

Independent Review of Ichthys LNG Emissions Modelling - Summary

Air Environment Consulting Pty Ltd – January 2026

Why was this review done?

In 2025, INPEX notified the Northern Territory Environment Protection Authority (NT EPA) that it had identified significant errors in how some air emissions from its Ichthys LNG facility, including benzene and related chemicals (BTEX), had been calculated and reported in previous years.

INPEX also advised that there were no increased health risks to the community, local workforce or environment from the Ichthys LNG facility. Since then, the NT EPA and Chief Health Officer have collaborated to verify these claims.

The NT EPA asked an independent air quality specialist, **Air Environment Consulting**, to review INPEX's emissions data, air quality modelling and monitoring around the Ichthys LNG facility in the Darwin airshed.

The purpose of the review was to:

- Assess whether INPEX's internal audit of emissions calculations was appropriate
- Assess whether INPEX's revised air quality modelling studies were fit for purpose
- Confirm what monitoring data shows about actual air quality in nearby communities
- Identify what improvements are needed to protect public health and the environment

What was reviewed?

The independent review looked at three main areas of concern:

1. **Emissions calculations**
Assess and assure the nature of errors, and the changes required to ensure future estimates are accurate, identified by INPEX's internal audit
2. **Air quality modelling**
Verify computer modelling used by INPEX to predict how emissions disperse in the air and what concentrations might reach nearby communities.
3. **Air quality monitoring**
Assess real-time air monitoring data from three locations around Darwin (Ben's Hill, Frances Bay and Palmerston).

What did the review find?

Emissions reporting

- The review confirmed INPEX's findings that some emissions had been significantly underestimated in past reporting, particularly emissions released during specific operating conditions known as *AGRU hot venting*.
- Several minor emission sources were missing or not fully accounted for in earlier calculations.
- Documentation and quality checks used for emissions reporting were not strong enough.

What this means:

The previously reported emissions data did not fully reflect what was actually released. This does **not** automatically mean there were health risks, but it does mean the data needs to be corrected and improved.

Air quality modelling

- INPEX's modelling was found to be **technically sound**.
- Predicted concentrations of benzene from this activity were **well below health-based guideline levels**, even under "worst case" scenarios.
- However, the modelling was limited in scope, examining only part of the facility (the AGRU), excluding some emission sources (for example, minor sources, ships at berth and storage), and considering only selected BTEX compounds (benzene and toluene).

What this means:

The modelling that was done is reliable for what it assessed but does not provide a complete picture of all air emissions from this and other facilities. However, the assessed worst-case scenarios provide confidence that the results are representative.

Air monitoring results

- INPEX's continuous air monitoring showed **generally low levels of BTEX chemicals**, consistent with normal urban background levels.
- Benzene levels were **well below health guidelines** at all monitoring locations.
- Short-term increases in xylene (a chemical mainly associated with odour rather than health effects) were observed occasionally.
- Most short-term increases **could not be clearly linked** to Ichthys LNG and may have come from other industrial or urban sources.

What this means:

Measured air quality in surrounding communities was generally good during the monitoring period, with **no evidence of long-term health risk** from BTEX exposure.

What improvements are recommended?

Air Environment made clear recommendations to strengthen oversight and public confidence:

1. Better emissions reporting

- Ichthys LNG should overhaul how emissions are calculated and reported.
- All emission sources must be included, using site-specific data and clear quality controls.
- Past emissions data may need to be reviewed and corrected.

2. A full air quality assessment

- A **comprehensive air quality study** should be completed, covering all BTEX chemicals and all emission sources from the facility.
- The assessment should consider cumulative impacts as well as worst-case operating scenarios (including emissions from other facilities in the airshed).
- It should cover the entire operating period from 2018 onwards.

3. Updated health risk assessment

- A new, independent health risk assessment may need to be undertaken if future improved air quality modelling indicates an increase in risk.

4. Independent monitoring

- INPEX currently undertake continuous air quality monitoring, but it is not independent or publicly available in real-time.
- The reviewers recommend that **independent background air quality monitoring** is undertaken in the Darwin airshed to provide confidence about community health.