

**Environmental Impact Assessment Ordinance, Cap.499  
Guidance Note**

**Preparation of Fixed Noise Sources Impact Assessment  
Under the Environmental Impact Assessment Ordinance**

*(Important Note :*

*The guidance note is intended for general reference only. You are advised to refer to and follow the requirements in the Environmental Impact Assessment Ordinance (Cap 499) and the Technical Memorandum on Environmental Impact Assessment (EIA) Process. Each case has to be considered on individual merits. This guidance note serves to provide some good practices on EIA and was developed in consultation with the EIA Ordinance Users Liaison Groups and the Advisory Council on the Environment. This guidance note may be subject to revision without prior notice. You are advised to make reference to the guidance note current to the date. Any enquiry on this guidance note should be directed to the EIA Ordinance Register Office of EPD on 27<sup>th</sup> Floor, Southorn Centre, 130 Hennessy Road, Wan Chai, Hong Kong. (Telephone: 2835-1835, Faxline: 2147-0894), or through the EIA Ordinance web site ([www.epd.gov.hk/eia](http://www.epd.gov.hk/eia))*

**1. Purpose**

- 1.1 This guidance note (GN) serves to provide some good practices to the practitioners on the preparation of Fixed Noise Sources Impact Assessment (FNIA) of designated projects (DPs) under the Environmental Impact Assessment Ordinance (EIAO).
- 1.2 This GN is applicable to EIA reports where FNIA is required, unless otherwise specified in the EIA study brief. It is advisory in nature and is not intended to supersede the relevant Annexes of the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).
- 1.3 The considerations in identifying adverse environmental impacts, criteria for evaluating fixed noise sources impact, contents of an EIA report, guidelines for FNIA, guidelines for the review of an EIA report, contents of Environmental Monitoring and Audit (EM&A) Programme are detailed in Annexes 3, 5, 11, 13, 20 and 21 of the EIAO-TM respectively.
- 1.4 This GN should not be considered as a prescriptive set of rules or an exhaustive manual of methods/techniques. It does not obviate the need for the compliance with all the requirements in the relevant Annexes of the EIAO-TM and the EIA study brief of the project.
- 1.5 The coverage of this GN includes those types of DP that may cause fixed noise sources impacts. The level of information required for individual FNIA and hence the application of relevant parts of this GN is dependent on the type of DP and the surrounding situation in which the DP is located.
- 1.6 Regardless of the results of the FNIA, fixed noise sources are controlled under the Noise Control Ordinance (Cap. 400). Upon the receipt of noise complaints, the Environmental Protection Department (EPD) will conduct investigations and assessments based on the prevailing condition and situations of adjoining land uses. The FNIA at EIA stage is only meant to demonstrate that practical and feasible approaches are available.

## 2. **Fixed Noise Sources Impact Assessment Methodology**

- 2.1 The FNIA should evaluate the fixed noise sources impacts of the project in accordance with the criteria and guidelines given in Annexes 5 and 13 of the EIAO-TM, and the EIA study brief issued under the EIAO.
- 2.2 To streamline the preparation of FNIA at EIA stage, the project proponent shall, unless otherwise agreed by the Director of Environmental Protection (the Director), conduct a qualitative assessment to demonstrate that no adverse fixed noise sources impact would be associated with the project by committing to adopt quieter plant and/or quieter designs during design and implementation stages. In such case, the project proponent should firstly identify the major fixed noise sources/activities and their preliminary locations, then propose the corresponding design measures, and commit to submit a Fixed Noise Sources Management Plan (FNMP) to the Director for approval during the pre-tender stage, if any, and before commencement of the project implementation. The FNMP should contain a quantitative fixed noise sources impact assessment, accounting all design measures including noise mitigation measures (if required), and a fixed noise sources commissioning test plan. In any case, the FNMP shall be submitted before commencement of the project implementation. The submission of FNMP during the pre-tender stage, if any, and before commencement of the project implementation will then be imposed as a condition in the environmental permit (EP).
- 2.3 Section 5.2 of Annex 13 of the EIAO-TM stipulates the assessment requirements for fixed noise sources impact. Reference could be made to the relevant technical memoranda issued under the NCO or international standards. Paragraphs 3 to 5 below also provide a general reference on the considerations given in adopting fixed noise sources mitigation measures and the methodology for FNIA.

