

| Infrastructure Australian Government Australia

February 2023

Guide to assessing greenhouse gas emissions (interim)

Information requirements for submissions to Infrastructure Australia, effective from 14 September 2022

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Infrastructure Australia is an independent statutory body that is the key source of research and advice for governments, industry and the community on nationally significant infrastructure needs. It leads reform on key issues including means of financing, delivering and operating infrastructure and how to better plan and utilise infrastructure networks.

Infrastructure Australia has responsibility to strategically audit Australia's nationally significant infrastructure, and develop 15-year rolling infrastructure plans that specify national and state level priorities.

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Introduction

On 14 September 2022, the *Climate Change Act* 2022 (*Cth*) and the *Climate Change* (*Consequential Amendments*) *Act* 2022 (*Cth*) were enacted by the Australian Government. As a result, Infrastructure Australia will take into account Australia's greenhouse gas (GHG) emissions reduction targets in:

- our advice to government
- infrastructure plans and audits
- infrastructure evaluations.

Infrastructure proponents will need to provide information on GHG emissions as part of Stage 1, 2 and 3¹ submissions to Infrastructure Australia from 14 September 2022 onwards. This document outlines the new information to be submitted and provides guidance on some key considerations related to GHG emissions.

Over the next 12 months, Infrastructure Australia will engage with stakeholders to formalise and embed consideration of GHG emissions in the *Infrastructure Australia Assessment Framework* (the Assessment Framework). This document

provides guidance on how GHG emissions will be considered until the Assessment Framework is updated.

Infrastructure Australia's approach will continue to be consistent with broader Australian Government legislation and policy, including the provisions for estimating and valuing emissions by the Clean Energy Regulator, the Safeguard Mechanism and the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). For reporting purposes, GHG emissions from the different gases are put on a common basis in terms of tonnes of carbon dioxide equivalent² expressed as CO2-e.

Infrastructure Australia recognises that this is an evolving policy area nationally, and acknowledges that while reviews of the Safeguard Mechanism³ and Australian Carbon Credit Units⁴ have recently concluded, implementation of reform recommendations is still underway. We also acknowledge the significant work of Australian state and territory governments in this policy area that we will seek to draw on in the future.

Figure 1 provides an indicative timeline for engagement and updating of the Assessment Framework.

14 Sept 2022 13 February 2023 **March 2023** 2023 IA Act **Release of Guide** Commence Release amended to assessing consultation on updated Assessment greenhouse updating Framework Assessment gas Framework emissions (interim)

Background

The Assessment Framework details how we assess each proposal submitted to us against three criteria: Strategic Fit, Societal Impact and Deliverability (see <u>Overview - Assessment Framework</u>, pp 49-51). We assess the merit of each proposal against all three of these criteria. Sustainability, resilience and the environment are already part of our assessment criteria. This includes considering alignment to government objectives, quadruple bottom line assessment of costs and benefits (including environmental impacts and climate adaptation effects) and whole of life costing.

Scope of interim guidance

Considering GHG emissions will enhance and broaden the assessment of the net social impact of infrastructure proposals. The impacts of a proposal's emissions will constitute an additional consideration as part of our holistic evaluation approach. Our assessment criteria are not weighted, with each proposal being assessed on its own specific merits.

This document should be read in conjunction with the sustainability and resilience considerations that are cross-cutting themes throughout the Assessment Framework. For example, see:

- <u>Stage 1 Defining problems and opportunities</u>, Boxes 6 and 7 and pp 54-57
- Stage 2 Identifying and analysing options, Box 6

and pp 45-49

- <u>Stage 3 Developing a business case</u>, Boxes 14, 15, 20 and 21, and Tables 3, 8 and 9 on pp 42, 57-63
- Guide to economic appraisal, pp 108-109
- <u>Guide to risk and uncertainty analysis</u>, Ch. 5 Climate risks and uncertainties.

Table 1 outlines the responses and information to be included with submissions for each stage of the assessment process from 14 September 2022 onwards. Infrastructure Australia provides detailed checklists of all information required before we can formally accept submissions for evaluation. Our submission checklists have also been updated to reflect the requirements set out in this document.

