

Submission to the Northern Territory Environment Protection Authority

Draft Terms of Reference for INPEX associated carbon capture and storage proposals

To: Northern Territory Environment Protection Authority

Consultation: Draft Terms of Reference for Environmental Impact Statements

Proposals addressed:

1. Ichthys LNG AGRU Upgrades and CCS Preparedness Project, EP2025/045
2. Bonaparte Carbon Capture and Storage Project, EP2025/048
3. Ichthys Carbon Capture and Storage Project, EP2025/049

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Capacity: Individual submitter

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Confidentiality: Public

Date: June 15 2026

Standing, limits and conflicts

I make this submission in my personal capacity as an individual submitter. My interest is in ensuring that the EIS process produces decision-useful, evidence-backed and publicly understandable information about emissions, air-quality, health-risk and offshore-dependency assumptions. I do not have access to INPEX's non-public engineering, monitoring, commercial or operational data, and I do not make findings about intentional misconduct, legal breach or final environmental acceptability. Where the proponent or regulators hold detailed information, this submission asks that the EIS provide public non-sensitive summaries and provide confidential technical material to the NT EPA where appropriate. I have no financial interest in INPEX, its joint-venture partners, the Ichthys LNG facility, the Bonaparte CCS proposal, affected offshore storage titles, related contractors or third-party CO₂ customers.

Acronyms and key terms

Acronym/term	Meaning
AGRU	Acid Gas Removal Unit
AGI	Acid Gas Incinerator
BTEX	Benzene, toluene, ethylbenzene and xylenes
CCS	Carbon capture and storage
CCES	Carbon capture and emission system, as used in the draft TOR materials
CHO	Chief Health Officer
EIS	Environmental Impact Statement
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
GHG	Greenhouse gas
HHRA	Human health risk assessment
HIA	Health impact assessment
LNG	Liquefied natural gas
NGER	National Greenhouse and Energy Reporting
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
OPGGS Act	<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> (Cth)
QA/QC	Quality assurance and quality control
TOR	Terms of Reference
VOC	Volatile organic compound

In this submission, HHRA refers to the preliminary human health risk assessment prepared by SLR Consulting, while HIA refers to the broader Chief Health Officer health impact assessment process that may be informed by, but is not identical to, the HHRA.

Core ask

Require each EIS to test the integrated CCS system through quantified, comparable, independently verified and publicly understandable scenario information, so the NT EPA can assess the proposals' claimed environmental benefits using evidence rather than assumption, while keeping Commonwealth offshore storage and NGER/Safeguard matters as disclosed dependencies only.

Alignment with NT EPA objectives and why these recommendations are low-friction

These recommendations are designed to assist the NT EPA to perform its existing environmental impact assessment role. They align with the NT EPA's statutory objectives of promoting ecologically sustainable development, protecting the environment having regard to the need to enable ecologically sustainable development, and enhancing community and business confidence in the Territory's environmental protection regime. They also align with the NT EPA's procedural obligations to encourage community involvement and engagement and to keep its processes transparent and consistent.

The recommendations do not ask the NT EPA to decide Commonwealth offshore storage approvals, administer NGER or the Safeguard Mechanism, reject CCS in principle, or require all technical, commercially sensitive or culturally sensitive information to be public by default. They ask the final TOR to require the EISs to disclose, quantify and verify the information needed to assess direct, indirect and cumulative impacts across the three associated proposals, consistent with the NT EPA's own consultation framing.

The approach is low-friction because it uses the existing EIS process, existing TOR headings, existing proponent-held information, existing public/confidential information controls and EIS tools including scenario tables, alternatives assessment, emissions-flow diagrams, independent verification statements, public summaries, confidential technical appendices, uncertainty ranges and trigger-action-response commitments.

Decision lens

The decision requested is what the final Terms of Reference should require each EIS to assess, not whether to approve or refuse the proposals. The test for the final TOR should be:

1. Can the public and the NT EPA compare the full-CCS, delayed-CCS, partial-CCS, no-CCS and underperforming-CCS cases on the same factual basis?
2. Does each EIS show what is separated, compressed, transported, stored, vented, emitted through energy use, released as BTEX/VOC pollution, offset or assumed?
3. Are substantial AGRU hot-vent, BTEX/VOC, HIA and GHG inputs independently verified where conclusions depend on uncertain or corrected emissions estimates?
4. Are Commonwealth offshore-storage and NGER/Safeguard matters disclosed only as dependencies and reporting-boundary issues, without asking the NT EPA to decide matters outside its role?
5. Are commitments written in measurable, auditable and consequence-linked language?

If these requirements are not adopted, the EISs may still contain the right headings but fail to produce the comparable, verified and public information needed to assess the proposals' claimed environmental benefits. The practical consequence is that the NT EPA, public submitters and later decision-makers would be left to test claims against narrative, fragmented or unverified material.

Recommendations at a glance

#	Recommendation	Purpose	Mechanism/instrument	Actor	Trigger/threshold	Timing	Adoptability rationale/fallback
1	Require an integrated assessment chapter in each EIS	Prevent fragmented assessment of one interconnected system	Final TOR EIS content requirement	NT EPA/INPEX	The three associated proposals rely on shared assumptions, sequencing or dependencies	Final TOR and draft EIS	Uses the existing EIS process; fallback is a shared cross-reference table and emissions-flow diagram
2	Quantify full-CCS, delayed-CCS, partial-CCS, underperforming -CCS and no-CCS scenarios	Make climate, air-quality and health consequences comparable	Scenario-assessment requirement	INPEX, assessed by NT EPA	CCS is delayed, unavailable, partial, underperforming or not operational	Draft EIS and adequacy review	Does not assume failure; fallback is annual full-CCS/no-CCS Scope 1/2 and vented-CO ₂ tables
3	Quantify AGRU-without-CCES and incinerator alternatives	Test contaminant-control and venting consequences	Alternatives assessment	INPEX	AGRU upgrades proceed without operational CCES or equivalent contaminant control	Draft EIS	Uses alternatives already contemplated in the TOR; fallback is a comparative emissions and air-toxics table

4	Independently verify AGRU hot-vent, BTEX/VOC and HIA inputs	Ensure health and air-quality conclusions rely on reliable inputs	Independent technical verification and HIA input requirement	INPEX/independent verifier/NT EPA	EIS relies on AGRU hot-vent, BTEX/VOC or dispersion-modelling conclusions	Before draft EIS exhibition	Proportionate because prior emissions-estimation issues affect the relevant pathway; fallback is independent verification of emissions inputs and public scenario summaries
5	Require emissions-estimation QA/QC and proponent-capacity disclosure	Show how corrected methods and error controls will support future estimates	Proponent-capacity section	INPEX	EIS relies on corrected, modelled or estimated emissions data	Draft EIS	Non-accusatory reliability requirement; fallback is an independent assurance statement
6	Require net Scope 1 and Scope 2 GHG accounting	Distinguish gross CO ₂ handled from net emissions outcome	Scenario-based GHG inventory	INPEX	CCS claims include emissions-reduction benefits	Draft EIS	Uses existing GHG accounting concepts; fallback is scenario-based Scope 1/2 totals and residual-emissions table

