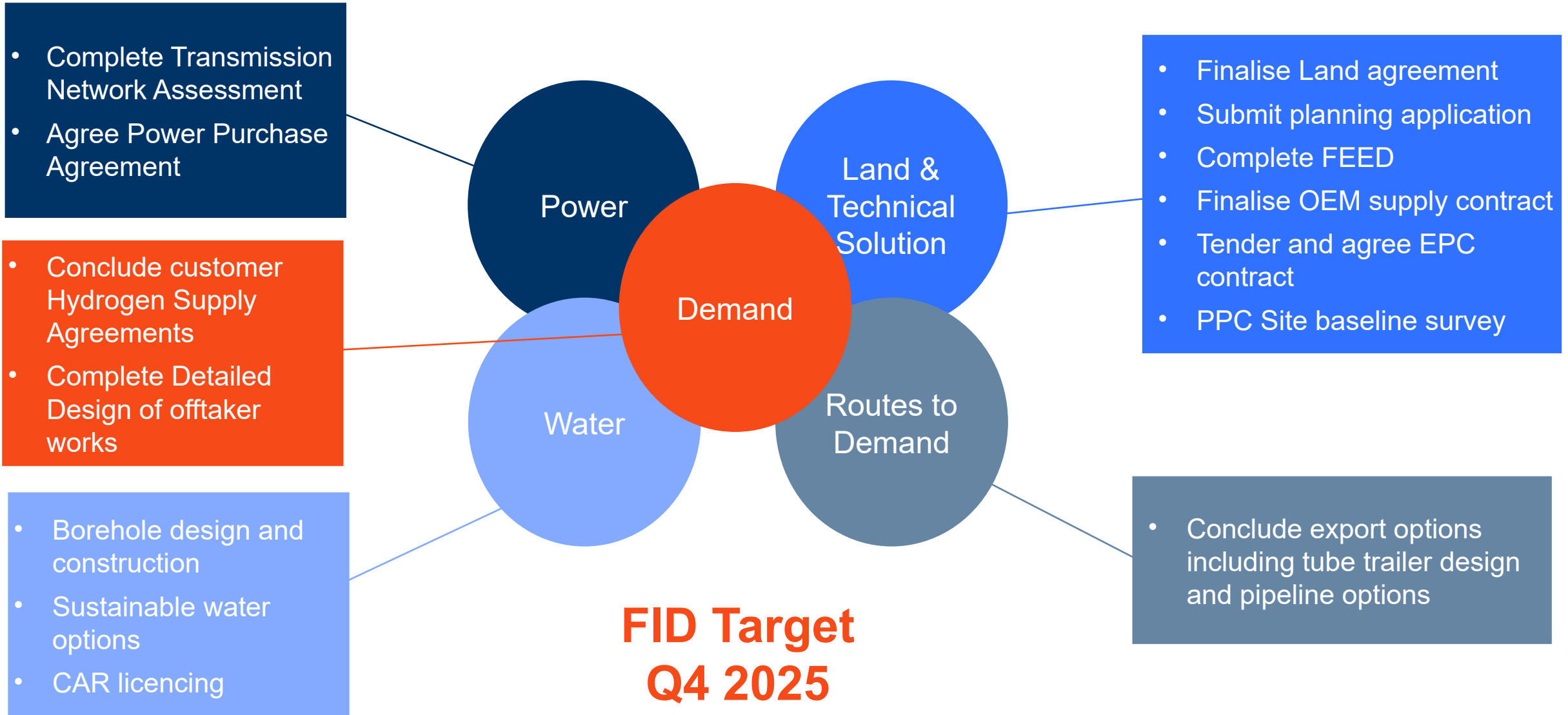
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<https://storegga.earth/en-gb/speyside-hydrogen>

Speyside Hydrogen – Next Steps in 2025

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THANK YOU

<https://www.cromartyhydrogenproject.co.uk/>

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