

# 13

## Air Quality and Climate

### 13.1

#### *Introduction and Methodology*

There are three main types of impact on air quality and climate which need to be considered.

Local air quality impacts are assessed by comparing levels of particular pollutants with recognised standards and assessing whether the proposals will lead to any significant change. For most pollutants the standards are set for the protection of human health and the effects are therefore assessed at houses and other residential buildings (“sensitive receptors”). Effects in places which are not occupied for long periods are not considered significant as they will not affect health other than at exceptionally high pollutant concentrations. Particular attention is paid to designated Air Quality Management Areas (AQMAs), which are areas where local air quality is not expected to comply with national objectives and where local authorities will take steps to improve air quality, for example by controlling traffic. There are no AQMAs within either the New Forest or Isle of Wight local authority areas.

Some pollutant standards are for the protection of vegetation and ecosystems; any effects of this nature are assessed in section 8 ‘Flora and Fauna’ (none are anticipated).

Aside from health effects, there can be effects due to dust or odours which cause nuisance or disturbance rather than health effects. These are assessed at the same sensitive receptors as health effects.

The potential effects of a project on climate are normally assessed as contribution to global warming through emission of carbon dioxide or other greenhouse gases.

### 13.2

#### *Baseline Conditions*

#### 13.2.1

##### *Air Quality*

Background pollutant emissions for the study area at NGR 446500 099500 have been estimated by the National Environmental Technology Centre of AEA Technology (NETCEN) for various years and are shown in Table 13.1

**Table 13.1** *Estimated background pollutant emissions*

Location (NGR)	Pollutant	Concentration (and year prediction relates to)	Selected UK Standards (year for compliance under UK Air Quality Objectives)
446500 099500	Nitrogen Dioxide	15.7 µg/m <sup>3</sup> (2005)	21 µg/m <sup>3</sup> annual mean (2005)
	Particulates ('PM10')	18.1 µg/m <sup>3</sup> (2004)	40 µg/m <sup>3</sup> annual mean (2004)
	Sulphur Dioxide	5.12 µg/m <sup>3</sup> (2001)	20 µg/m <sup>3</sup> annual mean (2000)
	Benzene	0.32 µg/m <sup>3</sup> (2003)	5 µg/m <sup>3</sup> annual mean (2010)
	Carbon Monoxide	0.24 mg/m <sup>3</sup> (2001)	No objective set for annual mean. 10 mg/m <sup>3</sup> maximum daily running 8-hour mean (2003)

These modelled concentrations are in line with expectations for a rural site. They fall within the recommended UK standards and indicate no significant concerns about air quality locally.

As the project is not expected to have a significant impact on local air quality, monitoring to collect further information was not considered necessary.

### 13.2.2

#### *Climate and Climate Change*

The climate in Hampshire and the Isle of Wight is typified by relatively mild winters, low rainfall and monthly rainfall similar in summer and winter. Average annual rainfall for 1971-2000 at the nearest Met Office reporting site (Everton, Hampshire) was 764mm.

The effects of climate change are hard to predict for any one location, as an overall increase in average temperature does not translate into a similar increase in all locations. There is reasonable consensus on an overall trend towards increasing winter rainfall, increased frequency of high intensity events and, in the next few decades, higher temperatures (with increased evaporation). Sea levels are also predicted to rise, although the rate at which this will happen depends on complex global processes and predictions vary significantly.

## 13.3

### ***Impact Assessment and Mitigation***

### 13.3.1

#### *Construction Impacts: New Forest*

I.1. Construction work is not expected to generate significant extra traffic on local roads within the New Forest. The usual screening test for local air quality impacts from road traffic is whether there will be roads experiencing a 10% increase in traffic, which is not expected to be the

case. In addition the local background pollution levels are sufficiently low that pollutant emissions would need to be very high in order to cause any health issue. There will therefore be **no significant impact** on local air quality due to vehicle emissions.