7	Require offshore storage and Commonwealth-interface disclosure	Prevent offshore assumptions being treated as settled or invisible	Commonwealth-interface table	INPEX/NT EPA	NT benefits depend on Commonwealth offshore status or NGER/Safeguard boundary	Draft EIS and updates before exhibition	Disclosure only, not NT approval overreach; fallback is a one-page interface table
8	Require public accountability and confidentiality controls	Preserve public scrutiny while protecting legitimate sensitive information	Public summary table plus confidential appendix where justified	INPEX/NT EPA	Data are material to emissions, venting, BTEX/VOC, health, verification or offshore dependency status	Draft EIS and public exhibition	Balances transparency and legitimate sensitivity; fallback is aggregated, delayed, redacted or threshold-based public reporting
9	Require committed language and trigger-action-response obligations	Convert modelling and mitigation promises into assessable commitments	TOR wording and commitment register	INPEX/NT EPA	Monitoring, verification, re-modelling, public reporting or mitigation is material	Draft EIS and conditions stage	Consistent with committed-language requirements; fallback is measurable “will” commitments for emissions, monitoring and verification

10	Require third-party/customer and future-hub assumptions to be disclosed	Avoid understated cumulative impacts or throughput assumptions	Capacity and cumulative-impact disclosure	INPEX	Infrastructure is designed, represented or reasonably foreseeable as serving broader CO ₂ throughput	Draft EIS	Does not require assessment of hypothetical uses unless relied on; fallback is maximum design capacity and included/excluded use disclosure
11	Retain dredging, Darwin Harbour and marine cumulative impacts	Keep marine and harbour impacts aligned with CCS construction schedule	Cumulative-impact assessment	INPEX/NT EPA	Dredging, spoil disposal or marine works are scheduled with CCS infrastructure	Draft EIS	Supporting issue, not replacement for emissions-integrity core; fallback is inclusion in project schedule and assumptions table
12	Integrate cultural heritage and First Nations engagement with cumulative impacts	Ensure cultural values are not treated as procedural add-ons	Cultural heritage and cumulative-impact requirements	INPEX/NT EPA	Construction, commissioning, operation, air-quality contours or decommissioning may affect cultural values	Draft EIS	Uses existing cultural-heritage TOR coverage; fallback is a consultation-outcomes and mitigation table

13	Require decommissioning and liability-interface disclosure	Identify end-of-life responsibilities and offshore/NT interfaces	Decommissioning responsibility table	INPEX/NT EPA	NT infrastructure, incinerator removal, pipeline risks or offshore storage post-closure obligations arise	Draft EIS	Practical accountability requirement; fallback is a decommissioning responsibility-interface table
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This submission addresses the three sets of draft Terms of Reference collectively. I understand that the NT EPA has received three separate referrals, that a standard environmental impact assessment by Environmental Impact Statement is required for each referral, and that each EIS will need to address the proposed action and its associated activities. In this submission, “integrated assessment” means coordinated and consistent assessment within each EIS of the common assumptions, dependencies and cumulative impacts across the three causally mutually dependent proposals.

Purpose: This submission supports strengthening the final Terms of Reference so the EIS process tests the INPEX associated CCS proposals as one integrated emissions, air-quality and offshore-dependency system. Its purpose is not to oppose CCS in principle or ask the NT EPA to decide Commonwealth offshore approvals. It asks the NT EPA to require quantified, independently verifiable and publicly understandable assessment of what happens under full-CCS, delayed-CCS, partial-CCS, underperforming-CCS and no-CCS cases.

Executive summary

The NT EPA should strengthen the final Terms of Reference so that each EIS tests the NT components of the proposed integrated CCS system and the Commonwealth-regulated offshore dependencies on which claimed environmental benefits rely.

The central issue is not whether carbon capture and storage is good or bad on paper. The central issue is whether the EIS will require INPEX to show, with quantified and independently verifiable evidence, what happens when the system works, and what happens if it is delayed, partial, unavailable or underperforming.

The draft TORs already recognise the key point. The Bonaparte and Ichthys CCS TORs state that the proposals and associated activities are “causally mutually dependent,” form part of “a single, interconnected project to develop a carbon sequestration system,” and have no clear standalone function, except in the Ichthys TOR’s qualified case of possibly connecting to a similar pipeline by another proponent.

The offshore storage pathway on which claimed CCS climate benefits depend should not be treated as a settled background assumption. The earlier Bonaparte CCS EPBC referral was withdrawn, and the later EPBC 2026/10480 referral should be disclosed and updated according to its status at the time of EIS preparation.

The strongest reason to strengthen the final TOR is the AGRU hot-vent/no-CCS failure pathway. The draft TORs state that the associated AGRU upgrades will allow processing of feed gas with higher volumes of CO₂ and other contaminants, and that unless an entire CCS system is built and operational, additional extracted CO₂ will be vented with or without contaminants depending on whether incineration is available. The preliminary HHRA separately identifies underreported benzene and toluene emissions from the AGRU hot vent, while assessing current AGRU HV health risk as low under its assumptions.

The same AGRU hot-vent pathway that has already required correction of benzene and toluene emissions estimates is also central to the upgraded-AGRUs and no-CCS scenarios, so the final TOR should require independent verification of future AGRU hot-vent, BTEX/VOC and HIA inputs rather than allowing current-risk conclusions to be carried forward without scenario-specific modelling.

This matters because the alternatives assessment is not just about climate accounting. It is also about whether an existing or equivalent contaminant-control pathway, such as acid gas incineration, is retained, removed, modified or replaced by reliance on a CCS chain that may be delayed or unavailable. The final TOR should therefore require the AGRU-without-CCS and incinerator-retention alternatives to be quantified for both GHG and air-toxics consequences. For this submission, “CCS” refers to the carbon capture and emission system terminology used in the draft TOR materials.

Real-world CCS performance evidence makes this scenario testing more than just theoretical. IEEFA reports that Chevron’s Gorgon CCS project captured and stored 30% of reservoir CO₂ removed in FY2023-24, falling to 25% in FY2024-25, despite an 80% capture condition. I am not claiming that Gorgon means that INPEX’s project will fail. I am using it as an Australian LNG-linked CCS benchmark showing that delayed or underperforming CCS is a realistic assessment scenario that should be tested, not simply treated as a peripheral contingency.

This submission does not ask the NT EPA to decide Commonwealth offshore storage approvals, administer NGER/Safeguard, resolve GWP100/GWP20 methane-metric debates, regulate downstream LNG Scope 3 emissions, or make findings of intentional misconduct. It asks the NT EPA to require the evidence needed to test whether the NT components of this integrated system can deliver the environmental benefits claimed for them.

Why this submission is being made and what it adds

The draft TORs are already heading in the right direction by recognising that the proposals and associated activities are interconnected. The risk is that this recognition remains descriptive rather than operational. If the EISs are prepared as separate documents with inconsistent assumptions, narrative scenario treatment or unverified inputs, the public and the NT EPA may still be unable to compare what is vented, stored, emitted, offset or assumed under full-CCS, delayed-CCS, no-CCS and underperforming-CCS cases.

This submission does not seek to repeat every issue raised by broader Middle Arm, fossil-gas or CCS debates. Its contribution is more specific: it identifies the points where the final TOR should turn the existing integrated-system framing into testable EIS requirements. Those points are integrated assessment, quantified scenario comparison, AGRU hot-vent and BTEX/VOC verification, incinerator and contaminant-control

alternatives, net Scope 1 and Scope 2 accounting, offshore-status disclosure, public accountability and committed trigger-action-response requirements.

This matters because the existing draft TORs already contain many of the right topics, including associated activities, alternatives, atmospheric processes, human health, cumulative impacts, public consultation and decommissioning. The remaining problem is not the absence of headings; it is whether those headings require comparable, quantified and independently verifiable information that can support assessment, public scrutiny and future conditions.

