



Environmental Protection Authority

Background paper on greenhouse gas assessment guidance



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EPA, Western Australia

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Background

On 7 March 2019, the Environmental Protection Authority (EPA) released assessment guidelines on how it would consider greenhouse gas emissions in its future assessments of developments in Western Australia.

These guidelines reflected on contemporary climate science, emissions trends, existing policies and regulation and, ultimately, the risks to the Western Australian environment. The guidelines further developed established themes in policies and assessments. The information and emission minimisation expectations in these guidelines were more explicit and more onerous. This was done in the context of the likely future increase in proposals emitting significant quantities of greenhouse gas coming before the EPA and their cumulative impact.

The release of the assessment guidelines was met with diverse public reaction, with serious concerns raised by some companies with potential exposure to these increased requirements. These concerns included the perceived inadequacy of consultation and the practicability of the EPA advice that might follow from application of the guidelines. The EPA acknowledged those concerns, and withdrew the guidelines pending further consultation over the coming months.

The EPA remains mindful of any future outcomes on greenhouse gas regulation at state and Commonwealth levels, and that any changes will potentially influence the EPA's consideration of its assessment guidelines.

The EPA is undertaking further consultation with a high level of transparency and participation. We are inviting written submissions from the whole community, to be published under the name of the submitter. Our summary of responses to these submissions will also be published.

The EPA is open to all views and welcomes all submissions.



This background paper serves a number of purposes with respect to the consultation process:

- ✓ It provides a description of the role of the EPA, including its statutory role and obligations, how the EPA frames its advice on environmental protection through application of the mitigation hierarchy, and how assessment guidelines are used in developing our advice.
- ✓ It provides a summary of the information on greenhouse gas emissions and trends, the current regulatory environment, and the implications for impacts on our environment which informed the development of the assessment guidelines to date.
- ✓ It invites input from stakeholders and the community to further inform the development of the greenhouse gas emissions guidelines.
- ✓ It explains the approach taken in the development of the guidelines; acknowledges those aspects of the March 2019 assessment guidelines which attracted concerns about their clarity, interpretation or implementability; and identifies areas in which further input is sought through this consultation process.

The aim of this consultation process is to ensure the guidelines provide a robust and effective framework within which the EPA will consider the greenhouse gas emissions of future proposals. As these are *technical* guidelines, the information the EPA is seeking through this consultation process is largely technical in nature.

The EPA is open to all views during the consultation process, and welcomes all submissions.

The role of the EPA

The statutory role and obligations of the EPA

The Western Australian EPA neither makes state policy nor does it make or enforce environmental regulation. Its functions are to consider, foster and promote the means of protecting the environment and to advise the Minister for Environment on environmental matters generally. The *Environmental Protection Act 1986* (the Act) establishes the EPA as not subject to the direction of the Minister.

Section 15 of the Act (s.15) establishes the objective of the EPA to use its best endeavours:

- to protect the environment; and
- to prevent, control and abate pollution and environmental harm.

In using its best endeavours, the EPA must have regard to a set of principles (s.4a), including:

- The precautionary principle: where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The principle of intergenerational equity: the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

- Principles related to the improved valuation, pricing and incentive mechanisms: the polluter pays principle – those who generate pollution and waste should bear the cost of containment, avoidance or abatement.

In making its advice, the EPA can only take into consideration environmental matters; the economic benefits of a proposal are excluded from consideration. It is the prerogative of the state government to weigh the EPA's advice against the proposal's economic and social benefits.

The functions of the EPA (s.16) include

- to consider and initiate the means of protecting the environment and the means of preventing, controlling and abating pollution and environmental harm
- to promote environmental awareness within the community and to encourage understanding by the community of the environment
- to establish and develop criteria for the assessment of the extent of environmental change, pollution and environmental harm.

The geographic scope of the EPA's obligations is the State of Western Australia and its environment; the EPA has no jurisdiction over activities proposed, for example, in Commonwealth offshore waters.

Application of the mitigation hierarchy

In accordance with international best practice in environmental management, the EPA applies the mitigation hierarchy when considering the potential environmental impacts of proposals.

The first consideration is how well a proposal has **avoided** potential impacts; for example, through its location or through its design. The next consideration is how the proposal plans to **reduce** its impacts over time. Finally, after all practicable endeavours have been made to avoid and reduce impacts, if there remains a significant residual impact, the EPA may seek environmental **offsets** (i.e. some like-for-like improvements to the environment which create a net benefit over and above the residual impacts).

