EXPLANATORY STATEMENT

Issued by authority of the Minister for Energy and Emissions Reduction

National Greenhouse and Energy Reporting Act 2007

National Greenhouse and Energy Reporting (Measurement) Amendment (2021 Update) Determination 2021

Background

The National Greenhouse and Energy Reporting Scheme (NGERS), established under the *National Greenhouse and Energy Reporting Act 2007* (the Act), provides a framework for the reporting of emissions, energy production and consumption in Australia. It also provides for the Safeguard Mechanism to place limits on the net emissions of the largest facilities in Australia.

The *National Greenhouse and Energy Reporting (Measurement) Determination 2008* (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.

Overview of the Measurement Determination

The Measurement Determination provides the methods for the estimation of greenhouse gas emissions and the production and consumption of energy. The scope of the Measurement Determination follows international classification systems and includes emissions from:

- the combustion of fuel for energy;
- the extraction, production, flaring, processing and distribution of fossil fuels and 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 and sulphur hexafluoride resulting from their use by certain industries; and
- waste disposal – either in landfill, as management of wastewater or from waste incineration.

The scope of the Measurement Determination does not include land based emissions covered by the Intergovernmental Panel on Climate Change (IPCC) categories ‘Agriculture’ and ‘Land Use, Land Use Change and Forestry’. Emissions from fuel combustion by land based industries are, nonetheless, covered by the Measurement Determination.

Methods of measurement

The methods specified in the Measurement Determination reflect the framework of the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, as adopted by the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol and Paris Agreement.

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

- Method 1 is the *National Greenhouse Accounts* default method and specifies the use of default emission factors in the estimation of emissions. This is the simplest method available; emissions may be estimated by reference to activity data such as fossil fuel consumption, evidenced by invoices, and the use of specified emission factors provided in the Measurement Determination.
- 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 2 enables corporations to undertake additional measurements – for example, the qualities of fuels consumed at a particular facility – in order to gain more accurate estimates for emissions for that particular facility.
- Method 3, where available, is a higher-level facility-specific method, for instance using Australian or international standards for both sampling and analysis of fuels and raw materials.
- Method 4, where available, provides for direct monitoring of emission systems, either on a continuous or periodic basis. Rather than providing for the analysis of the chemical properties of inputs (or in some case, products), Method 4 involves directly monitor greenhouse emissions arising from an activity. This approach can provide a higher level of accuracy in certain circumstances, however it is likely to be more data intensive than other approaches.

The Measurement Determination draws on existing estimation practices wherever possible, including 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 purpose of the *National Greenhouse and Energy Reporting (Measurement) Amendment (2021 Update) Determination 2021* (the Update Determination) is to:

- introduce a new method providing explicit reporting guidance for hydrogen production facilities whose primary product is hydrogen for use outside of the facility;
- expand on the method for estimating fugitive emissions from the transport and injection of greenhouse gases for Carbon Capture and Storage (CCS) to also include Enhanced Oil Recovery (EOR) where it is conducted for commercial reasons as part of oil and gas production;

- update methods for estimating fugitive emissions from oil and natural gas facilities to reflect the latest available research and reflect the results of Leak Detection and Repair (LDAR) programs;
- provide optional technology-specific methane emission factors for combustion of gaseous fuels;
- make other minor technical updates.

The Update Determination will commence on 1 July 2021 and apply to the 2021-22 financial year. It will affect NGERS reports to be submitted by corporations by 31 October 2022. Details of the amendments contained in the Instrument are provided below.

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.

Consultation

The substance of the amendments made by the Update Determination was released for public consultation from 4 May to 21 May 2020. Seven submissions were received. Numerous technical revisions were made to updated methods for estimating fugitive emissions from oil and natural gas facilities in response to submissions received from industry participants, following extensive prior consultation with the Australian Petroleum Production & Exploration Association.

Regulatory Impact

The regulatory impacts of the Update Determination have been assessed as not requiring a Regulation Impact Statement by the Office of Best Practice Regulation (ref 44070).