| Table 1: Information required to consider GHC | G emissions target in infrastructure | proposals |
|---|--------------------------------------|-----------|
|---|--------------------------------------|-----------|

| Assessment Criteria | Additional information required | Stage at which guidance applies |
|------------------------|--|---------------------------------|
| Strategic Fit | Describe how the proposal aligns with national, state territory and/or sectoral net zero emissions targets or interim targets. | 1, 2 and 3 |
| | Explain if you are currently required to report the proposal's emissions under your entity's NGER Act obligations and/or state and territory requirements. | 1, 2 and 3 |
| | Explain how the identified problems and opportunities directly relate to sustainability and if they have GHG emission impacts. | 1, 2 and 3 |
| | Explain how the scale of emissions was considered as part of scoping, analysing and selecting the proposal options. | 2 and 3 |

| Assessment Criteria | Additional information required | Stage at which guidance applies |
|------------------------|---|---------------------------------|
| | To the extent possible, outline how the proposal is likely to contribute to achieving state, territory or federal net zero targets and quantify the proposal's impact on Australia's emissions (at the level of detail appropriate to the assessment stage). | 1, 2 and 3 |
| | Explain how emissions have been estimated, with evidence provided, including the level of scope 1, 2 and 3 emissions as appropriate ⁵ . Scope 1 and 2 emissions, at a minimum, should be accounted for in the proposal's cost benefit analysis (CBA). Please refer to information on treatment of vehicle emissions below. | 2 and 3 |
| | Where metrics are not currently available to estimate and monetise the following emissions, they should be considered qualitatively in the business case: | |
| | net positive externalities | |
| | embodied emissions of purchased materials (e.g. quarry products, concrete, asphalt, steel) | |
| | • extraction, production and transportation of purchased fuels | |
| Societal impact | transportation of purchased materials | |
| | emissions attributable to the electricity lost in delivery in the transmission and distribution network | |
| | net vegetation loss/gain. | |
| | Clearly identify the value of carbon used in your rapid (Stage 2) and detailed (Stage 3) CBA. The analysis should include sensitivity testing on the benefit cost ratio specific to this value (refer to further guidance below). | 2 and 3 |
| | To the extent possible, outline the proposed method that would be used to measure and report emissions in construction and operations. If available, provide a sustainability reporting plan. | 2 and 3 |
| | Outline how the proposal concept or scheme design has considered opportunities to reduce the proposal's emissions profile (e.g., using recycled materials or including active transport). | 3 only |
| | Identify how these elements have been incorporated in the economic appraisal. | |

| Assessment Criteria | Additional information required | Stage at which guidance applies |
|------------------------|--|---------------------------------|
| | Outline how the proposal has considered climate change scenarios and how climate scenarios could impact deliverability. Please refer to the <u>Guide to risk and uncertainty analysis</u> , <i>Ch. 5 Climate risks and</i> <i>uncertainties</i> . | 1, 2 and 3 |
| | Identify climate related risks (physical and transition risks) in the risk register and risk management plan as appropriate. | 3 only |
| Deliverability | Identify approaches adopted to reduce, mitigate or offset emissions in construction and operations (e.g. recycled materials, securing renewable power purchase agreements etc.). | 3 only |
| | Outline how implementation may be impacted by the use of different materials/construction methods and how this might affect supply chains for delivery. | 3 only |
| | Outline the approval pathway for offsetting emissions, in accordance with state and territory requirements. <i>If this is not available</i> , identify a potential approval pathway for offsetting emissions. | 3 only |

Additional considerations

Valuing greenhouse gas emissions in CBA

CBA is an appraisal technique that estimates the economic, social, and environmental costs and benefits of a project in monetary terms. From the perspective of CBA, GHG emissions are an unpriced social impact, known as an externality. As CBA is intended to measure all social costs and benefits related to a project, the costs of emissions (or benefits of reducing them) should be included in CBA using a monetary value. There is currently no consistent, national carbon value in Australia that could be used to value emissions in CBA.

There are two broad concepts that can be used to estimate a carbon value:

- the marginal cost of abatement per tonne within Australia, which can be derived from modelling or from estimates revealed in particular carbon markets (or schemes)
- the social or damage cost of carbon, which is the economic welfare cost of each marginal unit of carbon.

In terms of a market-based carbon value, Australia's Emissions Reduction Fund (ERF) generates a carbon value. This value provides certainty for the 215 facilities covered by the Safeguard Mechanism on future investment, rather than capturing the full social impact of emissions that a CBA seeks to consider. Adopting carbon prices from other markets, such as the European Union – Emission Trading Scheme, is also unlikely to reflect the values appropriate for CBA to support informed decision-making.

A social cost of carbon approach has only been adopted in the U.S, and recent modelling to support this approach is also not available for Australia. Robust, peer reviewed, national scale modelling based on reliable emissions forecasts to determine an abatement cost are also not currently available in Australia.

As minimum GHG emission targets have now been legislated nationally, providing clear policy certainty, a national, target-consistent abatement cost approach is a practical and transparent way to estimate the cost of GHG emissions to the economy. A targetconsistent approach sets the value of carbon at the level that is consistent with the level of marginal abatement required to reach the targets adopted. This is consistent with methods used in the U.K, European Union and New Zealand for the purpose of government decision-making.

