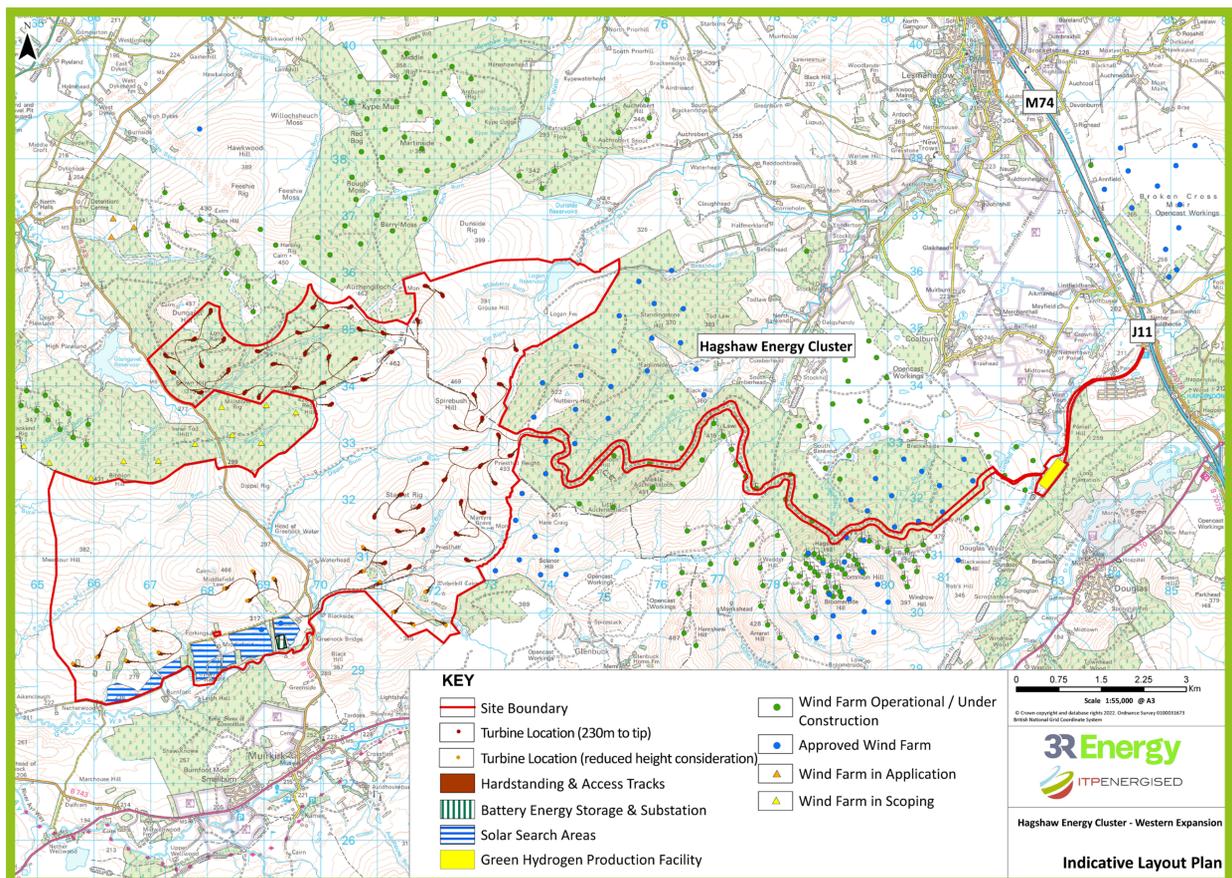


# Hagshaw Energy Cluster Western Expansion

## The Proposed Development

The Proposed Development is planned to comprise up to approximately 650 megawatts (MW) of renewable energy generation and energy storage output capacity, consisting of approximately 500 MW wind energy, 50 MW solar energy, and 100 MW battery energy storage systems. The Proposed Development also includes a 40 MW electrolyser plant for the production of green hydrogen fuel (see separate board).

The layout as shown below has been optimised in terms of wind yield analysis, landscape advice, residential buffers, ornithological advice and survey results as well as other environmental and engineering considerations. The layout is however only indicative at this stage.



## Project Components

## Technical Details

<b>Turbines</b>	Up to 72
<b>Turbine Capacity</b>	Around 7 MW each
<b>Maximum Tip Height</b>	230 m
<b>Maximum Rotor Diameter &amp; Blade length</b>	172 m & 84 m
<b>Crane Pads</b>	Each wind turbine requires an area of hardstanding adjacent to the turbine which provides a stable base for the cranes to erect the structures.
<b>Anemometer Mast</b>	Approximately 3 x 100m high anemometer masts will be located on the site. The masts would be kept for the duration of the operational period of the wind farm to monitor and record wind conditions.
<b>Solar Search Area</b>	Area around 155 ha with panel height up to 3 m
<b>Battery Energy Storage System</b>	Located alongside the substation will be an energy storage building housing a compliment of batteries to store electricity generated by the wind and solar components when it is not needed on the grid. The batteries will be stored within agricultural style sheds (60 m x 40 m) and have a capacity of around 100 MW.
<b>Green Hydrogen Production Facility</b>	Around 40MW located near J11 of the M74
<b>Substation &amp; Control Room</b>	An onsite substation and control room would house switchgear and metering and would connect the wind farm to the grid.
<b>Temporary Construction Compound(s)</b>	During the construction phase, a secure compound(s) would be required to store construction equipment and machinery. A hardstanding of locally won stone would be required for the base of the compound(s).
<b>Borrow Pits</b>	Where possible, the stone required for new tracks, turbine bases and hardstanding areas would be sourced from on-site borrow pits.
<b>Access Route and Tracks</b>	Access to site will be taken from junction 11 of the M74 motorway, via an existing private haul road through the Douglas West Wind Farm site, then through the Cumberhead Forest using existing access tracks.
<b>Grid Connection</b>	It is currently proposed that the Proposed Development will connect to the new Redshaw Transmission Substation near Crawfordjohn. The route of the cable(s) from the onsite substation to the Redshaw Transmission Substation will be developed separately by the Network Operator.
<b>Total Generating Capacity</b>	Around 650 MW
<b>Total Energy Generation per Annum</b>	Around 1.15 gigawatt hours
<b>Operational Life</b>	40 years

# 3R Energy

Hidden Area