

Air Quality - Air Pollutants

Baseline/issues: North West Plan Areas 10 11

(Please note that the figures in brackets refer to the SA scoping database. This is available on the MMO website)

The most highly populated and industrial areas adjacent to the coast are the main ports and this is where the focus needs to be with regard to analysing air quality impacts of inshore activities. The major ports in the North West marine plan area include:

- Liverpool (Seaforth, Birkenhead) - commercial, containers, bulk cargo, general cargo, ship fabrication and repair. New deep water container terminal completion 2015 doubles port capacity (Air_16)
- Manchester (via the Manchester Ship Canal), Eastham, Port Irlam, Ellesmere Port, Port Ince, Port Salford, Port Warrington, Runcorn (part of Peel Ports – working in conjunction with Liverpool) - commercial, containers, bulk cargo (Air_16)
- Fleetwood (Associated British Ports) - fishing, offshore gas, general cargo. Potential Celtic Array offshore wind development (Air_16)
- Heysham (Peel Ports) - ferry, bulk cargo, offshore gas, Potential Celtic Array offshore wind development (Air_16)
- Barrow in Furness (Associated British Ports) - general cargo, bulk cargo, shipbuilding, offshore wind (Air_16)

None of the port areas are designated AQMAs. However, there are localised air quality issues associated with the Stanlow Oil Refinery on the Mersey. These are known to affect the Mersey Estuary SSSI (Air_16)

Baseline/issues: South West Plan Areas 8 9

The major ports in the South West Marine Plan Area include:

- Plymouth – defence, fishing, ferry, general cargo (Air_12)
- Falmouth - shipyards and maintenance (Air_12)
- Avonmouth (and Bristol) - commercial and industrial (Air_12)

None of these port areas are designated AQMAs (Air_12)

Baseline/issues: North East Plan Areas 1 2

The major ports in the North East marine plan area include:

- Newcastle upon Tyne and associated ports - car ferries / cruises/ conventional and bulk cargo (Air_17)
- Sunderland - continental ferry port, cargo handling, North Sea oil and gas (Air_17)
- Hartlepool - fishing, bulk cargo, oil & gas & renewable energy (Air_17)
- Teeside including Teesport, Middlesborough, Billingham and Redcar – cargo annually, renewable energy (Air_17)

None of the port areas are designated AQMAs. However, there is a AQMA declared covering the village of Staithes (declaration for SO2 and PM10) (Air_17)

