

Technical Note for Modelling Industrial Emissions

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1. Introduction

This technical note (TN) provides additional guidelines on industrial emissions related to air quality impact assessments (AQIA) in Hong Kong.

2. Source Parameters

Point sources (stacks or vents) are the most common source type from industrial installations. In order to model point sources, an accurate determination of the following information will be required:

- Emission rate (typically in g/s) – emission rates are directly proportional to modelled concentration (for inert pollutants). The assumption of the emission rates should be reviewed to minimize the errors;
- Temperature of release (in K) — the exit temperature is important in the determination of plume rise;
- Stack diameter (in m) – the inner diameter of the stack;
- Stack height (in m, mAG) – the height above the stack base elevation;
- Stack exit velocity (in m/s);
- Stack base elevation (in m)

3. Emission Rates and Profiles

For existing industrial sources, applicants shall refer to the following references for the emission rates and emission profile assumption.

- Past activity data in approved EIA report
- The Centralised Environmental Database (CED) <https://eiaced.epd.gov.hk/>
- SP licence from the regional offices of the EPD
- From the operators of the industrial sources
- Emission source of similar type and size

To avoid overestimating the emissions (e.g. by assuming a flat round the clock operation), applicants / project proponents shall try their best to assume emission profiles in the model input files using best available information. For example, electricity generating units at a powerplant commonly assume emission profiles matching the actual operation pattern in recent years. EPD makes available the

emission profiles of power plant sources as implemented in the PATH model for applicants' use. For planned sources, design engineers can assume emission profiles from sources of the same type with appropriate documentation and justification. The applicant should submit documentation when variable emission rates are used.

Air Quality Modelling & Forecasting Section

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