

INTRODUCTION

Lhyfe are in the process of preparing a planning application for a green hydrogen plant on land at Neptune Energy Park, Wallsend.

PURPOSE OF THE EVENT

The purpose of this consultation event is to gain feedback on the emerging proposals for the development of the site.

A copy of these exhibition boards is also available on the project website: www.lhyfe.com/lhyfe-wallsend.



ABOUT LHYFE

Founded in 2017, Lhyfe is a European producer and supplier of green and renewable hydrogen dedicated to the energy transition. Its production sites aim to provide access to green and renewable hydrogen in industrial quantities allowing entire sections of industry and mobility to decarbonise. Operational across Europe, Lhyfe is active in Sweden, Denmark, Germany, Netherlands, Belgium, France and Spain.

Lhyfe Wallsend aims to supply green hydrogen to power industry and transport partners in the North East. Using renewable electricity, we split water into hydrogen and oxygen, creating a clean, carbon-free fuel. Green hydrogen reduces reliance on fossil fuels like diesel and natural gas in everyday life.



lhyfe.com

WHAT HAPPENS NEXT?

Once we have gathered your thoughts and ideas we will analyse this information to establish which issues are most important to the local community.

The project team will then use this information to develop a preferred scheme.

FEEDBACK

Your opinions are important, so please talk with the project team and leave comments. Feedback forms are also provided.

Please post completed forms in the box provided or alternatively they can be filled online at www.lhyfe.com/lhyfe-wallsend, emailed to hydrogenuk@lhyfe.com or posted to Lhyfe UK, The Corner, 26 Mosley Street, Newcastle upon Tyne, NE1 1DF by 29th March.



SITE LOCATION

The proposed site at Neptune Energy Park is located to the north of Wallsend and is surrounded by industrial processing plants and warehousing. The site is brownfield in nature and totals approximately 2ha in scale. The nearest residential properties are located to the north of the site screened by a dense tree belt with runs along Neptune Road.

The Hadrian's Wall Path runs to the rear of the site through the wider Neptune Energy Park. Access to the site is via Neptune Road.



THE NEED FOR THE SCHEME

The proposed development has potential to generate up to 8 tonnes of renewable fuel per day, capable of supplying local industry, including existing businesses at Neptune Energy Park.

The scheme responds to international and national climate change policy. It supports the Council's commitment to net zero by 2030 and directly responds to its declaration of a Climate Emergency in 2019 through the delivery of a meaningful reduction in local carbon emissions, with potential to support reduction in the region of 300,000 tonnes of carbon over the lifetime of the development.

The development supports national planning policy which provides a presumption in favour of sustainable development to meet the challenges of climate change. Being a renewable energy scheme, the proposal is expected to deliver significant environmental benefits.

The development is also expected to generate economic activity and jobs in the local area both during construction and in operation. By employing a local workforce, the site will contribute to growth in jobs and skills which benefits local communities.

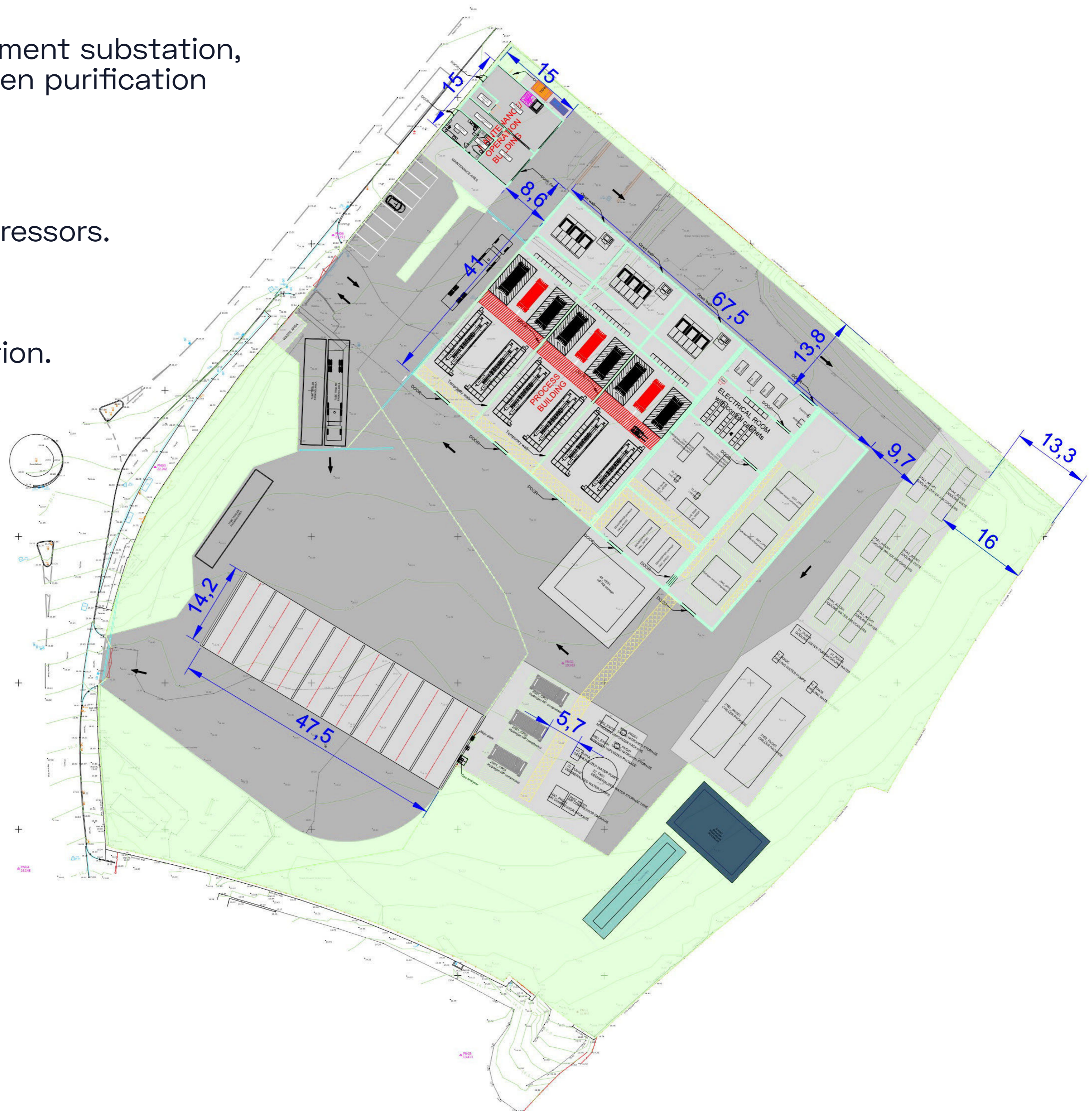
It will also support established local businesses to reduce their carbon outputs, future proofing sites for a more sustainable future.

