Northern Territory
Environment Protection Authority

NOTICE OF DECISION AND STATEMENT OF REASONS

Section 55 of the *Environment Protection Act 2019* (EP Act)
Regulations 57(2)(b) and 63(1) of the Environment Protection Regulations 2020 (EP Regulations)

Name of proposed action	Ichthys LNG AGRU Upgrades and CCS Preparedness
Proponent	INPEX Operations Australia Pty Ltd
NT EPA reference	EP2025/045
Nature of the proposed action	Oil and Gas, Carbon Capture and Storage
Description of proposed action	The proposed action is the development of a carbon dioxide (CO_2) compression and export system at the Ichthys LNG facility, Bladin Point, approximately 10 km southeast of Darwin. Works proposed include site-preparation, construction (including civil works, piling, drainage installation), and installation (module delivery/installation, installation of the CO_2 pipeline, cabling and upgrades within the Ichthys LNG facility), pre-commissioning[1] and cold commissioning[2] of: • modularised equipment to upgrade the two existing acid gas removal units (AGRUs) • CO_2 compressor modules (including auxiliary vents) • an in-plant section of CO_2 export pipeline, export metering, and pipeline inspection gauge launcher • a modular building with combined electrical and control equipment to power and control the new facilities • a common dehydration module • a water treatment system/s, including water tanks, to treat and re-use water recovered from the CO_2 stream • supplementary power infrastructure (i.e. a small battery energy storage system, electrical power distribution system and cabling). The proposed action is expected to generate 15,000 m^3 of hydrotest fluid and 400 m^3 of cold commissioning wastewater. Where the hydrotest fluid and wastewater cannot be reused, it will be disposed. Disposal options include: • evaporation from within the Ichthys LNG facility

[1] Referral section 2.4.4 Pre-commissioning: This includes cleaning and treatment (water, air, steam, mechanical and chemical), AGRU system cleaning (system flush (weak acid, weak alkali, demineralised water), hydrostatic pressure testing.
[2] Referral section 2.4.6 sets out cold commissioning: This includes nitrogen leak testing, pump, vessels and pipework system testing, dehydration system testing.

	• discharge to Darwin Harbour at the existing module offloading facility (MOF) via a new outfall, or • offsite disposal by a licensed waste contractor.
Person authorised to make decision	Dr Paul Vogel AM, Chairperson Northern Territory Environment Protection Authority (NT EPA) Delegate of the NT EPA under section 36 of the Northern Territory *Environment Protection Authority Act 2012*.
Decision	**Standard environmental impact assessment is required** in accordance with section 55 of the EP Act and regulation 57(2)(b)(i) of the EP Regulations. The method of environmental impact assessment to be by **environmental impact statement** in accordance with regulation 57(2)(b)(ii) of the EP Regulations.
Signature	
Date of decision	4 February 2026
Matters considered under EP Regulation 56	The NT EPA has considered the following: • the accepted referral (including the referral form, referral report and appendices) • additional information given to the NT EPA under EP Regulation 40 • submissions received (under EP Regulation 52 and 53) in relation to the accepted referral.
Consultation	Submission period: 25 November 2025 – 23 December 2025 Submissions received: • six government authority submissions • two public submissions. Submissions are available on the NT EPA website. Key issues raised in the submissions received by the NT EPA include: • Concern that the proposed action is linked to other actions proposed by the proponent including the Ichthys CCS Project and the Bonaparte CCS Project, and the view that the proposed action should be assessed together with the related actions to appropriately assess the combined effects of potential impacts. • Concern that implementation of the proposed action would result in human health impacts and atmospheric pollution.

- Risk of inadequate or incorrect significant impact assessment of threatened species and migratory species.
- Risk associated with inadequate or incorrect assessment of the environmental factors.
- A view that the proposed action requires an assessment by environmental impact statement.

Statement of reasons

Overview

The proposed action is described in the referral submitted to the NT EPA. The referral also identifies several associated activities closely related to the proposed action including:

- maintenance dredging at the MOF
- the Ichthys Carbon Capture and Storage (CCS) Project
- the Bonaparte CCS Project
- hot commissioning (operation) of the AGRU.

