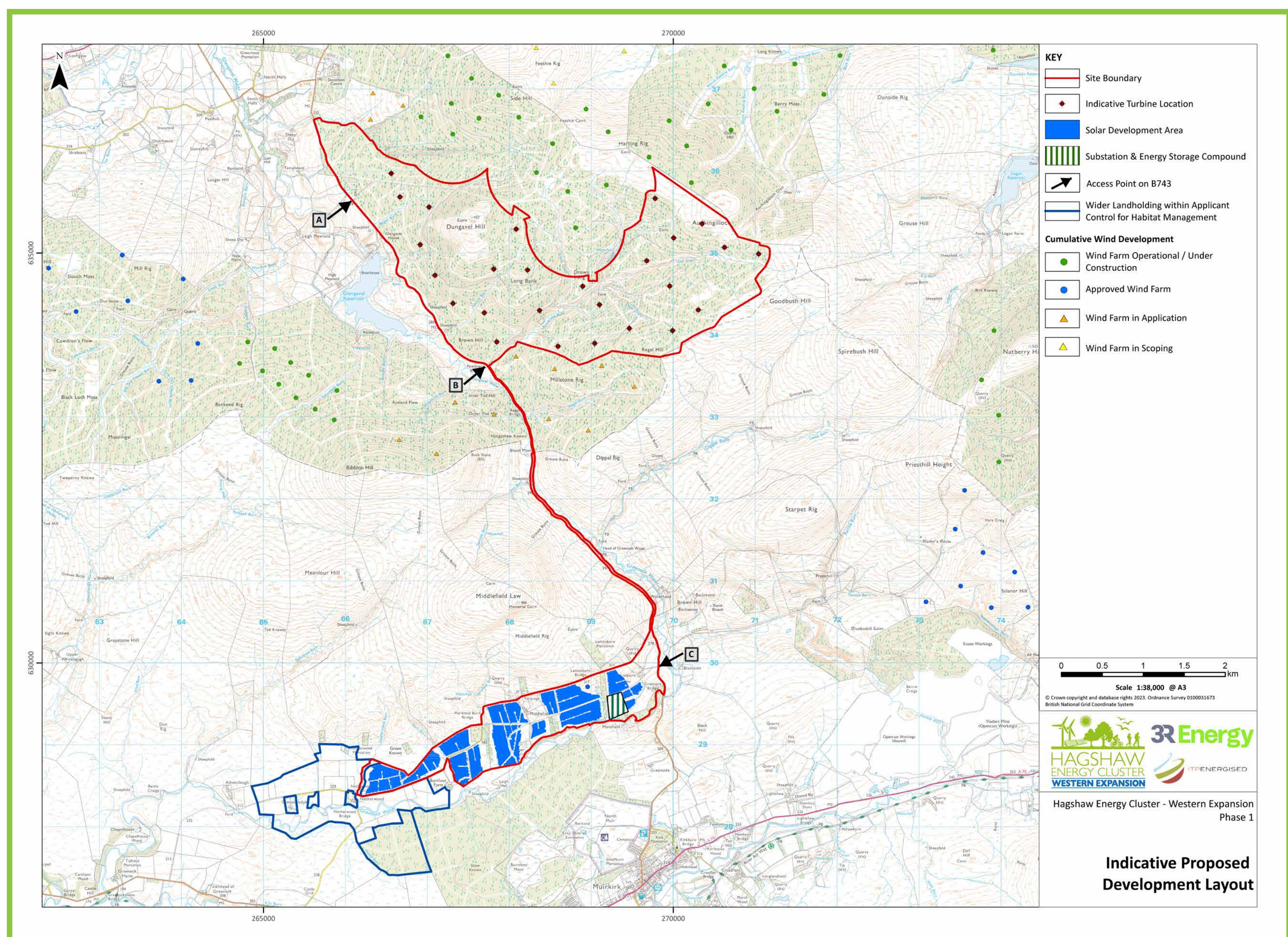


# Hagshaw Energy Cluster Western Expansion | Phase 1

## The Proposed Development (Phase 1)

The Proposed Development is planned to comprise up to approximately 487 megawatts (MW) of renewable energy generation and energy storage output capacity, consisting of approximately 187 MW wind energy, 100 MW solar energy, and 200 MW battery energy storage systems.

The layout as shown below has been optimised in terms of wind yield analysis, landscape advice, ornithological advice and survey results as well as other environmental and engineering considerations. The layout is however only indicative at this stage and may be subject to further design iteration.



## Project Components

## Technical Details

<b>Turbines</b>	Up to 26
<i>Turbine Capacity</i>	<i>Around 7.2 MW each</i>
<i>Maximum Tip Height</i>	<i>230 m</i>
<i>Maximum Rotor Diameter &amp; Blade length</i>	<i>163 m &amp; 81 m</i>
<i>Crane Pads</i>	<i>Each wind turbine requires an area of hardstanding adjacent to the turbine which provides a stable base for the cranes that are necessary to erect the structures.</i>
<b>Anemometer Masts</b>	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 Development Area</b>	Area around 100 ha with panel height up to 3 m
<b>Battery Energy Storage System</b>	Located alongside the substation will be two energy storage buildings 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 two agricultural style sheds (60 m x 40 m) and have a capacity of around 200 MW.
<b>Substation &amp; Control Room</b>	An onsite substation and control room would house switchgear and metering and would connect the wind and solar 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 Phase 1, for abnormal loads, is currently proposed to be taken from J11 of the M74 through the eastern extent of the existing Hagshaw Energy Cluster to meet the A70 west of Glespin (exact route tbc), then following the A70 to Muirkirk before heading north along the B743 to the site (access Point B on the figure above). See plan on next board for proposed abnormal load route.
<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 487 MW
<b>Total Energy Generation per Year</b>	Around 595 gigawatt hours
<b>Operational Life</b>	40 years

# 3R Energy

Hidden Area