

## Appendix 6.1

### Approach to Air Quality Dispersion Modelling

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The following methodology was agreed as part of the consultation process as agreed with City and County of Swansea (CCS).

**Table 6-1: Agreed Approach to the Air Quality Assessment**

Point of Consultation	Agreed Approach
<b>Stack Modelling</b>	
Model to be used:	ADMS 5
Pollutants to be considered:	Nitrogen oxides, carbon monoxide
Meteorological Data	5 years data (2012-2016) for Cwm Level Park Data (provided by CCS) with missing data/cloud cover supplemented with Mumbles Head Data for the same time period.
Terrain Data	Included in the model based maximum resolution (64x64) allowed within ADMS5 and covering an area applicable to each modelling grid
Modelling Grid	200 m (20 km x 20 km centred on the stack) – used for contour plots and ecological impact assessment. 30 m (3 km x 3 km centred on the stack) – used for Stack Height Determination
Indicative Receptors	Ecological Designations (modelled at a height of 1.5 m): <ul style="list-style-type: none"> <li>- Ramsar, SAC and SPA sites within 10 km</li> <li>- SSSI, SINCR, Ancient Woodland, NNR and LNRs designated within 2 km</li> </ul> Human Receptors (modelled at a height of 1.5 m) - specific receptor locations representing the closest sensitive receptors to the Project Site, i.e.: <ul style="list-style-type: none"> <li>- Abergelli Farm;</li> <li>- Morryston;</li> <li>- Pant-lasau;</li> <li>- Llwynceilyn;</li> <li>- Llangyfelach; and</li> <li>- Receptors representative of the eastern boundary of areas 11 and 5 on the LDP Concept Plan</li> </ul>
Background Air Quality	Human Health - Based on Mapped Defra grid square for each modelled receptor. Contour Plots - No background will be applied for contour plots which will just show contributions from the Project

Point of Consultation	Agreed Approach
	Ecology - Background for ecological receptors will be based on APIS background estimates
NO <sub>x</sub> to NO <sub>2</sub> conversion	Use Environment Agency values of 70% conversion of NO <sub>x</sub> to NO <sub>2</sub> for annual concentrations and 35% for hourly concentrations.
Assessment Significance	of Environment Agency Screening levels i.e. if less than 1% of AQS objective for Long-term and 10% for short-term then can be screened out as not significant.
Roads Modelling	
Is assessment required?	Screen need to assess road contributions based on the based on the IAQM Land-Use Planning & Development Control Planning For Air Quality Jan 2017 (v1.2) Table 6.2
If traffic contributions cannot be screened out based on the IAQM guidance's then:	<p>Model Using ADMS Roads at specific receptors close to the roads that exceed the IAQM screening level at a height of 1.5 m.</p> <p>Use Defra mapped background data</p> <p>Stack contribution will be added to this to assess in combination effects.</p> <p>NO<sub>x</sub> to NO<sub>2</sub> conversion based on Defra conversion tool.</p> <p>Assess significance based on the IAQM guidance's criteria</p>