Maintenance dredging at the MOF, and disposal of dredge spoil is needed to allow prefabricated modules (and potentially specialised pipeline materials) to be delivered via ship to onshore areas. The NT EPA considers it almost certain that this dredging and disposal will occur alongside the construction activities described in the referral. However, because it is not part of the referred action, it is not within the scope of any approval that may result from the referral.

The remaining three associated activities are not within the current proposed action, but they are closely linked to it. These activities could change the scale, intensity, and location of impacts that need to be considered. They are not speculative or hypothetical. Together, the proposed action and these associated activities form part of a single, interconnected project to develop a carbon sequestration system. The nature, scope, and feasibility of that system are, or should be, largely known to the proponent.

This is not a situation where completing the proposed action would resolve key uncertainties about whether or how the associated activities might proceed. Instead, the associated activities form an important part of the context in which the impacts of the proposed action must be assessed. For this reason, they need to be taken into account. Also, to the extent that the proposed action enables the associated projects to occur, it will potentially be a substantial cause of the impacts that those associated activities cause, and to this extent their combined contributions to any consequences or events have the potential to be cumulative impacts of the current action.

The proponent has not identified any purpose for constructing, pre-commissioning, and cold-commissioning the pipeline component of the proposed action other than to support the compression and export system described as part of the associated activities. The pipeline section has no clear standalone function, other than possibly connecting to a similar pipeline that another proponent may seek to build. The proposed action and the related projects are planned on an integrated schedule, with overlapping timeframes to allow them to be connected and operate together. Information provided by the proponent indicates that the proposed action and the construction and operation of a full pipeline are mutually dependent.

As a result, the indirect impacts of the proposed action may include impacts arising from these associated activities or a similar pipeline. While there are practical limits on how far indirect impacts should be considered, the NT EPA notes that the objects of the EP Act are focused on environmental protection, and that development is supported only where it is ecologically

sustainable. This includes making decisions based on the best available, relevant, and reliable information. Within that framework, it is reasonable to expect that the assessment consider indirect impacts of interdependent projects where their scope is already largely known or can be reasonably anticipated. Understanding those impacts is also essential to assessing the sensitivity of the environment in which the proposed action would occur.

The NT EPA recognises that the associated activities are subject to their own regulatory controls and approval processes. However, for the reasons set out above, this does not remove the need to consider their indirect impacts when assessing the proposed action. This is particularly relevant given that the proponent has presented the proposed action as critical to achieving its decarbonisation objectives, stating that captured CO_2 would be compressed and transported by pipeline for permanent underground storage. This message has been emphasised in public-facing materials and in the referral itself.

If this claimed environmental benefit is relevant to the proposed action, it can only be as an indirect effect that depends on construction of the full pipeline. If that indirect benefit is considered relevant, it follows that the environmental impacts associated with constructing and operating the pipeline cannot be categorised as too remote.

The proposed action has the potential to have a significant impact on environmental values associated with nine environmental factors[3]. The potential impacts are considered significant, due to the reasons outlined below.

LAND	**Terrestrial environmental quality** Potential acid sulfate soils (PASS) may be encountered within the right of way for the CO_2 pipeline or supplementary power cable. Disturbance of these soils can result in acid generation and run-off, and liberation of metal and metalloid contaminants and nutrients impacting adjacent soils and/or receiving waters including Darwin Harbour. Erosion and soil loss during construction would potentially impact land and soil quality and result in sedimentation and water quality impacts on the receiving environment including tidal flats and Darwin Harbour. The construction of the associated activities detailed in the referral also have the potential to significantly impact on terrestrial environmental quality, through the expansion of the construction footprint beyond the proposed action area. The proposed associated activities would require disturbance of an additional ~108 ha[4]. These disturbances are also likely to intersect volumes of ASS and experience erosion and soil loss during construction, resulting in cumulative impacts on terrestrial ecosystems. The referral does not provide sufficient information to determine the significance of potential impacts (direct, indirect and cumulative) resulting from the proposed action in its full context. There is insufficient information to determine whether the proposed management and mitigation measures identified in the referral are adequate to reduce the significance of those impacts. The significance of impacts and the ability to meet the NT EPA's factor objective for terrestrial environmental quality is uncertain.