In the absence of a target consistent marginal abatement cost that is consistent with Australia's legislative emissions target **Infrastructure Australia recommends that proponents continue to use their existing state and territory valuation approaches.**

The Assessment Framework currently recommends minimum standard sensitivity tests and ranges that should be carried out on all project proposals to account for uncertainty. Noting the need for further work to identify a target consistent abatement carbon value, **sensitivity testing on the benefit cost ratio based on the ±50% of value used per tonne is required and should be reported in core economic appraisal results until future guidance is provided.**

Treatment of vehicle emissions

Reducing the use of petrol and diesel fuelled vehicles reduces carbon emissions, and decreases air, water, and noise pollution, which benefits the community. CBA often attributes net positive externality benefits where a proposal provides travel time savings or reduces vehicles kilometres travelled (VKT), for example as a result of a road upgrade.

Submissions for road proposals typically estimate total demand, which estimates travel time savings to existing traffic that can be attributed to the proposal. In some cases, this benefit can be partly offset by increases in induced (or increased) demand where the proposal's transport modelling has estimated this to be significant. However, the negative externalities that can be attributed to induced demand as a result of the proposal is often not separately and clearly reported in CBA.⁶

Until further certainty is available on the treatment of vehicle emissions, Infrastructure Australia will only include consideration of net positive externality benefits associated with reduced VKT, where the cost of negative externalities related to induced demand has also been estimated, monetised and reported. This is only relevant to proposals where induced demand has been identified as being significant.

Providing information

Proponents making Stage 1-3 submissions should outline how the information requested in Table 1 have been considered in the submission material. Proponents can decide how best to do this, for instance as a defined chapter within the submission material, as an appendix, or provided throughout the documentation.

Next steps

Australia now has legislated targets to achieve a minimum of 43% reduction in GHG emissions on 2005 levels by 2030 and net zero by 2050. Private infrastructure investment is already aligning with existing international requirements to consider the cost of emissions and the physical and transitional risks posed by climate change. Public infrastructure is usually planned over a minimum horizon of 30 years. Australia's infrastructure projects being delivered now will be operating in 2050 and embedding consideration of GHG emissions is essential for infrastructure decision-making. Infrastructure Australia will consult and engage with key stakeholders as we update the Assessment Framework to consider key issues to inform decisionmaking, including:

- business case approach to climate-related risks, emissions impacts and delivery outcomes for infrastructure
- methodologies and values for quantifying embodied emissions from infrastructure
- treatment of embodied, operational and enabling emissions in CBA
- including carbon and environmental offsets as part of CBA
- forecasting the value and materiality of emissions over time
- deliverability considerations for abating carbon emissions and environmental impacts, in procurement and risk management frameworks for construction and operations.

We will consult and engage with Australian, State and Territory governments and key stakeholders in the infrastructure sector as we update the Assessment Framework to ensure it remains robust and contemporary guidance.

| Activity | Description | Time horizon |
|---|---|---------------------------|
| Publication of Guide to assessing greenhouse gas emissions (interim) | The interim guide on the information required from proponents as part of Stage 1-3 submissions made to Infrastructure Australia (effective 14 September 2022). | February 2023 |
| Consultations with state and territory stakeholders and commonwealth stakeholders | Consultation on, and future updates to, the Assessment Framework to: align with state and territory guidance on considering GHG emissions develop new guidance, where it doesn't exist elsewhere. | March 2023 – Sept 2023 |
| National carbon value | Consultation with Australian government stakeholders on an approach to developing national guidance on a carbon value for economic appraisal and policy evaluation. | Next 12 months |
| Update Assessment Framework guidance | Drawing on the above activities to update the Assessment Framework. | Next 12 months |

Table 2 outlines the indicative timeline and our approach to engagement.

Endnotes

- 1 Please refer to our <u>website</u> for further information on Stage 1, 2 and 3 submissions.
- 2 For example, one tonne of methane is expressed as 28 tonnes of carbon dioxide equivalence, or 28 t CO2-e.
- **3** On 10 January, the Australian Government announced further details of proposed reforms to the safeguard mechanism, intended to commence on 1 July 2023. The Department of Climate Change, Energy, the Environment and Water (DCCEEW) is seeking feedback on the reforms, with consultation closing on 24 February 2023.
- 4 Recommendations from the Independent Chubb Review of the Australian Carbon Credit Units (ACCUs), released 9 January 2023, were endorsed in principle by the Australian Government who will now work with stakeholders on implementation, including any associated legislative amendments.
- 5 For further information on scopes of emissions please refer to https://www.cleanenergyregulator.gov.au/NGER/ About-the-National-Greenhouse-and-Energy-Reporting-scheme/Greenhouse-gases-and-energy
- 6 Infrastructure Australia acknowledges there may be a need to consider emissions savings from electric vehicles in future demand scenarios.

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