Overview

A: Hydrogen production

Items 19 and 20 enhance transparency by providing for an explicit new source, emissions from hydrogen production, as well as an expansion of methods for estimation of emissions from facilities whose main product is hydrogen for use outside of the facility, such as bulk hydrogen for export or for use domestically in transport or industry.

The Australian Government is working both domestically and internationally through the International Partnership on Hydrogen and Fuel Cells in the Economy on the development of a hydrogen certification (or Guarantee of Origin) scheme. These new NGERS methods will also inform the hydrogen certification scheme, which will be a key part of demonstrating the carbon footprint of hydrogen produced in Australia.

The hydrogen production methods provide guidance for the estimation of scope 1 emissions from steam reforming processes used to produce hydrogen from fossil fuel feedstocks, such as natural gas and coal.

The hydrogen production methods apply the same principles used in existing methods for production of ammonia (Division 4.3.1- Ammonia production), as the same steam reforming processes are used in ammonia production to produce hydrogen as a precursor to ammonia.

Mirroring the existing ammonia production methods, the new hydrogen production methods provide for the capture of carbon dioxide (CO_2) and transfer off site, such as to a CCS facility or for other uses.

The hydrogen production methods do not apply to the production of ammonia where it is used as a carrier for hydrogen– this is covered by the existing ammonia production methods.

Item 29 of the Update Determination requires separate reporting of the amount of hydrogen produced from fossil fuel feedstocks and from electrolysers (see source 6 of Part 4 of the new Schedule 4 inserted by item 29).

B: Fugitive emissions of greenhouse gases transmitted and injected for EOR

Items 16 to 18 and 29 of the Update Determination expand the existing methods for estimating fugitive emissions for the transport and injection of carbon dioxide for CCS operations (Division 3.4.2—Transport of greenhouse gases; Division 3.4.3—Injection of greenhouse gases) to also cover estimation of fugitive emissions of CO_2 captured for EOR.

This interim step will allow data reported under NGERS to reflect the EOR activity, including the amounts imported and injected at EOR projects.

EOR is a commercial process pioneered in the United States of America where compressed CO_2 is injected into depleted oil or gas reservoirs to raise the pressure in the geological formation and improve the economic production of hydrocarbons. The majority of injected CO_2 is recovered during hydrocarbon production and recycled in the process. As is the case for any oil and gas operation, leaks and vents of CO_2 can occur during this process.

While EOR is not currently undertaken in Australia, recent interest in the technology suggests that it would be beneficial to establish data collection arrangements necessary to reflect the activity in the national inventory should it occur in the future.