Assessment logic

The causal logic of this submission is practical. Stronger final TOR wording does not itself prove that the CCS system will work or fail. Its role is to require the EIS to produce information that the NT EPA, public submitters and later decision-makers can test.

The appropriate government role at the TOR stage is limited but important. The NT EPA does not need to decide Commonwealth offshore storage approvals, administer NGER/Safeguard or decide whether CCS should be supported in principle. Its role is to ensure that the NT components and claimed environmental benefits are assessed on evidence that is complete enough, comparable enough and public enough to support environmental assessment.

The mechanism ladder is deliberately a modest one: require disclosure first; require quantification where scenario claims matter; require independent verification where emissions or health conclusions depend on uncertain inputs; require public summaries where accountability-relevant information can be disclosed safely; and require committed trigger-action-response language where monitoring, mitigation or further information will affect future decisions.

Why narrative assessment would not be enough

The risk is not simply that information may be missing. The risk is that the EISs may contain the right headings but still fail to produce decision-useful evidence. Separate EISs, narrative scenario descriptions, unverified emissions inputs and assumed offshore-storage availability would not be enough where the claimed environmental benefit depends on a connected system operating as intended.

A better approach is to require each EIS to explain the same shared assumptions, scenario outputs, offshore dependencies, verification status and uncertainty ranges. That would allow the NT EPA, public submitters and later decision-makers to compare the consequences of full-CCS, delayed-CCS, partial-CCS, underperforming-CCS and no-CCS cases on the same factual basis.

Scope and exclusions

This submission focuses on the final TOR information requirements for EP2025/045, EP2025/048 and EP2025/049. It addresses:

- integrated assessment across the three associated proposals;
- NT-scope emissions, venting, air quality, health and cumulative impacts;
- delayed, partial and no-CCS scenarios;
- AGRU hot-vent emissions and air-toxics verification;
- net Scope 1 and Scope 2 GHG outcomes;
- public accountability, confidentiality and uncertainty controls;
- Commonwealth-regulated offshore storage and NGER/Safeguard interfaces only as dependency or reporting-boundary issues.

This submission addresses EP2025/045, EP2025/048 and EP2025/049. I ask that it be treated as a submission on all three draft TOR consultations.

This submission does not ask the NT EPA to:

- approve or refuse Commonwealth offshore injection or storage;
- administer NGER or the Safeguard Mechanism;
- resolve broader methane-metric debates such as GWP100/GWP20;
- regulate downstream LNG Scope 3 emissions through these TORs;
- make findings of intentional misconduct; or
- require all technical, culturally sensitive or commercially sensitive information to be public by default.

However, if the EIS or supporting materials make broader claims about low-carbon LNG, transition benefits, net zero or climate benefit, those claims should clearly distinguish Scope 1 and Scope 2 emissions affected by the CCS proposals from downstream LNG combustion emissions that are not abated by the proposed CCS system.

This submission does not address terrestrial environmental quality, terrestrial ecosystems, or community and economy factors in detail, except where they intersect with cumulative impacts, consultation, health, cultural heritage or public accountability. Those matters remain important and should be addressed fully in the EIS and by submitters with relevant local, ecological, social-impact or place-based expertise.

Although this submission addresses all three proposals together, the recommendations attach differently across the three EISs. EP2025/045 is most relevant to AGRU/CCES construction, cold commissioning, readiness and alternatives; EP2025/049 is most relevant to hot commissioning, operation, AGRU hot-vent/BTEX/HIA and no-CCS operating consequences; and EP2025/048 is most relevant to the Bonaparte pipeline, inlet station, dredging/marine impacts and offshore-interface dependencies. The reason for a shared submission is that the environmental consequences depend on how these components interact.

3. Problem diagnosis

3.1 The proposals are not practically standalone

The Bonaparte TOR describes an onshore inlet station and approximately 90 km CO₂ pipeline from Middle Arm to the NT coastal-waters boundary, including CO₂ venting during pigging, connection to onshore pipelines, emergency scenarios and maintenance.

The Ichthys CCS TOR describes a ~12 km CO₂ export pipeline, hot commissioning and operation of the Ichthys LNG facility CCES, and upgraded AGRUs. It also states that decommissioning will include removal of acid gas incinerators at the end of proposal life.

The TORs also state that the proposals and associated activities are causally mutually dependent, planned on overlapping schedules and form part of a single interconnected carbon sequestration system.

The associated-proposals figure reinforces this integration visually: it shows the existing Ichthys LNG onshore facilities, AGRU upgrades and CCS preparedness area, Ichthys CCS tie-in station and onshore CO₂ pipeline, Bonaparte CCS onshore inlet station, proposed Bonaparte CO₂ pipeline, G-7-AP area and NT coastal-waters limit as parts of one connected system.

The final TOR should therefore not allow one integrated emissions system to be assessed through fragmented, hard-to-compare EIS documents.

3.2 The no-CCS scenario is already required – the issue is quantification

My request is not merely “add a no-CCS scenario”, since the draft TORs already require comparison between full-CCS and no-CCS scenarios. My request is that the already-required no-CCS scenario should be quantified, comparable, likelihood-informed and consequence-linked.

That assessment should cover delayed CCS, partial CCS, pipeline outage, incinerator unavailable, emergency/maintenance venting, both LNG trains hot venting simultaneously, and offshore storage delayed, modified or unavailable.

Incinerator unavailability is not hypothetical at this facility. INPEX’s response to Senate questions on notice records planned acid gas incinerator bypass notifications to the NT EPA from September 2018, unplanned bypass notifications from March 2019, and repeated extended acid gas incinerator outages since 2019, including individual outages of 215, 249, 323 and 530 days. The Middle Arm Senate report also records that, according to INPEX, the two acid gas incinerators were offline for 1,209 and 1,235 days respectively between January 2019 and June 2024. The final TOR should therefore require incinerator-unavailable and venting scenarios to be quantified as documented realistic operating states, not treated as remote contingencies.

Worked example – delayed or unavailable CCS with incineration unavailable

A decision-useful EIS should be able to show this in one table: what happens if upgraded AGRUs are operating, the CCES or offshore storage pathway is delayed or unavailable, and acid gas incineration or an equivalent contaminant-control pathway is unavailable. For that scenario, the EIS should identify the operating state, whether each LNG train is hot venting, what CO₂ is separated, compressed, transported, stored or vented, what BTEX/VOC emissions are released, what monitoring data supports the estimate, what uncertainty range applies, what public-health input is

used, what mitigation is triggered and whether the outcome changes the proponent's claimed emissions benefit. I don't use this worked example to assume failure, but to ensure that the consequences of a realistic failure pathway are quantified rather than described only in narrative form.

3.3 AGRU hot-vent emissions are central

The associated AGRU upgrades are directly relevant to this assessment because the TORs state that upgraded AGRUs can process feed gas with higher volumes of CO₂ and other contaminants, and that without a built and operational CCS system, additional extracted CO₂ will be vented, with or without contaminants depending on incineration availability.

The preliminary HHRA states that emissions of benzene and toluene from the Facility's AGRU hot vent had been underreported. It assesses the risk of harm from current AGRU HV benzene/toluene exposure as low under its assumptions, while recommending future facility-wide dispersion modelling, inclusion of ethylbenzene and xylenes at a minimum, independent long-term Darwin airshed monitoring, and a screening-level Darwin airshed-wide HHRA covering all significant BTEX sources.

The NT EPA and Chief Health Officer have publicly stated that revised AGRU emissions modelling was technically sound and that predicted benzene concentrations were well below health-based guideline levels under the assessed scenarios.