THE DEVELOPMENT

The proposed scheme comprises a Green Hydrogen Electrolyser(s) housed within a self contained building. The electrolyser(s) will produce up to 8 tonnes of hydrogen per day, utilising up to 20 MW of electrolysis capacity, using green electricity from the grid.

The proposed site will include:

- Main building for plant equipment substation, water treatment, and hydrogen purification and cooling systems.
- Control room.
- Hydrogen storage with compressors.
- New substation.
- Trailer parking and filling station.
- Parking for staff and visitors.



SITE PLAN

Baseline information has been gathered for the site to inform the development design.

Technical studies have been undertaken to understand the existing context including transport, ecology, geotechnics and site drainage.

The key site constraints and opportunities are mapped on the below plan and have been used to guide the development.



OPPORTUNITIES

- New industrial development providing green hydrogen in an attractive landscape setting.
- Integrated sustainable drainage features.
- Biodiversity net gain through the provision of biodiversity habitat within the site to support local wildlife.
- Meaningful reduction in local carbon emission over the course of the development (15 years).
- Jobs in construction and operation.
- Reinforcing economic activity through sale of hydrogen to customers.
- Knowledge centre for renewable energy in the local area through partnerships with educational institutions.

CONSTRAINTS

- Proximity to residential properties to the north.
- Sustainable Urban Drainage Systems required to be implemented on site in accordance with North Tyneside Council planning policy.
- The site has a history of past mining activity and industrial uses resulting in contamination.
- Thermal Syndicate listed building to the east of the site.
- Within the Hadrian's Wall Frontiers of the Roman Empire zone of influence policy which seeks to protect Segedunum Roman Fort and Hadrian's Wall World Heritage Site.
- Hadrian Wall Path (cycle route) to the south of the site.

WHAT IS GREEN HYDROGEN?

Green hydrogen is a gas that, when both produced and used, emits no carbon dioxide (CO₂). It is produced through electrolysis, a process where water is separated into hydrogen and oxygen, with oxygen as the only by-product.

Our environmentally friendly gas is manufactured in units powered by renewable electricity making it green. The hydrogen is then piped or compressed for transport to nearby customers.

It's a clean alternative to fossil fuels in various industries, including glass, chemicals, cement, and steelmaking, as well as in heavy transport like buses, trucks, construction, and logistics vehicles.

