

# Environmental Factor: Atmospheric Processes

## Greenhouse Gas Emissions

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# 1. Introduction

Under the *Environment Protection Act 2019* (EP Act), a proposal (proposed action or strategic proposal) that has the potential to have a significant impact on the environment must be referred to the Northern Territory Environment Protection Authority (NT EPA) for assessment. The NT EPA is responsible for deciding whether a proposal requires environmental impact assessment under the EP Act. A proposal that undergoes environmental impact assessment by the NT EPA must have an environmental approval granted by the Minister for Environment before it can proceed in the Northern Territory (NT).

To guide the environmental impact assessment process the NT EPA has developed a series of environmental factors and objectives ([environmental factors](#)) as a system for organising environmental information and identifying key values that require protection. The environmental factors assist in determining the potential significance of a proposal.

The NT EPA is developing guidelines to support each of its environmental factors, including for the environmental factor – Atmospheric Processes.

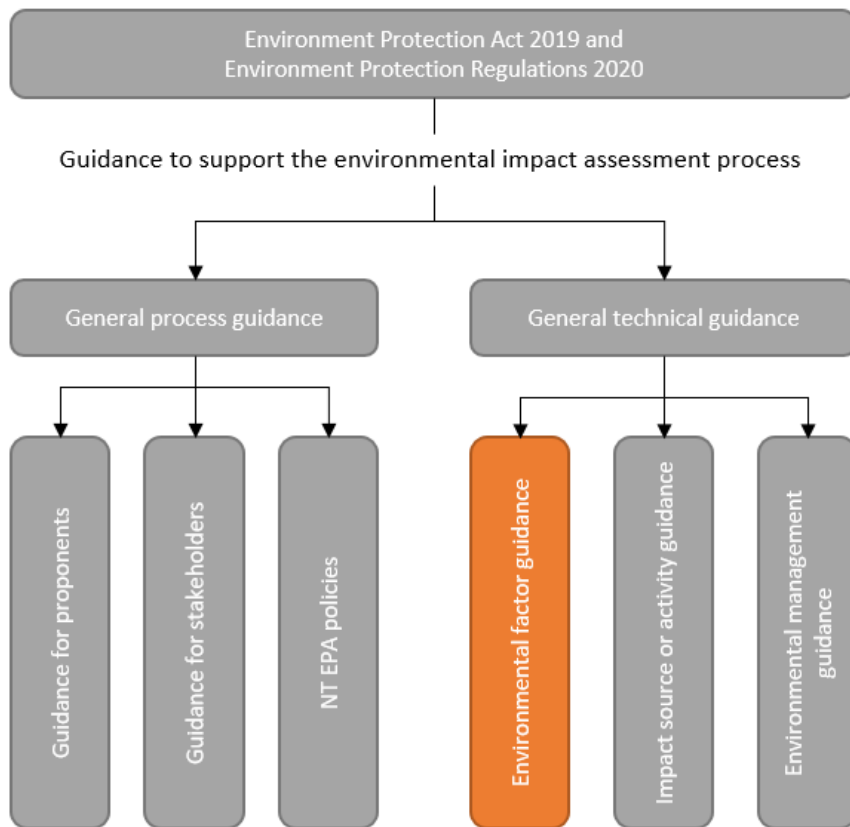
## 2. Purpose of Guideline

The purpose of this guideline is to outline when and how the NT EPA's Environmental Factor: Atmospheric Processes is considered in the environmental impact assessment process.

The guideline provides advice on the following:

1. a proponent's obligations in respect to the EP Act
2. when to refer a proposal based on greenhouse gas emissions
3. requirements of assessment documentation relating to the Environmental Factor: Atmospheric Processes.

This guideline is part of a series of guidance prepared by the NT EPA to support proponents with the environmental impact assessment process. Accordingly, this guideline is meant to be read in conjunction with the other guidance documents, ensuring a fuller understanding of the impact assessment process and the NT EPA's requirements, as shown in Figure 1.



