

## **EXPLANATORY STATEMENT**

Issued by authority of the Minister for Climate Change and Energy

*National Greenhouse and Energy Reporting Act 2007*

*National Greenhouse and Energy Reporting (Measurement) Amendment (2025 Update)  
Determination 2025*

### **Background**

The National Greenhouse and Energy Reporting (**NGER**) scheme is Australia's national system for reporting greenhouse gas emissions, energy consumption and energy production by Australian corporations.

The NGER scheme is a key data source which supports Australia's international and domestic reporting obligations and informs domestic climate and energy policies. Emissions reported under the NGER scheme underpin the operation of the Safeguard Mechanism.

NGER scheme legislation includes the:

- *National Greenhouse and Energy Reporting Act 2007* (the **Act**);
- *National Greenhouse and Energy Reporting Regulations 2008*; (the **Regulations**); and
- *National Greenhouse and Energy Reporting (Measurement) Determination 2008* (the **Measurement Determination**).

### **Overview of the Measurement Determination**

The Measurement Determination was made under section 10 of the Act, which provides for the Minister to determine methods, or criteria for methods, for the measurement of (a) greenhouse gas emissions; (b) the production of energy; and (c) the consumption of energy. It provides the technical detail of methods for the estimation of greenhouse gas emissions and for the production and consumption of energy within the NGER scheme.

Chapters 1 to 5 of the Measurement Determination provide methods for estimating 'scope 1' emissions, defined in Regulation 2.23 as the release of greenhouse gas into the atmosphere as a direct result of an activity or series of activities that constitute the facility. The structure of these Chapter reflects the framework of the *2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories*, as adopted by the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and Paris Agreement, and includes emissions from:

- the combustion of fuel for energy;
- the extraction, production, flaring, processing and distribution of fossil fuels, and from carbon capture and storage;

- industrial processes where a mineral, chemical or metal product is formed using a chemical reaction that generates greenhouse gases as a by-product, as well as emissions of hydrofluorocarbons (**HFCs**) and sulphur hexafluoride (**SF<sub>6</sub>**) resulting from their use by certain industries; and
- waste disposal – either in landfill, biological treatment facilities, as management of wastewater or from waste incineration.

Section 1.10 of the Measurement Determination sets out the sources of scope 1 emissions which are reportable within the NGER scheme.

Chapter 6 of the Measurement Determination provides methods to estimate quantities of energy produced and consumed.

Chapter 7 of the Measurement Determination provides methods to estimate ‘**scope 2**’ emissions, defined in Regulation 2.24 as the release of greenhouse gas into the atmosphere as a direct result of one or more activities that generate electricity, heating, cooling or steam that is consumed by the facility but that do not form part of the facility.

Chapter 8 sets out rules for assessing the uncertainty associated with estimates of scope 1 emissions.

Schedule 1 sets out default energy content factors and emission factors applicable to fuels and energy commodities.

Schedule 2 sets out applicable standards and sampling frequency for determining technical parameters such as energy content and composition of solid fuels.

Schedule 3 sets out default carbon content factors for fuels, feedstocks, products and carbonates.

Schedule 4 sets out ‘matters to be identified’ (**MTBI**) which must be reported in relation to estimates of emissions made under the NGER scheme. These matters provide information relevant to the use of the estimation methods set out in the Measurement Determination, allowing for the conduct of assurance of emissions estimates and providing important data used in the preparation of Australia’s National Greenhouse Accounts.

The NGER scheme is regularly reviewed by the department of Climate Change, Energy, the Environment and Water (the **department**) for opportunities to improve the accuracy of estimates while being cognisant of reporting burden.

### *Methods of measurement*

The Measurement Determination provides a hierarchy of emissions estimation methods to accommodate the circumstances of individual reporters:

- Method 1 typically specifies the use of default emission factors to estimate emissions based on those used in Australia’s National Greenhouse Gas Inventory;
- Method 2, where available, is a facility-specific method, for example using industry sampling and Australian or international standards to provide more accurate estimates of emissions at facility level;

- Method 3, where available, is a higher-level facility-specific method, for instance using Australian or international standards for sampling and analysis of fuels and raw materials;
- Method 4, where available, provides for direct monitoring of emissions, either on a continuous or periodic basis.

The Measurement Determination draws on existing estimation practices wherever possible, including through the use of data collected for commercial, taxation or other regulatory purposes, with the aim of maximising the use of readily validated data and minimising administrative burdens on reporters.

## **Purpose and operation**

The *National Greenhouse and Energy Reporting (Measurement) Amendment (2025 Update) Determination 2025 (the Update Determination)* is part of the continuous improvement of Australia's national greenhouse gas inventory and the related methods used for estimating emissions. Each year the department reviews and updates the NGER scheme as part of this improvement process and in response to feedback from users and other stakeholders. Every five years the annual update is also informed by the Climate Change Authority's review of the NGER scheme. The Authority's last review of the NGER scheme was delivered in December 2023.

Further details of the Update Determination are outlined in **Attachment A**.

The Update Determination is a legislative instrument for the purposes of the *Legislation Act 2003*.

A statement of the Update Determination's compatibility with human rights is set out in **Attachment B**.

The Measurement Determination is exempt from sunseting under *Legislation (Exemptions and Other Matters) Regulation 2015* section 12, item 42A. This exemption is justified because the legislative instrument implements international reporting obligations under the United Nations Framework Convention on Climate Change and Paris Agreement and is scientific and technical in application. There would be limited benefit in sunseting of this instrument because it is required on an ongoing basis for relevant persons to calculate their emissions estimates and for Australia to comply with its international reporting obligations.

## **Consultation**

An exposure draft of the Update Determination and accompanying consultation paper were released for public consultation from 28 February 2025 to 11 April 2025. 67 submissions were received. Taking into account feedback received in the consultation, the proposed amendments were modified in the following ways:

- The proposed revised nitrous oxide emission factor in sections 3.44(2), 3.53(2), 3.69(2) and 3.86(2) of the Measurement Determination was refined to remove the application of an oxidation factor while retaining the correction for previous minor rounding errors. This refinement reflected confirmation of stakeholder feedback that nitrous oxide emissions from gas flaring are primarily influenced by the flare temperature and the quantity of nitrogen containing compounds present.

- A number of changes were made to new rules for market-based reporting of emissions from consumption of renewable gases. Most relevantly: the vintaging period for certificates was extended to 24 months before the end of the relevant reporting year; and rules for deduction of captured fossil and biogenic carbon under methods for estimating emissions from ammonia and hydrogen production were clarified.

Submissions not requested to remain confidential are published on the Department’s consultation page, together with a statement of consultation outcomes.

## **Regulatory Impact**

The regulatory impacts of amendments made by the Update Determination have been assessed as minor by the Office of Impact Assessment (ref OIA25-09347).

## **Summary of amendments**

The Update Determination makes the following amendments to the Measurement Determination:

- **Renewable fuels:**
  - Introduces market-based reporting of emissions from consumption of biomethane and hydrogen.
- **Fugitive emissions from oil and natural gas operations:**
  - Updates the emissions factors used in Method 1 and Method 2A for gas flared during oil and natural gas operations.
    - The carbon dioxide and methane emission factors are updated using gas combustion stoichiometry to correct an unintentional inconsistency between oil sector flaring and gas sector flaring activities and minor rounding errors in previous iterations of the Measurement Determination.
    - The nitrous oxide emission factor is updated to correct a minor rounding error in previous iterations of the Measurement Determination.
  - Makes Method 2B for estimating fugitive emissions from gas flared during natural gas production available to natural gas transmission and distribution facilities to expand access to facility-specific higher order methods.
  - Corrects an error in the contextual data to be reported when Method 2B is used to estimate fugitive emissions from gas flared during natural gas production. The correction replaces unintentional references to “tonnes of flared crude oil and liquids” with references to “tonnes and gigajoules of flared gas”.
  - Adds the requirement to report the “tonnes of flared gas” when Methods 2, 2A or 3 is used to estimate fugitive emissions from flaring during natural gas operations are used. This update will help to support Australia’s domestic and international emissions reporting obligations and NGER scheme compliance.
- **Scope 2 emissions from consumption of electricity:**
  - Makes a routine annual update of emission factors.
  - Updates the market-based method:

- Adds requirement for consistent use of the market-based method for all facilities within a controlling corporation's group.
  - Clarifies the permitted timing of surrender of renewable energy certificates taken into account in calculating market-based emissions.
  - Adds new matters to be identified under Schedule 4: RET accreditation codes for power stations within the facility, and Surrender ID numbers of surrendered certificates.
- **Waste:**
    - Enables NGER reports to account for abatement from diversion of biosolids to biochar production.
    - Makes a minor update to the N<sub>2</sub>O emission factor for effluent discharged to estuaries.
  - Makes other minor technical updates to improve clarity and operation of the scheme.