In the context of considering greenhouse gas emissions as part of an EPA assessment, application of the mitigation hierarchy may require the proponent:

- to demonstrate how the proposed development will **avoid** potential emissions (e.g. by using the best available technology to improve energy efficiency; using low-emissions energy; geosequestration of emissions; or avoiding direct emissions of geologic greenhouse gases by design)
- to describe plans to **reduce** emissions over time (e.g. the phasing-in of higher energy efficient plant or operations; an ongoing gas leak detection and remediation program; or reduced emissions completions protocols)
- to show how some or all of the remaining emissions could be **offset** (e.g. through carbon offsets) over the life of the proposal.

What does the EPA assess?

The EPA assesses proposals which, if implemented, are likely to have a significant effect on the environment.

In considering whether to assess a proposal, the EPA may take into account the degree to which a potential environmental risk can be, or must be, mitigated through other existing laws, including Commonwealth regulation. This becomes pertinent in the case of greenhouse gas regulation, as discussed below.

It is important to note that the EPA has no power to call an authorised proposal back in for reconsideration, which means that the assessment guidelines could generally only apply to new proposals. The exception to this is the Minister may refer a proposal that already has authorisation back to the EPA for review. In such circumstances, the EPA may have regard for its guidelines and advise on the implementation conditions to which the Minister's inquiry relates. For example, in recent years the Minister has asked the EPA for fresh advice on specific aspects of existing authorisations for the Bluewaters power station, the Gorgon gas plant and the Wheatstone gas plant.

Expectations of the EPA and its advice

In meeting its obligations to use its best endeavours to protect the environment, the EPA's advice should be independent, sound, robust and transparent.

'Independence' reflects the expectation that the EPA is free of government direction, and not conflicted by any other interests outside of its objective under the Act. **'Soundness'** reflects the expectation that the EPA's advice is based on a thorough consideration of the available scientific and technical evidence. **'Robustness'** reflects the expectation that the EPA's advice would stand through a judicial review. **'Transparency'** reflects the community expectation that the EPA's assessment process, its considerations, and its conclusions on environmental risks and mitigation for proposed developments are visible and a matter of public record.

Where do assessment guidelines fit in developing the EPA's advice?

The EPA has established a set of environmental factors that span land, sea, air, water and people. Each factor has one or more guidelines which outline:

- the objective of the factor
- the information that may be required from a proponent in considering a proposal
- the considerations the EPA might bring in evaluating the likelihood that the proposal will meet that objective, and the advice to the Minister that might ensue from that evaluation on the risks and their mitigations.

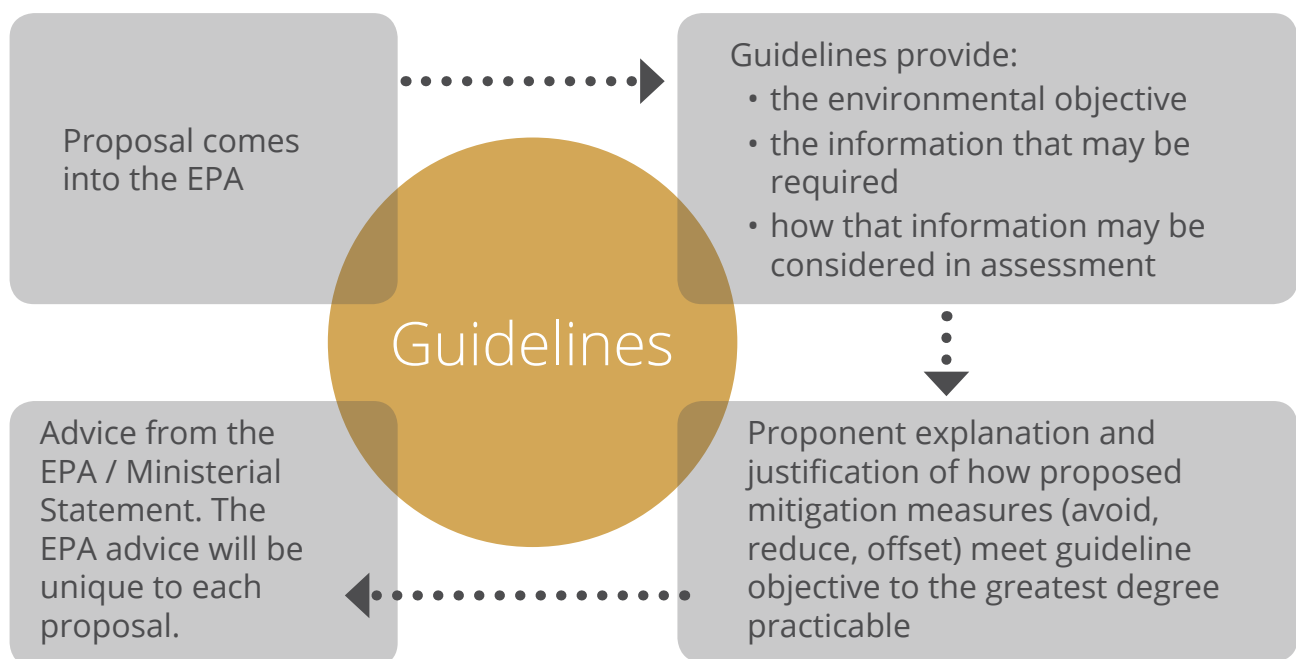
In some cases, a factor guideline is supported by technical guidance which provides further detail.

