List of studies

Environmental
The impact of the wind farm on the environment was assessed before the planning applications were made. The list below highlights some of the key studies and assessments that have been carried out.

The studies have been grouped into the two main planning and construction areas for the offshore and onshore works.

Offshore
Meteorological parameters
The wind speed on site has been monitored at sea level on a 'met-buoy' for the past few years. In September 2004 a wind monitoring mast was installed on site to ensure more detailed measurement of such things as wind speed and direction.

Marine ecology
In order to assess the ecology of the seabed on the site, samples were taken and analysed to obtain information about the numbers and types of species living there. A vessel was used to trawl the waters in and around the site to establish the number and species of fish in the region. In addition to this fisheries assessment, the numbers of marine mammals spotted within the estuary was collated.

Geophysical
The physical features of the offshore site location were mapped by sonar. In addition, a 'magnetometer survey' was undertaken to detect metal objects on the seabed. A survey has also been undertaken to identify the geological features of the sediments below the sand and gravel layer of the seabed.

Shipping and Navigation
Shipping activity in the Thames Estuary was monitored and assessed – alongside data obtained in desktop studies – to show the intensity of shipping activities within the Thames Estuary. The markings to be displayed on the wind turbines will be determined following discussion with the Maritime and Coastguard Agency.

Aviation
The Civil Aviation Authority (CAA), National Air Traffic Services (NATS) and the Ministry of Defence (MOD) have all been in discussions with the project team to assess any possible effects of the wind farm on their navigation operations. MOD has concluded that the wind farm would not affect its operations. The CAA referred London Array to Kent International Airport (KIA). Agreement has been reached with KIA on suitable mitigation measures. The lighting requirements still have to be determined with the CAA.

Ornithology
Over two years' worth of data has been obtained through boat and aerial surveys on bird movements around the site. Within this period three winters have been assessed because these are the more important over-wintering period. The results of the work have led to modifications to the site area, away from some of the more populous areas.

Coastal process modelling
The consortium obtained data on the wave and current conditions on site by deploying buoys in selected locations. A computer simulation using the data collected showed the potential effects of the wind farm on the movement of sands. The study shows any potential effects both locally and on the shoreline.

Inter-tidal ecology
The ecology in the inter-tidal areas close to shore differs from that found in the deeper waters on site, therefore a further assessment of the ecology in this area was undertaken. The result of this work has led to re-routing of the proposed cables to avoid sensitive areas.

Offshore turbine noise assessment
Desk studies have been undertaken by the offshore wind industry to assess the noise impact of wind farms during both the construction and operational phases. This work has yet to be completed.

Offshore landscape assessment
The visual impact of the wind farm has been assessed by producing a chart showing the 'Zone of Visual Influence'. This highlights any areas from which the wind farm might be seen. Photomontages have been produced to show how the wind farm will appear once built.

Offshore archaeology and wrecks
Geophysical surveys were used to help with the archaeological assessment, and wrecks were identified from the metal objects discovered during surveying. In addition, a desktop study was used to research the history of the site.

Onshore
Onshore noise
In early 2004 the noise within the surrounding area of the proposed substation was measured to obtain a background level. Any possible increase in noise levels as a result of the onshore works can then be predicted. Modifications were then made to the design of the proposed substation so as to limit noise to below existing average background levels.

Onshore landscape assessment
Completing a 'character assessment' of the site and surrounding areas determined the visual impact of the onshore substation. Photomontages have been produced that show how the substation would appear once built.

Onshore ecology
An onshore ecology assessment was completed to investigate the biodiversity around the onshore works. A habitat survey was also completed.

Traffic impact assessment
Surveys have been undertaken on traffic and heavy vehicles on the local road network to understand the existing traffic flow and what increase will occur during the construction period and afterwards. The local roads are capable of safely supporting any additional construction traffic.

Onshore archaeology
A desktop archaeological study was completed using data of known historic monuments. In addition, a site walkover was undertaken to search for any historical artefacts.