

# Air Quality Modelling and Assessment Unit (AQMAU)

## SPECIFIED GENERATOR TRANCHE B SCREENING TOOL

Version 2.1



### STEP1: GENERAL SITE INFORMATION

Applicant name UKPR

#### USER NOTES:

Please enter the name that will appear on the environmental permit.

Specified generator usage type category  
(Select from the drop-down list) Peaking

#### USER NOTES:

CHP - Combined heat and power plant typically used to provide mid-merit or base load electricity and therefore assumed to operate up to 8760 hours per year.  
Peaking - Peaking plant are used to provide power during grid peak demand periods and are assumed to operate between 501 and 1500 hours per year.  
Balancing - Balancing plant are considered to operate between 51 and 500 hours per year and are typically used to provide balancing power reserve to the grid.

Fuel  
(Select from the drop-down list) Natural gas

#### USER NOTES:

Natural gas - Can be used for screening of all usage types (CHP, Peaking and Balancing).  
Diesel (ultra low sulphur) - Can be used for screening for blancing operations only (between 51 and 500 hours per year).

Is it a mixed Tranche A and B Specified Generator site?  
(Select yes or no) No

#### USER NOTES:

Select yes, if there are any Tranche A generators on the Specified Generator site. If there are, then all Tranche A generators must comply with the Tranche B generator requirements.  
Select no, if there are no Tranche A generators on the Specified Generator site.

Specified generators aggregated rated thermal input 38.7 MW

#### USER NOTES:

This is the total aggregated thermal input of all generators on the Specified Generator site. It should include Tranche A and B generators for mixed sites.  
CHPs - Screening distances for up to 25 MWth aggregated plant have been calculated.  
Peaking and balancing plant - Screening distances for up to 50 MWth aggregated plant have been calculated.

Operational hours per year 8760 hours  
If 'Peaking' or 'Balancing', is rolling average flexibility required?  
(Select yes or no) Yes

#### USER NOTES:

Enter the number of operational hours per year.  
Select yes, if rolling average flexibility is required for the peaking or balancing plant. These are: rolling averages over a period of 3 years for new plant operating no more than 500 hours per year; and 5 years for existing plant operating no more than 500 hours per year or plant operating between 501 and 1500 hours per year.  
Otherwise select no.

Existing or new medium combustion plant generators?  
(Select from drop-down list) Existing  
Emission Limit Value (273 K, dry and 15% O<sub>2</sub>)  
(Automatically selected) 190 mg/Nm<sup>3</sup>

#### USER NOTES:

Generators with rated thermal input greater than 1 MW and less than 50 MW are medium combustion plant. Those that operate more than 500 hours per year will be required to comply with MCPD ELVs, those that operate up to 500 hours must comply with the SG ELV.  
Existing - MCPs operating before 20 December 2018 and more than 500 hours (MCPD ELV 190 mg/Nm<sup>3</sup>).  
New - MCPs operating after 20 December 2018 and more than 500 hours (MCPD ELV 95 mg/Nm<sup>3</sup>).  
Other - MCPs operating up to 500 hours per year, or generators with individual rated thermal inputs less than 1 MW (SG ELV 190 mg/Nm<sup>3</sup>).

Do the generators have secondary abatement fitted?  
(Select yes or no) No

#### USER NOTES:

Select yes, if secondary abatement is used to reduce emissions from generators on the specified generator site.  
Select no, if no secondary abatement is fitted.

Attainable emission concentration (273 K, dry and 15% O<sub>2</sub>) 190 mg/Nm<sup>3</sup>  
Screening Emission Limit Value (273 K, dry and 15% O<sub>2</sub>)  
(Automatically selected) 190 mg/Nm<sup>3</sup>

#### USER NOTES:

Enter the emission concentration that all the generators on the site can achieve.  
If it is a mixed Tranche A and B site, it should be no more than the Specified Generator ELV of 190 mg/Nm<sup>3</sup>.  
A lower Emission Limit Value can be set and screened against if it can be achieved.  
The lowest Emission Limit Value possible is 35 mg/Nm<sup>3</sup>, which can be achieved when secondary abatement is fitted.  
If left blank the screening Emission Limit Value will be set automatically.

### STEP 2: RELEASE INFORMATION

Stack height 12 m

#### USER NOTES:

The stack height is the height of the top of the stack above ground level of the release point. If there are multiple generator stacks then the lowest stack should be entered.