EPA guidelines are not binding rules. They are neither regulation nor state policy. They are not subject to government endorsement or otherwise. Guidelines are ideally constructed to apply to any type of proposal; they are not tailored for a specific industry or sector. They are intended to inform both the development and assessment of a proposal, not determine the outcome. They are to assist proponents to show how and the degree to which the proponent is able to meet the environmental objective and justify the limits of practicability. The assessment of each proposal against any factor is unique, with the ultimate criterion being whether or not the proposal meets the objective of that factor, in consideration of the degree to which the proponent can practicably mitigate environmental impacts.

The EPA's objective for greenhouse gas assessment is:

- to mitigate greenhouse gas emissions and consequently minimise the risk of contributing to climate change.

How the EPA factor guidelines are used for the assessment process



The figure above illustrates the relationship between guidelines, assessment and the EPA's advice.



How the EPA's assessment guidelines are developed and reviewed

The EPA's guidance framework was independently reviewed in 2016. The review recommended a more consistent, simple and hierarchical framework. The result was the factor guidelines and supporting technical guidance described above. This work was completed in December 2016, with a commitment to begin a review of each of the guidelines after 12 months of application.

The EPA's review of the guidelines is nearing completion with the review and potential revision of the air quality/greenhouse gas guidelines. One consequence of the recent review was to separate 'air quality' and 'greenhouse gas' into unique assessment guidelines, supported by further technical guidance.

A key forum for the review and potential revision of EPA guidance has been and remains the EPA's [Stakeholder Reference Group](#) (SRG). The SRG is comprised of representatives from peak industry, government and nongovernment organisations. The development and review of assessment guidelines for all factors following the 2016 recommendations have involved the SRG.

In January 2019, the EPA called for and received submissions from the SRG on draft revisions to the air quality/greenhouse gas guidelines. The broad advice from the SRG was that:

- greenhouse gas emissions should be treated as a unique factor (distinguished from air quality) and have its own assessment guidelines
- the mitigation hierarchy should apply
- emissions threshold(s) should be set to which the revised guidelines would usually apply
- the degree of any expected offsetting of emissions should be clear.

There was disagreement in the group on:

- the need for any local (state) controls on emissions in addition to existing Commonwealth regulation
- the appropriateness or level of any offsetting.

The EPA considered all of this advice in finalising the revised guidelines released on 7 March 2019. On 14 March 2019, the EPA withdrew the guidelines and committed to further consultation.

Greenhouse gas emissions, trends and regulation

How serious are the projected environmental impacts of further greenhouse gas emissions?

There is now broad community concern that greenhouse gas emissions from human activity are driving changes to our climate and the scientific data and analyses underpinning these concerns are robust and compelling.

The 2018 [State of the Climate Report](#) from the Bureau of Meteorology and the CSIRO noted that concentrations of all the major long-lived greenhouse gases in the atmosphere continue to increase, with carbon dioxide concentrations rising above 400 ppm since 2016 and the carbon dioxide equivalent of all greenhouse gases reaching 500 ppm for the first time in at least 800 000 years. Emissions from the burning of fossil fuels continue to increase and are the main contributor to the observed growth in atmospheric carbon dioxide. The report details the changes to our climate that have already taken place.