This submission does not seek to relitigate the preliminary HHRA and takes no position on whether current community exposure is in fact low-risk. It notes, however, that the assessment is preliminary on its own terms, and that the evidence base beneath it has documented limits. Those limits mean any current-risk conclusion should not automatically be extended to future upgraded-AGRUs, no-CCS, delayed-CCS, incineration-unavailable or underperforming-CCS scenarios. Those future scenarios should be independently modelled and verified because reliable health-risk conclusions depend on accurate emissions estimates.

The need for independent, scenario-specific verification is reinforced by the independent technical review commissioned through the NT Department of Lands, Planning and Environment. Air Environment's February 2026 review found that AGRU hot-venting emissions had been underestimated by several orders of magnitude since production commenced in September 2018, that site-specific emission factors could not be traced to supporting documentation, that several emission sources were omitted, that venting durations used in emission estimates failed to capture the episodic nature of hot-venting operations, and that QA/QC procedures had systematic deficiencies. The review recommended a facility-wide air quality impact assessment covering all BTEX sources over the full operational period, a revised health risk assessment, and independent background monitoring. The final TOR should carry these requirements forward into the EIS rather than leaving them as post-incident remediation.

Air Environment also identified modelling-validation limits relevant to the HHRA's exposure basis. It found that dispersion-model validation limited to Darwin Airport may not represent meteorological conditions across residential receptor locations, that model predictions would have been better compared against observations from multiple EPA and/or Bureau of Meteorology sites, and that Darwin's complex coastal meteorology with sea-land breeze interactions requires enhanced validation for local-scale accuracy. The EIS should therefore require validation

of predicted ground-level BTEX concentrations at sensitive residential receptors and clear explanation of how local meteorology and monitoring data affect confidence in HIA conclusions.

The monitoring record also supports a cautious approach to current-risk conclusions. INPEX's Senate questions-on-notice response states that routine air-toxics monitoring at Stokes Hill, Winnellie and Palmerston occurred between October 2019 and October 2021, and that quarterly contingency monitoring was implemented in Q1 2023 after both acid gas incinerators were expected to remain offline for an extended period. The final TOR should therefore require the EIS to identify what monitoring exists for each relevant period, which data were proponent-collected, which data were independently collected or verified, and how any monitoring gaps affect the confidence of health-risk conclusions.

3.4 Offshore storage is a live dependency, not an NT approval condition

Offshore storage status is necessary context for assessing claimed environmental benefits of the NT components, even though approval of Commonwealth offshore storage remains outside the NT EPA's role.

The associated-projects figure states that the G-7-AP permit area is in Commonwealth waters and that Commonwealth-water activities are subject to EPBC assessment. NOPTA explains that a GHG assessment permit authorises exploration for potential GHG storage formations or injection sites. A declaration of identified greenhouse gas storage formation is the mechanism for transition toward a GHG holding lease or injection licence, and NOPTA's register guidance states that a declaration does not itself give titleholders rights to inject or store GHG.

This is also a live status issue. Reuters reported in January 2026 that INPEX withdrew the Bonaparte CCS plan from the EPBC portal while awaiting further detail on EPBC Act amendments, intended to resubmit, and had no set timeline for resubmission. The EPBC Public Portal records the earlier Bonaparte Carbon Capture and Storage Project referral as EPBC 2025/10356 with project status "Project Withdrawn." The portal also records a later Bonaparte Carbon Capture and Storage Project referral as EPBC 2026/10480 with project status "Assessment Approach Determined." The EIS should therefore disclose the current offshore approval/status pathway at the time of EIS preparation and update the scenario assessment if that status changes. Offshore storage may sit outside NT approval jurisdiction, but it is not outside NT assessment relevance where NT infrastructure, venting, air-quality impacts or claimed environmental benefits depend on it.

3.5 NGER/Safeguard is relevant only as an interface

NGER and the Safeguard Mechanism are Commonwealth schemes. The EIS should identify whether NGER/Safeguard obligations apply and explain reporting boundaries. This is a disclosure issue for the EIS, not a request for the NT EPA to administer Commonwealth emissions-reporting schemes.

4. Evidence base

Evidence	Why it matters
The associated-proposals figure shows the existing Ichthys LNG onshore facilities, AGRU upgrades and CCS preparedness area, Ichthys CCS tie-in station and onshore CO ₂ pipeline, Bonaparte CCS onshore inlet station, proposed Bonaparte CO ₂ pipeline, G-7-AP area and NT coastal-waters limit.	Supports integrated assessment, cross-EIS assumptions and NT/Commonwealth interface disclosure.
Bonaparte and Ichthys TORs state the proposals and associated activities are causally mutually dependent, cumulative and part of a single interconnected carbon sequestration system.	Supports integrated assessment.
Associated AGRU upgrades can process feed gas with higher CO ₂ and contaminants, and if CCS is not built and operational, additional CO ₂ will be vented with or without contaminants depending on incineration availability.	Supports no-CCS and delayed-CCS scenario quantification.
Ichthys TOR describes the project as including hot commissioning and operation of CCES and upgraded AGRUs, and decommissioning including removal of acid gas incinerators.	Supports alternatives and incinerator treatment.
Associated-proposals materials show the Bonaparte CCS onshore inlet station, Ichthys CCS tie-in station and Ichthys CCS onshore CO ₂ pipeline as connected components of the broader system. Any third-party/customer or future-hub assumptions affecting capacity, throughput or cumulative impacts should be disclosed.	Supports third-party/customer and future-throughput disclosure without relying on unsupported figure wording.
NT EPA guide says submissions must be true, accurate, not misleading or defamatory, and that organisational submissions require authorisation.	Supports careful wording and personal-capacity disclosure.
IEEFA reports Gorgon CCS materially underperformed against its capture target in FY2023-24 and FY2024-25.	Supports treating underperforming CCS as a realistic scenario to benchmark, not a theoretical edge case.

Reuters reported that INPEX withdrew the Bonaparte CCS plan from the EPBC portal in January 2026 while awaiting further detail on EPBC Act amendments, intended to resubmit, and had no set timeline for resubmission. The EPBC Public Portal records the earlier Bonaparte Carbon Capture and Storage Project referral as EPBC 2025/10356 with project status “Project Withdrawn,” and a later Bonaparte Carbon Capture and Storage Project referral as EPBC 2026/10480 with project status “Assessment Approach Determined.”	Supports offshore-status disclosure and updates.
The preliminary HHRA assessed benzene and toluene AGRU hot-vent exposure as low risk under available modelling and monitoring data, while recommending future facility-wide air dispersion modelling, inclusion of ethylbenzene and xylenes, independent long-term Darwin airshed monitoring and a screening-level Darwin airshed-wide HHRA covering significant BTEX sources.	Supports a balanced position: the submission should not overstate current health risk, but the final TOR should require independent, scenario-specific and cumulative health-risk modelling before current-risk conclusions are carried forward.
The DLPE-commissioned Air Environment review found AGRU hot-vent emissions underestimated by several orders of magnitude since production commenced in September 2018, untraceable site-specific emission factors, omitted emission sources, inadequately characterised venting durations and systematic QA/QC deficiencies. It recommended facility-wide BTEX assessment over the full operational period, revised health-risk assessment and independent monitoring.	Directly supports Recommendations 2, 4 and 5: independent verification, scenario-specific modelling and proponent-capacity QA/QC disclosure.
INPEX’s 2024 response to Senate questions on notice documents repeated extended acid gas incinerator outages since 2019, including 323- and 530-day outages, and the Middle Arm Senate report records cumulative offline periods of 1,209 and 1,235 days respectively for the two acid gas incinerators between January 2019 and June 2024.	Supports treating incinerator-unavailable and venting scenarios as realistic operating states requiring quantification, complementing the Gorgon benchmark with facility-specific operating history.
NT EPA answers to Senate questions on notice state that the EPA does not measure benzene at its air-quality monitoring stations, that benzene is measured quarterly by INPEX on a voluntary basis when AGRUs are offline, and that results are provided to the NT EPA. The Middle Arm Senate report further records that the extent of toxic carcinogens released into Darwin’s atmosphere was unknown due to the limited monitoring framework.	Supports public-accountability tables, independent monitoring, and clear disclosure of whether exposure data are proponent-collected, regulator-collected, independently verified or publicly accessible.