[3] NT EPA Environmental factors and objectives (2002)
[4] Bonaparte CCS proposes 32 ha terrestrial disturbance. Ichthys CCS proposes 76.5 ha terrestrial disturbance.

	Terrestrial ecosystems The proposed action is within the existing Ichthys LNG facility footprint, adjacent to Darwin Harbour mangrove communities and salt pan habitat that potentially provides habitat for threatened and migratory fauna species. Noise modelling presented in the referral predicts that construction noise in neighbouring habitat is expected to be between 60-70 dB(A). Construction noise has the potential to affect threatened and/or migratory species that utilise the mangrove communities adjacent to Ichthys LNG. The referral does not include information about the noise impacts from pre commissioning and construction of the pipeline within the facility. The referral does not include information about noise impacts from associated activities including operation of new infrastructure and decommissioning within the existing footprint. The indirect impacts via associated activities which are located outside the existing footprint are anticipated to involve substantial vegetation clearing and noise generation. This has the potential to significantly affect threatened and/or migratory species including shorebirds in the vicinity of the Middle Arm Peninsula. The referral does not provide sufficient information to determine the significance of impacts from the proposed action in its full context. There is also insufficient information to determine whether the proposed management and mitigation measures identified in the referral are adequate to reduce the significance of those impacts. The significance of impacts and the ability to meet the NT EPA's factor objective for terrestrial ecosystems is uncertain.
SEA	**Marine environmental quality** The referral states 15,000 m^3 of pre-commissioning hydrotest fluid and 400 m^3 of cold commissioning wastewater will be generated by the proposed action. Hydrotest fluid may contain contaminants absorbed from pipework and infrastructure during testing. Where it remains fit for purpose, hydrotest fluid and wastewater will be reused for subsequent testing. Where pre-commissioning hydrotest fluid and cold commissioning wastewater is not fit for purpose, it will be disposed. The precise method of disposal has not been nominated, however the proponent has indicated that wastewater disposal options include: • evaporation from within the Ichthys LNG facility • discharge to Darwin Harbour at the existing MOF via a new outfall, or • offsite disposal by a licensed waste contractor. The proposed action has the potential to significantly impact marine environmental quality, through disturbance and trenching for a new outfall (if discharge to Darwin Harbour via new outfall), discharge of hydrotest fluid and wastewater, the required maintenance dredging of the MOF, and potentially dredging and trenching for construction of the CO_2 pipeline during the associated activities. The referral identifies that pre-commissioning of the future CO_2 pipeline will include dewatering. It is unclear what volume of wastewater will result from this activity or whether other wastewater generating activities are required to complete the associated activities. It is unclear whether associated activities will result in the generation of volumes of wastewater additional to that generated beyond pre-commissioning and cold commissioning activities.

	The referral does not provide sufficient information to determine the significance of potential direct, indirect and cumulative impacts from the proposed action in its full context. There is also insufficient information to determine whether the proposed management and mitigation measures identified in the referral are adequate to reduce the significance of those impacts. The significance of impacts and the ability to meet the NT EPA's factor objective for marine environmental quality is uncertain.
	Marine ecosystems Darwin Harbour is a site of conservation significance containing ecologically sensitive marine and coastal systems that support extensive mangrove forests, intertidal mudflats, seagrass meadows and diverse benthic communities. Darwin Harbour, including surround the proposed action area provides suitable habitat for a range of threatened and migratory species. The proposed action occurs entirely within an existing disturbed footprint. However, the associated activities described in the referral have the potential to significantly impact on marine ecosystems, through the dredging and the construction of subsea pipelines and cables associated with the Bonaparte CCS Project. The proponent indicates the maintenance dredging is 'required' to be undertaken for the purpose of enabling the proposed action, so the proposed action is an indirect but substantial cause of the dredging and potentially of its impacts. The scant information provided regarding the impacts of dredging combined with the uncertainties regarding wastewater introduces further uncertainty regarding the indirect impacts from the proposed actions on marine ecosystems. Those indirect impacts must be considered in a context where the associated activities will also likely occur, which must be factored in when evaluating the sensitivity of marine ecosystems within the environment of the Darwin Harbour. The referral does not provide sufficient information to determine the significance of potential direct, indirect and cumulative impacts from the proposed action in its full context. There is also insufficient information to determine whether the proposed management and mitigation measures identified in the referral are adequate to reduce the significance of those impacts. The significance of impacts and the ability to meet the NT EPA's factor objective for marine ecosystems is uncertain.
AIR	**Air quality** The proposed action will generate pollutants that can adversely affect air quality during construction, installation and cold commissioning. The installation and cold commissioning of the AGRUs is so closely linked with their subsequent use and hot commissioning that the impacts of use and hot commissioning must be considered as indirect impacts that are substantially caused by the proposed action. The AGRUs will generate pollutants that can adversely affect air quality during construction, installation, commissioning, operation and shutdown and maintenance activities. The AGRUs will facilitate the use of higher CO_2 feed gas from Plover gas wells that have high concentrations of pollutants than what the