#### Market-based reporting of emissions from consumption of biomethane and hydrogen

##### *Market-based approach for determining the amount of renewable gas in a blended fuel received from a natural gas network*

The Update Determination makes amendments to enable market-based reporting of scope 1 emissions from the consumption of renewable gas (defined in item 6 as biomethane or hydrogen) that has been injected into the natural gas network.

Biomethane and hydrogen are both low scope 1 emissions gases that can be injected into existing gas networks. Biomethane is a biomass-derived, high-methane content gas with nearly identical chemical and physical properties to natural gas. Biomethane is generally considered a fully compatible 'drop-in' substitute for natural gas, meaning that the existing natural gas network will be the preferred and most cost-effective method of transporting biomethane to market rather than through new, segregated infrastructure. Under the NGER scheme, biomethane has the same technical parameters as natural gas transmitted or distributed in a pipeline, except is assigned a scope 1 carbon dioxide (CO<sub>2</sub>) emission factor of zero. This approach is consistent with other biogenic fuel types and reflects the fact that combustion of biomethane releases carbon which was absorbed by its biogenic source materials from the atmosphere during their life. Combustion of hydrogen releases zero physical CO<sub>2</sub> and methane (CH<sub>4</sub>) emissions but does release nitrous oxide (N<sub>2</sub>O) emissions. Hydrogen is chemically distinct from natural gas and can only be supplied through the natural gas network in accordance with regulatory blending limits.

Under the NGER scheme's previous accounting approach, reporters reported the scope 1 emissions from combustion of the gaseous fuel they physically consume. This approach meant that when renewable gas was co-mingled with other gases and distributed through shared infrastructure (for example, through shared pipelines), the claim to its consumption and the associated emissions benefit was spread across all users of the infrastructure. Renewable gas purchasers were only able to report consumption of the part share of renewable gas they physically consumed, determined in

accordance with the blended gaseous fuel provisions in section 2.67A of the Measurement Determination. This materially limited the incentive for operators to purchase renewable fuels.

Item 6 introduces a new section 2.67C which provides a ‘market-based’ approach for determining the amount of a renewable gas in a blended gaseous fuel received from a natural gas network. The new section 2.67C replaces the existing blended gaseous fuel provisions in section 2.67A for the purposes of determining the amount of renewable gas in a blended fuel received from a natural gas network.

Section 2.67C takes a certificate-backed approach to market-based reporting. It provides for reporters to determine that the blended gas they receive from the natural gas network and consume at a facility in a reporting year contains an amount of renewable gas, as represented by eligible renewable gas certificates retired or completed by them or on their behalf, adjusted for losses. This is the case even if the facility does not physically consume all the gas represented by the certificates, because of it having been blended and distributed with natural gas in the broader pipeline gas network. Any gas sourced from the natural gas network that is not covered by this certificate-backed loss-adjusted amount must be reported as natural gas. Once a certificate is retired or completed, it is withdrawn from circulation and is unable to be used again, ensuring the attributes of a single unit of renewable gas cannot be reported more than once.

The loss factor (*LF*, defined in subsection 2.67C(2)) accounts for the fact that some of the injected renewable gas represented by renewable gas certificates will be lost as pipeline fugitive emissions as the gas moves through the network to consumers. It applies mass balance principles to help ensure the integrity of the amendments by preventing more renewable gas being reported as consumed than is deliverable. It is separate from and does not impact or duplicate existing arrangements for reporting pipeline fugitive emissions, which continue to only be reported once, by the pipeline operator. The loss factor for biomethane is based on an average of the unaccounted-for-gas percentages for each state and territory (see section 3.81 Method 1 – natural gas distribution in the Measurement Determination), weighted by each jurisdiction’s proportion of Australia’s total gas consumption (based on the Australian Energy Update 2024). This factor takes account of the fact that only 37.3% of unaccounted for gas is attributable to leakage. The loss factor for hydrogen is derived by converting the biomethane loss factor on an energy leakage basis and assuming turbulent flow, using the conversion factors set out in the 2022 consultancy report *Fugitive Hydrogen Emissions in a Future Hydrogen Economy*, commissioned by the UK Department for Business, Energy and Industrial Strategy.

Linking renewable gas certificates into the NGER scheme provides a streamlined way of transferring claims to the scope 1 emissions attributes of renewable gas within shared networks. It also provides assurance to government, the public and NGER scheme reporters, that the fuel whose attributes are being reported is indeed renewable gas and improves the integrity and transparency of low emissions claims.

Two types of certificates are recognised (see subsection 2.67C(4)):

- **Product Guarantee of Origin (PGO)** certificates, registered under the Guarantee of Origin (GO) scheme.
- **Renewable Gas Guarantee of Origin (RGGO)** certificates, issued under the GreenPower Renewable Gas Certification (RGC).

Both certificate types can be used to underpin market-based reporting for both biomethane and hydrogen subject to meeting the requirements in subsection 2.67C(5). These requirements include that:

- the certificate is retired or completed after the start of the reporting year and prior to the submission of the report for the facility for the reporting year (see paragraph 2.67C(5)(a)).
- the certificate represents renewable gas that was injected into the natural gas network within the 24-month period immediately preceding the end of the reporting year (see paragraph 2.67C(5)(b), known as the **temporal link requirement**).
- there is a connection between the location or entity listed on the certificate as the consumer or beneficiary and the facility reporting to have consumed the renewable gas represented by the certificate (see paragraphs 2.67C(5)(c) and (d)).
- the certificate represents renewable gas that could reasonably pass from its injection point into the natural gas network to the facility (see paragraph 2.67C(5)(e), known as the **reasonable physical link requirement**).
- the certificate must not represent renewable gas in respect of which a biomethane displacement ACCU has been surrendered for the purposes of reducing the net emissions number for a facility with obligations under the Safeguard Mechanism (see paragraph 2.67C(5)(f), known as the **biomethane displacement ACCU requirement**).

The temporal link requirement ensures the attributes of injected gas are reported within a reasonable timeframe, which is important for maintaining the accuracy and utility of NGER scheme data. The 24-month injection window provides flexibility to reduce the risk of renewable gas becoming ‘unreportable’ if there are administrative delays in the processing of certificates; minimise the potential premium placed on gas produced early in the reporting period; and to account for the fact that some gas is held in long term storage after injection, rather than being quickly consumed. The information required to verify the temporal link requirement will be recorded on eligible renewable gas certificates. For example, the period during which renewable gas was injected into the network will be recorded on a RGGO Retirement Statement. The time and date the product reached the delivery gate will also be listed on PGO certificates.

The reasonable physical link requirement balances the need for high integrity, traceable claims to the scope 1 emissions attributes of individual renewable gas consignments, while still providing flexibility in the production, supply and consumption of renewable gas through Australia’s interconnected gas networks. This reasonable physical link requirement is applied by treating the interconnected pipeline infrastructure comprising the East coast gas market and Western Australia gas market as two segregated systems, each under a separate, closed mass balance. NGER scheme facilities who source gas from the East coast gas market can report the scope 1 emissions attributes of renewable gas (as represented by the eligible renewable gas certificates retired or completed by them or on their behalf) supplied into the East coast gas market at any injection point but cannot report the scope 1 emissions attributes of renewable gas injected into the Western Australia market (and vice versa). Section 2.67C only covers renewable gas injected into and received from the natural gas network (not renewable gas consumed behind the meter or off-grid) and is **not** intended to facilitate book and claim style reporting of the emissions from consuming renewable gas. Eligible renewable gas certificates will provide the information required to verify the reasonable physical link between the injection point and NGER scheme facility. For example, RGGO Retirement Statements include information on the name of the producer and renewable gas project

to which the certificates relate, as well as the gas metering point number. PGO certificates will include the details of the delivery gate for the batch of product covered by the certificate.