The October 2018 Intergovernmental Panel on Climate Change's [Special Report on Global Warming of 1.5°C](#) describes what is at stake if we do not stay well below a 2 degree temperature increase, and the likely degree of emissions reductions that would be required to achieve this.

Taken together, this information is of concern and cannot be dismissed as speculative or incorrect. At the very least, it points to

a significant risk which must feature in decision making, and calls for careful application of the precautionary principle. Given the present and likely future impacts of further greenhouse gas emissions, the EPA has concluded that the risk to the environment is significant and must be considered in our assessments and advice, if the EPA is to comply with its statutory obligation to use its best endeavours to protect the environment.

How the EPA considers greenhouse gas emissions

Under the Act, 'emission' means a discharge of waste, and premises that cause or increase an emission are subject to regulation. Emissions that are detrimental to or degrade the environment are pollution. Greenhouse gases such as carbon dioxide and methane are components of natural processes, but at higher levels in our atmosphere or oceans they become harmful to the environment. This is directly equivalent to recognising that emissions of other essential plant and animal nutrients (e.g. nitrogen or phosphorous) can be detrimental to ecosystems if they accumulate to levels higher than those systems can tolerate. The EPA must have regard for the principles (s.4A) that those who generate pollution and waste should bear the cost of containment, avoidance or abatement; and that all reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.

These considerations extend to minimising greenhouse gas emissions, and it is in this context that historical advice on greenhouse gas has been incorporated into EPA advice.

There is scientific uncertainty about precisely how future greenhouse gas emissions and levels will affect our local climate and environment, but there is little scientific doubt as to the general relationship between increased atmospheric and oceanic greenhouse gas levels and environmental change. It is usual for environmental advice on potential impacts to be based on uncertain information, and where uncertainty is high and the potential consequences severe or irreversible, then regard must be given to the precautionary principle as set out in the Act (s.4A). The continuing increase in greenhouse gas emissions and their accumulation in the atmosphere is expected to result in serious and irreversible consequences to the Western Australian environment.

How does EPA advice on greenhouse gas emissions relate to state and Commonwealth policy?

It is rapidly becoming standard international practice for greenhouse gas emissions to be considered by regulatory agencies as part of Environmental Impact Assessment processes. Such consideration is normally conducted in the context of the relevant climate change policy framework; for example, proponents may be required to assess how their proposal contributes to greenhouse gas emissions targets at a jurisdictional or industry level. This approach presupposes that the operative policy framework is reliably effective in meeting its stated outcomes. As indicated above, if the EPA considers that an environmental risk is adequately regulated by statute or government policy, then it may conclude that no additional advice on protection is merited through an EPA assessment.

Because greenhouse gas emissions affect local climate through global processes, effective environmental protection requires international recognition of responsibilities by national governments. This recognition is currently embodied in the 2015 Paris Agreement, in which 195 nations agreed to emissions reductions necessary to keep the global increase in temperature this century to below 2 degrees Celsius above pre-industrial levels, and to pursue efforts to even further limit the temperature increase to 1.5 degrees.

Under the Paris Agreement, Australia committed to a 2030 emissions reduction of 26–28 per cent below 2005 levels and the longer-term goal of balancing global emissions with natural or constructed carbon sinks (net-zero emissions) by 2050. Only the Australian Government can make such treaty-level commitments, and it is therefore appropriate for sub-national jurisdictions to defer to national legislation and policies to meet our international commitments, where those frameworks can be relied upon.

Australia's emissions for the year to September 2018 were only 11.5 per cent below emissions in 2005 (604.7 Mt CO₂-e), and since 2013 there has been an overall upward increase in Australia's greenhouse gas emissions. [National emissions for the year to September 2018](#) were estimated to be 536 MtCO₂-e, up 0.9 per cent on the previous year, primarily due to a 19.7 per cent increase in liquefied natural gas (LNG) exports. Growth in LNG also strongly impacted fugitive emissions due to flaring and the venting of methane and carbon dioxide.

The stated aim of the Australian Government's Safeguard Mechanism (under the [National Greenhouse and Energy Reporting Act 2007](#)) is to keep emissions from (large) facilities at or below baseline levels. For new proposals operational after 2020, baselines will be guided by estimates of production, emissions intensity and best practice. Baselines can be adjusted (increased) to accommodate economic growth, natural resource variability and other circumstances where historical baselines will not represent future business-as-usual emissions. As of March 2019, 103 facilities (30%) have been given permission to increase their emissions baselines under the Safeguard Mechanism.