	INPEX facility currently processes. Further, the level of venting required is indicated to be dependent on the operability of the carbon capture and export system (CCES), with significantly greater venting required if it is not operating, or operating at reduced capacity. The extent to which air quality will be impacted by the increased feed therefore appears to vary significantly depending on the viability and operability of the associated activities. Venting is proposed from several locations for varying purposes during commissioning, testing and ongoing operation of new infrastructure. Under certain circumstances CO_2 would need to be vented (either continuously or non-continuously) as a result of either operational or safeguard protection reasons from the associated activities, and any AGRU acid gas produced that exceeds the CCES capacity would continue to be vented via existing vents. The referral does not provide sufficient information on emissions and cumulative emissions to air. There is uncertainty regarding the types and concentrations of pollutants to be released to air and under what scenarios (including duration). The referral does not provide sufficient information to determine the significance of potential impacts to the air quality and there is insufficient information to determine whether the proposed management and mitigation measures are adequate to reduce the significance of those impacts. The significance of impacts and the ability to meet the NT EPA's factor objective for air quality is uncertain.
	Atmospheric processes Direct greenhouse gas emissions (GHG) resulting from the proposed action are limited to vehicle and equipment used during construction, pre-commissioning and cold commissioning. The direct impact GHG emissions from the proposed action is not predicted to be a significant impact. However, the associated activities have the potential to significantly impact atmospheric processes, through venting during commissioning, testing and ongoing operation of new infrastructure. The proponent asserts that the proposed action will minimise GHG emissions so as to contribute to the NT Government's goal of achieving net zero greenhouse gas emissions by 2050. The NT EPA accepts that this is a potential indirect impact of the proposed action, and notes the importance of further information to understand the extent and likelihood of this potential benefit. Information provided in the referral for context together indicates that emissions from associated activities may result in a significant impact to atmospheric processes of various kinds. The referral does not provide sufficient information to determine the significance of potential indirect and cumulative impacts from the associated activities. There is also insufficient information to determine whether any proposed management and mitigation measures are adequate to reduce the significance of those impacts.
PEOPLE	**Community and economy** The proposed action area is situated less than 10 km from Darwin and 4 km from Palmerston and will generate noise and vibration including during construction work.

