

Environmental factor guidance: Atmospheric processes

Greenhouse Gas Emissions

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1. Introduction

Under the *Environment Protection Act 2019* (EP Act), a proposed action 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 proposed action requires environmental impact assessment under the EP Act. A proposed action or strategic 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 proposed action.

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

This Guideline has been drafted to support the Environmental Factor – Atmospheric Processes. The NT EPA invites you to provide your input and comment on the draft Guideline.

2. Purpose of Guideline

The purpose of this guidance 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 *Environment Protection Act 2019*
2. when to refer a proposed action based on greenhouse gas emissions
3. requirements of assessment documentation relating to the Environmental Factor: Atmospheric Processes.

3. Environmental Factor: Atmospheric Processes

As concluded by the Intergovernmental Panel on Climate Change¹, 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.

The 'Northern Territory Climate Change Response: Towards 2050' establishes the Northern Territory Government's target of net zero greenhouse gas emissions by 2050. In September 2021 the Northern Territory Government released the policy 'Greenhouse Gas Emissions Management for New and Expanding Large Emitters' on 1 September 2021. The Policy sets out the Northern Territory 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'.

¹ Intergovernmental Panel on Climate Change 2021, 'Climate Change 2021: The Physical Science Basis'

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

Theme	Factor	Objective
AIR	Air quality	Protect air quality and minimise emissions and their impact so that environmental values are maintained.
	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 an action, their impact on atmospheric processes and the subsequent changes to climate.

The NT EPA’s Environmental Factor: Atmospheric Processes has the purpose of ensuring greenhouse gas emissions from actions requiring assessment under the EP Act are minimised.

4. Legal context

The *Environment Protection Act 2019* (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 actions, now or in the future (section 42(a)).

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

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

The purpose of section 42(b) 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) of the EP Act places obligations on both the NT EPA and proponents of a proposed action to ensure that climate change impacts are addressed through the planning and assessment of a proposed action and in the implementation and carrying out of the proposed action.

This section of the EP Act applies to all proposed actions that may have a significant impact on the environment. It is not limited to those proposals where the NT EPA has determined that the potential greenhouse gas emissions associated with the proposed action may have a significant impact.

Consequently, in accordance with section 42(b) of the EP Act, in its assessments of all proposed actions, the NT EPA will consider:

- the greenhouse gas emissions of an action (acknowledging the link between greenhouse gas emissions and climate change)

- the impacts of climate change on an action (for example, rising sea levels, water security, heat stress etc.)
- the potential for an action 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).

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 proposed action.
- To apply the environmental decision-making hierarchy in the design of the proposed action.
- To consider the waste management hierarchy in the design of the proposed action.

5. Application of this guideline

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

- must include the information specified in section 7.1 of this guideline, and
- should contain the information specified in sections 7.2 and 7.3 of this guideline.

If the proposed action does not meet the thresholds identified in this document and the proponent is required to refer the proposed action due to a potentially significant impact on another of the NT EPA's Environmental Factors, the referral:

- must include an estimate of the proposal's greenhouse gas emissions (proponents are encouraged to do this in accordance with section 7.1 of this guideline)
- must address the requirement of section 42(b) of the EP Act to consider the impacts of a changing climate, and
- should include a greenhouse gas abatement plan (noting that this 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'.