Certain methods under the Australian carbon credit unit (ACCU) scheme credit ACCUs to projects that generate abatement by producing biomethane and using it to displace the consumption of natural gas, for example, by injecting biomethane into the natural gas network (**biomethane displacement ACCUs**, defined in subsection 2.67C(6)). The biomethane displacement ACCU requirement in paragraph 2.67C(5)(f) helps to control the risk of double counting that could arise if a biomethane producer creates both biomethane displacement ACCUs and renewable gas certificates in respect of a single unit of biomethane, and a facility covered by the Safeguard Mechanism:

- uses the renewable gas certificate under the market-based arrangements to report biomethane consumption (instead of natural gas consumption), and
- also meets their Safeguard obligation by surrendering the associated biomethane displacement ACCU.

In this scenario, the emissions benefit of a single unit of biomethane consumption (compared to consuming the equivalent amount of natural gas) is claimed twice. The biomethane displacement ACCU requirement controls this risk while giving biomethane producers the flexibility to create both renewable gas certificates and biomethane displacement ACCUs and to use them in a manner that does not lead to double counting. This requirement complements a similar requirement in the GreenPower RGC scheme.

#### *Reporting use of the market-based blended gaseous fuel provisions under matters to be identified*

The Update Determination adds new matters to be identified for fuel combustion, ammonia production and hydrogen production sources. The items require NGER scheme reports which contain estimates of scope 1 emissions from the consumption of blended gaseous fuel received from the natural gas network to include information about how section 2.67C in the Measurement Determination was used to make these estimates.

Reports must identify the eligible renewable gas certificates, and the amount of renewable gas represented by those certificates, used to underpin their reporting. This information will provide greater visibility over the use of the arrangements and support the reconciliation and verification of reported emissions.

#### *Reporting scope 1 emissions from the consumption of hydrogen*

Hydrogen was previously classified in the NGER scheme as an ‘energy commodity’. To support its inclusion in the market-based reporting arrangements, hydrogen has been reclassified as a ‘fuel’ via an amendment to the Regulations. All instances of hydrogen combustion, consumption and production must be reported in accordance with the rules in the Measurement Determination that apply to the reporting of gaseous fuels.

The Update Determination includes consequential amendments to support the reclassification of hydrogen as a fuel type. The consequential amendments include the listing of hydrogen in Part 2 of Schedule 1 of the Measurement Determination, along with an energy content factor and emission factors, in terms of kg CO<sub>2</sub>-e/GJ, for scope 1 emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O released from combustion of hydrogen. The setting of the N<sub>2</sub>O emission factor for hydrogen has been informed by independent technical expert advice from the University of Melbourne, including a review of



domestic and international literature and research, and thermodynamic simulations covering a range of equipment types and operating conditions.

#### Deduction of captured fossil carbon dioxide under methods for estimating emissions from ammonia and hydrogen production

The Update Determination makes amendments (see items 23 to 43) to Divisions 4.3.1 and 4.3.7 of the Measurement Determination which set out methods for estimating industrial process emissions from the production of ammonia and hydrogen respectively.

The methods provided in these Divisions provide for reporters to deduct emissions of CO<sub>2</sub> derived from the production of ammonia or hydrogen from their emissions estimate if the CO<sub>2</sub> was captured and transferred for use in another facility. This deduction amount is listed as the term **R** in the emissions calculation.

Previously, the methods did not distinguish between captured CO<sub>2</sub> that is of fossil or biogenic origin. The Update Determination amends the definition of the term **R** to specify that it represents the amount of fossil CO<sub>2</sub> (being CO<sub>2</sub> derived from fossil fuel) released from production of ammonia or hydrogen, that has been captured and transferred for use at another facility. The effect of this is that reporters can only deduct captured fossil CO<sub>2</sub> emissions from their emissions estimate. If a facility consumes a mix of fossil and biogenic feedstocks (for example, a mix of natural gas and biomethane) and thereby emits a mix of fossil and biogenic CO<sub>2</sub>, only the portion of captured CO<sub>2</sub> that is derived from fossil fuel can be deducted in the emissions estimate. If a facility only consumes fossil fuel feedstocks (for example, only natural gas) and captures and transfers some or all the CO<sub>2</sub> produced during production, its reporting would be unchanged.

This reflects that under the NGER scheme, biogenic carbon fuels are already assigned a CO<sub>2</sub> scope 1 emission factor of zero. From an emissions accounting perspective, use of biogenic carbon fuel as a feedstock for ammonia or hydrogen production therefore does not produce reportable scope 1 CO<sub>2</sub> emissions. Allowing reporters to deduct emissions of biogenic CO<sub>2</sub> that have been captured and transferred for use at another facility could put the ammonia or hydrogen producer in a negative emissions position. The potential for ammonia and hydrogen producers to report using biomethane as a feedstock is enhanced because of amendments in the Update Determination enabling market-based reporting of scope 1 emissions from consumption of biomethane and hydrogen transported via the natural gas network.

Reporters should determine the permitted fossil CO<sub>2</sub> deduction by pro-rating the total amount of CO<sub>2</sub> captured in line with the proportion of fossil and biogenic carbon in the input fuels reported as having been consumed to produce ammonia or hydrogen.

#### Update of the emissions factors used in Method 1 and Method 2A for gas flared during oil and natural gas operations

The Update Determination makes amendments to sections 3.44, 3.53, 3.69, and 3.86 of the Measurement Determination (see items 7, 8, 9 and 12) which set out methods for estimating fugitive emissions from gas flared during oil and natural gas operations.

The amendments revise emission factors for CO<sub>2</sub> and CH<sub>4</sub> using a carbon balance stoichiometry approach to correct an unintentional inconsistency between oil sector flaring and gas sector flaring activity methods and minor rounding errors in previous iterations of the Measurement Determination and improve the methods' alignment with Intergovernmental Panel on Climate Change (IPCC) guidance adopted under the Paris Agreement.

The amendments also revise the N<sub>2</sub>O emission factor to correct a minor rounding error identified in the Determination.

Method 2B for estimating fugitive emissions from gas flared during natural gas production made available to natural gas transmission and distribution facilities

The Update Determination makes amendments to sections 3.88J and 3.88T of the Measurement Determination (see items 13, 15, 17, 18, 20, 22, 86, and 90) which set out methods for estimating fugitive emissions from gas flared during natural gas transmission and natural gas distribution, respectively.

The amendments provide a Method 2B for estimating fugitive emissions from gas flared for these sources, in line with the existing Method 2B—Natural gas production mass balance approach (flared methane and carbon dioxide emissions) in section 3.87B of the Determination.

Method 2B — Natural gas production was made in 2024, with more details on this method available in the Explanatory Statement of the *National Greenhouse and Energy Reporting (Measurement) Amendment (2024 Update) Determination 2024*.

These amendments provide an additional option for reporters to more accurately estimate emissions from a given facility's natural gas flaring activities.

Correction of an error in the contextual data to be reported when Method 2B is used to estimate fugitive emissions from gas flared during natural gas production

The Update Determination makes amendments to Schedule 4, Part 2, Sources 2T and 2U of the Measurement Determination (see items 80 and 82) which set out the matters to be identified (MTBI) for estimating fugitive emissions from gas flared during natural gas production.

Under the NGER scheme, MTBI may include inputs from methodological formulae or they may provide additional context around the emissions results and activities reported. MTBIs support analysis and comparison within and across different reporting entities and play an important role in the effective operation of the NGER scheme and by extension Australia's compliance with its UNFCCC and Paris Agreement emission reporting obligations.

The amendments correct an error identified in Item 4 of the MTBI that applies to the use of Method 2B for estimating fugitive emissions from gas flared during onshore natural gas production (Source 2T) and offshore natural gas production (Source 2U). Item 4, and Method 2B, were made in 2024 as part of the *National Greenhouse and Energy Reporting (Measurement) Amendment (2024 Update) Determination 2024*. The corrections replace unintentional references in Item 4 to “tonnes of flared crude oil and liquids” with references to “tonnes and gigajoules of flared gas”, such that the item now requires facilities that use Method 2B to report “the tonnes and gigajoules of flared gas (hydrocarbon component), calculated through a mass balance”.