The DLPE-commissioned Air Environment review records that Ichthys identified significant emissions-calculation errors affecting VOC and BTEX reporting, prompting recalculation of the 2023/24 reporting period. The review reports that AGRU hot-venting emissions had been underestimated by several orders of magnitude since production commenced, and that ERM calculated approximately 550 tonnes of benzene emissions for FY24 from AGRU hot venting. This supports requiring the EIS to verify corrected benzene, toluene, BTEX and VOC inputs before relying on future AGRU hot-vent or health-risk conclusions.

This submission does not reproduce all corrected benzene, toluene, BTEX or VOC tonnages. However, the DLPE-commissioned Air Environment review reports that ERM calculated approximately 550 tonnes of benzene emissions for FY24 from AGRU hot venting, compared with INPEX's much lower previous estimates. The EIS should state and verify the corrected benzene, toluene, BTEX and VOC figures directly against the underlying ERM review, NPI record, INPEX correction material and HHRA inputs, and should explain how those corrected values affect future AGRU hot-vent, BTEX/VOC and HIA modelling.

5. Options considered

Option 1 – Generic anti-CCS argument

This option would focus on leakage, greenwashing, fossil gas expansion and broad opposition to CCS.

Decision: not preferred. Those issues may be relevant in broader forums, but they risk being treated as too general or partly outside this draft TOR decision.

Option 2 – Narrow onshore-only argument without dependency disclosure

This option would assess only NT physical infrastructure and avoid offshore storage, EPBC, OPGGS, NOPTA/NOPSEMA and NGER/Safeguard dependencies.

Decision: too specific. It would avoid jurisdictional overreach but fail to disclose assumptions that are central to the claimed environmental benefits of the NT components.

Option 3 – Integrated TOR-strengthening argument

This option accepts the NT EPA's own integrated-system framing and asks the final TOR to require quantified, verified and publicly understandable assessment of NT impacts, while treating Commonwealth offshore storage and NGER/Safeguard as dependencies and reporting-boundary issues only.

Decision: preferred. It is in scope, evidence-led, implementable and hard to dismiss as generic anti-CCS advocacy.

Likely objections and responses

The strongest legitimate objection is that the NT EPA should not use the TOR process to decide Commonwealth offshore approvals, administer Commonwealth emissions-reporting schemes, or require full public disclosure of genuinely sensitive technical, commercial, cultural or security information.

That objection is valid to this extent: offshore storage approvals, NGER and Safeguard administration, and genuinely sensitive information should remain within their proper legal and institutional boundaries.

In response to that objection, this submission does not ask for jurisdictional overreach. It asks for dependency disclosure, scenario quantification, independent verification and public summaries where claimed NT environmental benefits depend on offshore storage, CCES availability, AGRU hot-vent assumptions, contaminant-control availability or corrected emissions-estimation inputs.

A second objection is that these recommendations may add burden. That is partly true, but the burden is proportionate because the relevant engineering, emissions, venting, monitoring, sequencing and assurance information is held by the proponent. The recommendations use existing EIS tools, allow confidential technical material to be provided to the NT EPA where appropriate and rely on public summaries where full public disclosure is not appropriate.

6. Recommendations

Recommendation 1 – Require an integrated assessment chapter in each EIS

Each EIS should include a standalone integrated assessment chapter covering the NT components of the integrated CCS system and the Commonwealth-regulated offshore dependencies on which claimed environmental benefits rely.

For clarity, integrated assessment does not require the NT EPA to collapse the three referrals into one EIS. It means each EIS should include:

- an integrated assessment chapter explaining how that proposal depends on, affects, or is affected by the other two associated proposals;
- shared assumptions and cross-referenced scenario tables across the three EISs, including full-CCS, delayed-CCS, partial-CCS and no-CCS cases; and
- consistent treatment of common issues, including AGRU hot-venting, BTEX/VOC and HIA inputs, net Scope 1 and Scope 2 accounting, offshore-storage dependency status, public reporting and trigger-action-response commitments.

That chapter should include:

- a system diagram showing the AGRU, CCES, Ichthys pipeline, Bonaparte pipeline, onshore inlet station and offshore storage dependency;
- a shared assumptions table;
- an NT-scope emissions-flow table;

- a separate Commonwealth-interface table;
- a clear explanation of which EIS assesses which component;
- a statement explaining how each EIS remains complete in its own right.

Justification: The TORs already state that the proposals are causally mutually dependent, cumulative and part of a single interconnected carbon sequestration system. The point is not merely to recognise integration; the draft TORs already do that. The point is to convert that recognition into a standardised, public, cross-EIS assessment chapter so the same scenario assumptions, emissions flows, verification status and offshore dependencies can be compared across all three EISs. The practical consequence is that direct and indirect consequences flowing from the associated activities should be assessed as potential indirect impacts of each proposed action, not left to separate documents in a way that prevents comparison.

Minimum fallback: require a shared cross-reference table and emissions-flow diagram in each EIS.

Recommendation 2 – Quantify the no-CCS scenario already required by the TOR

The final TOR should require the already-mandated full-CCS and no-CCS scenario assessment to be quantified, comparable, likelihood-informed and consequence-linked.

The EIS should assess:

- full CCS operational;
- delayed CCS;
- partial or underperforming CCS;
- no CCS operational;
- AGRU upgrades without CCES;
- pipeline outage;
- incinerator unavailable;
- emergency/maintenance venting;
- both LNG trains hot venting simultaneously;
- offshore storage delayed, modified, unavailable or underperforming.

Each scenario should quantify:

- CO₂ separated;
- CO₂ compressed;
- CO₂ transported;
- CO₂ vented;

- energy-use emissions;
- Scope 1 and Scope 2 emissions;
- BTEX/VOC emissions;
- residual emissions;
- proposed offsets, if any;
- thresholds and consequences if the scenario occurs.

The comparative-likelihood assessment should be informed by observed CCS performance evidence, including Australian LNG-linked experience at Gorgon, rather than relying only on design expectations or proponent assumptions. IEEFA reports material underperformance at Gorgon, including 30% capture in FY2023-24 and 25% in FY2024-25.

The worked example in Section 3.2 illustrates the type of failure-pathway table this recommendation is intended to require.

Minimum fallback: require quantified annual full-CCS and no-CCS Scope 1/2 emissions and vented-CO₂ tables.

Recommendation 3 – Quantify AGRU-without-CCES and incinerator alternatives

The final TOR should require alternatives assessment to quantify the emissions, air-toxics, health, operational, mitigation and, where relevant, cost consequences of:

- proceeding with AGRU upgrades and other equipment in the absence of a CCES system;
- retaining an acid gas incinerator or similar technology;
- removing, modifying or replacing incineration or equivalent contaminant-control technology.

The EIS should not assume that removal, non-availability or replacement of incineration or equivalent contaminant-control technology is environmentally neutral. It should quantify whether each alternative would increase or decrease vented contaminants relative to the existing control pathway under full-CCS, delayed-CCS, no-CCS and underperforming-CCS scenarios.