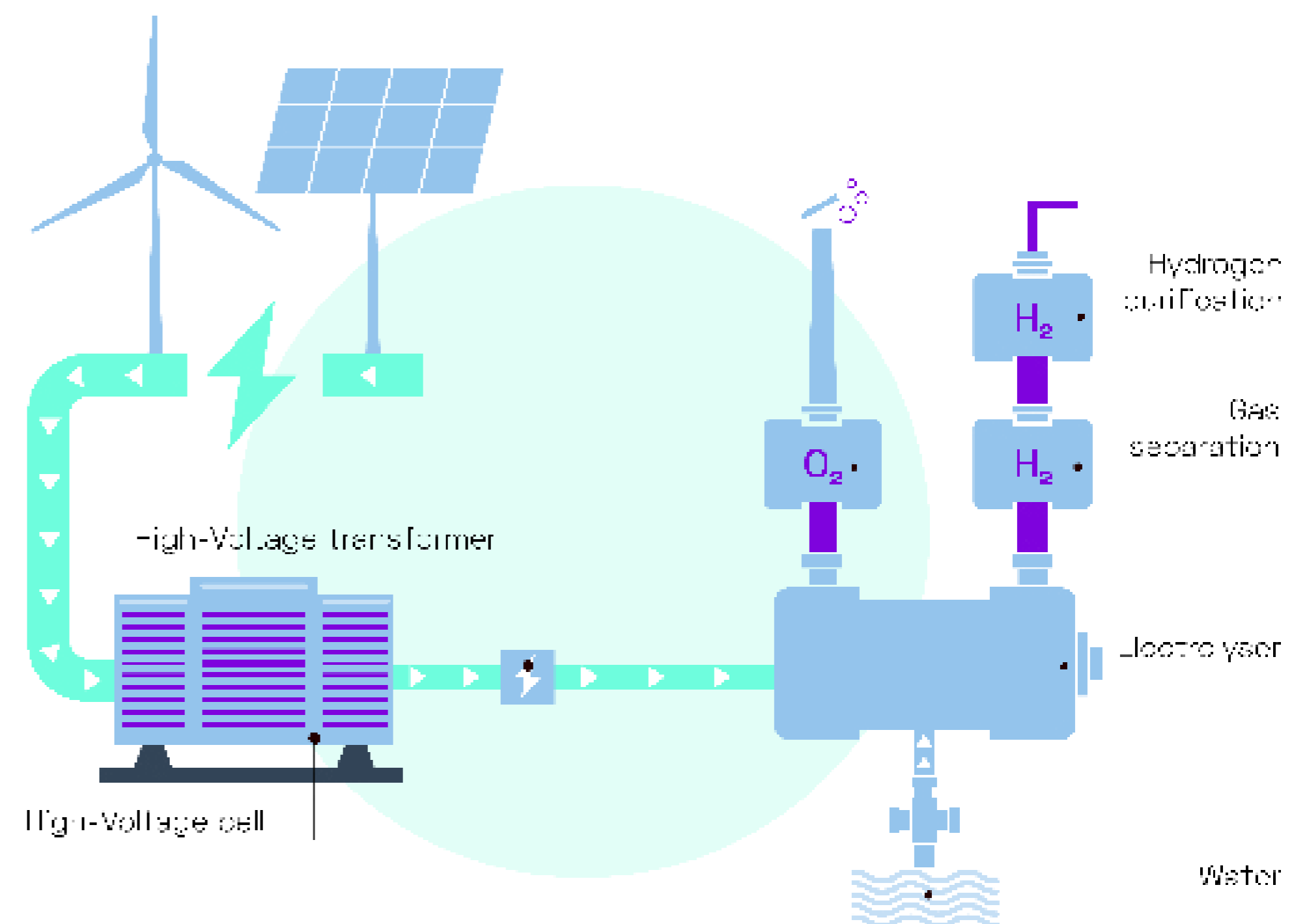
Electrolysers are the primary component of green hydrogen production and comprise several 'cells' which in turn comprise two electrodes, one positively charged anode and one negatively charged cathode. The two electrodes are separated by an electrolyte. The electrolyte is responsible for transporting the electrical charge between electrodes, whereby hydrogen and oxygen are produced. The oxygen is then either vented into the atmosphere or captured and stored for commercial use.

IS HYDROGEN SAFE?

Yes. As a fuel, it is very well controlled. For example, it is used in hydrogen buses and hydrogen-powered cars which are ranked among the safest cars, and emits zero tailpipe emissions.

It is such a safe technology that the UK Government has funded a pilot to develop hydrogen powered emergency vehicles including fire engines.

In France, where Lhyfe is headquartered, there is already a million tonnes of hydrogen produced a year, with 4,000 tonnes of hydrogen on the roads every day. The UK currently uses around 700,000 tonnes of hydrogen per annum. As a mature gas, there are regulations in place across the UK for its production, transportation and use.



HOW CAN HYDROGEN DECARBONISE NORTH TYNESIDE?

The scheme supports the Council's commitment to net zero by 2030 and directly responds to its declaration of a Climate Emergency in 2019. This declaration set a target to reduce the carbon footprint of the council's operations, and the borough, by 50% by 2023 and to align to the Government's net zero target of 2050.

Lhyfe Wallsend could deliver a meaningful reduction in local carbon emissions, with potential to support reduction in the region of hundreds of thousands of carbon over the lifetime of the development.

Wallsend is an ideal location for green hydrogen production, helping local industrial sites to switch seamlessly to green hydrogen.