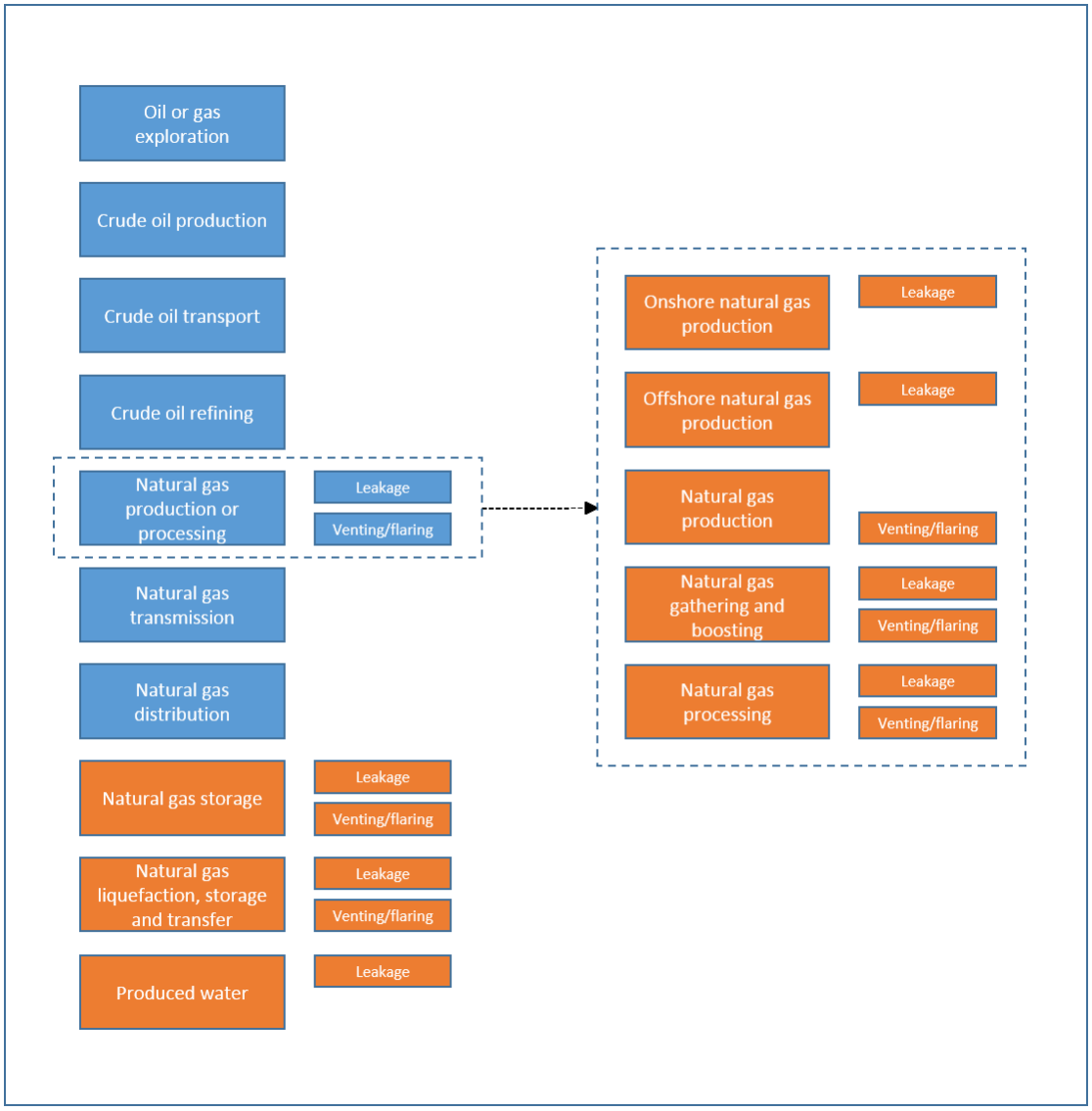
As there are no provisions under existing state and commonwealth oil and gas production licencing regimes for appropriate monitoring activities, the Department intends to undertake further research and consultation on a future elaboration of this method

C: Update to oil and gas methods

Items 2 to 15 of the Update Determination bring the NGER oil and gas reporting provisions into alignment with estimation methods applied in the Australian Government's National Inventory Report submitted under the UNFCCC and its Kyoto Protocol, and take into account developments in the empirical evidence base regarding leakages from oil and gas operations.

The amendments introduce greater delineation of emission sources within the oil and gas production chain (current and new oil and gas emissions sources are illustrated in **Figure 1**). The segment of the oil and gas production chain currently termed *natural gas production or processing* is split into separate segments for *onshore natural gas production; offshore natural gas production*; *natural gas gathering and boosting*; and *natural gas processing*. New segments also are introduced for *natural gas storage*; *natural gas liquefaction, storage and transfer*; and *produced water*.

Figure 1: Overview of oil and natural gas emission sources. The amendments introduce greater delineation of emission sources within the oil and natural gas production chain (current Measurement Determination sources in blue; new sources in orange)



New methods introduced by the amendments primarily relate to the reporting of emissions from leakages. Methods for estimating emissions from ***venting*** (disposal of gas by release to the atmosphere) and ***flaring*** (disposal of oil or gas by combustion) remain largely unchanged.

As is the case for other sectors in NGERS, the amendments allow reporters flexibility to choose from a hierarchy of estimation methods. For a given source in the provisions:

- **Method 1** is the method used in Australia's National Inventory Report, frequently applying default emission factors on the basis of throughput of oil or gas through the segment;
- **Method 2 and Method 3**, where available, provide for more detailed estimation of emissions, such as by applying emission factors on a per-piece-of-equipment and per-component basis;
- **Method 4**, where available, provides for the estimation of emissions using direct measurement by reporters.