Justification: The draft TORs already identify the relevance of AGRU operation, CCES availability and incineration availability to whether additional CO₂ and contaminants are vented. This is already consistent with the draft TOR structure. The EP2025/045 draft TOR requires the alternatives assessment to consider retention of an acid gas incinerator or similar technology, alternative CCES and CCS designs and locations, and proceeding with the AGRU upgrades and other equipment in the absence of a CCES system. INPEX's Senate questions-on-notice response also shows that acid gas incinerator outages have occurred repeatedly and for extended periods. The EIS should therefore not assume incineration availability as a constant background condition when assessing AGRU-without-CCES, no-CCS, delayed-CCS or underperforming-CCS scenarios.

Minimum fallback: require a comparative emissions and air-toxics table for AGRU-without-CCES and incinerator-retention alternatives.

Recommendation 4 – Require independently verified AGRU hot-vent, BTEX/VOC and HIA inputs

The final TOR should require specific treatment of AGRU hot-vent emissions and air-toxics modelling, anchored to the Chief Health Officer's HIA requirements.

The EIS should:

- identify all AGRU hot-vent operating modes;
- model BTEX/VOC emissions under normal operation, startup, shutdown, maintenance, upset, emergency and no-CCS scenarios;
- model both LNG trains hot venting simultaneously;
- assess unplanned CO₂ leaks with trace pollutants;
- include facility-wide and cumulative Darwin airshed context;
- validate dispersion-model predictions against ambient observations at multiple relevant receptor or monitoring locations, including residential receptors where data are available;
- disclose whether inputs are measured, modelled, estimated or default-based;
- disclose uncertainty ranges;
- require independent verification of emissions inputs, pollutant-dispersion modelling and any health-risk conclusions relying on those inputs.

Independent verification should mean review by a suitably qualified independent air-quality, emissions-estimation, GHG-accounting or human-health risk-assessment expert, with the verifier's appointment pathway, funder, qualifications, scope, access to underlying data, method, limitations, conflicts of interest and summary conclusions disclosed in the EIS, and with full technical material available to the NT EPA.

Justification: The TORs expressly include higher-CO₂ feed gas, contaminants, incineration availability and both LNG trains hot venting simultaneously as relevant to assessment. The HHRA identifies AGRU hot-vent benzene/toluene underreporting while assessing current risk as low.

The preliminary HHRA itself recommends future facility-wide dispersion modelling, inclusion of ethylbenzene and xylenes, independent long-term Darwin airshed monitoring and a screening-level Darwin airshed-wide HHRA covering significant BTEX sources. The DLPE-commissioned Air Environment review also recommended facility-wide BTEX modelling, assessment over the full operational period, revision of the health risk assessment and independent monitoring. The final TOR should require the EIS to meet these standards from the outset.

The worked example in Section 3.2 also illustrates why BTEX/VOC and HIA inputs should be tied to specific operating states, not treated as generic facility averages.

Minimum fallback: require independent verification of AGRU hot-vent emissions inputs and a public summary of BTEX/VOC scenario modelling.

Recommendation 5 – Require proponent-capacity and emissions-estimation QA/QC disclosure

The proponent-capacity section should address emissions-estimation and reporting reliability.

The EIS should explain:

- what has been identified about the emissions-estimation error or reporting-system weakness;
- what corrections have been made;
- what QA/QC systems have changed;
- how future AGRU, CCES, venting and air-toxics estimates will be validated;
- whether independent assurance has been obtained;
- what triggers re-modelling or re-reporting;
- how corrected or updated data would be reflected in the EIS before finalisation;
- how material errors would be disclosed to regulators and the public.

This should be framed as a verification issue, not as an allegation of deliberate misconduct.

Justification: The TOR proponent-capacity requirement is the appropriate non-accusatory place to address emissions-estimation and reporting reliability. The issue is that the EIS should explain how corrected emissions-estimation methods, QA/QC systems, independent assurance and error-response processes will support future AGRU, CCES, venting and air-toxics estimates. This is especially important because the preliminary HHRA was triggered by underreported benzene/toluene emissions from the AGRU hot vent.

Minimum fallback: require an independent assurance statement on emissions-estimation methods used in the EIS.

The Air Environment review's findings – including untraceable site-specific emission factors, omitted sources, inadequately characterised AGRU venting durations and systematic QA/QC deficiencies – are precisely the emissions-estimation and reporting-reliability matters the proponent-capacity section should require the EIS to address. This should include how corrected methodologies will apply to future AGRU, CCES, venting and air-toxics estimates.

Recommendation 6 – Require net Scope 1/2 GHG accounting, energy penalty and offsets discipline

The final TOR should require a net Scope 1 and Scope 2 GHG table that distinguishes gross CO₂ handled by the CCS system from net emissions outcomes.

The EIS should separately report:

- CO₂ separated;
- CO₂ compressed;
- CO₂ transported;
- CO₂ vented;
- leaks or releases within NT infrastructure;
- electricity, fuel, compression and supplementary power emissions;
- residual Scope 1 and Scope 2 emissions;
- offsets proposed for residual emissions, if any.

The purpose is not to penalise energy use in the abstract. The purpose is to ensure claimed emissions reductions are presented net of the additional energy required to separate, compress, dehydrate, transport and manage CO₂ and associated contaminants.

Offsets should not be presented as a substitute for delayed, failed or partial CCS performance. They should be assessed only after residual and vented emissions are quantified.

Justification: The draft TORs require assessment of atmospheric processes and the associated project context, including whether the full CCS system is operational or not. The net-GHG analysis should therefore distinguish gross CCS handling from net emissions outcomes.

This is consistent with the draft TOR's atmospheric-processes requirements, which already require assessment of GHG emissions generated by implementing the proposal and associated activities, including a scenario where the AGRUs are upgraded and operational and CCS is operational, and a scenario where the AGRUs are upgraded and operational and CCS is not operational. The issue is not whether these scenarios should exist; it is whether the EIS presents them as quantified, comparable net Scope 1 and Scope 2 outcomes rather than narrative assumptions.

Minimum fallback: require scenario-based Scope 1/2 totals and a separate residual-emissions/offset table.

Recommendation 7 – Require offshore storage and Commonwealth/federal interface disclosure

Each EIS should include a Commonwealth-interface table covering:

- offshore storage status;

- whether storage is proposed, assessed, declared, licensed or operational;
- EPBC/OPGGs/NOPTA/NOPSEMA approval pathway assumptions;
- what offshore-storage assumptions are used in each emissions scenario;
- what happens if offshore storage is delayed, modified, unavailable or underperforming;
- whether NGER/Safeguard obligations apply;
- how EIS emissions claims align with NGER/Safeguard reporting boundaries.

This recommendation does not ask the NT EPA to decide offshore approvals or administer NGER/Safeguard. It asks the EIS to disclose dependencies necessary to understand the NT components and claimed environmental benefits.

Justification: The associated-projects figure identifies G-7-AP as in Commonwealth waters and states that Commonwealth-water activities are subject to EPBC assessment. Reuters reported that INPEX withdrew the Bonaparte CCS plan from the EPBC portal in January 2026 while awaiting further detail on EPBC Act amendments, intended to resubmit, and had no set timeline for resubmission. The EPBC Public Portal records the earlier Bonaparte Carbon Capture and Storage Project referral as EPBC 2025/10356 with project status “Project Withdrawn,” and a later Bonaparte Carbon Capture and Storage Project referral as EPBC 2026/10480 with project status “Assessment Approach Determined.” This confirms that offshore status should be treated as a live dependency to be disclosed and updated, not assumed.

