Environmental Factor Guideline

Greenhouse Gas Emissions

The environmental objective of the *Greenhouse Gas Emissions* factor is:

To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.

Purpose

The purpose of this guideline is to outline how and when the *Greenhouse Gas Emissions* factor is considered by the Environmental Protection Authority (EPA) in the environmental impact assessment (EIA) process.

Specifically, the guideline:

- describes why the EPA has published the guideline
- outlines how EPA guidelines are applied
- provides background on the *Greenhouse Gas Emissions* factor
- identifies activities that may be considered under this factor
- describes how this factor links with other environmental factors
- outlines when the EPA may apply this guideline
- describes EIA considerations for this factor
- provides a summary of the information required by the EPA to undertake EIA related to this factor (including consideration of scope 1, 2 and 3 emissions)
- outlines periodic public reporting requirements
- identifies issues commonly encountered by the EPA during EIA of this factor
- outlines the timeframes for reviewing this guideline.

Why does the EPA need an Environmental Factor Guideline for Greenhouse Gas Emissions?

Under section 15 of the *Environmental Protection Act 1986* (EP Act), the EPA has the objective to *use its best endeavours to protect the environment and to prevent, control and abate pollution and environmental harm*. One way in which the EPA discharges this objective is to assess proposals referred to it under Part IV of the EP Act. The reports that the EPA produces following these assessments must set out what the EPA considers to be the key environmental factors identified in the course of the assessment, the EPA's recommendation as to whether the proposal may be implemented, and (if the EPA recommends that implementation be allowed) the conditions and procedures that should apply to that implementation.

This guideline provides guidance on when greenhouse gas (GHG) emissions will be considered to be a key environmental factor and how this factor will be dealt with in the EPA's assessment reports.

The section 15 objective, combined with the established link between GHG emissions and the risk of climate change, and the broad acknowledgement that the warming climate will impact the Western Australian environment, means that the EPA can consider the effects of proposals which would increase the State's emissions, and contribute to environmental harm.

How are EPA guidelines applied?

The intent of EPA guidelines is to *inform* the development and assessment of a proposal, not determine the outcome of the EPA's assessment. In the end, each proposal is assessed on its individual merits. These guidelines do not bind EPA assessments; they are explicitly not intended to be predictive of EPA advice.

EPA guidelines do not seek to unnecessarily duplicate other regulatory approaches. The approach outlined in our guidelines will be applied with regard to evolving state and national policy settings or new international commitments. The EPA will take contemporary policy settings or commitments into account as it undertakes its assessments, and will update its guidelines if these settings or commitments change significantly and materially.

What are greenhouse gases and what is their relationship to Western Australia's environment?

This guideline relates to the six categories of greenhouse gases covered by the United Nations Framework Convention on Climate Change (UNFCCC) Reporting Guidelines on Annual Inventories. These gases are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulphur hexafluoride (SF_6), hydro fluorocarbons (HFCs) and perfluorocarbons (PFCs).

Australia is currently contributing around 1.3 per cent of global GHG emissions[1]. Australia's emissions for the year to March 2019 were approximately 540 million tonnes carbon dioxide equivalent (CO_2-e), up 0.6 per cent on the previous year, primarily due to increased liquefied natural gas (LNG) exports[2]. This is only 11.7 per cent below emissions in 2005[2], and the National Inventory Reports 2014 to 2017 indicate that Australia's GHG emissions have risen each year since 2014[3].

In 2017, Western Australia (WA) contributed 88.5 million tonnes CO_2-e, which is a 23 per cent increase from 2005 levels[4]. The State Greenhouse Gas Inventory show a steady increase in GHG emissions in WA from the early 1990s. Generally, emissions growth in WA is expected to continue in the short to medium term.

The UNFCCC provides the framework for international cooperation to reduce global GHG emissions and limit temperature increases. The UNFCCC Paris Agreement entered into force on 4 November 2016 and Australia is currently committed to reducing GHG emissions by 26 to 28 per cent below 2005 levels by 2030. The Paris Agreement states that net zero emissions will be required in the second half of the century to achieve its goals of limiting warming to well below two degrees Celsius above pre-industrial levels[5]. More recently, the Intergovernmental Panel on Climate Change's (IPCC's) 1.5 report indicated that global emissions need to fall by about 45 per cent from 2010 levels by 2030, reaching 'net zero' around 2050, to limit global warming to 1.5 degrees Celsius.

1 World Resources Institute (2017, April 11). *CAIT Climate Data Explorer*. Retrieved from: http://cait.wri.org
2 Quarterly update of Australia's National Greenhouse Gas Inventory for March 2019. Retrieved from https://www.environment.gov.au
3 Volume 1 - National Inventory Reports 2014 to 2017 (Total net emissions (excluding LULUCF)). Retrieved from http://www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/publications#national
4 State and Territory Greenhouse Gas Inventories 2017.
5 The Paris Agreement, United Nations Framework Convention on Climate Change, 2016.

