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10 February 2026

To: Northern Territory Environmental Protection Authority
Re: Ichthys Carbon Capture and Storage Project

Thank you for the opportunity for the Institute for Energy Economics and Financial Analysis (IEEFA) to provide input to the Ichthys Carbon Capture and Storage Project consultation.

IEEFA is an independent energy finance think tank that examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.

IEEFA's submission accompanies a submission to the Bonaparte CCS consultation. Our view is consistent in that there are concerns about CCS as a climate solution, but acknowledge that it could play a niche role in reducing greenhouse gas (GHG) emissions for specific projects. The Ichthys CCS/Bonaparte CCS project could play such a niche role by capturing and storing the carbon dioxide contained in the Ichthys gas fields as well as from the Barossa gas field. That said, the project would only account for a small proportion of the GHG emissions from Ichthys LNG given more than 90% of emissions are generated at combustion by end users.

IEEFA is also concerned about the proposal to send some of the associated toxins into the CCS facility without a specified program to monitor the impact of these toxins on transport infrastructure, and without further scientific evidence that the level of toxins Inpex plans to put into the CCS facility can be done in a safe and secure way. These toxins, including benzene, toluene, ethylbenzene and xylene (BTEX) have historically been vented, with reported emissions recently found to have been underreported.[1]

Kind regards,

Kevin Morrison, Energy Finance Analyst, Australian Gas

[1] NT EPA. Inpex pollutant emissions underreporting: joint statement from the NT EPA and Chief Health Officer. December 2025.

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Bonaparte CCS yet to be proven a suitable project location

Inpex plans to build the Bonaparte Carbon Capture and Storage (BCCS) facility to initially capture 8 million tonnes a year (MTPA) of carbon dioxide (CO_2), eventually increasing to 10MTPA.[2] Not only would this represent the largest dedicated CCS project in the world, it would almost equal the total amount of CO_2 captured in all dedicated CCS projects globally to 24 July 2025. This does not include carbon capture, utilisation and storage facilities (CCUS), which primarily use captured CO_2 to increase oil extraction through a process known as enhanced oil recovery (EOR).[3,4,5]

IEEFA is also concerned that Inpex plans to send benzene, toluene, ethylbenzene and xylene (BTEX) into the BCCS without a specified thresholds or a plan to monitor toxin levels and the potential impact on transport infrastructure.[6]

To be clear, it is not unusual for CO_2 injected into a CCS or a CCUS facility to contain impurities (which may include toxins such as benzene).[7] Further, the Northern Lights CCS project in Norway has set limits for BTEX concentration in CO_2 transported to and injected into the facility.[8] However, an academic paper states that Northern Lights CCS has no specific monitoring solution to measure how BTEX reacts with the CO_2 in the CCS reservoir, raising concerns about unanticipated impacts.[9]

Specifically, the paper notes, "Monitoring impurity concentrations at various stages of the CCUS process is essential for both operational and regulatory reasons. After CO_2 capture, impurity analysis can help determine whether further purification is necessary. During transportation to storage or utilization sites, ownership of the CO_2 stream may change, prompting the need to verify compliance with agreed upon CO_2 specification. Accurate impurity monitoring ensures the stream meets quality standards and protects the integrity of the transport infrastructure."[10]

IEEFA's view is that Inpex should be required to provide information on its proposed approach to monitoring the impacts of BTEX injections into Bonaparte CCS. The company should advise on appropriate BTEX concentration limits (and whether this differs by source of CO_2 given Inpex plans to store CO_2 from Santos's Barossa gas field and from other third parties).[11]

IEEFA also notes that Inpex's environmental track record may raise questions about its suitability to develop and manage a complex CCS project. As noted earlier, the NT EPA recently advised

[2] Inpex. Attachment A: Bonaparte Carbon Capture and Storage (CCS) Project – Supporting Information Document. 17 October 2025. Page 20.
[3] Global CCS Institute. Global Status of CCS 2025. 9 October 2025. Pages 44-46. This is based on the calculation of all projects under the storage type deep saline formation and using storage rates, not nameplate capacity.
[4] International Energy Agency. World Energy Outlook 2020. 13 October 2020. Page 131.
[5] Engineering. Investigating the Synergistic Impact of CCUS-EOR. May 2025. Page 16.
[6] Inpex. Ichthys Carbon Capture and Storage Project – Referral Report. 18 November 2025. Page 71.
[7] Carbon Capture Science & Technology. Framework for CO2 impurity monitoring in CCUS infrastructure. September 2025. Page 1.
[8] Northern Lights. Liquid CO2 Quality Specifications. March 2024. Page 1.
[9] Carbon Capture Science & Technology. Framework for CO2 impurity monitoring in CCUS infrastructure. September 2025. Page 2.
[10] Ibid.
[11] Inpex. Ichthys Carbon Capture and Storage Project – Referral Report. 18 November 2025. Page 32.

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that Inpex historically underreported emissions of hazardous chemicals in Darwin for several years.[12] These chemicals include benzene and toluene, which are the same toxic chemicals Inpex now plans to store in the Bonaparte CCS. In considering Inpex's application, regulators should assess whether Inpex is a suitable proponent to develop and operate such a technically complex project.

[12] NT EPA. Inpex pollutant emissions underreporting: joint statement from the NT EPA and Chief Health Officer. December 2025