Additional data to be reported when Methods 2, 2A, 2B or 3 is used to estimate fugitive emissions from flaring during natural gas operations

The Update Determination makes amendments to Part 2 of Schedule 4 for sources 2D, 2F, 2H, 2T, 2U, 2W, 2Y, 2Z, 2ZB, 2ZE, and 2ZF of the Measurement Determination (see items 74 to 76, 79, 81, 83 to 85, 87 to 89) which set out the matters to be identified (MTBI) for estimating fugitive emissions from gas flared during oil and gas operations.

These amendments introduce a MTBI that requires facilities to report ‘the tonnes of flared gas’ for these sources, which means the total gas stream that moves through the flare stack (both

hydrocarbons and inert gases), for Methods 2, 2A, 2B, and 3. This MTBI is the same as that required under Method 1 for these sources.

These amendments will support Australia's compliance with international emission reporting obligations and NGER scheme compliance. It will also support facility time series consistency and enable reporters to better compare method tiers for reporting of these sources.

## ATTACHMENT A

### *National Greenhouse and Energy Reporting (Measurement) Amendment (2025 Update) Determination 2025*

#### Section 1 – Name

This section provides that the title of the instrument is the *National Greenhouse and Energy Reporting (Measurement) Amendment (2025 Update) Determination 2025* (the **Update Determination**).

#### Section 2 – Commencement

This section provides that the commencement of the Update Determination would commence on 1 July 2025.

#### Section 3 – Authority

This section outlines that the Update Determination is made under subsection 10(3) of the Act. The power to make legislative instruments under this subsection includes the power to amend or revoke instruments that have already been made, with any doubt about this resolved by subsection 33(3) of the *Acts Interpretation Act 1901*.

#### Section 4 – Schedules

This section provides that the amendments are outlined at Schedule 1.

## Schedule 1—Main Amendments

Item	Name	Description
1.	Section 1.8 (definition of <i>blended fuel</i> )	Repeals and replaces the definition of “ <i>blended fuel</i> ” in section 1.8 of the Measurement Determination. The new definition incorporates hydrogen and a combination of biogenic carbon fuel and hydrogen.
2.	Section 1.10 (table item 4B, column headed “Source of emissions”)	Removes “Wastewater handling (industrial)” at table item 4B, under the column headed “Source of emissions” in section 1.10 of the Measurement Determination, and substitutes “Wastewater handling (domestic or commercial)”.
3.	Section 1.10 (table item 4C, column headed “Source of emissions”)	Removes “Wastewater handling (domestic or commercial)” at table item 4C, under the column headed “Source of emissions” in section 1.10 of the Measurement Determination, and substitutes “Wastewater handling (industrial)”.
4.	Section 2.67A (note)	Editorial amendment.
5.	At the end of section 2.67A	Inserts an additional note at the end of section 2.67A of the Measurement Determination which provides that the application of section 2.67A is subject to section 2.67C. This note ensures that the amount of renewable gas in a blended gaseous fuel received from a natural gas network is determined through the rules provided in the new section 2.67C. The rules in section 2.67A will continue to apply when determining the composition of a blended gaseous fuel that is not received from a natural gas network.
6.	After section 2.67B	<p>Inserts a new section 2.67C which provides a market-based approach for determining the amount of renewable gas in blended gaseous fuel received from a natural gas network.</p> <p>Subsection 2.67C(1) sets out that section 2.67A must not be used for determining the amount of renewable gas in blended gaseous fuel received from a natural gas network. Previously, reporters were required to determine the amount of each kind of fuel that is in a blended gaseous fuel in accordance with the options specified under section 2.67A, which only allowed reporting of the amount of renewable gas they physically consumed.</p> <p>Subsection 2.67C(2) sets out that a person can determine that the gas they receive from the natural gas network and consume at a facility in a reporting year contains an amount, in gigajoules, of renewable gas equal to the term <math>Q_{RG}</math>, calculated as the term <math>RGC</math> multiplied by a loss factor adjustment, <math>(1 - LF)</math>.</p>

Item	Name	Description
		<p><b>RGC</b> is an amount, in gigajoules, of a renewable gas that has been injected into the natural gas network, as represented by an amount of eligible Renewable Gas Certificates. While the term <b>RGC</b> is in units of gigajoules, it is not a requirement that the certificates representing <b>RGC</b> are themselves expressed in units of gigajoules. For example, an eligible Renewable Gas Certificate could cover an amount of renewable gas in terms of kilograms, and this amount could be converted into gigajoules for the purposes of market-based reporting under section 2.67C.</p> <p>Separate loss factors, <b>LF</b>, are provided for biomethane and hydrogen.</p> <p>Subsection 2.67C(3) sets out that any gas received from the natural gas network that is not determined to be renewable gas in accordance with subsection 2.67C(2) is determined to be natural gas transmitted or distributed in a pipeline. For example, a facility receives and consumes 200 gigajoules of gas from the natural gas network in a reporting year. In accordance with 2.67C(2), the reporter determines that the gas consumed at the facility contains 99 gigajoules of biomethane, equal to 100 gigajoules worth of eligible Renewable Gas Certificates multiplied by 1 minus 0.01, the loss factor for biomethane. In accordance with 2.67C(3), the reporter must report the residual 101 gigajoules of gas they received from the natural gas network and consumed in the year as natural gas transmitted or distributed in a pipeline. Natural gas transmitted or distributed in a pipeline is defined in the Regulations as natural gas that has been injected into a natural gas transmission pipeline or natural gas distribution pipeline.</p> <p>Subsection 2.67C(4) sets out the certificate types that are eligible Renewable Gas Certificates subject to meeting the requirements in subsection 2.67C(5). A <b>RGGO</b> or <b>PGO</b> that does not meet the conditions in subsection (5) is not eligible.</p> <p>Paragraph 2.67C(5)(a) sets out the period within which the certificate must be retired or completed by the person or on their behalf. The option for certificates to be retired or completed on the persons behalf is intended to cater for different business models and the options afforded within the certificate schemes themselves. For example, a renewable gas producer may sell their gas to a consumer, list the consumer on the certificate and retire it as part of the service they offer to the consumer, rather than requiring the consumer to register as a scheme participant and retire the certificate themselves. The note to subsection 2.67C(5) sets out that for the purposes of paragraph 2.67C(5)(a), a PGO is completed if consumption information has been added to it.</p>

Item	Name	Description
		<p>Paragraph 2.67C(5)(b) sets out the period within which the renewable gas represented by the certificate must have been injected into the natural gas network, being within the 24-month period immediately preceding the end of the reporting year.</p> <p>Paragraphs 2.67C(5)(c) and (d) are intended to ensure a connection between the location or entity listed on the certificate and the NGER facility. These provisions help to ensure a person cannot report to have consumed renewable gas at Facility A using a certificate which states the renewable gas represented by the certificate was consumed at or by Facility B.</p> <p>Paragraph 2.67C(5)(c) requires that, if the certificate is a PGO, the PGO specifies that the renewable gas represented by the PGO was consumed at the facility or a location that constitutes a part of the facility. The option for the PGO to specify a location that constitutes a part of the facility provides for circumstances where the location listed on the PGO does not exactly match the NGER facility name but is nonetheless a location included in the report for the facility.</p> <p>Similarly, paragraph 2.67C(d) requires that, if the certificate is a RGGO, the Beneficiary listed on the Retirement Statement covering the RGGO must be the facility, person with operational control of the facility or an entity that constitutes a part of the facility. Under the GreenPower Renewable Gas Certification, the Beneficiary is the person to whom RGGOs are allocated when they are retired and who is entitled to claim the benefit of the Renewable Gas represented by the RGGOs.</p> <p>Paragraph 2.67C(5)(e) gives effect to the principle that there must be a reasonable physical link between the facility and the location the renewable gas represented by the certificate was injected into the natural gas network.</p> <p>Paragraph 2.67C(5)(f) prohibits the use of certificates representing biomethane in respect of which a biomethane displacement abatement ACCU has been surrendered for the purpose of reducing the net emissions number for a facility covered by the Safeguard Mechanism.</p> <p>Subsection 2.67C(6) defines the terms biomethane displacement ACCU, natural gas network and renewable gas. A biomethane displacement ACCU means an Australian carbon credit unit issued for displacement abatement resulting from an eligible offsets project covered by one of the listed ACCU methodology determinations. ‘Displacement abatement’ is a defined term in each of the listed determinations.</p>

