

# Advice Note

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air quality | environment | sustainability

Date: Wednesday, 22 April 2026

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From: Varun Marwaha

To: LCI Consultants

From: Northstar Air Quality

**Project Name:** Eastern Creek Data Centre Expansion Project (SSD-21342738-Mod-2) – Air Quality  
**Reference:** 26.1029.DR2V2

Northstar Air Quality Pty Ltd was engaged by LCI Consultants to perform an air quality impact assessment (AQIA, 26.1029.FR1V1 dated 24 October 2025) for a proposed modification (Mod-2) to the Eastern Creek Data Centre Expansion Project (SSD-21342738), located at 90 Peter Brock Drive, Eastern Creek NSW.

After a review of the AQIA, the NSW Department of Planning, Housing and Infrastructure (NSW DPHI) issued a request for additional information (DPHI comments) on 27 February 2026. The aim of this advice note is to provide a response to those comments related to air quality.

For and on behalf of

**Northstar Air Quality Pty Ltd**

**Varun Marwaha, CAQP**

**Principal Air Quality Consultant**

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## 1. RESPONSE TO NSW DPHI COMMENTS

### 1.1. NSW DPHI Comment 5

*'In order to ensure the updated modelling provides an accurate comparison to the previous assessment, please provide a table comparing the parameters of the original dispersion model to the modification dispersion model, with any differences in assumptions and/or modelled sources clearly described and justified.'*

#### Northstar Response

A comparison of the Mod-2 AQIA (Northstar, 2025) and the AQIA performed as part of the original approval for SSD-21342738 (Todoroski, 2022) indicates the following key differences:

- a. The number of generators on site has increased from 27 to 52.
- b. Generator operations have been assessed at loads of  $42 \times 85\%$  plus  $10 \times 80\%$  (Northstar, 2025), compared to:
  - i. - Scenario 1 –  $27 \times 50\%$  (Todoroski, 2022); and
  - ii. - Scenario 2 –  $23 \times 75\%$  plus  $3 \times 100\%$  (Todoroski, 2022).
- c. For context, total nitrogen oxides ( $\text{NO}_x$ ) emissions associated with the modification are estimated at  $132.7 \text{ g}\cdot\text{s}^{-1}$ , compared to:
  - i. - Scenario 1 –  $67.5 \text{ g}\cdot\text{s}^{-1}$  (Todoroski, 2022); and
  - ii. - Scenario 2 –  $120.8 \text{ g}\cdot\text{s}^{-1}$  (Todoroski, 2022).

### 1.2. NSW DPHI Comment 6

*Please provided an updated version of Figure 8 to ensure all potential sources have been accurately modelled. Consideration should be paid to the following:*

*a. based on the current figure, it is unclear whether emissions associated with the existing data centre's back-up generators have been included (and as per the original dispersion modelling)*

*b. based on the current figure, it appears an existing building on the eastern section of the site (already demolished to facilitate construction of the on-site substation) has been included as a barrier within the dispersion model. Please review and amend accordingly.*

Figure 8 of the Mod-2 AQIA (Northstar, 2025) has been reviewed to confirm that all relevant emission sources and influencing structures have been appropriately represented within the dispersion modelling interface.

The existing Eastern Creek Data Centre (under SSD-21342738) standby generators (six (6) units) were not included as quantitative emission sources within the dispersion modelling for the Mod-2 works. Potential cumulative impacts associated with existing on-site standby generation were instead considered qualitatively, consistent with NSW DPIE Cumulative Impact Assessment Guidelines for State Significant Development Applications (SSDA) assessment guidance. The first modelling scenario performed for Mod-2 assumes simultaneous operation of all proposed standby generators under Mod-2 to represent an appropriate evaluation of site emissions under peak operating conditions.

Figure 8 of the AQIA accurately identifies the emission sources included within the quantitative modelling and no amendment to the figure is required in relation to standby generators forming the modification.

The building previously located in the eastern section of the site has been demolished to facilitate construction of the on-site substation.

A review of the building wake inputs confirms that buildings included in the dispersion modelling were selected in accordance with the building wake algorithm (BPIP-PRIME), as referenced in the NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in NSW regulatory guidance.

For the Proposal, the applicable building influence distance (5L), determined in accordance with BPIP-PRIME guidance (where L is the lesser of the building height or projected width), is approximately 181 m (refer Figure 1 below).

The demolished eastern building is located beyond the applicable building influence distance relative to the relevant emission sources and therefore does not influence building wake effects or dispersion outcomes presented in the Mod-2 AQIA.

Figure 1 BPIP-PRIME Building influence zone and included structures



Source: Northstar

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|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>air quality</b>    | Northstar specialises in all aspects of air quality, dust, and odour management, covering monitoring, modelling and assessment, due diligence and process specification, licencing and regulatory advice, peer review and expert witness.           |
| <b>environment</b>    | Our team has extensive experience in environmental management, covering environmental policy and management plans, licencing, compliance reporting, auditing, data, and spatial analysis.                                                           |
| <b>sustainability</b> | We look beyond compliance to add value and identify opportunities. Our services range from sustainability strategies, ecologically sustainable development reporting and assessment, to bespoke greenhouse gas and energy estimation and reporting. |

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