Locally, the Government of Western Australia released the *State Greenhouse Gas Emissions Policy for Major Projects* (State Emissions Policy) in August 2019. The State Emissions Policy commits the State Government to working with all sectors of the Western Australian economy to achieve net zero GHG emissions by 2050, and commits to working with the Australian Government's interim target of emission reductions of 26 to 28 per cent by 2030. The State Emissions Policy contemplates that proponents of projects with significant emissions may develop GHG management plans that detail their contribution towards achieving net zero emissions by 2050. The State Emissions Policy declares that local innovation and local benefits are encouraged, particularly in the development of carbon offsets, and indicates a willingness to consider credible international offsets to limit abatement costs.

In further recognition of the role that climate change is having on the Western Australian environment, and reflecting the growing public interest in this matter, the Government of Western Australia released its *Climate change in Western Australia – Issues Paper* in September 2019. The State Government has also committed to developing a State Climate Policy based on this issues paper in 2020.

National and international greenhouse gas reporting standards define a set of distinct classes (scopes) of GHG emissions that delineate sources and associated responsibilities. Scope 1 GHG emissions are the emissions released to the atmosphere as a direct result of an activity, or a series of activities at a facility level. Scope 2 GHG emissions are the emissions from the consumption of an energy product. Scope 3 emissions are indirect GHG emissions other than scope 2 emissions that are generated in the wider community. Scope 3 emissions occur as a consequence of the activities of a facility, but from sources not owned or controlled by that facility's business[6].

Activities that may be considered under this factor

Development activities that may be considered under this factor include, but are not necessarily limited to:

- the extraction, processing and refining of oil and gas
- the burning of fossil fuels for energy production
- mining and processing of metallic and non-metallic minerals
- waste to energy plants
- infrastructure development
- chemical manufacturing and processing
- development that clears vegetation.

How this factor links with other environmental factors

The EPA recognises that there are inherent links between the *Greenhouse Gas Emissions* factor and other environmental factors through effects on climate. For example, climate change has already caused a significant drying of the State's south-west, which in turn places significant additional pressures on water resources, flora and fauna, marine environmental quality, and social surroundings.

This guideline addresses one of the major causes of a changing climate, however the potential impacts of changes in our climate will be considered under each relevant factor. EPA guidance with respect to maintaining air quality and minimising emissions for human health and amenity are dealt with in the *Air Quality* guideline.

6 Clean Energy Regulator (20 July 2018). *Greenhouse gases and energy*. Retrieved from http://www.cleanenergyregulator.gov.au

When the EPA may apply this guideline

Generally, the geographic scope of the EPA's obligations is the State of Western Australia and its environment.

The EPA will have regard to this guideline when assessing new proposals (including expansions) and changes to proposals resulting in an increase in GHG emissions, which may involve the EPA in the reconsideration of GHG conditions.

Generally, GHG emissions from a proposal will be assessed where they exceed 100,000 tonnes of scope 1 emissions each year measured in CO_2-e. This is currently the same as the threshold criteria for designation of a large facility under the Australian Government's Safeguard Mechanism.

The consideration of GHG emissions from proposals will be subject to the approach as outlined in this guideline to ensure projects are assessed and conditioned in an effective, consistent and equitable manner. Notwithstanding this, the EPA will continue to assess proposals on a case-by-case basis and recognises that a flexible approach is important in driving innovation and improvement in best practice technologies.

Considerations for EIA

Considerations for EIA for *Greenhouse Gas Emissions* factor include, but are not necessarily limited to:

- application of the mitigation hierarchy to avoid, reduce and offset emissions
- the interim and long-term emissions reduction targets the proponent proposes to achieve
- the adoption of best practice design, technology and management appropriate to mitigate GHG emissions
- whether proposed mitigation is plausible, timely, achievable and is all that is reasonable and practicable.

Information required for EIA

Where *Greenhouse Gas Emissions* has been identified as a preliminary key environmental factor, the EPA may require the proponent to provide information including, but not limited to the following categories.

Estimated emissions

It is in the public interest that GHG emissions arising from significant developments in WA, and measures to mitigate those emissions, are documented and disclosed. The practice of seeking information on scope 1, 2 and 3 emissions from a proposal is not new, and reflects the approach of the Australian Government in relation to recent assessments of proposals in Commonwealth waters under the *Environment Protection and Biodiversity Conservation Act 1999*. On that basis, the EPA may ask proponents to provide estimates of scope 1, 2 and 3 emissions and how they are likely to change over the life of the proposal, to inform the assessment process.

The EPA may request the following information:

- credible estimates of scope 1, scope 2 and scope 3 GHG emissions (annual and total) over the life of a proposal
- a breakdown of GHG emissions by source inclusive of, but not limited to, stationary energy, fugitives, transport, and emissions associated with changes to land use
- projected emissions intensity (emissions per unit of production) for the proposal and benchmarking against other comparable projects.