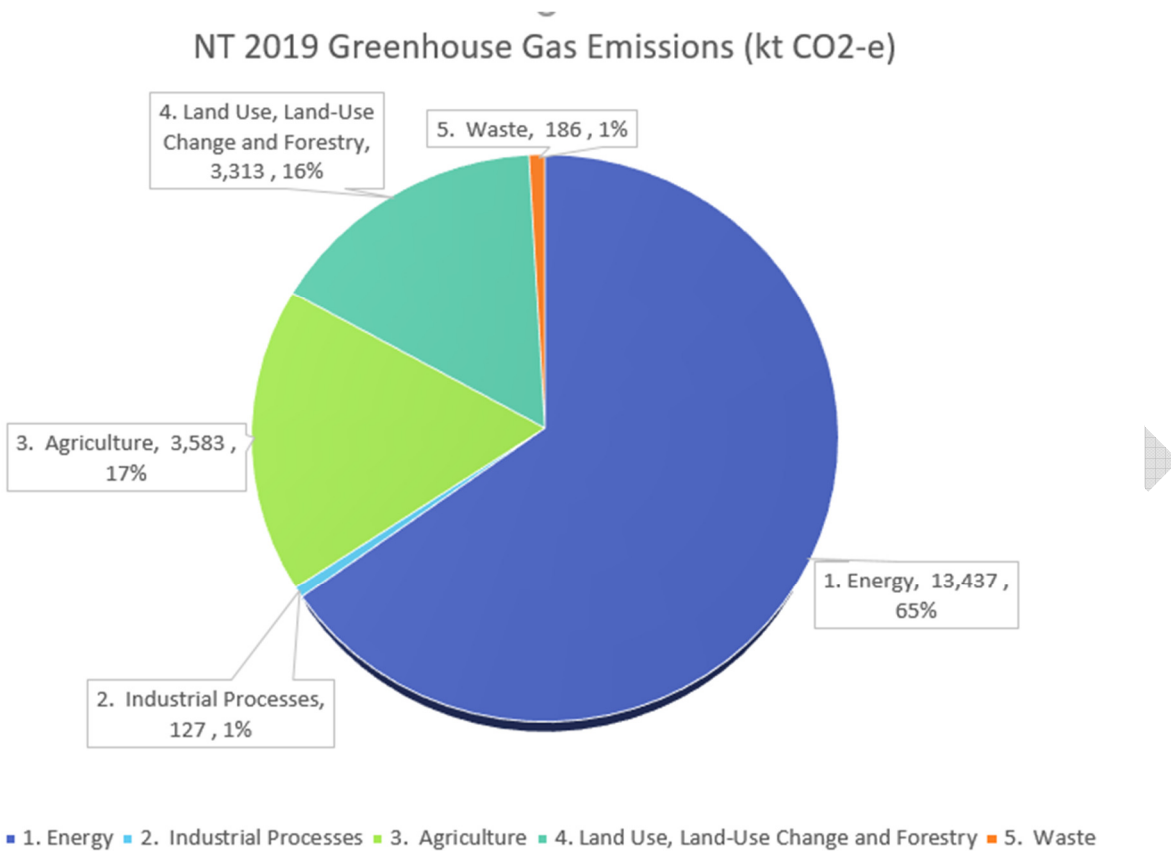
Supporting information – the NT emissions profile

The NT's greenhouse gas emissions accounts are contained in the Australian Government's State and Territory Greenhouse Gas Inventories (STGGI) report, which is produced annually by the Australian Government's Department of Industry, Science, Energy and Resources (DISER). The STGGI is prepared as part of the National Greenhouse Gas Inventory (NGGI) Report, drawing on the information provided in the NGGI, and disaggregating it down to the individual state and territory level.

The NGGI reports net emissions from the following sectors:

- *energy*
- *industrial processes and product use*

- agriculture
- land use, land use change and forestry (LULUCF)
- waste.



In 2019 the total emissions from the NT were 20.7 million tonnes carbon dioxide equivalent (Mt CO₂-e). This is an increase of 46.5% from 2005 emission levels. This increase is attributed to the growth in mining and exports driving increases in fugitive emissions from fossil fuel extraction and stationary energy emissions ([State and territory greenhouse gas inventories: annual emissions | Department of Industry, Science, Energy and Resources](#)).

In 2019 the energy and IPPU sectors accounted for 66% of total NT emissions, agriculture 17% of total emissions and LULUCF 16% of total emissions. Emissions from the energy sector are the major source of emissions in the Northern Territory.

The NT is one of the few Australian jurisdictions where emissions from the LULUCF sector represent an emissions source as opposed to a sink.

In 2019, LULUCF emissions declined from the long-term average of 44% of total NT emissions (since 1990) to 16% of total NT emissions. This is attributable to rising emissions in the energy sector as well as declining LULUCF emissions resulting from a reduction in fire-related emissions from savanna grasslands and woodlands.

Fires in tropical savanna country, especially late in the dry season, are the major contributor to LULUCF emissions in the NT. The next-largest contributor to the Territory's LULUCF emissions is land clearing.

By comparison to savanna burning, it is a relatively small contributor, in 2019, land clearing (comprising land converted to cropland, grassland, wetland, or settlements) totalled approximately 8% of total LULUCF emissions.

6. Referring an action to the NT EPA

The EP Act requires a proponent to refer an action 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 an action to the NT EPA for assessment, or the NT EPA may call in an action 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 an action.

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

- For an industrial proposed action: 100 000 tonnes carbon dioxide equivalent (tCO₂-e) (scope 1) in any financial year over the life cycle of a proposed action.
- For a land use proposed action: 500 000 tCO₂-e (scope 1) generated from a single clearing action, or cumulatively from multiple land clearing actions on a property over time.

These thresholds are provided as a guide to when a referral is required. A proponent should consider referring a proposed action if the emissions from a proposed action are below but close to the thresholds, and the NT EPA may decide to call-in a proposed action that has emissions below the guiding thresholds.

Supporting Information – the NT EPA’s considerations

The NT Government released the policy ‘Greenhouse Gas Emissions Management for New and Expanding Large Emitters’ (the Large Emitters Policy) on 1 September 2021. The Policy sets out the NT Government’s minimum requirements for how greenhouse gas emissions are to be managed from new, or expanding, industrial and land use development projects. It applies to new projects and expansions of existing projects that require an environmental authorisation and are considered to be ‘large emitters’.

