Purpose of the project:
Responding to the need to meet and exceed renewable energy generation targets, the project is the proposed development of an onshore wind farm in the Highlands of Scotland. Seeking consent under Section 36 of the Electricity Act 1989, as amended, the operational wind farm would have an installed generation capacity of c.82MW of renewable energy. With an expected range of generation from 70 GigaWatt Hours (“GWh”) to 85GWh per annum (as the minimum, the equivalent annual consumption of c.24,000 homes), total carbon emissions savings over the proposed development’s lifetime of circa 3,057,990 tCO₂eq are expected.

Description of the project:
The project consists of seventeen wind turbine generators (WTG) with height to blade tip of 175 m, and each with an installed capacity of 4.8MW. Located in the Highland region of Scotland, in addition to the WTGs the key components of the wind farm would comprise the following:
WTG hardstanding areas; two permanent meteorological masts; internal access tracks; an operations control building with parking and welfare facilities; a substation compound; a modular energy storage facility; telecommunication equipment; temporary construction compounds; borrow pits to provide suitable rock on site for construction; and underground cabling linking the turbines with the substation.

Key Issues:

In common with most large onshore wind farm developments, and largely as a function of its rural setting, the development, design and assessment of Kirkan Wind Farm had a number of issues that required attention. These issues could largely be divided into those that occurred within the bounds of the site and those that needed to be considered in the wider area beyond the site boundary, as follows:

- On site – ground conditions (peat stability and management); ecological and ornithological interests; archaeoological assets.
- Off site – visual and landscape amenity (including for impacts on designated/protected areas), noise impacts on local residents, traffic and transportation.

Of particular relevance was the potential cumulative visual amenity impact and relationship that Kirkan could potentially have with existing operational wind farms in the immediate vicinity of the proposed site.
The overall challenge was to balance the consideration of these issues with the energy generation optimisation of the proposed scheme, with a key focus on ‘designing out’ and the avoidance of impacts as far as possible.

**Lessons Learnt:**

The approach taken to Kirkan Wind Farm was one of using lessons learned from other similar projects to minimise project risks and potential impacts, and to maximise benefits. The key lessons brought to bear to focussed primarily on:

- The early identification of key constraints & opportunities relating to the proposed development and its site and surroundings from the inception of the project;
- The value of focused and integrated multidisciplinary design workshops where the identified key constraints & opportunities provided the driver for design and with minimization of impacts at its heart;
- The importance of the development design taking due cognisance of cues taken from existing development in the landscape;
- Being aware of and managing the programme, site and quality risks associated with seasonal constraints with particular focus on ground condition surveys and investigation;
- Maintaining a focus on the adoption of a proportionate EIA by scoping out certain environmental aspects such as socio-economics, human health, and accidents and disasters.

By bringing such focus to the project, key impacts and opportunities were identified early on and necessary measures integrated within the design (including for avoidance). The desired programme was maintained due to early identification and management of the key seasonal constraints and placing an emphasis on ensuring the EIA remaining proportionate throughout. Submitting the EIA report and application for consent on time also meant that the client avoided paying increased application fees to the Scottish Ministers that were forecast to rise considerably shortly after the target submission date.

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