## 3 **Identification of Fixed Noise Sources Impact**

### *Identification of Assessment Area and Noise Sensitive Receivers (NSRs)*

- 3.1 The assessment area is usually within 300 m from the project boundary. However, if warranted, impacts outside 300 m should also be considered (e.g. airport, theme park, amusement park, etc.).
- 3.2 Regarding the identification of NSRs for the FNIA, the approach would be specified in the EIA study brief for the project and examples of NSRs are given in Annex 13 of the EIAO-TM.
- 3.3 All NSRs, including existing, committed and planned within the assessment area shall be identified. Assessment points, representing all identified NSRs, shall be agreed with the Director prior to conducting the FNIA.

### *Inventory of Noise Sources*

- 3.4 Fixed noise sources impact mainly originates from the use of machinery plant or activities from or nearby the project. The emission inventory of the fixed noise sources is a list of such plant or activities. It must be noted that different plant or activities may be operated or carried out at different periods of time during a day, e.g. chiller systems may be operated continuously, while some ventilation system may only be operated in daytime and evening

period, etc. Confirmation of the validity of the inventory and the operational details shall be obtained from the relevant professionals representing the project proponent or relevant parties responsible for those plant or activities. Where necessary, the agency or contractor should also be consulted.

- 3.5 The inventory and their operational details must be realistic and practicable. They should not be artificially or arbitrarily developed to fit in with the noise criteria without any regard to the practicability and feasibility of the project requirements.
- 3.6 For DPs where noise sensitive uses are proposed, project proponents shall usually be required to evaluate the fixed noise sources impacts upon planned NSRs for which existing, committed or planned fixed noise sources may be involved. Project proponents shall identify the premises with significant existing, committed or planned fixed noise sources based on best available information at the time of assessment.
- 3.7 All the above assumptions, validations and considerations shall be included and properly documented in the FNIA.

#### **4 Prediction and Evaluation of Fixed Noise Sources Impact in FNIA**

- 4.1 The project proponent could then conduct a qualitative assessment in the EIA study to demonstrate that no adverse fixed noise sources impact would be associated with the project by committing to adopt quieter plant and/or quieter designs during operation stage. Alternatively, if a quantitative FNIA is to be carried out in the EIA study, the project proponent should assess the fixed noise sources impact of the Project, with respect to the procedures as stipulated in the EIAO-TM, in particular to the criteria and methodology set out in Annex 5 and Annex 13 of the EIAO-TM.
- 4.2 *Prediction of Noise Impact in the EIA Study*
  - (a) The assessment should address the cumulative fixed noise sources impact resulting from the operation of the project and other significant existing, committed or planned fixed noise sources, if applicable, identified during the course of the EIA study on NSRs within the assessment area.
  - (b) The potential fixed noise sources impact to existing, committed or planned NSRs shall be addressed taking into account the preliminary design, presumed operation mode, identified mitigation measures, if necessary, of the planned fixed noise sources. Project proponents shall explicitly spell out in the EIA report that a FNMP, with quantitative assessment, would be submitted in a later stage of the project.

#### **5 Mitigation of Fixed Noise Sources Impact**

##### *Direct Mitigation Measures*

- 5.1 The project proponent shall consider and evaluate the possible application of all direct mitigation measures including but not limited to the mitigation measures set out in Annex 13 of the EIAO-TM, quieter plant or quieter designs (e.g. use of acoustic screen, silencer, enclosure), etc. The feasibility, practicability and effectiveness of the recommended mitigation measures shall be assessed and confirmed with the relevant responsible parties and be spelt out in the EIA report as appropriate. Specific reasons for not adopting certain direct mitigation measures should be clearly substantiated and documented in the FNIA.