**Figure 1 Environmental impact assessment guidance framework**

### 3. Environmental Factor: Atmospheric Processes

As concluded by the Intergovernmental Panel on Climate Change<sup>1</sup> (IPCC), it is unequivocal that human influence has warmed the global climate system since pre-industrial times. The IPCC advised that it will only be with immediate and large-scale reductions in greenhouse gas emissions that global warming will be limited to between 1.5°C and 2°C.

On 16 June 2022 Australia updated its Nationally Determined Contribution under the Paris Agreement to reduce greenhouse gas emissions by 43 per cent below 2005 levels by 2030 and achieve net zero by 2050. These targets have been captured in the *Climate Change Act 2022* (Cth).

The '[Northern Territory Climate Change Response: Towards 2050](#)' establishes the NT Government's target of net zero greenhouse gas emissions by 2050. The NT Government released the policy '[Greenhouse Gas Emissions Management for New and Expanding Large Emitters](#)' (Large Emitter's Policy) on 1 September 2021. The Policy sets out the NT Government's expectations for how greenhouse gas emissions are to be managed from new, or expanding, industrial and land use development projects as one means of achieving the net zero by 2050 target. The Policy applies to new projects and expansions of existing projects that require an environmental authorisation and are considered to be 'large emitters'.

<sup>1</sup> Intergovernmental Panel on Climate Change 2021, 'Climate Change2021: The Physical Science Basis'

The NT EPA has incorporated the NT Government's net zero greenhouse gas emissions by 2050 target into the environmental objective for the NT EPA's Environmental Factor: Atmospheric Processes.

Environmental Factor	Environmental Objective
Atmospheric processes	Minimise greenhouse gas emissions so as to contribute to the Northern Territory Government's target of achieving net zero greenhouse gas emissions by 2050

The Environmental Objective recognises the fundamental link between the release of greenhouse gas emissions from a proposal, their impact on atmospheric processes and the subsequent changes to climate.

## 4. Legal context

The EP Act states that the purpose of the environmental impact assessment and approval system in the NT is to ensure there is no unacceptable impact on the environment resulting from proposals, now or in the future (section 42(a)).

If a proposal may have a significant impact on the environment it is to be planned, assessed and carried out taking into account (section 42(b)):

- i. the principles of ecologically sustainable development
- ii. the environmental decision-making hierarchy
- iii. the waste management hierarchy
- iv. ecosystem-based management
- v. the impacts of a changing climate.

The purpose of section 42(b)(v) is to ensure that the environmental impact assessment system considers how development may impact on climate as well as how changes in climate may impact on developments.

Section 42(b)(v) applies to all proposals that may have a significant impact on the environment. It places obligations on both the NT EPA and proponents of a proposal to ensure that climate change impacts are addressed through the planning and assessment of a proposal and in the carrying out of the proposal.

When addressing climate change impacts in project planning and implementation a proponent has obligations under section 43 of the EP Act – the general duty of proponents, which include:

- To consider the principles of ecologically sustainable development in the design of the proposal.
- To apply the environmental decision-making hierarchy in the design of the proposal.
- To consider the waste management hierarchy in the design of the proposal.

## 5. How this factor links with other environmental factors

In accordance with section 42(b)(V) of the EP Act, the NT EPA will consider:

- the greenhouse gas emissions of a proposal (acknowledging the link between greenhouse gas emissions and climate change) (the subject of this guideline)

- the impacts of climate change on a proposal (for example, rising sea levels, water security, heat stress etc.)
- the potential for a proposal to exacerbate the impacts of climate change (for example, cumulative impacts associated with displacing species already under threat from shrinking habitat due to a changing climate).

There are inherent links between the Atmospheric Processes environmental factor and other environmental factors through effects on climate. For example, increasing average temperatures and extreme weather events places significant pressures on terrestrial ecosystems and terrestrial environmental quality, human health, and the NT community and economy.

The potential impacts of climate change and the potential for a proposal to exacerbate the impacts of climate change will be considered under each relevant factor.

## 6. Application of this guideline

Where a proposal meets a threshold specified in this guideline, the proponent is to refer the proposal to the NT EPA for consideration in accordance with the EP Act. The referral:

- must include the information specified in section 9.1 of this guideline, and
- should contain the information specified in sections 9.2 and 9.3 of this guideline.