Item	Name	Description
7.	Subsection 3.44(2) (table item 1)	For Method 1 – oil or gas exploration and development, repeals the emission factors at item 1 of the table at subsection 3.44(2) for carbon dioxide, methane, and nitrous oxide, and inserts new emissions factors, being 2.69, 0.56 and 0.021, respectively, for the gas types.
8.	Subsection 3.53(2) (table item 1)	For Method 1 – crude oil production (flared) emissions, repeals the emission factors at item 1 of the table at subsection 3.53(2) of the Measurement Determination for carbon dioxide, methane, and nitrous oxide, and inserts new emissions factors, being 2.69, 0.56 and 0.021, respectively, for the gas types.
9.	Subsection 3.69(2) (table item 1)	For Method 1 – gas flared from crude oil refining, repeals the emission factors at item 1 of the table at subsection 3.69(2) of the Measurement Determination for carbon dioxide, methane, and nitrous oxide, and inserts new emissions factors, being 2.73, 0.14 and 0.021, respectively, for the gas types.
10.	Subparagraph 3.85T(1)(b)(ii)	Omits “and” from subparagraph 3.85T(1)(b)(ii) of the Measurement Determination as an editorial correction.
11.	Subparagraph 3.85T(1)(b)(iii)	Omits “.” and substitutes “; and” from subparagraph 3.85T(1)(b)(iii) of the Measurement Determination as an editorial correction.
12.	Subsection 3.86(2) (table item 1)	For Method 1 – gas flared from natural gas production, repeals the emission factors at item 1 of the table at subsection 3.86(2) of the Measurement Determination for carbon dioxide, methane, and nitrous oxide, and inserts new emissions factors, being 2.69, 0.56 and 0.021, respectively, for the gas types.
13.	After subparagraph 3.88J(1)(a)(ii)	Inserts a new subparagraph (iia) after subparagraph 3.88J(1)(a)(ii) of the Measurement Determination which includes Method 2B under the existing section 3.87B as an additional available method for estimating emissions of carbon dioxide release from gas flared from natural gas transmission.
14.	Subparagraph 3.88J(1)(b)(ii)	Omits “and” from subparagraph 3.88J(1)(b)(ii) of the Measurement Determination as an editorial correction.
15.	At the end of paragraph 3.88J(1)(b)	Inserts a new subsection (iii) at the end of paragraph 3.88J(1)(b) of the Measurement Determination which includes Method 2B from existing section 3.87B as an additional available method for estimating fugitive methane emissions from natural gas transmission.



Item	Name	Description
16.	Subsection 3.88J(2)	Renumbers subsection 3.88J(2) of the Measurement Determination as subsection 3.88J(3) as an editorial amendment incidental to the amendment made by item 17.
17.	After subsection 3.88J(1)	Inserts a new subsection 3.88J(2) after subsection 3.88J(1) of the Measurement Determination which provides that if Method 2B has been used to estimate emissions of either methane or carbon dioxide released from gas flared during natural gas transmission, Method 2B must be the only method used to estimate emissions of both gases.
18.	After subparagraph 3.88T(1)(a)(ii)	Inserts a new subparagraph (iia) after subparagraph 3.88T(1)(a)(ii) of the Measurement Determination which includes Method 2B from existing section 3.87B as an additional available method for estimating fugitive carbon dioxide emissions from natural gas distribution.
19.	Subparagraph 3.88T(1)(b)(ii)	Omits “and” in subparagraph 3.88T(1)(b)(ii) of the Measurement Determination as an editorial correction.
20.	At the end of paragraph 3.88T(1)(b)	Inserts a new subparagraph at the end of paragraph 3.88T(1)(b) of the Measurement Determination which includes Method 2B from existing section 3.87B as an additional available method for estimating fugitive methane emissions from natural gas distribution.
21.	Subsection 3.88T(2)	Renumbers subsection 3.88T(2) of the Measurement Determination as subsection 3.88T(3) as an editorial amendment incidental to the amendment made by item 22.
22.	After subsection 3.88T(1)	Inserts a new subsection 3.88T(2) after subsection 3.88T(1) of the Measurement Determination which provides that if Method 2B has been used to estimate emissions of either methane or carbon dioxide released from gas flared during natural gas transmission, Method 2B must be the only method used to estimate emissions of both gases.
23.	Subsection 4.42(1)	<p>Inserts the word “fossil” after “<i>R</i> is the quantity of” in subsection 4.42(1).</p> <p>Previously, the term <i>R</i> did not distinguish between different types of carbon dioxide. This amendment specifies that <i>R</i> relates to fossil carbon dioxide only.</p>
24.	Subsection 4.42(2)	<p>Replaces the word “fuel” (first, second and fourth occurring) with the words “fossil fuel”.</p> <p>As item 23 amends the term <i>R</i> to be only the <i>fossil</i> carbon dioxide generated from the production of ammonia that is captured and transferred for use in the operation of another</p>

Item	Name	Description
		facility, the quantity covered by <b>R</b> should only be attributed to each <i>fossil</i> fuel consumed.
25.	Subsection 4.42(2)	Omits “carbon dioxide” (second occurring) and substitutes “fossil carbon dioxide”, reflecting corresponding amendments to subsection 4.42(1) (see item 23).
26.	Paragraph 4.42(2)(b)	Editorial correction.
27.	At the end of section 4.42	Adds a note to the end of section 4.42 specifying that fossil carbon dioxide is carbon dioxide derived from a fossil fuel.
28.	Subsection 4.43(1)	<p>Inserts the word “fossil” after “<b>R</b> is the quantity of” in subsection 4.43(1).</p> <p>Previously, the term <b>R</b> did not distinguish between different types of carbon dioxide. This amendment specifies that <b>R</b> relates to fossil carbon dioxide only.</p>
29.	Subsection 4.43(3)	<p>Replaces the word “fuel” (first, second and fourth occurring) with the words “fossil fuel”.</p> <p>As item 28 amends the term <b>R</b> to be only the <i>fossil</i> carbon dioxide generated from the production of ammonia that is captured and transferred for use in the operation of another facility, the quantity covered by <b>R</b> should only be attributed to each <i>fossil</i> fuel consumed.</p>
30.	Subsection 4.43(3)	Omits “carbon dioxide” (second occurring) and substitutes “fossil carbon dioxide”, reflecting corresponding amendments to subsection 4.43(1) (see item 28).
31.	Paragraph 4.43(3)(b)	Editorial correction.
32.	At the end of section 4.43	Adds a note to the end of section 4.43 specifying that fossil carbon dioxide is carbon dioxide derived from a fossil fuel.
33.	Subsection 4.62(1)	<p>Inserts the word “fossil” after “<b>R</b> is the quantity of” in subsection 4.62(1).</p> <p>Previously, the term <b>R</b> did not distinguish between different types of carbon dioxide. This amendment specifies that <b>R</b> relates to fossil carbon dioxide only.</p>
34.	Subsection 4.62(2)	<p>Replaces the word “fuel” (first, second and fourth occurring) with the words “fossil fuel”.</p> <p>As item 33 amends the term <b>R</b> to be only the <i>fossil</i> carbon dioxide generated from the production of hydrogen that is captured and transferred for use in the operation of another facility, the quantity covered by <b>R</b> should only be attributed to each <i>fossil</i> fuel consumed.</p>