Is there one or more buildings within 5L and with heights more than 40% of the stack height?  
(Select yes or no) No

#### USER NOTES:

If yes, all [buildings that could affect dispersion](#) must be combined into a single effective combined block. Buildings that can affect dispersion must be both:  
• Within 5L of the stack, where L is the lowest of either the height of the building, or the maximum projected width (for example, the opposing corners of a roof). Typically, L will be the building height unless the building is a tower.  
• Have a height that is more than 40% of the stack height.  
Select no, only if there are no buildings that satisfy the above criteria.

Height of tallest building within 5L 0 m  
Length (or length of combined block for multiple buildings) 0 m  
Width (or width of combined block for multiple buildings) 0 m

#### USER NOTES:

Enter height of tallest building that can affect dispersion.  
Enter the length and width of the building or the combined block building.  
If there are no buildings that could affect dispersion then leave blank.

Maximum downwash cavity length #DIV/0! m  
Are there any receptors within the downwash cavity length from the nearest edge/side of the building?  
(Select yes or no) No

#### USER NOTES:

There are very high uncertainties when predicting impacts in the cavity region of buildings that cause downwash.  
Select yes, if there are any sensitive receptors within the calculated downwash cavity length from any side or corner of the inputted building.  
Otherwise, select no.

### STEP 3: STUDY AREA SETTING AND BACKGROUND CONCENTRATIONS

Sensitive receptor setting  
(Select from drop-down list)

Suburban

#### USER NOTES:

The study area should be defined based on a 1 km buffer zone around the site.  
Rural - Rural settings are locations in the open countryside, agricultural areas, villages and small towns.  
Suburban - Suburban settings are mixed-use or residential areas on the outskirts of a city or large town.  
Industrial - Industrial settings are locations where industry is the main land use and makes a contribution to the pollution burden.  
Urban - Urban settings are considered to be locations in the main areas of a city or large town.

Sensitive receptors near an A road or motorway network?  
(Select yes or no)

No

#### USER NOTES:

Receptors near roads have elevated background NO<sub>2</sub> concentrations.  
Select yes, if there is an A road (main road) or motorway within 50 m of receptors in the study area.  
Otherwise, select no.

Sensitive receptors within an AQMA declared for NO<sub>2</sub>?  
(Select yes or no)

No

#### USER NOTES:

If there are receptors within an Air Quality Management Area (AQMA), then there is likely to be little or no headroom. Current AQMAs can be found at the following link <https://uk-air.defra.gov.uk/aqma/maps>  
Select yes, if the receptor is within an AQMA declared for nitrogen dioxide (NO<sub>2</sub>).  
Otherwise select no.

Baseline background NO<sub>2</sub> concentration

8.0

µg/m<sup>3</sup>

#### USER NOTES:

Enter the assumed baseline background concentration for the study area.  
The Local Authority can give baseline background concentrations for the study area from their local air quality management responsibilities.  
The baseline background should not be a roadside or kerbside concentration.

### STEP 4: RECEPTORS

Distance to nearest non-roadside Human Health Receptor

260

m

Are there any human health receptors where there is roadside public exposure?

No

Distance to nearest roadside Human Health Receptor

m

#### USER NOTES:

Enter the shortest distance from any generator stack to the nearest receptor where there is [relevant public exposure](#).  
Non-roadside receptors are those where there is public exposure beyond 15 m of any road or street.

Roadside receptors are those where there is public exposure within 15 m of a busy road or junction (10,000 vehicles/day or more), or a congested narrow streets (5,000 vehicles/day).  
Higher backgrounds are automatically assumed for these receptors.

Select yes, if there is relevant public exposure within 15 m of a busy road and enter the distance to the nearest roadside receptor.

Otherwise, select no and enter no distance.

Examples of public exposure are given in the 'Guidance on dispersion modelling for oxides of nitrogen assessment from specified generators'.

Are there any SACs, SPAs, Ramsar sites within 5 km or SSSIs within 2 km?

Yes

Distance to nearest SAC, SPA, Ramsar site or SSSI

1500

m

#### USER NOTES:

Select yes, if there is a SAC (Special Area of Conservation), SPA (Special Protection Area) or Ramsar site within 5 km, or SSSI (Site of Special Scientific Interest) within 2 km.

If yes, enter the distance in meters from any generator stack to the nearest habitat site.

Otherwise, select no and enter no distance.

Sites can be found at the following link <http://magic.defra.gov.uk/MagicMap.aspx>

### STEP 5: ENVIRONMENTAL RISK

Run tool

Reset data

Screening result:

The number of operational hours is above the 1500 limit for simple bespoke application under the 'Peaking' plant usage category. Complex bespoke application required.