

Hagshaw Energy Cluster Western Expansion

PAN EVENT
INFORMATION

Green Hydrogen Production Facility

The Green Hydrogen Production Facility is part of the Hagshaw Energy Cluster – Western Expansion project but due to planning regulations we will need to apply for planning consent separately to the Local Authority, rather than through a Section 36 application to the Scottish Ministers which is the case for the rest of the project components. The applications will be submitted simultaneously, and both will be supported by a single overarching Environmental Impact Assessment Report (EIA Report).

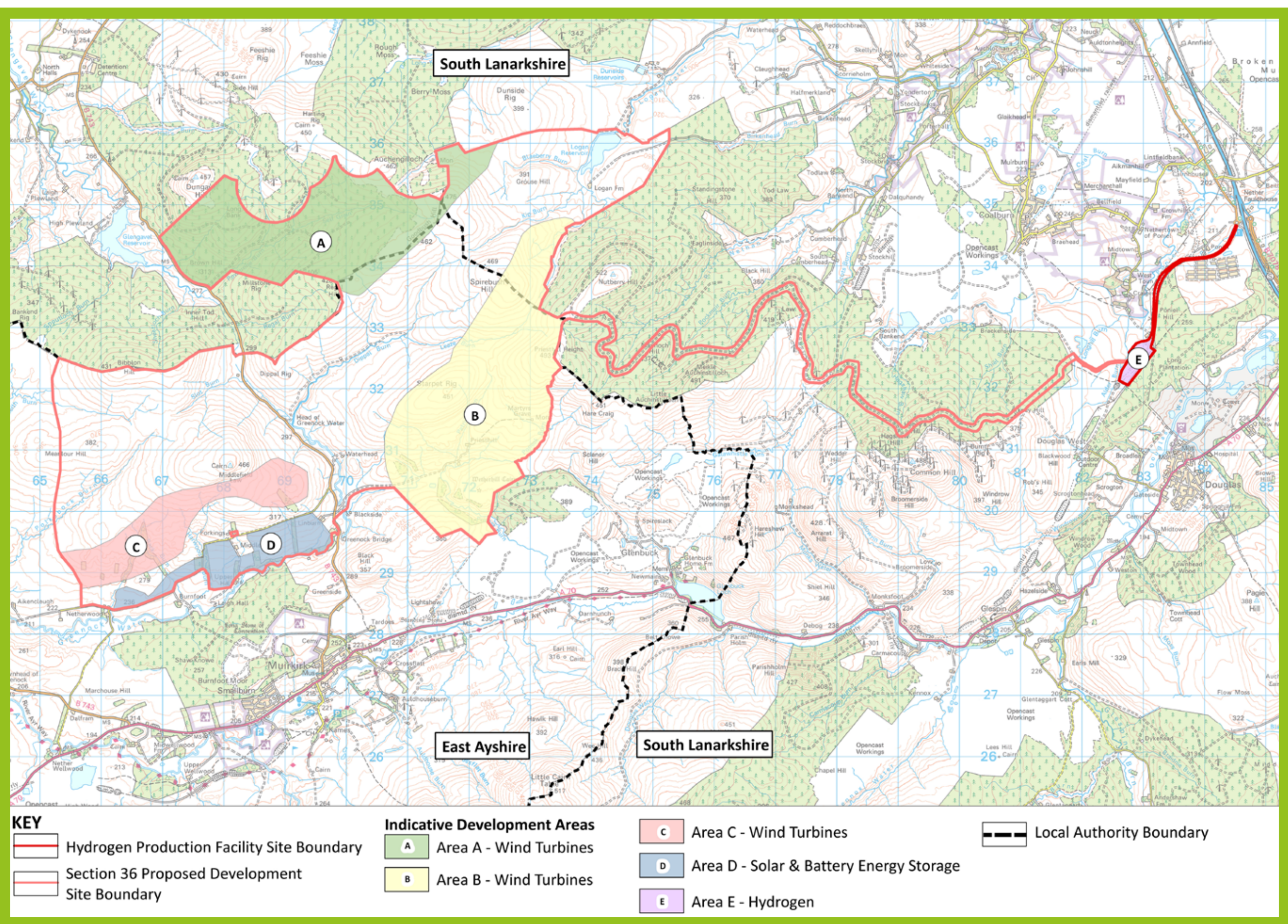
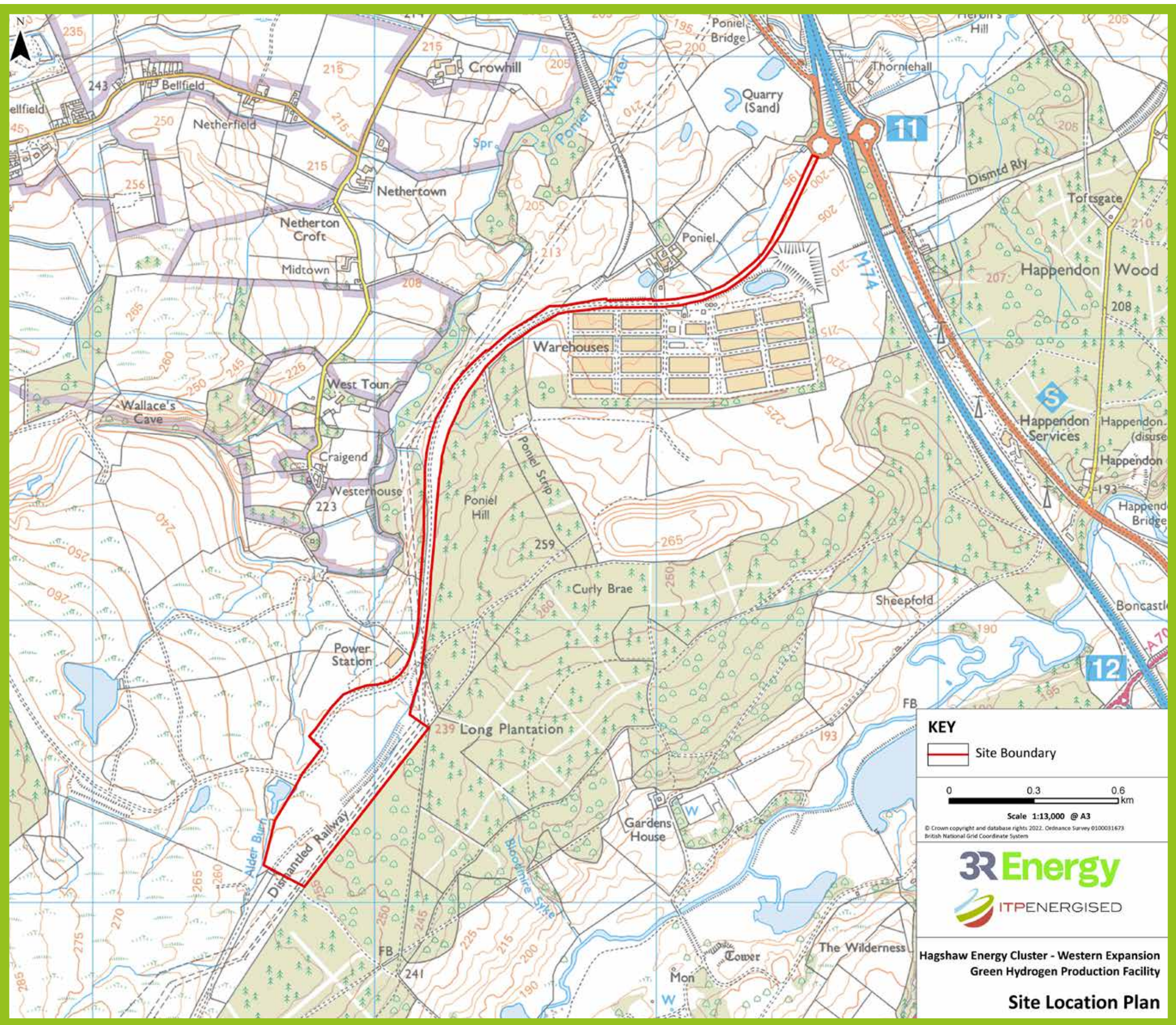
A Proposal of Application Notice (PAN) was submitted to South Lanarkshire Council as the Local Authority in September 2022 for the hydrogen component of the project and scoped under the single project EIA.