Item	Name	Description
35.	Subsection 4.62(2)	Omits “carbon dioxide” (second occurring) and substitutes “fossil carbon dioxide”, reflecting corresponding amendments to subsection 4.62(1) (see item 33).
36.	Paragraph 4.62(2)(b)	Editorial correction.
37.	Section 4.62 (note)	Editorial change consequent on item 38.
38.	At the end of section 4.62	Adds a Note 2 to the end of section 4.62 specifying that fossil carbon dioxide is carbon dioxide derived from a fossil fuel.
39.	Subsection 4.62A(1)	<p>Inserts the word “fossil” after “<i>R</i> is the quantity of” in subsection 4.62A(1).</p> <p>Previously, the term <i>R</i> did not distinguish between different types of carbon dioxide. This amendment specifies that <i>R</i> relates to fossil carbon dioxide only.</p>
40.	Subsection 4.62A(3)	<p>Replaces the word “fuel” (first, second and fourth occurring) with the words “fossil fuel”.</p> <p>As item 39 amends the term <i>R</i> to be only the <i>fossil</i> carbon dioxide generated from the production of hydrogen that is captured and transferred for use in the operation of another facility, the quantity covered by <i>R</i> should only be attributed to each <i>fossil</i> fuel consumed.</p>
41.	Subsection 4.62A(3)	Omits “carbon dioxide” (second occurring) and substitutes “fossil carbon dioxide”, reflecting corresponding amendments to subsection 4.62A(3) (see item 39).
42.	Paragraph 4.62A(3)(b)	Editorial correction.
43.	At the end of section 4.62A	Adds a note to the end of section 4.62A specifying that fossil carbon dioxide is carbon dioxide derived from a fossil fuel.
44.	Subsection 5.25(5) (formula)	<p>Repeals the formula at subsection 5.25(5) of the Measurement Determination and inserts a new formula for the estimation of methane generated from domestic wastewater handling to include a term (COD<sub>trb</sub>) for sludge diverted to biochar production facilities.</p> <p>This amendment to Method 1 for estimation of methane from wastewater handling (domestic and commercial) is made to account for the emissions abatement impact of re-directing sewage sludge to be used as a feedstock at biochar production facilities. The inclusion of (COD<sub>trb</sub>) enables biochar production to be accounted for within the national inventory (as a reduction in emissions from wastewater handling), creating opportunities for biochar abatement methods within the Australian Carbon Credit Unit Scheme.</p>

Item	Name	Description
45.	Subsection 5.25(5) (after the definition of $COD_{trl}$ )	Inserts a definition of “ $COD_{trb}$ ” after the existing definition of “ $COD_{trl}$ ” in subsection 5.25(5) of the Measurement Determination. The new definition of “ $COD_{trb}$ ” is “the quantity of COD in sludge transferred out of the plant to biochar production facility”. COD is defined in the of the Measurement Determination as <i>Chemical Oxygen Demand</i> .
46.	Subsection 5.25(5) (definition of $COD_{tro}$ )	Updates the definition of “ $COD_{tro}$ ” in subsection 5.25(5) of the Measurement Determination to include the wording “or biochar production facility” after “landfill”. This amendment is incidental to the amendments made by item 44.
47.	Subsection 5.26(2), Step 1	<p>Repeals the formula at Step 1 of subsection 5.26(2) of the Measurement Determination and inserts a new formula for the estimation of the ratio of methane captured to methane generated from sub-facilities at a domestic wastewater handling to include a term (<math>COD_{trbz}</math>) for sludge diverted to biochar production facilities.</p> <p>This amendment to Method 2 for estimation of methane from wastewater handling (domestic and commercial) is made to account for the emissions abatement impact of re-directing sewage sludge to be used as a feedstock at biochar production facilities. The inclusion of (<math>COD_{trbz}</math>) will enable biochar production to be accounted for within the national inventory (as a reduction in emissions from wastewater handling), creating opportunities for biochar abatement methods within the Australian Carbon Credit Scheme.</p>
48.	Subsection 5.26(2), Step 1 (after the definition of $COD_{trlz}$ )	Inserts a definition of “ $COD_{trbz}$ ” at Step 1 of subsection 5.26(2) of the Measurement Determination after the existing definition of “ $COD_{trlz}$ ”. The new definition of “ $COD_{trbz}$ ” is “the quantity of COD in sludge transferred out of the sub facility and removed to a biochar production facility, measured in tonnes of COD”.
49.	Subsection 5.26(2), Step 1 (definition of $COD_{troz}$ )	Updates the definition of “ $COD_{troz}$ ” at Step 1 of subsection 5.26(2) of the Measurement Determination to include the wording “or biochar production facility” after “landfill”. This amendment is incidental to the amendments made by item 47.
50.	Subsection 5.26(2), Step 2	Repeals the formula at Step 2 of subsection 5.26(2) of the Measurement Determination and inserts a new formula for methane generated from sub-facilities at a domestic wastewater handling where the capture to generation ratio is less than or equal to 1.00 to include a term ( $COD_{trbz}$ ) for sludge diverted to biochar production facilities.

Item	Name	Description
51.	Subsection 5.26(2), Step 2 (after the definition of $COD_{trlz}$ )	Inserts a definition of “ $COD_{trbz}$ ” at Step 2 of subsection 5.26(2) of the Measurement Determination after the existing definition of “ $COD_{trlz}$ ”. “ $COD_{trbz}$ ” has the same meaning as in Step 1.
52.	Subsection 5.31(7), (table item 2, column headed “ $EF_{disij}$ ”)	<p>Omits “1.026” at table item 2 of subsection 5.31(7) of the Measurement Determination in the column headed “<math>EF_{disij}</math>” and substitutes “1.041”. This amendment updates the nitrous oxide emissions factor for effluent discharged to estuaries.</p> <p>This amendment corrects a rounding error which only applied to the Measurement Determination so as to align the Measurement Determination with the national inventory.</p>
53.	Subsection 5.42(5)	Repeals the formula at subsection 5.42(5) of the Measurement Determination and inserts a new formula within Method 1 for the estimation of methane generated from industrial wastewater handling to include a term ( $COD_{trb}$ ) for sludge diverted to biochar production facilities.
54.	Subsection 5.42(5) (after the definition of $COD_{trl}$ )	Inserts a definition of “ $COD_{trb}$ ” at subsection 5.42(5) of the Measurement Determination after the existing definition of “ $COD_{trl}$ ”. The definition of “ $COD_{trb}$ ” is “the quantity of COD in sludge transferred out of the plant to a biochar production facility during the year, measured in tonnes of COD”.
55.	Subsection 5.42(5) (definition of $COD_{tro}$ )	Updates the definition of “ $COD_{tro}$ ” at subsection 5.42(5) to insert the wording “or a biochar production facility,” after “landfill”. This amendment is incidental to the amendments made by item 53.
56.	Paragraph 6.2(1)(a)	Removes the reference to hydrogen from paragraph 6.2(1)(a). This gives effect to the reclassification of hydrogen within the NGER scheme from an energy commodity to a fuel.
57.	Section 6.3	Removes references to hydrogen, wherever occurring, from section 6.3. This gives effect to the reclassification of hydrogen within the NGER scheme from an energy commodity to a fuel.
58.	Subsection 6.3(3) (heading)	Removes the reference to hydrogen from the heading to subsection 6.3(3). This gives effect to the reclassification of hydrogen within the NGER scheme from an energy commodity to a fuel.
59.	Section 6.5	Removes references to hydrogen, wherever occurring, from section 6.5. This gives effect to the reclassification of hydrogen within the NGER scheme from an energy commodity to a fuel.