About a third of emissions covered by the Safeguard Mechanism are from facilities based in Western Australia, and the major resource developments that comprise a large fraction of the state's emissions also comprise a large fraction of Australia's GDP and export value. The most recent inventory (June 2019) shows Western Australia's greenhouse gas emissions have significantly increased (23%) above its 2005 baseline, according to the [State and Territory Greenhouse Gas Inventories 2017](#). New resource industry facilities are anticipated in the coming decade that can be expected to add significantly to Western Australia's (and therefore Australia's) emissions.

In 2017, the EPA identified the need for a contemporary state climate policy. The current state government has also recognised that Western Australia must play a role in reducing emissions and recently committed to developing a new climate policy.

The previous State Climate Policy (2012) recognised the lead role for Commonwealth policies consistent with the COAG Complementarity Principles (Appendix 1), and thus limited local policy to that which would be complementary to a national carbon price. Implicitly, this position acknowledged that under the Australian Government's national carbon price, greenhouse gas emissions arising from Western Australian developments would be regulated in a manner consistent with legislated targets and treaty obligations.

Since the drafting of the 2012 State Climate Policy, the national carbon price has been repealed and the national framework for emissions reductions no longer imposes effective limitations on emissions through either taxation or capped trading.

Revision of the EPA's greenhouse gas emissions guidelines

Previous EPA advice on greenhouse gas emissions

Since 1991, the EPA has advised on greenhouse gas conditions for more than 40 proposed large emitters. These have included proposals from natural gas, power generation, mining and chemical production. Such advice has included conditions relating to the mitigation hierarchy:

- **Avoid:** benchmarking and designs for minimising emissions intensity and maximising energy efficiency; carbon geosequestration.
- **Reduce:** continuous improvement in net greenhouse gas emissions through periodic review and adoption of advances in technology and process management; further minimising net emissions per unit product.
- **Offset:** offset management plans; programs to develop offsets; requirements to offset reservoir carbon dioxide emissions.
- Monitoring and reporting emissions.

The majority of EPA assessments of large proposed emitters have specified a Greenhouse Gas Abatement Program or Management Plan including some or all of the above requirements. Differences in the greenhouse gas conditions across this set of historical developments in part reflect attempts to recognise changing Australian Government policy, the changing emissions profile for WA, and changing criteria for what levels of proposed emissions should attract more stringent conditions.

Why is the EPA revising its greenhouse gas guidelines?

The original air quality/greenhouse gas emissions guidelines were under review as part of the standard practice to consider their utility and effectiveness after 12 months of application to assessments. Further impetus for their review was:

- increasing clarity and certainty on the seriousness of climate change to the WA environment and the need to limit emissions
- the referral to the EPA by the Minister of previously authorised gas plants for fresh advice specifically related to greenhouse gas conditions.

What were the significant revisions proposed for the guidelines?

The greenhouse gas guidelines of March 2019 were aimed at increasing clarity and consistency in greenhouse gas emissions advice from the EPA.

The March 2019 guidelines retained the mitigation hierarchy (avoid, reduce and offset) as the structure within which greenhouse gas emissions would be considered by the EPA, and reflect the same high level of transparency that the EPA expects regarding the level of emissions and how emissions are to be mitigated.

The specific changes proposed by the March 2019 guidelines and of potential concern to industry were:

- A clear requirement for proposals to provide estimates of their direct and indirect emissions.
- A clear threshold of scope 1 (direct) emissions (i.e. emissions that the EPA would consider significant and warranting advice to the Minister). This threshold (100 000 tonnes CO₂e per year) is the same as liability under the Australian Government's Safeguard Mechanism.
- A clear requirement to describe and justify emissions mitigation measures.
- The potential to recommend offsetting of all residual direct emissions.
- Depending on nature of project, further consideration of scope 2 and 3 (indirect) emissions when making EPA advice.

What the EPA is looking for through this consultation?