Greenhouse Gas Management Plan

When the EPA applies this guideline in assessing a proposal, the EPA will require proponents to develop a Greenhouse Gas Management Plan as part of the assessment process that demonstrates their contribution towards the aspiration of net zero emissions by 2050. The EPA notes that both the Paris Agreement and the IPCC's 1.5 report recommends net zero emissions by 2050.

At a minimum, a Greenhouse Gas Management Plan should outline:

- intended reductions in scope 1 emissions over the life of the proposal
- regular interim and long-term targets that reflect an incremental reduction in scope 1 emissions over the life of the proposal
- strategies which demonstrate that all reasonable and practicable measures have been applied to avoid, reduce and offset a proposal's scope 1 emissions over the life of the proposal.

Measures to avoid, reduce and offset GHG emissions

The EPA may request information on any considered and proposed mitigations that demonstrate that all reasonable and practicable measures have been applied at each step of the mitigation hierarchy, including:

- Avoiding emissions through best practice design. This may involve comparing emissions and energy intensity performance metrics with comparable facilities and ensuring emissions and energy intensity are minimised at the design stage and/or a particular level of emissions intensity performance is attained through adoption of renewable/low emissions technologies.
- Continuous improvement to reduce emissions over the project life through consideration of measures to improve performance or setting targets for emissions intensity improvement over time.
- Offsetting emissions (carbon offsets) through the implementation of a GHG emissions offset package to offset some or all residual emissions.

The EPA recognises the importance of innovation as critical to the success of achieving the goal under the Paris Agreement of limiting warming to well below two degrees Celsius above pre-industrial levels, and acknowledges the benefits of providing advice that allows for changes in greenhouse gas management plans over time as more effective mitigation alternatives become available.

The EPA also appreciates that some details of contemplated abatement actions may, for example, constitute commercial-in-confidence information. The proponent may request that specific details are treated as confidential and are not made publicly available, with justification to support this request.

Periodic public reporting against the Greenhouse Gas Management Plan

The EPA supports the requirement for proponents to periodically publicly report against their interim targets as outlined in their Greenhouse Gas Management Plan. Ideally, this reporting should be aligned with the five year milestones set out in Article 4 of the Paris Agreement (e.g. 2025, 2030).

The EPA will also consider undertaking its own periodic statewide reporting, under section 16(i) of the EP Act, to provide public advice on GHG emissions and the progress of mitigation measures developed and implemented by major proposals within WA.

Issues commonly encountered by the EPA during EIA of this factor

The following issues are matters that are commonly encountered by the EPA due to the nature of proposals that are referred to it. Background on these issues is provided here to help proponents and the community engage with EIA. This issues section will be updated from time to time to reflect new issues as they arise in referrals and EIA.

Reasonable and practicable measures to mitigate harmful emissions

Consistent with the objective of the EPA under the EP Act to use its best endeavours to protect the environment and to prevent, control and abate pollution and environmental harm, the EPA encourages the application of all practicable measures to avoid, reduce and offset GHG emissions. This might include facility design, technology choice, operation and closure.

EPA consideration of what information can be expected in this regard include:

- identification of the latest technologies and environmental management procedures available at the scale of the relevant proposal
- evidence that the proposed technologies and procedures are capable of achieving stated GHG reductions
- evidence that proposed mitigation measures (e.g. carbon offsets) are effective
- identification of local conditions and current circumstances of the relevant proposal that might influence the choice of technologies or procedures to mitigate GHG emissions
- feasibility and availability of any additional abatement and offsets.

Expectation regarding GHG (carbon) offsets

The EPA advises that where carbon offsets are to be implemented, they should meet offset integrity principles and be based on clear, enforceable and accountable methods. For example, the EPA recognises Australian Carbon Credit Units issued under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth) as meeting these standards. Compliance offsets under the Safeguard Mechanism, as well as voluntary offsets purchased to reduce residual emissions, may contribute to a proponent's Greenhouse Gas Management Plan and will be recognised by the EPA.

Guideline review

This guideline will be reviewed initially after 12 months for the identification and resolution of any technical issues.

The EPA acknowledges that this is a rapidly moving subject area and a comprehensive review will be undertaken within three years to ensure it remains contemporary within the policy environment at that time.

Version	Change	Date
1.0	Initial document	7 March 2019
2.0	Draft guideline – updated following public consultation	9 December 2019
3.0	Final guideline – updated following consultation with the EPA Stakeholder Reference Group	16 April 2020

As EPA documents are updated from time to time, users should consult the EPA website (www.epa.wa.gov.au) to ensure they have the most recent version.

Environmental Protection Authority 2020, *Environmental Factor Guideline: Greenhouse Gas Emissions*. EPA, Western Australia.

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