The estimation methods in the amendments are informed by empirical studies of the Australian oil and gas industry where available. In other cases, methods are informed by overseas evidence, including inventory materials published by the US Environmental Protection Agency (USEPA) and the American Petroleum Institute (API), in particular the *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry 2009* (the API Compendium), which is a freely available document (available at https://www.api.org/~/media/files/ehs/climate-change/2009_ghg_compendium.ashx) providing industry guidance for estimating greenhouse gas emissions from oil and gas operations.

The amendments have been developed in consultation with relevant industry participants.

Leak Detection and Repair (LDAR)

To enable the results of active leak management efforts to be reflected in reported NGER emissions, the amendments allow reporters to apply per-component 'leak' and 'no-leak' emissions factors based on the results of LDAR programs to detect leaking components at their facilities.

Results of LDAR programs may be taken into account in estimating leakages in *onshore* and *offshore natural gas production*, *natural gas gathering and boosting*, *natural gas processing*, *natural gas storage*, and *natural gas liquefaction, storage and transfer*.

LDAR programs must be undertaken in accordance with applicable greenhouse gas monitoring requirements in the United States for USEPA Method 21 instruments or optical gas imaging cameras, or using equivalent standards. The relevant United States regulations referred to are freely available from https://www.ecfr.gov/. The United States Environmental Protection Agency also publishes Method 21 online at https://www.epa.gov/emc/method-21-volatile-organic-compound-leaks.

D: Technology-specific methane emission factors for combustion of gaseous fuels

Literature demonstrates that methane emissions from combustion of gaseous fuels are strongly dependent on engine technology type due to the occurrence of incomplete fuel combustion (termed 'combustion slip').

Items 11 and 12 of the Update Determination therefore make associated amendments to section 2.27 of the Measurement Determination (Method 2—emissions of methane from the combustion of gaseous fuels) to allow the use of more detailed and up-to-date emission factors for relevant technologies. The Department will continue to explore the appropriate scope of the application of this method to inform future updates.

E: Other technical matters

References to NGER Technical Guidelines in Part 5.2 (Solid waste disposal on land)

The NGER Technical Guidelines are no longer maintained by the Department of Industry, Science, Energy and Resources (the Department) and are superseded by guidance material published by the Clean Energy Regulator (the Regulator).

Items 22 and 23 amend subsection 5.17(2) and 5.17B(3) of the Measurement Determination to replace the existing reference to the NGER Technical Guidelines with references to a stand-alone guidance document to be published by the Regulator (*Landfill site plan and*

verification requirements (methods 2 and 3)). The document can be freely obtained from http://www.cleanenergyregulator.gov.au.

Update to Scope 2 emission factors

Item 27 makes a customary update to scope 2 emission factors for consumption of electricity contained in Part 6 of Schedule 1 of the Measurement Determination.

Matters formerly identified in Schedule 3 to the *National Greenhouse and Energy Reporting Regulations 2008* (NGER Regulations)

Schedule 3 to the NGER Regulations formerly listed reportable data points relevant to methods and calculations contained in the Measurement Determination. Item 29 (with contemporaneous amendments to the NGER Regulations made by the *National Greenhouse and Energy Reporting Amendment (2021 Measures No. 1) Regulations 2021*) (the 2021 Regulations) moves these matters from their previous location in the NGER Regulations to Schedule 4 of the Measurement Determination and makes updates to those matters in light of the updates to methods made by the amendments above. Because the data points are a direct result of the methods set out in the Measurement Determination, this change will simplify interpretation of NGERS instruments, and will reduce procedural complexity involved in updating the Schedule in accordance with regular updates to methods in the Measurement Determination.

ATTACHMENT A

National Greenhouse and Energy Reporting (Measurement) Amendment (2021 Update) Determination 2021

Section 1 – Name of Determination

This section provides that the title of the Instrument is the *National Energy Reporting (Measurement) Amendment (2021 Update) Determination 2021*.

Section 2 – Commencement

This section provides for the amendments to commence on 1 July 2021.

