

Written evidence submitted by Chesterfield Special Cylinders (IND0010)

CSC introduction

Chesterfield Special Cylinders (CSC) has over a century of industry knowledge and expertise as a world-leading supplier of specialised, safety-critical high-pressure gas containment products and services.

- CSC currently employs approximately 120 highly skilled staff at our Sheffield site and stands ready to increase investment in skills and workforce with confirmation of orders from hydrogen production projects.
- **We are one of only five companies globally that can compete for ultra-large cylinder contracts to meet the demanding safety and performance standards specified for defence, hydrogen, energy and industrial markets.**
- We are already exporting our hydrogen technology to Poland, France, Germany, Netherlands, Belgium and New Zealand.
- Having assessed the opportunity, by FY 2028, we have set a target to grow hydrogen sales to between £8 million and £10 million annually, representing 30% of total company revenue.

We welcome the chance to respond to this inquiry and, below, present our summary of the opportunity, key recommendations, and further points in response to the questions posed.

Summary of our evidence

- The global hydrogen industry is growing fast, and the UK has the potential to capture a significant share of the technology market. Modelling by the Hydrogen Innovation Initiative (2024) shows that the global hydrogen technology market could be worth \$1 trillion annually by 2050. The report suggests that the UK should target a 10% share of this market, delivering an annual revenue of £46 billion by 2050.
- In order to capture its fair share of the opportunity, Government should provide certainty on the scale of its ambition in the hydrogen market. The UK Hydrogen Strategy and subsequent British Energy Security Strategy set progressive ambitions for 10GW of hydrogen production capacity in construction or operation by 2030. However, delays to the award of HAR1 contracts and publication of the HAR2 shortlist are eroding investor confidence, which is having knock-on impacts for technology providers including CSC.

- Backing UK content would address some of this impact. At present, there is no requirement for UK content when awarding government contracts to hydrogen projects. This is a missed opportunity to support the UK technology sector and avoid the mistakes made in development of the offshore wind sector.
- Developing our domestic hydrogen supply chain will deliver economic benefits by protecting and creating highly skilled manufacturing jobs. It will spur investment in training and underpin manufacturing apprenticeships in companies like CSC, where for over 20 years apprenticeships have formed the basis of our skills and knowledge development. Our current programme has three apprentices in 2024 intake and an additional three former apprentices embarking upon engineering degree qualifications.
- Since setting our sights on growth opportunities in hydrogen storage and transportation in 2020, we have increased our workforce by 16%. Securing orders for HAR1 and HAR2 projects would support a further 10% increase in our workforce.
- Growing our domestic industry can also provide security of supply to hydrogen projects, ensuring UK projects receive supply and maintenance as quickly as possible.

The opportunity

The global hydrogen energy market is developing quickly, with more than 1,500 projects announced globally by the end of 2024. CSC is well positioned to supply products and services to the burgeoning UK and European markets.

Planned hydrogen production sites are geographically broad and, in both the short and long term, there is a need for trailers as well as pipelines to deliver hydrogen to end users. Over the last 80 years, CSC has designed, manufactured and maintained hydrogen storage across a wide range of pressures, for both static and transportable solutions. Large-scale hydrogen production also requires different types of pressurised storage and transportation systems. CSC offers its own range of designed and manufactured solutions, which are required for static hydrogen storage and road trailer applications.

The components manufactured by CSC are vital for enabling hydrogen as a clean energy carrier. We support the adoption and future growth of hydrogen energy with innovative and cost-effective storage solutions predominantly using our own designed and manufactured type 1 steel cylinders. We deliver solutions for applications such as Hydrogen Refuelling Stations (HRS - for buses, HGVs, trains and wind farm crew transfer vessels), Green Hydrogen production and Industrial Decarbonisation projects, with more than 4,000 cylinders (each larger than 1,000 litres water capacity and pressures in excess of 500 bar) being quoted into HAR 1 or 2 projects.

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If the UK can retain and grow its hydrogen supply chain, there is potential for significant inward investment, job creation and export opportunities. Hydrogen presents the opportunity for the UK to learn from the experience with offshore wind, by actively championing domestic expertise and ambition. CSC has an ambition to grow hydrogen sales to 30% of total revenue by 2028. We will do this through delivery of new-build static storage and trailer projects, which will be driven by orders from projects in HAR1 and HAR2.

Recommendations to the Committee

1. Government needs to provide certainty on hydrogen production and end use

- The UK Government has already demonstrated its commitment to electrolytic hydrogen production through the HAR1 and HAR2 processes, as well as publication of the Gas Shipper Obligation consultation. However, progress has slowed, and industry is waiting for contracts to be issued to the remaining HAR1 projects, for news on the outcome of the HAR2 shortlisting process, and further detail on future HAR rounds. CSC is in discussion with several HAR1 and HAR2 projects to supply its Type 1 steel cylinders to these projects.
- To capture the economic potential of the emerging hydrogen economy, the UK Government should **issue the remaining HAR1 contracts, publish the HAR2 shortlist and provide further detail on future allocation rounds**. This would give developers certainty on Government commitment to hydrogen production, enabling them to commit to orders with companies such as CSC, which in turn enables CSC to commit to its next-tier suppliers, and so on, without which there is a risk to the development of sustainable UK supply chain.
- Government should also build on the Hydrogen Economy Roadmap, published as part of the Hydrogen Delivery Update in December 2023, by **providing further detail on the sectors that will drive the highest demand for hydrogen through the 2020s, 2030s and beyond**. This will provide the supply chain industry with greater certainty on which to base decisions about employment, skills and training in the medium to long term. The UK Hydrogen Strategy cites estimates that the wider hydrogen sector could support 100,000 jobs by 2050.