If the proposal does not meet one of the thresholds identified in this document and the proponent is required to refer the proposal due to a potentially significant impact on another of the NT EPA's Environmental Factors, the referral must address the requirement of section 42(b)(v) of the EP Act to consider the impacts of a changing climate by providing:

- an estimate of the proposal's greenhouse gas emissions (proponents are encouraged to do this in accordance with section 9.1 of this guideline)
- emissions management information as specified in section 9.3 (noting that a greenhouse gas abatement plan may be required by the NT EPA as part of the assessment process).

Proponents should also consider the NT EPA's guidance '[Referring a proposal to the NT EPA](#)'.

## 7. Referring a proposal to the NT EPA

The EP Act requires a proponent to refer a proposal to the NT EPA for assessment if it has the potential for a significant impact on the environment. Alternatively, a statutory decision-maker may refer a proposal to the NT EPA for assessment, or the NT EPA may call in a proposal for assessment.

For the Environmental Factor: Atmospheric Processes, the potential to have a significant impact on the environment is determined based on the level of greenhouse gas emissions generated by a proposal.

Under the Environmental Factor: Atmospheric Processes a proponent is to refer a proposal to the NT EPA if its emissions exceed:

- For an industrial proposal: 100 000 tonnes carbon dioxide equivalent (tCO<sub>2</sub>-e) of scope 1 emissions in any financial year over the life cycle of a proposal, or

- For a land use proposal: 500 000 tCO<sub>2</sub>-e (scope 1) generated from a single clearing action, or cumulatively from multiple land clearing actions on a property over time.

Scope 1 emissions estimates must include all emissions caused as a direct result of the proposal, inclusive of, but not limited to, stationary energy, fugitives, and emissions associated with transport. Proposals should not be split into separate referrals to avoid consideration of greenhouse gas emissions (noting that in accordance with section 47(c) of the Environment Protection Regulations 2020 the NT EPA may refuse to accept a referral if it relates to part of a larger proposal).

Where a proposal describes a significant variation to an existing proposal the NT EPA will assess changes to the existing proposal in the context of the ongoing (but not past) greenhouse gas emissions from the proposal, and will have regard to whether the combined effect of the existing proposal and the proposed expansion or change are reasonably likely to exceed the referral thresholds.

These thresholds are provided as a guide to when a referral is required. A proponent should consider referring a proposal if the emissions from a proposal are below but close to the thresholds (section 53(1) of the EP Act).

## 8. Considerations

Where an industrial proposal meets the referral threshold the NT EPA will consider the following in its assessment:

- The application of the environmental decision making hierarchy.
- The interim and long-term emissions reduction targets the proponent proposes to achieve.
- The adoption of best practice design, technology and management appropriate to avoid, reduce or offset scope 1 emissions.
- Whether reasonably practicable alternatives and measures to avoid, reduce or offset emissions have been considered for scope 2 emissions.
- Relevant sector pathways, benchmarks and /or milestones.
- Whether there are other legal and policy instruments that can require reductions in emissions from a proposal to meet the NT EPA's objectives.

Where a land use proposal meets the referral criteria the NT EPA expects the proponent to demonstrate its application of the [NT Land Clearing Guidelines](#) as well as other proposed management initiatives (beyond the NT Land Clearing Guidelines) to ensure all emissions from the proposal are reduced as far as reasonably practicable.

## 9. Information required by the NT EPA

The NT EPA will require comprehensive information to support its assessment and decision making under the EP Act. A proponent is encouraged to provide the information with a referral, particularly when projected emissions are above thresholds. At a minimum, the NT EPA would expect a referral to provide information on estimated emissions.



## 9.1. Estimated emissions

For proposals and significant variations to a proposal that meet the thresholds in the guideline, the NT EPA will require the following information:

- Estimates of annual and total scope 1, scope 2 and scope 3 emissions over the life of the proposal.
- A breakdown of scope 1, scope 2 and scope 3 emissions according to the emission source locations of within the NT and/ or elsewhere in Australia and/ or outside of Australia.
- A breakdown of emissions by source, including but not limited to: stationary energy; fugitives; transport; and emissions associated with changes to land use.
- A comparison of estimated emissions against NT and Australian greenhouse gas emissions, as reported in Australia's National Greenhouse Accounts, and against Australia's Nationally Determined Contribution targets and interim targets.
- Projected emissions intensity (emissions per unit of production) and benchmarking against other comparable projects, industry standards and best practice.