The EPA welcomes all submissions as part of this consultation process on potential changes to the greenhouse gas guidelines and will take all views into account. This background paper establishes the underlying foundations for how the EPA views the environmental risks posed by greenhouse gas emissions and the EPA's potential advice on emission mitigation. These foundations have been carefully determined and are the starting point for our guidelines:

- Greenhouse gas emissions pose a significant risk of harm to our environment by affecting our climate, and therefore the EPA has clear obligations to consider this under the Act.
- Atmospheric concentrations of greenhouse gases have risen to serious levels that pose further risks to the Western Australian environment.
- Australia has an international commitment to substantially reduce its emissions.
- Over recent years Australian, and Western Australian, greenhouse gas emissions have been rising, not reducing.
- The primary obligation to meet these emission reduction targets lies with the Australian Government, but there is uncertainty as to whether Australia will meet those obligations.



- The EPA remains mindful of any future outcomes on greenhouse gas regulation at state and Commonwealth levels, and that any changes will potentially influence the EPA's consideration of its assessment guidelines.
- The mitigation hierarchy applies to this factor as much as any other, as does the expectation that the EPA's advice be independent, sound, robust and transparent.

Given the above, the following are areas about which the EPA is particularly interested in receiving any views or information to improve the greenhouse gas emissions guidelines:

- **The information that should be required by the EPA for Environmental Impact Assessment**
 - information on greenhouse gas emissions and their mitigation which the EPA should expect and consider in making any advice on a proposal
 - information the EPA should expect on how a proposal aligns with Australia's emissions reduction targets
 - the need for, and any reasonable constraints on, transparency in emissions data and proposed mitigations
- **How emissions associated with a proposal should be considered by the**

EPA

- the scope of emissions to be considered
- the relevance and context for considering indirect (scope 3) emissions
- the relationship to national or state emissions targets and regulation
- consistency with the EPA's duty to use its best endeavours to protect the environment
- **The constraints on potential emissions mitigation conditions the EPA should recognise**
 - the appropriateness and practicability of measures to mitigate greenhouse gas emissions, including nature and level of planned reductions or offsets
 - the timing of planned reductions or offsets
 - the kinds or size of proposals to which the guidelines should apply
- **Any other advice related to the assessment of greenhouse gas emissions by the EPA that would further clarify or improve the guidelines.**

Appendix 1.

COAG Complementarity Principles 2012

Complementary measures should be assessed against the following principles:

1. The measures are targeted at a market failure that is not expected to be adequately addressed by the carbon price or that impinges on its effectiveness in driving emissions reductions.
 - For example, research and development failures, common use infrastructure issues, information failures and excess market power.

Complementary measures should adhere to the principles of efficiency, effectiveness, equity and administrative simplicity and be kept under review. They may include:

 - a) Measures targeted at a market failure in a sector that is not covered by the carbon price.
 - b) Measures for where the price signals provided by the carbon price are insufficient to overcome other market failures that prevent the take-up of otherwise cost-effective abatement measures.
 - c) Measures targeted at sectors of the economy where price signals may not be as significant a driver of decision making (e.g. land use and planning).
 - d) Some measures in (a) or (b) may only need to be transitional depending on expected changes in coverage or movements in the carbon price.
2. Complementary measures should be tightly targeted to the market failure identified in the above criteria that are amenable to government intervention. Where the measures are regulatory they should meet best-practice regulatory principles, including that the benefits of any government intervention should outweigh the costs.
3. Complementary measures may also be targeted to manage the impacts of the carbon price on particular sectors of the economy (e.g. to address equity or regional development concerns). Where this is the case, in line with regulatory best-practice, the non-abatement objective should be clearly identified and it should be established that the measure is the best method of attaining the objective.
4. Where measures meet the above criteria, they should generally be implemented by the level of government that is best able to deliver the measure. In determining this, consideration should be given to which level of government has responsibility as defined by the Constitution or convention/practice, the regulatory and compliance costs that will be imposed on the community, and how the delivery of the measure is best coordinated or managed across jurisdictions.

Web links

The *National Greenhouse and Energy Reporting Act 2007*: www.cleanenergyregulator.gov.au/NGER

Quarterly update of Australia's National Greenhouse Gas Inventory for September 2018:
www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/publications/quarterly-update-australias-national-greenhouse-gas-inventory-sept-2018

Special Report on Global Warming of 1.5°C (2018): www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments

Stakeholder Reference Group terms of reference:
www.epa.wa.gov.au/stakeholder-reference-group-terms-reference

State and Territory Greenhouse Gas Inventories 2017:
www.environment.gov.au/climate-change/climate-science-data/greenhouse-gas-measurement/progress-inventory

State of the Climate Report (2018): www.bom.gov.au/state-of-the-climate

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