2. Government must champion local content in clean power projects

- CSC is one of only five companies globally which can compete for ultra-large cylinder contracts to meet the demanding safety and performance standards specified for defence, hydrogen, energy and industrial markets. We can provide pressurised hydrogen storage packages and road trailers to the hydrogen market. These packages also provide export opportunities to the EU and beyond; CSC has already sold products into projects in France, Germany, Netherlands, Belgium, Poland, Czech, Australia and New Zealand.
- To encourage greater supply chain investment in the energy industry by 2035, the **Government should include local content as part of the assessment criteria in the HARs**. A high ranking for UK supply chains in awarding HAR contracts would drive investment by ensuring that domestic manufacturers and the UK workforce benefit from hydrogen production projects. It would also increase supply chain security.
- The **National Wealth Fund should bring forward the £500m green hydrogen manufacturing fund**, as committed to in the Government’s manifesto.

Response to questions

1. *How can UK plc capture its fair share of the economic potential of emerging or less developed energy technologies?*
2. *What more can the Government do to encourage greater domestic supply chain investment in the energy industry by 2035, including through the Contracts for Difference scheme?*

The Hydrogen Allocation Rounds and the Gas Shipper Obligation consultation have been critical to building investor confidence in the UK as a location for hydrogen production projects. In order to encourage greater domestic supply chain investment in the energy industry by 2035 and capture the UK’s fair share of the economic potential of emerging technologies Government should:

- **Award the remaining HAR1 contracts as quickly as possible.** This would enable developers to take Final Investment Decision (FID), which in turn would result in firm orders through the supply chain. CSC is in discussion with all three of the first HAR1 projects to sign contracts and with other developers of HAR1 and HAR2 projects. CSC has signed NDAs with other businesses looking to invest in green hydrogen sites this year (see below). These projects require steel cylinders for static storage and road trailer applications, and securing these orders would support a further 10% increase in our workforce. However, delays to the approval of these projects have made us more cautious in committing to further investment in apprenticeships and wider skills recruitment.

- **Announce the HAR2 shortlist as soon as possible.** Similar to the above, this would enable successful projects to start the next stage of development, including sourcing components through the supply chain. This in turn gives supply chain companies visibility over future orders, helping them to make investment decisions. CSC remains well positioned to secure projects in early 2025 for delivery in 2026 and 2027.
- **Champion local content in domestic production projects by placing value on local content** in the HAR assessment process or ensuring an effective CBAM that penalises product produced from raw materials made with fossil fuel energy and/or imported across great distances. Without this, projects are liable to purchase the cheapest CAPEX components from overseas suppliers. The total carbon cost of these products is higher, in turn reducing the clean energy credentials of the projects they supply, and they may be of inferior quality and shorter lifespan.

These actions would demonstrate UK ambition to develop a leading position in hydrogen supply chains and **provide the necessary certainty for CSC to invest in upskilling and growing our workforce to meet increased demand.** Without a strong signal of intent from government, investment and growth will remain smaller and market share could be lost as happened with the offshore wind industry.

3. Does the UK have the supply chain capacity to deliver the required energy infrastructure by 2035, including an expanded electricity network?

If hydrogen is confirmed as the preferred route to decarbonisation in key sectors, the UK already has the supply chain capacity to deliver the required energy infrastructure by 2035. These applications include manufacturing based outside industrial clusters and transport – such as Sheffield, where CSC are headquartered and employ 120 people.

Certainty will enable supply chain companies to make long-term decisions on employment and skills, both of which take time and require investment which can be achieved.

4. To what extent would growing the domestic supply chain bolster UK energy security?

Localised manufacturing of high-pressure hydrogen storage vessels, such as those produced by CSC, can ensure a stable and reliable supply chain for the hydrogen industry as it grows. This reduces dependency on international suppliers and mitigates risks to project development from global disruption.

A further energy security benefit of growing the domestic supply chain is the ability to provide UK based post-sales support, which can ensure quick and efficient maintenance and ensure that clean power projects can deliver consistently.

Growing the domestic supply chain can also help the hydrogen economy to grow, which in turn increases UK energy security. For sectors that cannot easily electrify, hydrogen offers

an alternative to imported fossil fuels which are subject to price fluctuations on global markets.

5. What are the key concerns with respect to the availability of raw materials in the supply chain and how might those be addressed?

The key concern for CSC with respect to the availability of raw materials in the hydrogen storage supply chain is location. There is no UK supplier of seamless steel tube, the basic raw material for CSC's type 1 steel cylinders. As a result, CSC sources steel tube from Italy, which is the closest location available to its Sheffield manufacturing facility.

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