Section 3 – Authority

This section outlines that the Determination is made under subsection 10(3) of the *National Greenhouse and Energy Reporting Act 2007*. 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

The amendments to the Determination are outlined at Schedule 1.

Schedule 1 – Amendments

[1] At the end of section 1.4

Item 1 notes that data points relevant to methods and calculations set out in the Measurement Determination are now listed in Schedule 4 of that Determination. These matters have been moved from their previous location in Schedule 3 to the NGER Regulations. Because the data points are a direct result of the methods set out in the Measurement Determination, this change will simplify interpretation of NGER Scheme instruments, and will reduce procedural complexity involved in updating the Schedule in accordance with regular updates to the Measurement Determination.

[2] Section 1.8 (subparagraph (d)(i) of the definition of appropriate unit)

Item 2 makes amendments consequential to items 4, 5, 6 and 12 of Schedule 1 to the *National Greenhouse and Energy Reporting Amendment (2021 Measures No. 1) Regulations 2021*, in which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and the new, more easily interpreted terms *field condensate* and *plant condensate* are introduced based on guidance notes to the Australian Petroleum Statistics (see *Field production guidance note v1.0* freely available at https://www.energy.gov.au/publications/field-production and *Plant production guidance note v1.0* freely available at; https://www.energy.gov.au/publications/plant-production; these documents provide technical guidance for reporting of information for the purposes of the Australian Petroleum Statistics).

[3] Section 1.8

Item 3 amends relevant definitions to support method changes introduced by the amendments.

Definition	**Notes**
captured for enhanced oil recovery	Supports methods for estimating fugitive emission from the transport and injection of greenhouse gases captured the Enhanced Oil Recovery in item 19 of the Update Determination. This is distinct and separate from the definition for *captured for permanent storage* in section 1.19A of the Measurement Determination.
city gate	Supports the definition of natural gas distribution in item 6 of the Update Determination.
CO_2 stimulation	Supports methods for estimating vented emissions from CO2 stimulation set out in Subdivision 3.3.9A.7—Natural gas production—emissions that are vented—CO2 stimulation in item 15 of the Update Determination.

crude oil	References the new definition of *crude oil* in the NGER Regulations. See items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations, in which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and new terms *field condensate* and *plant condensate* are introduced based on guidance notes to the Australian Petroleum Statistics (see note on item 2 of the Update Determination above).
enhanced oil recovery authority	Supports methods for estimating emissions from the transport and injection of greenhouse gases captured for the purpose of EOR activities, as provided for in new Divisions 3.4.2 and 3.4.3 inserted by item 18 of the Update Determination
equivalent leak detection standard	Supports the technology-neutral operation of provisions allowing estimation of emissions based on the results of LDAR programs (sections 3.73C, 3.73H, 3.73M, 3.73S, 3.78E, 3.78J in the new Part 3.3 in item 15 of the Update Determination) by defining equivalent leak detection standards to be a standard or approach with integrity and leak detection sensitivity equivalent or higher than the standards specified. The relevant United States regulations referred to are freely available from https://www.ecfr.gov/.
Leak Detection and Repair Program or ***LDAR program***	Supports provisions allowing estimation of emissions based on the results of LDAR programs (sections 3.73C, 3.73H, 3.73M, 3.73S, 3.78E, 3.78J in the new Part 3.3 in item 15 of the Update Determination).
leaker	Supports provisions allowing estimation of emissions based on the results of LDAR programs (sections 3.73C, 3.73H, 3.73M, 3.73S, 3.78E, 3.78J in the new Part 3.3 in item 15 of the Update Determination) by defining a leaking component (*leaker*) by reference to relevant USEPA reporting rules. LDAR programs must be undertaken in accordance with applicable greenhouse gas monitoring requirements in the United States for USEPA Method 21 instruments (see US Code of Federal Regulations: 40 CFR 60 Appendix A-7, providing technical requirements for the use of appropriate instruments for the purposes of leak detection) or optical gas imaging

