

Acorn Hydrogen

Expression of Interest for the Supply of Hydrogen



Invitation to current and potential hydrogen users to express interest in a stable, long-term supply of hydrogen from the Acorn Hydrogen Project.

Invitation

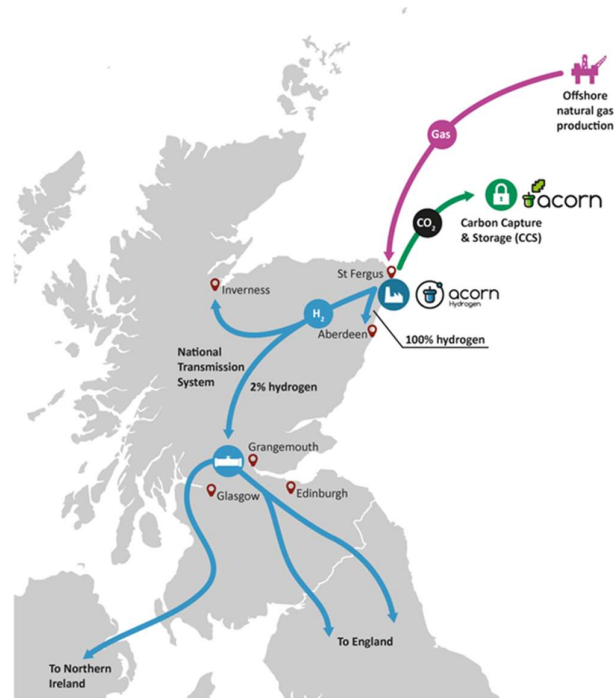
The Acorn Hydrogen project, a build out project of the Acorn Carbon Capture and Storage (CCS) project, a European Project of Common Interest, is seeking non-binding **Expressions of Interest (EOI)** from large energy users, industrial or public sector projects or regions for an ongoing supply of low carbon hydrogen to help decarbonisation through fuel switching. By the end of 2025, Acorn Hydrogen plans to have hydrogen ready to be delivered to end users by both pipeline and potentially road haul to support Scottish, UK and international efforts in support of industrial decarbonisation, clean industrial growth and reducing climate change impact. Letters outlining indicative interest are now sought to reflect potential hydrogen volumes and timing. Your interest would be welcome at any time, but your early representations would be appreciated.

Overview

Pale Blue Dot Energy is developing the Acorn Hydrogen Project in the North East of Scotland. The Acorn Hydrogen development is preceded by the Acorn CCS Project, which will provide the route to permanently sequester CO₂ emissions generated from reformation of natural gas into hydrogen.

The project will be initiated with a natural gas supply from the St Fergus area feeding a 200MW reformer to produce 1.6 TWh of hydrogen per year, starting at the end of 2025. This will be the first phase of Acorn Hydrogen with the Acorn Project aiming to develop additional hydrogen capacity.

This initial EOI process will start to address questions regarding the potential demand for hydrogen from regions around the UK, North Sea jurisdictions and beyond. This will support the evolving design, capacity and phasing of the Acorn Project and its Acorn CCS and Acorn Hydrogen infrastructure build out.



There are many reasons to lodge an initial expression of interest, but the primary driver is to note a potential interest in receiving hydrogen to your site, project or region, thus enabling your emissions reduction (or 'decarbonisation options') via fuel switching. This could be on a long-term basis, or simply during the early stages of decarbonisation to assist investment decisions ahead of any local hydrogen generation.

Why should I share an Expression of Interest now?

Acorn Hydrogen is scalable and has several development pathways. Your expression of interest will help to inform those pathways to ensure that the system has both the hydrogen production capacity and the CO₂ injection and storage capacity to service the needs of potential hydrogen users at the right time. Your

Expression of Interest can also provide you with evidence of your commitment to emissions reduction and clean industrial growth. In return for your Expression of Interest and where you say yes to email updates, you will be kept fully informed about the Acorn CCS Project and Acorn Hydrogen Project developments as they progress and receive ongoing project progress updated including information on hydrogen specification and the modes of transportation of hydrogen supply to key points of demand.

Your Expression of Interest signifies a potential interest in receiving hydrogen from the Acorn Hydrogen Project, however at this time, no commitment either implied or actual is made by either party.

Why St Fergus and the North East of Scotland?

The Acorn CCS Project represents a significant hydrogen generation hub because:

1. One third of the carbon entering the UK as natural gas lands at St Fergus making it an ideal place to manufacture hydrogen from gas with CO₂ disposal through the Acorn CCS system.
2. Acorn's position as an EU Project of Common Interest, supported financially by the Connecting Europe Facility, the UK Government and the Scottish Government towards the ongoing development and implementation of the project.
3. The existence of a CO₂ storage license over one of the world's best appraised and de-risked CO₂ storage sites, including both the Atlantic and Goldeneye depleted gas fields, for permanent sequestration of the separated CO₂ from the clean hydrogen production unit.
4. The three existing and available major subsea pipelines suitable for dense phase CO₂ transport to the offshore storage sites each with a landfall at St Fergus.
5. The proximity of several well appraised offshore storage site build-out options coupled with around one third of total UKCS storage resource within 50km of the target pipeline infrastructure. This ensures the hydrogen generation is scalable.
6. The proximity and connectivity of Peterhead deep water harbour where hydrogen export facilities can be developed to provide hydrogen by ship to around the North Sea Basin.

What do I need to do to Express an Interest?

All we ask for at this time, is a letter expressing your interest and a mid-case estimate of your envisaged profile of hydrogen requirements between 2025 and 2060 in MWh/year. Note that if you were to convert fully to hydrogen, your current fuel usage in MWh, i.e. natural gas, oil etc., would equate to your current hydrogen demand in MW. Your site location will determine the mode of transportation, but it is considered that many parties will initially receive hydrogen by pipeline or road haul. We are happy to present an outline of the project to parties interested in providing an EOI.

Acknowledgements

Pale Blue Dot Energy would like to acknowledge the support of funding partners which include the Connecting Europe Facility, UK Government, Scottish Government, Chrysaor, Shell and Total E&P Ltd.



Expression of Interest in potential use of hydrogen from Acorn Hydrogen

Your Name	
Your Company	
Your Plant / Project or Region	
Your email address	

Please outline the reasons for your interest in the Acorn Hydrogen Project

I would be interested in a short presentation of the project to my organisation			Yes / No
Please keep me informed of developments at the Acorn CCS and Hydrogen Projects by email			Yes / No
Year when receipt of hydrogen might start	Earliest Date	Mid Case Date	Latest Date

Hydrogen Demand Profile

Year	Hydrogen MWh/yr
2025	
2026	
2027	
2028	
2029	
2030	
2031	
2032	
2033	
2034	
2035	
2036	
2037	
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2060	

Any Other Comments

Please forward your Expression of Interest in letter form in headed notepaper together with your anticipated profile of hydrogen requirements to Tim Dumenil, Hydrogen Project Manager at Pale Blue Dot Energy Ltd at tim.dumenil@pale-blu.com.