The Large Emitters Policy includes the following thresholds as an indication of what the Northern Territory Government considers to be a large emitter:

- The industrial project threshold is 100 000 tCO₂-e (scope 1) in any financial year over the life cycle of a project.
- The land use project threshold is 500 000 tCO₂-e (scope 1) generated from a single clearing action, or cumulatively from multiple land clearing actions on a property over time.

Under the EP Act, an action requires environmental impact assessment if it has the potential to have a significant impact on the environment. It is the NT EPA who decides whether assessment is required or not, and this cannot be directed by government policy. The Large Emitters Policy does, however, provide clear guidance to the NT EPA on when the NT Government believes emissions are significant enough to require assessment and regulation.

The NT EPA reviewed the NT Government’s policy and acknowledges the justification for the chosen threshold levels stated in the Policy. The NT EPA is of the view that the thresholds established by the Large Emitters Policy provide a reasonable position for when the emissions from a proposed action have the potential to have a significant impact on the environment. The NT EPA proposes to adopt the thresholds as a guide to when a proposed action requires referral to the NT EPA for consideration under the EP Act. In taking this approach, the NT EPA maintains discretion in its determination of significance.

As with the Large Emitters Policy, the NT EPA has included a separate referral threshold for land clearing activities. The NT EPA recognises that land clearing actions contribute to the greenhouse gas emissions inventory for the NT, primarily as carbon dioxide (CO₂). As a greenhouse gas emission, CO₂ has less warming potential than other types of greenhouse gas emissions, such as methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride (associated with energy consumption and industrial processes) and the proposed threshold level reflects this difference.

In developing this guideline the NT EPA also considered adopting the Large Emitters Policy thresholds as a threshold for requiring environmental assessment of a proposed action. However, the NT EPA recognised the need to retain its flexibility when determining significance. Adopting the Large Emitters Policy thresholds as referral thresholds allows the NT EPA to call in a proposed action for environmental assessment even when the thresholds have not been met. The NT EPA also considered applying a threshold range to minimise a proposed action being planned to ensure its emissions are just shy of the threshold in order to avoid referral. However, this was considered unnecessary as the NT EPA can use its powers to call in a proposed action which it considers has the potential for significant environmental impact, regardless of whether the referral thresholds have been met.

7. 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.

7.1. Estimated emissions

For proposed actions and expanding actions 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 action.
- 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 (scope 1 emissions from land use change are not included in threshold calculations for industrial actions, however they are to be provided as part of an action's emissions profile).
- A comparison of estimated emissions against Northern Territory and Australian greenhouse gas emissions, as reported in Australia's National Greenhouse Accounts.

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.

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.

7.2. Emissions management

The NT EPA will require proponents to outline how their proposed action will contribute to the NT's target of zero net emissions by 2050. 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. The NT EPA will require a proponent to demonstrate emissions reduction over the life of a proposed action with the aim of achieving net zero emissions by 2050 (or, where appropriate, by the action's end of life).

Information required by the NT EPA includes:

1. Identification of the latest technologies and environmental management procedures available at the scale of the proposed action.
2. Evidence that the proposed technologies and procedures are capable of achieving stated greenhouse gas emissions and emission reductions.
3. Projected emissions intensity of the proposed action (emissions per unit of production) and benchmarking against other comparable actions/ projects.

4. Identification of local conditions and current circumstances of the proposed action 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 an action – this includes the planned 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 Framework².

7.3. A greenhouse gas abatement plan

Where a proposed action 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 action includes scope 2 emissions, those scope 2 emissions. A proponent may choose to submit the greenhouse gas abatement plan with a referral.

At a minimum the plan should outline:

1. 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 action with the aim of achieving net zero greenhouse gas emissions by 2050 (or, where the action is completed before 2050, preferably by the end of the life of the action)
2. the intended actions to avoid, mitigate and offset greenhouse gas scope 1 and, if applicable, scope 2 emissions
3. 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
4. strategies that demonstrate that all reasonable and practicable measures have been, and will continue to be, applied to avoid and reduce an action's emissions over time
5. 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.

8. Environmental approval

The Minister for Environment (the Minister) is responsible for granting or refusing to grant an environmental approval.

² Available from: depws.nt.gov.au/environment-information

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 an action. 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 an action'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 Government's Offset Framework 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 an action with its environmental approval, including compliance with an action's greenhouse gas abatement plan. An action 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.

9. Review

A review of this Guideline will be undertaken within two years to ensure it remains contemporary within the policy and regulatory environment at that time. As a consequence of a review or due to future changes in the policy or regulatory environments the NT EPA will re-examine and may reduce the referral thresholds contained in the Guideline.