Item	Name	Description
60.	Subsection 6.5(4) (heading)	Removes the reference to hydrogen from the heading to subsection 6.5(4). This gives effect to the reclassification of hydrogen within the NGER scheme from an energy commodity to a fuel.
61.	After subsection 7.1(2) (before the notes)	Inserts a new subsection 7.1(3) after subsection 7.1(2) of the Measurement Determination providing that, where an entity uses a market-based method for a facility in its controlling corporation's group, it must apply the market-based method for all facilities in its controlling corporation's group for which a purchase or acquisition of electricity has occurred in the reporting year.
62.	Subsection 7.4(1) (definition of $REC_{surr}$ )	Omits "in" and substitutes "for" in the definition of $REC_{surr}$ at subsection 7.4(1) of the Measurement Determination. This amendment to the definition of $REC_{surr}$ clarifies that Renewable Energy Certificate ( <b>REC</b> ) surrenders are made <i>for</i> the reporting year and not necessarily <i>in</i> the reporting year.
63.	Subsection 7.4(3)	Repeals the existing subsection 7.4(3) of the Measurement Determination and substitutes a new subsection 7.4(3) which clarifies eligible Renewable Energy Certificates are those surrendered <i>for</i> rather than <i>in</i> the reporting year.
64.	Subsection 7.4(4)	Repeals the existing subsection 7.4(4) of the Measurement Determination and substitutes a new subsection 7.4(4) which clarifies the meaning of eligible certificates in respect of $REC_{onsite}$ and <i>JRPP</i> .
65.	Subsection 8.6(1) (table item 28A)	Renumbers existing table item 28A at subsection 8.6(1) of the Measurement Determination as table item 29A. This amendment is an editorial correction.
66.	Subsection 8.6(1) (table item 30, column headed "Fuel Combusted")	Omits "28, 28A and 29" at subsection 8.6(1) of the Measurement Determination and substitutes "28, 29 and 29A". This amendment is an editorial correction.
67.	Subsection 8.6(1) (after table item 30)	Inserts a new table item 30A in section 8.6 of the Measurement Determination after table item 30 which prescribes the energy content uncertainty and carbon dioxide emission factor uncertainty to be used when reporting emissions from combustion of hydrogen using Method 1.
68.	After section 9.19	Inserts a new section 9.20 after section 9.19 in the Measurement Determination, which provides that amendments made by this Update Determination apply in relation to reporting for the financial year 2025-26 and later financial years.

Item	Name	Description
69.	Part 2 of Schedule 1, (after table item 30)	Specifies the energy content factor, and carbon dioxide, methane and nitrous oxide scope 1 emission factors for hydrogen as a new fuel type at item 30A of Part 2 of Schedule 2 after table item 30. The carbon dioxide and methane emission factors are zero. The nitrous oxide emission factor is 0.05 kg CO <sub>2</sub> -e/GJ.
70.	Part 6 of Schedule 1 (Column 2)	Makes a customary annual update to emission factors for use under the location-based method for estimating scope 2 emissions from electricity consumption in section 7.2 of the Measurement Determination.
71.	Part 7 of Schedule 1 (Table item 86)	Repeals item 86 in Part 7 of Schedule 1 in the Measurement Determination. This gives effect to the reclassification of hydrogen within the NGER scheme from an energy commodity to a fuel.
72.	Part 2 of Schedule 3, Carbon content factors – gaseous fuels (after table item 30)	Inserts a new row after table item 30A in Part 2 of Schedule 3 in the Measurement Determination which specifies the carbon content for the new fuel type hydrogen, which is specified as 0.
73.	Part 1A of Schedule 4 (table item 1, column headed “Matters to be identified”, after paragraph (c))	<p>Inserts a new paragraph (d) in table item 1, Part 1A of Schedule 4 under the column headed “Matters to be identified” after paragraph (c) in the Measurement Determination.</p> <p>This amendment specifies new matters to be identified by reporters who use the new section 2.67C to determine the amount of renewable gas in a blended fuel received from a natural gas network.</p>
74.	Part 2 of Schedule 4, Source 2D—Oil or gas exploration and development—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2D, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during oil or gas exploration and development.</p>
75.	Part 2 of Schedule 4, Source 2F—Crude oil production (table item 4, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 4, Source 2F, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of</p>



Item	Name	Description
		methane, carbon dioxide and nitrous oxide from flaring of gas during oil or gas during crude oil production.
76.	Part 2 of Schedule 4, Source 2H—Crude oil refining (table item 4, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 4, Source 2H, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during oil or gas during crude oil refining.</p>
77.	Part 2 of Schedule 4, Source 2R—Onshore natural gas production—venting (table item 1, column headed “Method”)	Omits “Methods 1 2 and 4” and inserts “Methods 1, 2 and 4” in table item 1, Source 2R, Part 2 of Schedule 4, under the column heading “Method” in the Measurement Determination. This amendment is an editorial correction.
78.	Part 2 of Schedule 4, Source 2S—Offshore natural gas production—venting (table item 1, column headed “Method”)	Omits “Methods 1 2 and 4” and inserts “Methods 1, 2 and 4” in table item 1, Source 2S, Part 2 of Schedule 4, under the column heading “Method” in the Measurement Determination. This amendment is an editorial correction.
79.	Part 2 of Schedule 4, Source 2T—Onshore natural gas production—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2T, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during onshore natural gas production.</p>
80.	Part 2 of Schedule 4, Source 2T—Onshore natural gas production—flaring (table item 4, column headed “Matters to be identified”, paragraph (a))	<p>Omits “of flared crude oil and liquids (hydrocarbon component) within the flared gas” and inserts “and gigajoules of flared gas (hydrocarbon component)” in paragraph (a) of table item 4, Source 2T, Part 2 of Schedule 4, under the column headed “Matters to be identified” in the Measurement Determination.</p> <p>This amendment corrects an error in the existing matter to be identified under Schedule 4 when using Method 2B for estimating emissions of carbon dioxide from flaring during onshore natural gas production.</p>



Item	Name	Description
81.	Part 2 of Schedule 4, Source 2U—Offshore natural gas production—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2U, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during offshore natural gas production.</p>
82.	Part 2 of Schedule 4, Source 2U—Offshore natural gas production—flaring (table item 4, column headed “Matters to be identified”, before paragraph (a))	<p>Omits “of flared crude oil and liquids (hydrocarbon component) within the flared gas” and inserts “and gigajoules of flared gas (hydrocarbon component)” in paragraph (a) of table item 4, Source 2U, Part 2 of Schedule 4, under the column headed “Matters to be identified” in the Measurement Determination.</p> <p>This amendment corrects an error existing matter to be identified under Schedule 4 when using Method 2B for estimating emissions of carbon dioxide from flaring during offshore natural gas production.</p>
83.	Part 2 of Schedule 4, Source 2W—Natural gas gathering and boosting—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2W, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during natural gas gathering and boosting.</p>
84.	Part 2 of Schedule 4, Source 2Y—Natural gas processing—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2Y, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during natural gas processing.</p>
85.	Part 2 of Schedule 4, Source 2Z—Natural gas transmission—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2Z, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4</p>

Item	Name	Description
	identified”, before paragraph (a))	when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during natural gas transmission.
86.	Part 2 of Schedule 4, Source 2Z—Natural gas transmission—flaring (at the end of the table)	<p>Inserts rows 3 and 4 in Source 2Z, Part 2 of Schedule 4 after table item 2 in the Measurement Determination.</p> <p>This amendment inserts matters to be identified under Schedule 4 when using Method 2B for estimating emissions of methane and carbon dioxide from flaring of gas during natural gas transmission.</p> <p>For row 3, this amendment provides that when using Method 2B to estimate emissions of methane, as set out in subsection 3.87B(1), the matters to be identified are (a) the tonnes of flared gas, and (b) the tonnes and gigajoules of methane within the flared gas calculated through a mass balance.</p> <p>For row 4, this amendment provides that when using Method 2B to estimate emissions of carbon dioxide, as set out in subsection 3.87B(2), the matters to be identified are (a) the tonnes and gigajoules of flared gas (hydrocarbon component), calculated through a mass balance.</p>
87.	Part 2 of Schedule 4, Source 2ZB—Natural gas storage—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2ZB, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during natural gas storage.</p>
88.	Part 2 of Schedule 4, Source 2ZE—Natural gas liquefaction, storage and transfer—flaring (table item 2, column headed “Matters to be identified”, before paragraph (a))	<p>Inserts a new paragraph (aa) in table item 2, Source 2ZE, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4 when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during natural gas liquification, storage and transfer.</p>
89.	Part 2 of Schedule 4, Source 2ZF—Natural gas distribution—flaring (table item 2, column headed “Matters to be	<p>Inserts a new paragraph (aa) in table item 2, Source 2ZF, Part 2 of Schedule 4, under the column headed “Matters to be identified” before paragraph (a) in the Measurement Determination.</p> <p>This amendment inserts the wording “the tonnes of flared gas” as an additional matter to be identified under Schedule 4</p>