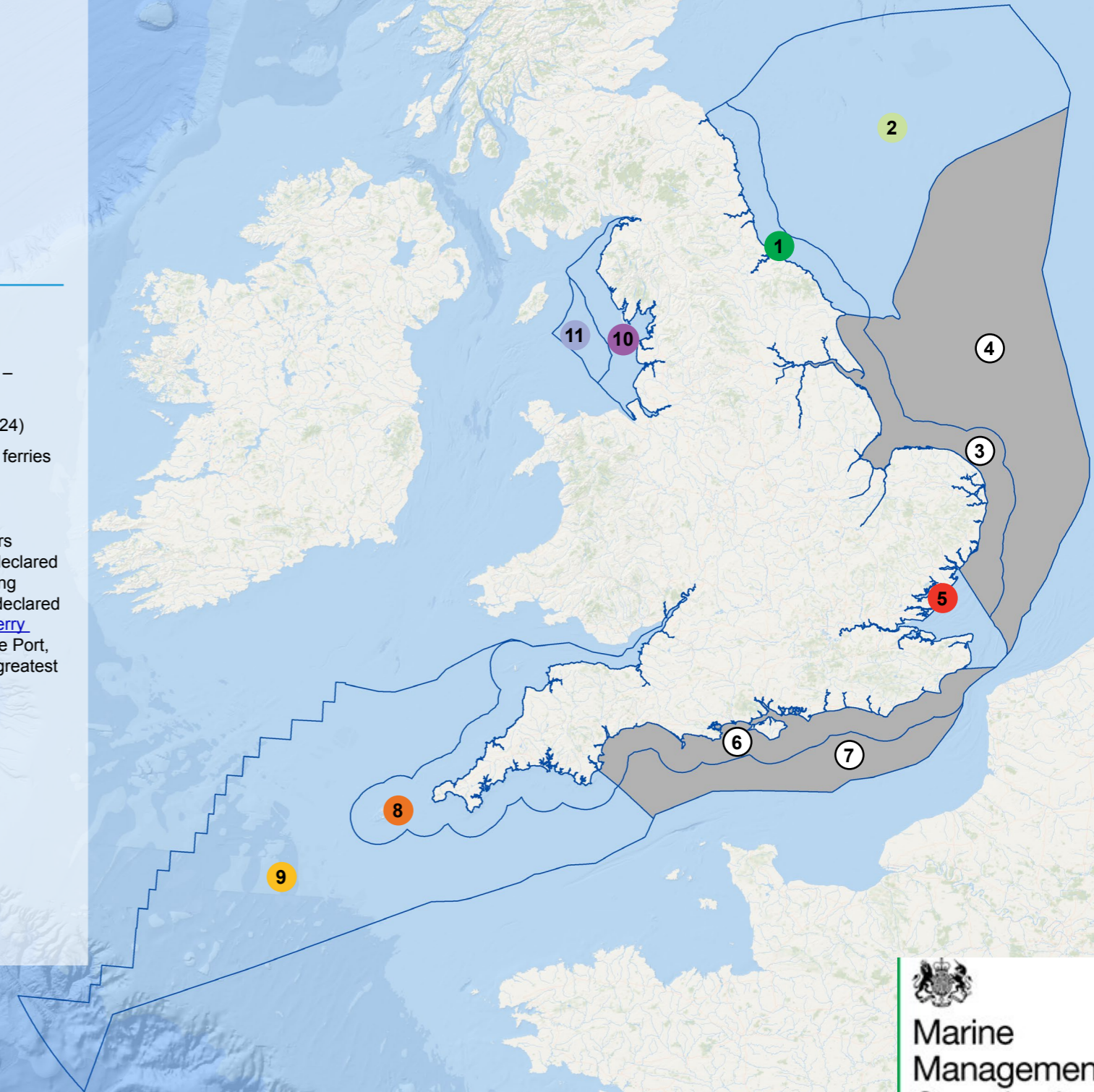
Baseline/issues: South East Plan Areas 5

The major ports in the South East plan area include:

- The Port of London (including Tilbury and London Gateway) – logistics (Air_24)
- Felixstowe / Harwich - warehousing and cross-docking (Air_24)
- Thamesport - commercial including container terminal, ro-ro ferries and bulk carriers (Air_24)
- Dover - ferry, cruise liners, cargo terminal (Air_24)

AQMAs are in place in Tilbury. [Greater London - AQMA 24](#) covers Tilbury Dock Road and Calcutta Rd Road transport - Pollutants declared NO2). [Dover Docks AQMA](#) covers Dover Eastern Docks including residential properties in East Cliff and Athol Terrace - Pollutants declared SO2 (Air_24). An AQMA is also designated for the [Dooley Inn, Ferry Lane](#) next to Felixstowe Port. Container handling activities on the Port, and heavy duty vehicles on roads external to the Port made the greatest contribution to NO2 levels within the AQMA (Air_24)

- 1 North East inshore
- 2 North East offshore
- 3 East Inshore
- 4 East Offshore
- 5 South East inshore
- 6 South inshore
- 7 South offshore
- 8 South West inshore
- 9 South west offshore
- 10 North West inshore
- 11 North West offshore



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Summary of the legislative / policy context

- Shipping is a key contributor to sulphur dioxide emissions. Under [EU Directive 1999/32/EC Emissions from Maritime Transport](#), from July 2010 ships operating in [Sulphur Emission Control Areas](#) must not use fuel exceeding 1% sulphur. This was reduced to 0.1% from 2015. However, sulphur dioxide emissions may not be as significant to the inshore areas as other industries (Air_8)
- Directive 1996/62/EC aims to ensure prevention and reduction of airborne pollutants for the protection of human health and the environment (Air_5)
- With regard to marine environment specifically, the [Marine Policy Statement](#) for the UK recognises that activities and developments in the marine and coastal area can have adverse effects on air quality and the UK is a signatory to various conventions, the most significant one being [MARPOL](#) (Marine Pollution Convention, 1973 / 1978). This is the main convention governing the prevention of pollution of the marine environment from ships and in part oil rigs and production platforms. It covers pollution by chemicals, oil, harmful substances in packaged form, rubbish, sewage and air pollution. It was amended in 2008 to further reduce harmful emissions from ships of sulphur oxides (SOx) and nitrogen oxides (NOx). There are also regulatory controls on atmospheric emissions for oil and gas platforms e.g. EU Emissions Trading System and Pollution Prevention and Control Regulations (Air_2)