The NT EPA expects emissions to be calculated using Australian Government endorsed methodologies. Resources and calculators are found on the Australian Government's Clean Energy Regulator website. To calculate emissions from land use, specifically land clearing, proponents are to use the Full Carbon Accounting Model (FullCAM) available on the Australian Government's Department of Industry, Science, Energy and Resources website. Additional information, including data derived from FullCAM, is provided by the Department of Environment, Parks and Water Security<sup>2</sup>.

Where a proponent does not follow an Australian Government methodology, it must provide clear reasoning and justification within its documentation for the choice of methodology.

## 9.2. Emissions management

The NT EPA will require proponents to outline how their emissions and emissions management approach will influence the NT's target of zero net emissions by 2050 being achieved. Proponents will be required to demonstrate that all reasonable and practicable measures have been applied to reduce emissions, including through best practice design, technology and management.

### 9.2.1. Industrial proposals

The NT EPA will require a proponent to demonstrate emissions reduction over the life of an industrial proposal with the aim of achieving net zero emissions by 2050 (or, where appropriate, by the proposal's end of life). Where a proposal has obligations under the Safeguard Mechanism it is required to reduce its emissions baseline by 4.9% each year under the *National Greenhouse and Energy Report Act 2007*.

Information required by the NT EPA includes:

1. Identification of the latest technologies and environmental management procedures available at the scale of the proposal.

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<sup>2</sup> <https://nt.gov.au/property/land-clearing/pastoral-land/clearing-native-vegetation-on-pastoral-land>

2. Evidence that the proposed technologies and procedures are capable of achieving stated greenhouse gas emissions and emission reductions.
3. Identification of local conditions and current circumstances of the proposal that might influence the choice of technologies or procedures to mitigate greenhouse gas emissions.

A proponent must demonstrate how it has applied the decision-making hierarchy by:

1. avoiding emissions through best practice design – ensuring emissions and energy intensity are minimised at the design stage (facility design, technology choice, operation and closure methodologies) and / or achieving reduced emissions through the adoption of renewable / low emission technologies
2. incorporating mitigation and continuous improvement measures to reduce emissions over the life of a proposal – this includes the planned introduction of measures to improve performance as well as setting targets for reducing emissions over time
3. if appropriate, identifying options to offset significant residual greenhouse gas emissions that cannot be avoided or mitigated – offsets should be developed in consideration of the NT Offsets Principles and Greenhouse Gas Emissions Offsets Policy<sup>3</sup>.

### 9.2.2. Land use proposals

The NT EPA will require proponents to demonstrate how emissions will be minimised as far as reasonably practicable. Emissions may be managed through the application of land management practices and/or through broader property-wide emissions reduction opportunities. At a minimum, proponents need to demonstrate the application of all land management practices outlined in the NT Government's Land Clearing Guidelines, both from the clearing event and in regards to ongoing emissions (emissions that occur in the months and years following a clearing event).

A proponent must demonstrate how it has applied the decision-making hierarchy by:

1. Avoiding emissions – for example, avoiding the clearing of old growth vegetation and only clearing areas of vegetation regrowth
2. Incorporating mitigation measures – for example:
  - selective clearing (noting that a clearing permit provides the landholder discretion for how much vegetation is to be cleared). Retaining stands of larger trees, for example, results in the retention of vegetation which stores the majority of biomass carbon
  - applying buffer zone widths beyond the minimum required by the Land Clearing Guidelines, particularly in areas of high erosion risk, minimising as much as practicable soil disturbance and subsequent loss of carbon
  - adopting clearing methods that minimise the mechanical disturbance of the soil profile
  - ongoing land, fire and weed management practices
  - ongoing management of operations to reduce emissions
  - identifying and implementing property-wide emission reduction opportunities.