Item	Name	Description
	identified”, before paragraph (a))	when using Method 2, 2A or 3 for estimating emissions of methane, carbon dioxide and nitrous oxide from flaring of gas during natural gas distribution.
90.	Part 2 of Schedule 4, Source 2ZF—Natural gas distribution—flaring (at the end of the table)	<p>Inserts rows 3 and 4 in Source 2ZF, Part 2 of Schedule 4 after table item 2 in the Measurement Determination.</p> <p>This amendment inserts matters to be identified under Schedule 4 when using Method 2B for estimating emissions of methane and carbon dioxide from flaring of gas during natural gas distribution.</p> <p>For row 3, this amendment provides that when using Method 2B to estimate emissions of methane, as set out in subsection 3.87B(1), the matters to be identified are (a) the tonnes of flared gas, and (b) the tonnes and gigajoules of methane within the flared gas calculated through a mass balance.</p> <p>For row 4, this amendment provides that when using Method 2B to estimate emissions of carbon dioxide, as set out in subsection 3.87B(2), the matters to be identified are (a) the tonnes and gigajoules of flared gas (hydrocarbon component), calculated through a mass balance.</p>
91.	Part 4 of Schedule 4, Source 3F—Ammonia production (table)	<p>Repeals the table in Part 4 of Schedule 4, Source 3F—Ammonia production and substitutes an amended version.</p> <p>The information required by the paragraphs under the heading “Matters to be identified” in items 1 and 2 of the table has been amended to reflect corresponding amendments to Division 4.3.1—Ammonia production (see items 23-32 of the Update Determination) limiting the deduction of carbon dioxide that is derived from the production of ammonia during the year, captured and transferred for use in the operation of another facility to fossil carbon dioxide only.</p> <p>Matter (b) in item 1 and matter (c) in item 2 (the tonnes of carbon dioxide recovered and transferred from the facility) are intended to cover all recovered carbon dioxide, fossil and biogenic, and including carbon dioxide recovered and used for urea production.</p> <p>Matter (c) in item 1 and matter (d) in item 2 cover only the fossil component of carbon dioxide determined to be recovered and transferred from the facility.</p> <p>The amended table includes a new item 3 which specifies matters to be identified for any method for the source, as set out in sections 4.42, 4.43, 4.44 and Part 1.3. The newly included item requires NGER reports which contain estimates of scope 1 emissions from consumption of blended fuels to identify the section of Part 2.6 used to determine the amounts of each kind of fuel in the blended fuel, the amount of blended fuel consumed, and the amount of each type of</p>

Item	Name	Description
		<p>fuel determined to be contained in that blended fuel. Matters must be identified for each blended fuel consumed at a facility. If a facility does not consume any blended fuel, the matters to be identified for item 1 do not need to be reported.</p> <p>This information will provide useful insights into how the blended fuel provisions are being used, and for which fuel types, and support the reconciliation and verification of reported emissions.</p>
92.	Part 4 of Schedule 4, Source 6—Hydrogen production (table)	<p>Repeals the table in Part 4 of Schedule 4, Source 6—Hydrogen production and substitutes an amended version.</p> <p>The information required by the paragraphs under the heading “Matters to be identified” in items 1 and 2 of the table has been amended to reflect corresponding amendments to Division 4.3.7—Hydrogen production (see items 33-43 of the Update Determination) limiting the deduction of carbon dioxide that is derived from the production of hydrogen during the year, captured and transferred for use in the operation of another facility to fossil carbon dioxide only.</p> <p>The amended table includes a new item 3 which specifies matters to be identified for any method for the source, as set out in sections 4.62, 4.62A, 4.62B and Part 1.3. The newly included item requires NGER reports which contain estimates of scope 1 emissions from consumption of blended fuels to identify the section of Part 2.6 used to determine the amounts of each kind of fuel in the blended fuel, the amount of blended fuel consumed, and the amount of each type of fuel determined to be contained in that blended fuel. Matters must be identified for each blended fuel consumed at a facility. If a facility does not consume any blended fuel, the matters to be identified for Item 1 do not need to be reported.</p> <p>This information will provide useful insights into how the blended fuel provisions are being used, and for which fuel types, and support the reconciliation and verification of reported emissions.</p>
93.	Part 6 of Schedule 4, Source 4B—Wastewater handling—industrial (table)	Repeals the table at Source 4B, Part 6 of Schedule 4. A corrected version is inserted by item 95 below.
94.	Part 6 of Schedule 4, Source 4C—Wastewater handling—domestic or commercial (table)	Repeals the table at Source 4C, Part 6 of Schedule 4. A corrected version is inserted by item 95 below.
95.	Part 6 of Schedule 4, after Source 4A	Insert a new source 4B and 4C at the end of Source 4A, Part 6 of Schedule 4 in the Measurement Determination. The new

Item	Name	Description
		source 4B and 4C tables inserted by this item largely maintain the previous source 4B and 4C tables but also introduced additional MTBIs for the reporting of the quantity of COD in sludge transferred to a biochar production facility.
96.	Part 7 of Schedule 4 (cell at table item 1, column headed “Matters to be identified”)	<p>Adds two new paragraphs (b) and (c) in the third column of item 1 of Part 7 of Schedule 1 of the Measurement Determination, which specifies matters to be identified in relation to use of the market-based method for estimating scope 2 emission (Method B as set out in section 7.4).</p> <p>Paragraph (b) requires reporting of the RET accreditation codes for any accredited power stations within the facility.</p> <p>Paragraph (c) requires, for purchases other than GreenPower electricity, the Surrender ID numbers from the REC Registry of any surrendered renewable energy certificates (REC<sub>surr</sub>).</p> <p>This information will allow the verification of renewable energy certificates reported as surrendered for the purpose of calculating emissions under the market-based method.</p>

## **Statement of Compatibility with Human Rights**

*Prepared in accordance with Part 3 of the Human Rights (Parliamentary Scrutiny) Act 2011*

### ***National Greenhouse and Energy Reporting (Measurement) Amendment (2025 Update) Determination 2025***

This Legislative Instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

#### **Overview of the Legislative Instrument**

The *National Greenhouse and Energy Reporting (Measurement) Amendment (2025 Update) Determination 2025* makes amendments to the *National Greenhouse and Energy Reporting (Measurement) Determination 2008* in order to:

- **Renewable fuels:**
  - Introduces market-based reporting of emissions from consumption of biomethane and hydrogen.
- **Fugitive emissions from oil and natural gas operations:**
  - Updates the emissions factors used in Method 1 and Method 2A for gas flared during oil and natural gas operations.
  - Makes Method 2B for estimating fugitive emissions from gas flared during natural gas production available to natural gas transmission and distribution facilities to expand access to facility-specific higher order methods.
  - Corrects an error in the contextual data to be reported when Method 2B is used to estimate fugitive emissions from gas flared during natural gas production. The correction replaces unintentional references to “tonnes of flared crude oil and liquids” with references to “tonnes and gigajoules of flared gas”.
  - Adds the requirement to report the “tonnes of flared gas” when Methods 2, 2A or 3 is used to estimate fugitive emissions from flaring during natural gas operations are used. This update will help to support Australia’s compliance with international emissions reporting obligations and NGER scheme compliance.
- **Scope 2 emissions from consumption of electricity:**
  - Makes a customary annual update of emission factors
  - Updates the market-based method:
    - Adds requirement for consistent use of the market-based method for all facilities within a controlling corporation’s group.
    - Clarifies the permitted timing of surrender of renewable energy certificates taken into account in calculating market-based emissions.

- Adds new matters to be identified under Schedule 4: RET accreditation codes for power stations within the facility, Surrender ID numbers of surrendered certificates.
- **Waste:**
  - Enable NGER reports to account for abatement from diversion of biosolids to biochar production.
  - Makes a minor update to the N<sub>2</sub>O emission factor for effluent discharged to estuaries.
- Makes other minor technical updates to improve clarity and operation of the scheme.

### **Human rights implications**

This Legislative Instrument does not engage any of the applicable human rights or freedoms.

### **Conclusion**

This Legislative Instrument is compatible with human rights as it does not raise any human rights issues.

**The Hon Chris Bowen MP**  
**Minister for Climate Change and Energy**