Key cross cutting baseline / issues across all plan areas

- Shipping is a key contributor to sulphur dioxide emissions. EU Regulations will require higher quality fuels to be used to reduce sulphur emissions. Under Directive 1999/32/EC: From July 2010 ships operating in Sulphur Emission Control Areas (ECA) must not use fuel exceeding 1% sulphur. This was reduced to 0.1% from 2015 (Air_8)
- There are Emission Control Areas in place in the Baltic Sea ECA (sulphur oxides only), the North Sea ECA (sulphur oxides) and North American ECA (sulphur oxides, nitrogen oxides and PMs). The marine plan areas have more restrictive emissions standards and this may have transboundary effects on air pollutants (Air_15)
- There is the potential for negative cumulative ecological effects from air quality as a result of new nuclear power stations and other development activities and this will need to be addressed as part of the cumulative effects assessment carried out as part of the SA. The Environment Agency (EA) assesses that non-radioactive aerial emissions (sulphur dioxide, nitrogen oxides and volatile organic compounds) from nuclear power stations are extremely low compared to other regulated industries. However, this does not equate to no adverse effects (Air_20)
- Ongoing challenges with air quality (from transport emissions amongst others) in [Air Quality Management Areas](#) at the coast and on land could lead to eutrophication of the marine environment and acid deposition effects (Air_23)
- Ports such as Dover do not show 'hotspots' of SO2 concentrations indicating it is not necessarily shipping itself that accounts for the peaks but the nearby industry linked to the ports (Air_25)

The likely evolution of the environment over the plan duration

Agreed amendments to MARPOL will help improve air quality at ports. There have been quite substantial reductions in emissions of nitrogen oxides during the last decades in Europe. From 1990 to 2009 the NOx emissions in Europe decreased by 31%. The reductions were in the first decade mainly caused by a change from burning of coal and gas to nuclear power. NOx emissions from traffic especially in Western European have also decreased, even though fuel consumption increased. However, increased shipping activity, port expansion and associated industry growth could lead to increased sulphur oxides and nitrous oxides emissions at certain coastal locations, which in turn could contribute to the breach of national objectives for air quality. These include London Gateway port development, planned expansion of the Port of Felixstowe, Port of Dover Masterplan and the Port of Liverpool Masterplan. Therefore, it can be seen that there is likely to be a mixed picture in terms of the likely evolution of the environment dependent on location.

Potential interactions with other topics

The main potential interaction is with economy, particularly ports development, shipping and industrial emissions and as seen above there are some AQMAs where port activities are contributing to poor air quality (Air_24). There are also interactions between air quality and human health and biodiversity. It is possible that there are Natura 2000 sites and SSSIs on the coast that could be affected by poor air quality and these will be identified as part of the Habitats Regulation Assessment screening process. Effects on SSSIs will be assessed as part of the SA and further information will be collected at the assessment stage if required.

Potential transboundary issues

There are Emission Control Areas in place in the Baltic Sea (sulphur oxides only), The North Sea (sulphur oxides) and North American ECA (sulphur oxides, nitrogen oxides and PMs). The marine plan areas have more restrictive emissions standards and this may have transboundary effects on air pollutants (Air_15)

Key data gaps

- Air quality is not routinely monitored at offshore sites so it is difficult to predict the future trends of air quality within offshore plan areas. There is currently a paucity of data from which to generate a strategic understanding of where particular air quality sensitivities exist. As a consequence, it will be difficult to determine plan impacts on particular areas for air quality (Air_18)
- It would be useful to collect more information on Natura 2000 sites that are sensitive to air pollution. This will be undertaken as part of the Habitats Regulation Assessment screening process (Air_7)