It is proposed that the Green Hydrogen Production Facility comprising a c. 40 megawatt (MW) electrolyser is located on land at Conexus West, consented industrial land, at Junction 11 of the M74 motorway, close to the main site entrance. The Facility would produce up to 20,000 kg per day of green hydrogen for use as a fuel to help decarbonise industry and heavy freight.

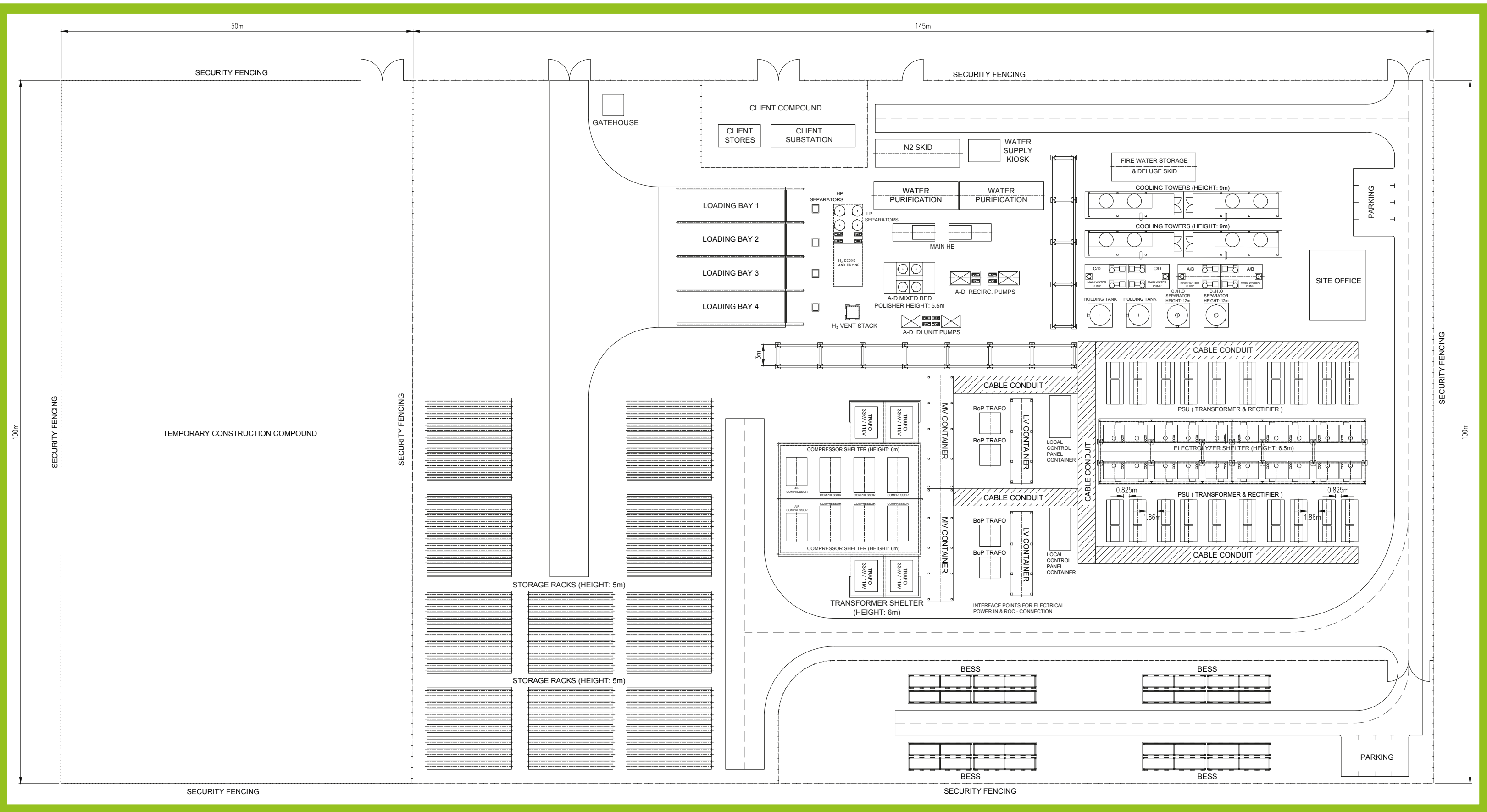
The electrolyser will make use of surplus electrical generation from the wind turbines at times of low demand to split water into oxygen and hydrogen. As the electrolyser uses renewable electricity to separate water into oxygen and hydrogen, no chemical or carbon emissions are produced at any stage. Oxygen is produced as a by-product and will be vented to the atmosphere, along with some water vapour. On cold days, a plume of steam (water) may be visible as a result.

This site was chosen as the location for the Green Hydrogen Production Facility due to:

- Readily available source of renewable energy
- Excellent site accessibility from the motorway network (M74)
- Existing outline planning permission for industrial/commercial uses
- Remote from residential properties



Indicative Site Layout



At present, the internal layout of the Green Hydrogen Production Facility has yet to be finalised, however based on its initial layout the facility would consist of:

- temporary construction compound and laydown areas;
- battery energy storage system (c.20MW);
- multiple buildings with a number of vertical standing pressure vessels up to 15 m in height. To include:
 - a hydrogen electrolyser facility
 - a hydrogen purification unit
 - site office
 - transformers
 - infrastructure associated with water supply
 - various H2 and O2 processing plant
- Internal access roads;
- foundations and hardstanding; and
- perimeter security fencing.

The Green Hydrogen Production Facility will also be supported by circa 20MW of battery energy storage to ensure that the supply of electricity always matches the demand of the facility. Renewable energy production of this nature is dependent on weather conditions (wind or sun) and battery energy storage systems (BESS) allow excess generation to be stored rather than that electricity being wasted. As battery storage technology can react to changes on the network very quickly it can also provide stability during fluctuations on the National Grid.

Jobs & Economic Development

The construction and operation of the Green Hydrogen Production Facility will also create new employment opportunities in the area. The Hagshaw Green Hydrogen Facility will provide an opportunity for upskilling and retraining of individuals previously employed in the oil and gas industry. The types of equipment and apparatus used in the production and transport of hydrogen will be highly familiar to anyone who has worked in the offshore industry in Scotland.

3R Energy

Hidden Area