Public offshore CCS approvals guidance explains that GHG assessment permits, declarations of identified GHG storage formations, holding leases, injection licences, pipeline licences, environment plans, sea-dumping approvals and EPBC Act approvals sit in related but distinct Commonwealth approval pathways. The EIS should therefore identify which step each offshore dependency has reached, rather than treating offshore storage as available merely because an assessment permit or proposal exists.

Minimum fallback: require a one-page Commonwealth-interface table in each EIS.

Recommendation 8 – Require public accountability tables and confidentiality controls

The final TOR should require public-facing accountability tables in the executive summary and main EIS.

The EIS should apply a clear confidentiality boundary. Information should not be withheld from public release merely because it is inconvenient, commercially uncomfortable or accountability-relevant. The EIS should separate:

1. information that may legitimately require protection, including culturally sensitive information, sacred-site information, security-sensitive infrastructure detail, genuinely trade-secret level process detail and personal information;
2. information that may be publishable in aggregated, delayed, redacted or threshold-based form, including detailed operating data, engineering data or commercially sensitive throughput assumptions where full disclosure is not appropriate; and

3. information that should ordinarily be public unless a specific lawful basis for withholding is identified, including scenario outputs, annualised NT-scope vented CO₂, annualised BTEX/VOC summaries, net Scope 1 and Scope 2 emissions, verification status, uncertainty ratings, whether CCS is full, delayed, partial or unavailable, and offshore-dependency/status summaries.

Where INPEX claims confidentiality, the EIS should identify the specific confidentiality, security, commercial, cultural-sensitivity or legal basis relied on, explain why less restrictive disclosure is not sufficient, and state what non-sensitive public summary will still be provided.

Justification: The NT EPA guide emphasises that submissions should be accurate and should avoid confidential, culturally sensitive, commercially sensitive, misleading or defamatory material. The same principle should apply to EIS public-accountability design: legitimate sensitivities should be protected, but accountability-relevant emissions and scenario information should not be withheld by default.

This is not a hypothetical concern. In answers to Senate questions on notice, the NT EPA stated that it does not measure benzene at its air quality monitoring stations, that benzene is measured quarterly by the proponent on a voluntary basis when the AGRUs are offline, and that results are provided to the NT EPA. Public accountability for emissions and exposure data should not depend on unclear, voluntary or proponent-controlled monitoring arrangements.

Minimum fallback: require a public summary table and confidential technical appendix for the regulator.

Recommendation 9 – Require committed language and measurable trigger-action-response commitments

The final TOR should require all commitments on scenario assessment, monitoring, mitigation, public reporting, independent verification and re-modelling to use committed language and measurable outcomes.

The EIS should avoid ambiguous terms such as “may,” “where possible” or “if required” in relation to:

- AGRU hot-vent monitoring;
- BTEX/VOC modelling;
- no-CCS scenario assessment;
- re-modelling triggers;
- public reporting;
- independent verification;
- offset reliance.

Justification: The draft TOR already requires the EIS to use committed language, such as “will,” rather than ambiguous terms such as “may,” “where possible” or “if required.” The final TOR should apply that standard directly to emissions, monitoring, verification, public reporting, re-

modelling and mitigation commitments so that quantified modelling becomes an enforceable assessment commitment rather than a discretionary future action.

Minimum fallback: require emissions, monitoring and verification commitments to be written as measurable “will” commitments.

Recommendation 10 – Require third-party/customer and future-hub assumptions to be disclosed

To the extent Bonaparte or associated infrastructure is designed, represented or reasonably foreseeable as serving third-party CO₂ customers beyond Ichthys, the EIS should distinguish:

- committed throughput;
- proposed throughput;
- reasonably foreseeable third-party throughput;
- maximum design capacity;
- hypothetical future use not assessed in the current EIS.

The EIS should state whether impacts are assessed only for Ichthys-linked CO₂ or for broader potential hub use.

Justification: The associated-proposals figure shows the proposed Bonaparte CCS CO₂ pipeline linking the Darwin/Middle Arm area toward G-7-AP, with approximately 90 km marked on the figure, and shows the Bonaparte CCS onshore inlet station, Ichthys CCS tie-in station and Ichthys CCS onshore CO₂ pipeline as connected components. To the extent Bonaparte or associated infrastructure is designed, represented or reasonably foreseeable as serving additional third-party CO₂ customers or broader hub use, the EIS should disclose whether those assumptions are included or excluded from impact assessment.

Minimum fallback: disclose maximum design capacity and whether third-party use is included or excluded from impact assessment.

Recommendation 11 – Retain dredging, Darwin Harbour and marine impacts as supporting coverage

The final TOR should retain and strengthen treatment of maintenance dredging, Darwin Harbour, Beagle Gulf and marine cumulative impacts.

Justification: The Bonaparte and Ichthys TORs state that maintenance dredging and spoil disposal are expected to occur alongside construction, and that impacts substantially caused by dredging can be assumed to be impacts of the proposal unless further information shows otherwise.

Minimum fallback: require maintenance dredging and cumulative harbour impacts to be assessed in the same project schedule and assumptions table as the CCS infrastructure.

Recommendation 12 – Require cultural heritage and First Nations engagement to be integrated with cumulative-impact assessment

The final TOR should require each EIS to show how relevant Aboriginal representative bodies, Traditional Owners, native title holders and other Aboriginal peoples have been consulted on impacts from the proposal and associated activities, including construction, commissioning, operation and decommissioning.

This should include:

- cultural heritage management;
- sacred-site protection;
- underwater cultural heritage;
- unexpected finds;
- monitoring and reporting;
- how advice from Traditional Owners or representatives shaped avoidance, mitigation and management measures.

Justification: The TORs require cultural heritage and culturally significant values to be considered as part of the EIS. The Ichthys CCS TOR's air-quality requirements also require pollutant contour maps to show environmental values such as sacred sites and culturally significant sites, which means air-quality and cumulative-impact assessment should not be disconnected from cultural-heritage values. The EIS should therefore show how relevant Aboriginal representative bodies, Traditional Owners, native title holders and other Aboriginal peoples have been consulted, and how that consultation shaped avoidance, mitigation, monitoring and reporting commitments.

Minimum fallback: require each EIS to include a consultation-outcomes table identifying which relevant Aboriginal representative bodies, Traditional Owners, native title holders and other Aboriginal peoples have been consulted, on which matters, and how their advice shaped avoidance, mitigation, monitoring and reporting commitments.

Recommendation 13 – Require decommissioning and liability-interface disclosure

The final TOR should require each EIS to distinguish:

- NT infrastructure decommissioning obligations;
- ongoing monitoring responsibilities;
- residual contamination or pipeline risks;
- Commonwealth offshore storage and post-closure interfaces;

- responsibility for long-term monitoring and reporting.

Justification: The Ichthys CCS TOR identifies decommissioning activities, including removal of acid gas incinerators, at the end of the proposal life. Decommissioning should therefore be treated as part of system accountability, not as a generic end-of-life appendix.

Minimum fallback: require a decommissioning responsibility-interface table.

7. Implementation roadmap

Final TOR stage

NT EPA should add or strengthen requirements for:

1. integrated assessment chapters;
2. quantified scenario tables;
3. alternatives quantification;
4. AGRU hot-vent and BTEX/VOC verification;
5. proponent-capacity QA/QC disclosure;
6. net GHG and offsets discipline;
7. Commonwealth-interface disclosure;
8. public accountability and confidentiality controls;
9. committed language and trigger-action-response commitments;
10. First Nations/cultural-heritage integration;
11. decommissioning/interface tables.