	The proposed action detailed in the referral viewed in its full context has the potential to significantly impact on community and economy values, through further increased noise, traffic activity, workforce activities and vessel movements. The referral does not provide sufficient detail on the impacts associated with these activities or whether management and mitigation measures are adequate to reduce the significance of those impacts. The significance of impacts and the ability to meet the NT EPA's factor objective for community and economy is uncertain.
	Culture and heritage The entirety of the proposed action area is within the existing Ichthys LNG facility with no significant impacts to culture and heritage anticipated from the proposed action. However, the associated activities have the potential to significantly impact on culture and heritage values. The referral does not provide sufficient information to determine the significance of potential direct, indirect and cumulative impacts likely to result from the proposed action in its full context. Given the relevance of knowing the precise intended location of the subsea pipeline to evaluation of these issues, and the absence of concerns within the existing footprint, there is some force in the view that full consideration and assessment of this factor is better done as part of considering those separate referrals. Nevertheless, at present the information is not sufficient to know whether those indirect impacts that occur as a result of enabling the associated activities will broadly be acceptable or unacceptable. It would better meet the objectives of the EP Act to at least have that broad indication in order to better evaluate the likelihood of the indirect impacts of the proposed action. The significance of impacts and the ability to meet the NT EPA's factor objective for culture and heritage has some uncertainty but considers this relates to the extent to which consideration of those impacts can be assumed to be able to be sufficiently mitigated via separate regulatory processes. .
	Human health The proposed action will generate pollutants that can affect air quality through construction, installation and cold commissioning. The proposed action, when considered with the indirect impacts has the potential to significantly impact on air quality affecting human health. This potential significant impact would occur through venting during commissioning, testing and ongoing operation and maintenance of new infrastructure. The referral does not provide sufficient information to determine the significance of potential direct, indirect and cumulative impacts and whether any management and mitigation measures protect human health. The significance of impacts and the ability to meet the NT EPA's factor objective for human health is uncertain.

Other environmental factors

The NT EPA considered other environmental factors during consideration of the referral information; however, the potential impacts on those factors were not considered to be significant.

Justification

A standard assessment by environmental impact statement is required because:

Regulation 59 (a)	the high level of uncertainty regarding the significance of the potential direct, indirect and cumulative impacts of the proposed action in its full context on nine of the NT EPA's environmental factors
Regulation 59 (b)	the low level of confidence in predicting the potential significant direct, indirect and cumulative impacts of the proposed action in its full context, taking into account the extent and currency of existing knowledge, particularly in relation to the: • volumes and characteristics of potentially acid sulfate soils within the disturbance footprint of the associated activities • construction timing and locale of infrastructure required to facilitate the associated activities, and their proximity to habitat for threatened and migratory fauna particularly migratory shorebirds and marine fauna • impact on marine water quality from water discharges and disturbances including dredging and trenching activities • impact on air quality from emissions associated with the AGRUs, CCES commissioning and operations, including venting • CO_2 emissions across the life of the proposed action and associated activities • construction timing and locale of infrastructure required to facilitate the associated activities, and the potential disruptions to the communities of the greater Darwin region, including users of the local road network and commercial and recreational users of Darwin Harbour • the extent to which consideration of indirect impacts via the associated activities on the cultural and heritage values can be sufficiently mitigated through separate regulatory processes; • impacts to human health from air quality from emissions associated with the AGRUs, CCES and their commissioning and operations, including venting.
Regulation 59 (c)	the low level of confidence in the effectiveness of the proposed measures identified in the referral to avoid, mitigate or manage potential significant impacts of the proposed action in its full context.
Regulation 59 (d) & (e)	the extent of community engagement that has occurred, and whether it is sufficient to ensure that affected communities and individuals understand the proposed action in its full context and the potential direct, indirect and cumulative impacts on the nine environmental factors as described above.

Conclusion

The NT EPA considers that the proposed action has potential for significant impacts on nine environmental factors, and that environmental impact assessment is required. There is a high level of uncertainty regarding the potential significant impacts from the proposed action and the associated activities and there is insufficient information for the NT EPA to be confident that the proponent has (a) adequately predicted the potential significant impacts of the proposed action, and (b) demonstrated that the proposed measures to avoid, mitigate or manage potential significant impacts are effective. Further information is required to enable the NT EPA to complete its assessment.

In making its decision under section 55 of the EP Act and regulation 57 of the EP Regulations, the NT EPA has considered:

- the objects of the Act in section 3 of the EP Act
- the principles of environment protection and management in Part 2 of the EP Act
- the purpose of the environmental impact assessment process in section 42 of the EP Act
- the matters under regulation 56 of the EP Regulations
- the matters relevant to a consideration of the method of environmental impact assessment in regulation 59 of the EP Regulations.
- the accepted referral, additional information provided under EP Regulation 40, and submissions made under EP Regulations 52 and 53 (in line with EP Regulation 56)