This article by SLR Consulting discusses the role of Environmental Impact Assessment has, and is having, in developing new sustainable development policies and environmental best practice for commercial on shore wind farm developments.

**Introduction**

By nature of the topography and meteorology of the UK, the areas with greatest potential for on shore wind farm development and the most reliable wind resources are usually located on elevated ground. Typically, preferred sites are also in areas that have seen limited development. These areas can be environmentally sensitive locations – and include areas with recognised landscape value, areas of peatland and areas that contain the headwaters of important river catchments, water dependent habitats, sensitive ecology and ornithology and maybe used by protected species. The need for detailed, robust and comprehensive Environmental Impact Assessment (EIA), to inform development and decision making, in these situations is clear.

**Improving Best Practice**

Whilst the need for a comprehensive EIA in sensitive locations is not a new concept, on shore wind farm development has some key aspects which differentiate it from many other forms of development. As a result best practice guidance and protocols for the development of on shore wind farms has been developed. This is used to ensure that rigorous assessment is undertaken of on shore wind energy developments.

Regulators across the UK, including Scottish Natural Heritage, Scottish Environment Protection Agency and the Countryside Council for Wales, have worked with wind energy industry groups (including Scottish Renewables and RenewablesUK) and developers to develop guidance and best practice that should be used when assessing impacts associated with on shore wind farm. Recent examples include guidance for landscape assessment; tools for assessing carbon balance; habitat restoration guidance; and peat slide risk assessment. There are not many other examples where the need for rigorous EIA has led innovation and been responsible for developing standards and best practice on such a scale for a specific form of development.

**Integrated EIA**

In sensitive environmental settings integrated EIA is paramount whatever the form of development. Various technical specialists all have a role to play in assessing potential impacts, identifying appropriate mitigation measures and achieving a sustainable form of development. In the case of the development of an on shore wind farm it is especially important, for example, for the hydrology, ecology and geology teams to be working together. This is due to the way in which the three disciplines are interlinked and inter dependant. For example peatlands can provide complex habitats for protected species and potential dewatering could cause significant effects.

It is considered important that a design led approach is used for the development of many on shore wind farm sites. This should commence with a comprehensive constraints mapping exercise.
This mapping can then be used to guide discussions on design and as the constraints mapping is refined and the visual impacts of the development are understood the design can be developed in a comprehensive way to ensure that the most appropriate design for the site is achieved. In order for a successful on shore wind farm development specialists are required to work together, as is the case in any development. For example, many on shore wind farms require a habitat management plan, this maybe especially true in areas that have a legacy associated with previous development (for example where there has been artificial drainage of peat, associated with forestry commercial land management practices or peat cutting). In such a situation it is possible to provide positive and tangible benefits, for several technical disciplines, through managed ditch blocking and habitat restoration. This practice is an example of a specialist area that has been subject to much recent research and publication of best practice guidance.

### Whole Life Cycle Assessment

Many on shore wind farm EIAs consider the potential impacts associated with wind farm construction and operation of the wind farm. It is however usual practice to refer only briefly to the likely method of decommissioning. This is due to the fact that it is best generally considered appropriate not to consider the decommissioning as the regulatory regimes are likely to be different in 25 years time and it will be appropriate to consider the most appropriate method of decommissioning at that time.

The subject of on shore wind farm decommissioning, and the production of best practice decommissioning, is the subject of a current SLR commission from Scottish Natural Heritage.

### Conclusion

Often on shore wind farm sites are in sensitive environmental locations, where it can be challenging to characterise baseline conditions. On shore wind turbine development proposals have been the catalyst for much of the recent best practice guidance and developing survey and assessment approaches to promote the rigorous EIA of on shore wind farm developments. On shore wind farm EIAs are subject to thorough consultee, local authority and third party review. It is not usual for wind farm developments to be the subject of appeal and so ES’s are regularly considered at hearings or Public Inquires. There are few other sectors that have promoted or disseminated as much research and best practice, for a particular development type, in recent years.

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