5.2 Listed below are some commonly used direct mitigation measures:

- layout design / level difference / proper orientation to avoid direct line of sight to NSRs;
- use of quieter plant and/or quieter designs;
- consideration on operation time (e.g. avoid night time or early morning operation); and
- use of acoustic screen, silencer / enclosure.

5.3 It must be noted that the calculation of maximum allowable sound power level of the proposed fixed noise sources is not valid to demonstrate compliance in the quantitative assessment stage. Project proponents are required to gather noise emission information regarding the actual fixed plant, or equivalent, that would be implemented in the project for detailed assessment.

5.4 The project proponent should get the early involvement of relevant professionals and encourage the development of innovative noise mitigation measures. In general, more innovative noise mitigation measures should be considered when:

- the fixed noise sources are close to NSRs;
- there are NSRs surrounding the fixed noise sources; or
- noisy plant/activities would continue at the same location for a long period of time.

## 6 **Requirement of FNMP**

6.1 The submission of a FNMP can become a condition of EP for EIA studies, particularly those having only undergone qualitative assessment as mentioned in paragraph 2.2 of this GN. The FNMP shall typically include the following information:

- Detailed FNIA
  - List of fixed noise sources proposed or in the vicinity of the project;
  - Established noise emission data of the existing, committed or planned fixed noise sources (e.g. catalogues of the proposed model type of the fixed plant, site measurement of existing/similar fixed noise sources/activities, etc.)
  - Quantitative FNIA for representative NSRs; and
  - Noise mitigation measures to be adopted, if any and their associated practicability, feasibility and acceptability.
- Relevant clauses for tender document, which include the layout, requirements of the planned fixed plant, operation and mitigation measures, if any.

6.2 Under the EP, the FNMP usually needs to be submitted to the Director for approval no later than 2 months before the issuance of tender of the project, if any, and before commencement of project implementation. Such FNMP shall be included in the tender document, if any. If there is any change to specifications of planned fixed plant, layout design, operation modes, mitigation measures, or any other factors that could have implications on the fixed noise sources impact as concluded in the approved FNMP, an updated FNMP shall be submitted to the Director for approval, no later than one month before the implementation of any such change.

- 6.3 The FNMP / updated FNMP shall include an inventory of noise sources, a layout plan indicating the locations of all existing, committed or planned fixed noise sources and the associated noise mitigation measures. The FNMP / updated FNMP shall be prepared and checked by Certified Noise Modelling Professional as recognized by the Hong Kong Institute of Qualified Environmental Professionals Limited or equivalent as meeting the requirements given in this GN. The FNMP / updated FNMP shall be certified by the ET Leader and verified by the IEC as conforming to the relevant information and recommendations of the approved EIA report. All mitigation measures recommended and requirements specified in the FNMP / updated FNMP shall be fully implemented.
- 6.4 The FNIA contained in the FNMP / updated FNMP shall follow the principles mentioned in paragraph 4 of this GN and in Annex 13 of the EIAO-TM. In proposing the mitigation measures, the project proponent shall make reference to the principles given in paragraph 5 of this GN, and include the quieter plant and/or quieter designs identified in the approved EIA report.
- 6.5 During the course of preparation of the FNMP / updated FNMP, the project proponent should involve the relevant professionals as early as possible. For large scale projects, the project proponent is encouraged to prepare/update the FNMP as early as possible so as to avoid causing any delay on the tendering process, if any, and project implementation as mentioned in paragraph 6.2 above.

## 7 **Conclusion**

- 7.1 This document attempts to provide good practices and procedures for general reference in preparing a FNIA. Though it is expected that the guidelines could be followed for most of the situations, one should always exercise sound professional judgment on the appropriateness, practicability, feasibility and acceptability of the proposals and recommendations made in the FNIA.

Environmental Protection Department

Date of Issue: December 2023