3. If appropriate, identifying options to offset significant residual greenhouse gas emissions.

### 9.3. A greenhouse gas abatement plan

Where an industrial proposal requires environmental assessment due to its potential for significant greenhouse gas emissions, the NT EPA will require the proponent to prepare a greenhouse gas abatement plan which addresses scope 1 emissions, and where the proposal includes scope 2 emissions, those scope 2 emissions. A proponent is encouraged to submit the greenhouse gas abatement plan with a referral. This may assist the NT EPA in determining a lower level of assessment is required for a proposal.

At a minimum the plan should outline:

1. justification for the emissions baseline used and the alternative approaches that were considered to calculating baselines (including an explanation why these were not adopted)
2. regular interim and long-term targets (and corresponding timeframes) that reflect an incremental reduction in scope 1, and if applicable scope 2, emissions over the life of the proposal with the aim of achieving net zero greenhouse gas emissions by 2050 at a minimum, or, where the proposal is completed before 2050, preferably by the end of the life of the proposal
3. the intended actions to avoid, mitigate and offset greenhouse gas scope 1 and, if applicable, scope 2 emissions
4. that consideration has been given to reducing scope 3 emissions, where practicable, throughout the life of the proposal through regular reviews of the greenhouse gas abatement plan
5. the intended locations where emissions reduction actions for scope 1 and, if applicable, scope 2 emissions will have effect, within the NT and/ or elsewhere in Australia and/ or outside of Australia
6. strategies that demonstrate that all reasonable and practicable measures have been, and will continue to be, applied to avoid and reduce a proposal's emissions over time
7. a timetable for review of the plan.

It is understood that some details of contemplated abatement actions may constitute commercial-in-confidence information. In accordance with s.281 of the EP Act, the proponent may request that specific details are treated as confidential and are not made publicly available.

Where a land use proposal requires environmental assessment due to its potential for significant greenhouse gas emissions, the NT EPA will require the proponent to prepare a greenhouse gas abatement plan to demonstrate how emissions will be minimised as far as reasonably practicable to contribute to the NT target of net zero emissions by 2050. At a minimum the plan should include:

1. the intended actions to avoid, mitigate and offset scope 1 greenhouse gas and, if applicable, scope 2 emissions associated with the clearing event as well as subsequent land use, and
2. strategies that demonstrate that all reasonable and practicable measures have been, and will continue to be, applied to avoid and reduce a proposal's emissions over time.
3. a timetable for review of the plan.

## 10. Environmental approval

The Minister for Environment (the Minister) is responsible for granting or refusing to grant an environmental approval. In respect to greenhouse gas emissions, the Minister will be guided by the NT EPA's advice as well as the Large Emitter's Policy.

At the conclusion of the environmental impact assessment process the NT EPA provides its assessment report to the Minister and advises on the acceptability of a proposal. The NT EPA advises the Minister to grant or refuse to grant an environmental approval, including recommended conditions of approval when the advice recommends an environmental approval be granted. The Minister is not bound by the NT EPA's advice.

In its assessment report the NT EPA will advise on the acceptability of a proposal's greenhouse gas emissions and proposed targets, as well as any proposed measures to reduce emissions. The NT EPA may refer a proponent to the NT Government's Offsets Principles and the [Greenhouse Gas Emissions Offsets Policy](#), and may recommend emissions be offset. However it will be the Minister that determines the requirement for an offset (through a condition of the environmental approval) and the Department of Environment, Parks and Water Security (DEPWS) that advises on, and assesses, the efficacy of an offset.

The NT EPA supports transparency and accountability in environmental management. The NT EPA will recommend to the Minister that approval conditions require the proponent to publicly report against targets in their greenhouse gas management plan.

DEPWS is responsible for monitoring the compliance of a proposal with its environmental approval, including compliance with a proposals' greenhouse gas abatement plan. A proposal is legally required to develop and operate according to an environmental approval and may be subject to enforcement action where there is a non-compliance with its environmental approval.

## 11. Review

An initial review of this Guideline will be undertaken after 12 months to allow the NT EPA to monitor the expected function and performance of the Guideline. As a consequence of the review, or due to changes in the policy or regulatory environments, the NT EPA will re-examine and may reduce the referral thresholds contained in the Guideline.