I.2. Construction and demolition activities will generally produce dust which may be deposited in the surrounding area. Earth-moving activities and stockpiling of soil and drilling arisings, as proposed at the drilling sites, are significant sources of dust, not only in dry weather but also in conditions where mud may be spread around the site or local roads and then dry out. Further discussion of the proposed working methods is provided in section 13.3.2; at the Lepe site impacts are reduced as there are no sensitive receptors in the downwind direction. Given the mitigation measures detailed below, **no significant impact** is anticipated from dust deposition in New Forest.

M.2. It is proposed to sweep debris, including mud, from local roads if any is carried off-site. Skips containing solid materials from the drill arisings will be sheeted for transportation unless the nature of the material makes this unnecessary. These measures should prevent dust generation from areas outside the site.

### 13.3.2

#### *Construction Impacts: Isle of Wight*

I.3. Construction work is not expected to generate significant extra traffic on local roads. The usual screening test for local air quality impacts from road traffic is whether there will be roads experiencing a 10% increase in traffic, which is not expected to be the case. In addition the local background pollution levels are sufficiently low that pollutant emissions would need to be very high in order to cause any health issue. There will therefore be **no significant impact** on local air quality due to vehicle emissions.

I.4. Construction and demolition activities will generally produce dust, which may be deposited in the surrounding area. Earth-moving activities and stockpiling of soil and drilling arisings, as proposed at the drilling site, are significant sources of dust, not only in dry weather but also in conditions where mud may be spread around the site or local roads and then dry out. There are several houses close to the Gurnard site which are in a

downwind direction of the south-westerly prevailing wind and might therefore be affected by dust from the site.

Part of the drilling site will be surfaced with rock on a geotextile membrane. This is to provide a suitable working surface for specialised plant, but will have the side benefit of reducing the spread of mud and therefore reducing dust generation.

The process of stripping topsoil from the site and stockpiling it is likely to generate dust, depending on the weather at the time, but this stockpile will then be undisturbed until the end of the works when the site is being reinstated. As long as it is built properly and kept damp if material is blown by the wind during sustained dry weather, dust generation from this source should be manageable.

The drill arisings will pass through a soil separation plant that typically uses screening settlement and centrifuging to separate the solid materials into a suitable skip for disposal, the liquid portion and much of the drilling lubricant is reused in the drilling mud. The solid material will include silt and clay as well as larger particles, and dust would be generated by wind action if it were transported in open skips without sheeting. Skips will therefore be sheeted when such material is transported.

Dust is likely to be produced by the action of the wind on the temporary stockpile(s), and will certainly be produced from the process of loading the HGVs, which is expected to be by an excavator, a grab loader or a similar vehicle. It is estimated that only 1 or 2 HGVs per day will be loaded.

The dust impact from this site is predicted to be **minor adverse**.

- M.4. It is proposed to sweep debris, including mud, from local roads if any is carried off-site. Skips containing solid materials from the drill arisings will be sheeted for transportation unless the nature of the material makes this unnecessary. These measures should prevent dust generation from areas outside the site.

13.3.3

*Construction Impacts: Marine*

I.5. It is not anticipated that there will be any significant activities generating air pollution, therefore there should be **no significant impact** on either air quality or climate.

13.3.4

*Construction Impacts: Global Climate*

I.6. Construction work will lead to emission of additional carbon dioxide both directly from vehicles transporting materials and staff to and from the site and indirectly due to energy consumption during construction. Any such emissions will make a contribution to global warming, unless counterbalanced by activities which “capture” carbon dioxide, however the scale of the works proposed mean that such changes would be very minor relative to other local sources and the impact should be regarded as **minor adverse**.

13.3.5

*Operational Impacts*

I.7. It is not anticipated that future operations will be different to those required for the current pipeline, in terms of activities generating air pollution, therefore there should be **no significant impact** on either air quality or climate.