Draft EIS stage

INPEX should provide:

- quantified scenario outputs;
- emissions-flow diagrams;
- NT-scope emissions tables;
- separate Commonwealth-interface tables;
- independent verification statements;
- facility-wide/cumulative air-quality modelling;
- HIA-ready health inputs;
- public and regulator-only data tables;

- uncertainty ranges and re-modelling triggers.

Adequacy review stage

NT EPA should seek further information if the EIS:

- treats full CCS as the only meaningful case;
- leaves the already-required no-CCS scenario as narrative;
- omits delayed, partial or underperforming CCS cases;
- relies on unverified AGRU hot-vent inputs;
- obscures offshore storage status;
- mixes gross captured CO₂ with net emissions outcomes;
- withholds accountability data without a specific confidentiality basis;
- uses ambiguous “may,” “where possible” or “if required” language for material commitments;
- leaves key assumptions scattered across the three EISs.

Review/update hooks within the 24-month EIS period

The TOR should require updated modelling before public exhibition of the draft EIS, where changes materially affect scenario outputs or public understanding, including if:

- AGRU operating assumptions change;
- CCES commissioning assumptions change;
- incinerator status changes;
- offshore storage status changes;
- pipeline schedule or availability changes;
- corrected emissions data becomes available;
- monitoring indicates materially different venting or air-toxics outcomes.

Because the claimed benefits depend on sequencing, the EIS should distinguish investment decision, approval, procurement, construction, commissioning, offshore-storage readiness and operational emissions impact. A CCS component should not be treated as reducing emissions in the EIS until the relevant transport, storage, commissioning, monitoring and approval dependencies are also available or clearly accounted for in the scenario tables.

Review and narrowing criteria

If the evidence available during EIS preparation shows that any recommendation is broader than necessary, the NT EPA can narrow it rather than reject it. Relevant narrowing or review criteria include:

1. whether verified monitoring shows materially lower AGRU hot-vent, BTEX/VOC or vented-CO₂ risks than assumed in scenario modelling;
2. whether independent verification confirms that corrected emissions-estimation and QA/QC systems are reliable for future AGRU, CCES and venting scenarios;
3. whether offshore storage reaches a materially different approval, licensing or operational status before draft EIS exhibition;
4. whether particular information is shown to be genuinely culturally sensitive, security-sensitive or trade-secret-level, in which case public disclosure can be aggregated, delayed, redacted or replaced by regulator-only disclosure;
5. whether an alternative contaminant-control pathway provides equivalent or better air-toxics protection than existing acid gas incineration;
6. whether the cost or administrative burden of a requirement is shown to be disproportionate relative to its decision value, in which case the requirement should be narrowed to the minimum information needed for scenario comparison, public accountability and NT EPA assessment.

8. Risks, safeguards and fallback package

Risk/failure mode	Safeguard
CCS benefit is assumed before the system is operational	Quantified full/delayed/partial/no-CCS scenarios
Observed CCS underperformance is ignored	Benchmark comparative likelihood against observed CCS performance, including Australian LNG-linked experience
Already-required no-CCS scenario becomes narrative only	Comparable emissions, likelihood and consequence tables
AGRU hot-vent emissions are underestimated	Independent verification and conservative inputs
Current health risk is either overstated or understated because the evidence base has documented limits	Do not relitigate the preliminary HHRA; identify evidence limits and require independent, scenario-specific modelling, monitoring and verification
Offshore storage assumptions are treated as settled	Proposed/assessed/declared/licensed/operational status table

NT EPA appears to regulate Commonwealth matters	Dependency-disclosure framing only
NGER/Safeguard is ignored or overclaimed	Reporting-boundary disclosure only
Confidentiality blocks accountability	Public/aggregated/regulator-only/culturally sensitive information split with specific basis required
Offsets obscure failed CCS performance	Quantify residual emissions first, then assess offsets separately
Separate EISs obscure cumulative impacts	Integrated assessment chapter in each EIS
Cultural heritage is treated procedurally	Integrate First Nations engagement with cumulative-impact assessment
Commitments remain vague	Committed-language and trigger-action-response requirements

Minimum viable fallback

If NT EPA does not adopt all recommendations, the minimum package should be:

1. a shared integrated assessment chapter or cross-reference table in each EIS;
2. quantified full-CCS and no-CCS annual Scope 1/2 emissions tables;
3. quantified AGRU-without-CCES and incinerator-retention alternatives;
4. independent verification of AGRU hot-vent BTEX/VOC inputs;
5. a Commonwealth offshore-storage and NGER/Safeguard interface table;
6. a public accountability table for vented CO₂, air toxics and net Scope 1/2 emissions;
7. a requirement that material monitoring and mitigation commitments use committed language.

9. Basis and limits

This submission gives highest weight to the NT EPA draft TORs and consultation materials, public NT EPA guidance and statements, the preliminary HHRA, the Air Environment technical review, Senate inquiry material, INPEX answers to Senate questions on notice, Commonwealth offshore CCS guidance, NOPTA/EPBC status materials and public Gorgon CCS performance analysis.

The submission integrates evidence from three layers: the regulatory layer, including NT EPA draft TORs, NT EPA submission guidance, EPBC Public Portal material, NOPTA and Commonwealth offshore CCS pathway materials, INPEX Senate questions on notice, the Middle Arm Senate inquiry and NT EPA answers to Senate questions on notice; the technical layer, including the SLR preliminary HHRA, the DLPE-commissioned Air Environment independent technical review and ERM emissions recalculations referenced in the Air Environment review; and the comparative-

performance layer, including IEEFA Gorgon CCS analysis and other publicly available CCS performance evidence. These layers are connected through scenario tables and emissions-flow logic so that no load-bearing claim is dependent on a single source.

External analysis, including IEEFA's Gorgon CCS analysis, is used as benchmark and scenario-testing evidence, not as proof that the INPEX proposals will fail or that any party has acted improperly. Where evidence is contested or uncertain, this submission uses that evidence as a reason for disclosure, quantification, verification or review, not as a substitute for final findings.

10. Conclusion

The final TOR should convert the NT EPA's existing integrated-system framing into practical, testable EIS requirements.

The TORs already recognise that the proposals are causally dependent, cumulative and part of a single carbon-sequestration system. The TORs also already require full-CCS and no-CCS scenario assessment. The final TOR should now ensure those requirements are not merely narrative. They should require quantified emissions, likelihoods, consequences, verification methods, public accountability fields and committed trigger-action-response measures.

This submission does not ask the NT EPA to decide Commonwealth offshore storage approvals, administer NGER/Safeguard or reject CCS in principle. It asks the NT EPA to require the evidence needed to test whether the NT components of this integrated system can deliver the environmental benefits claimed for them, and what the consequences are if the full system is delayed, partial, unavailable or underperforming.

In practical terms, the requested changes would help the NT EPA do what the TOR process is already for: obtain enough reliable information to assess significant potential environmental impacts and make informed recommendations. The recommendations are proportionate because they use existing EIS tools, focus on information held by the proponent, protect legitimate confidentiality and cultural-sensitivity interests, and include fallbacks where full adoption is not accepted. If the final TOR does not require this level of quantification, verification and public accountability, the EISs may still describe the integrated CCS system but fail to test the claims on which its environmental benefits depend.

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25. EPBC Act Public Portal. Bonaparte Carbon Capture and Storage Project, EPBC 2026/10480. Project status: Assessment Approach Determined.