	cameras (see US Code of Federal Regulations 40 CFR 98.234(a)(1) providing technical requirements for the use of optical gas imaging cameras for the purposes of leak detection), or using equivalent standards. The relevant United States regulations referred to are freely available from https://www.ecfr.gov/.
liquefied natural gas station	Supports the operation of methods to estimate fugitive emissions from natural gas liquefaction, storage and transfer set out in new Divisions 3.3.7B and 3.3.9F inserted by item 15 of the Update Determination.
natural gas distribution pipelines	Supports the definition of natural gas distribution in item 6 below and methods to estimate fugitive emissions from natural gas distribution set out in new Divisions 3.3.8 and 3.3.9G inserted by item 15 of the Update Determination.
natural gas liquefaction, storage and transfer	Supports the operation of methods to estimate fugitive emissions from natural gas liquefaction, storage and transfer set out in new Divisions 3.3.7B and 3.3.9F inserted by item 15 of the Update Determination.
natural gas production	Supports the operation of methods to estimate fugitive emissions from natural gas production set out in new Divisions 3.3.6A, 3.3.6B, 3.3.9A inserted by item 15 of the Update Determination.
natural gas processing	Supports the operation of methods to estimate fugitive emissions from natural gas processing set out in new Divisions 3.3.6E., 3.3.9C inserted by item 15 of the Update Determination.
natural gas storage	Supports the operation of methods to estimate fugitive emissions from natural gas storage set out in new Divisions 3.3.7A and 3.3.9E inserted by item 15 of the Update Determination.
natural gas storage station	Supports the operation of methods to estimate fugitive emissions from natural gas storage set out in new Divisions 3.3.7A and 3.3.9E inserted by item 15 of the Update Determination.
natural gas transmission pipeline	Supports the operation of methods to estimate fugitive emissions from natural gas transmission set out in new Divisions 3.3.7 and 3.3.9D inserted by item 15 of the Update Determination.

oil or gas exploration and development	Supports the operation of methods to estimate fugitive emissions from oil or gas exploration and development set out in new Divisions 3.3.2 and 3.3.6D inserted by item 15 of the Update Determination.
offshore natural gas production	Supports the operation of methods to estimate fugitive emissions from offshore natural gas production set out in new Divisions 3.3.6B and 3.3.9A inserted by item 15 of the Update Determination.
offshore platform	Supports the operation of methods to estimate fugitive emissions from offshore natural gas production set out in new Division 3.3.6B inserted by item 15 of the Update Determination.
offshore platform (shallow water)	Supports the operation of methods to estimate fugitive emissions from offshore natural gas production set out in new Division 3.3.6B inserted by item 15 of the Update Determination.
offshore platform (deep water)	Supports the operation of methods to estimate fugitive emissions from offshore natural gas production set out in new Division 3.3.6B inserted by item 15 of the Update Determination.
onshore natural gas production	Supports the operation of methods to estimate fugitive emissions from onshore natural gas production set out in new Divisions 3.3.6A and 3.3.9A inserted by item 15 of the Update Determination.
onshore natural gas wellhead	Supports the operation of methods to estimate fugitive emissions from onshore natural gas production set out in new Division 3.3.6A inserted by item 15 of the Update Determination.
plant condensate	Supports the operation of methods for estimating fugitive emissions from natural gas transmission (new Division 3.3.7 inserted by item 15 of the Update Determination) by referencing the new definition of *plant condensate* in the NGER Regulations. See items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations, which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and new terms *field condensate* and *plant condensate* are introduced based

	on guidance notes to the Australian Petroleum Statistics (see note on item 2 of the Update Determination above).
pipeline natural gas	Supports the definition of *natural gas distribution pipelines* above and methods to estimate fugitive emissions from natural gas distribution set out in new Divisions 3.3.8 and 3.3.9G inserted by item 15 of the Update Determination.

[4] Section 1.8

This item repeals two definitions that are now unnecessary and will be unused by the Measurement Determination.

This item repeals the definition of *crude oil condensates* to align with contemporaneous amendments by the 2021 Regulations. Items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations repeal the term *crude oil condensates* following industry feedback that the term is not a commonly understood. The 2021 Regulations introduced new terms, *field condensate* and *plant condensate*, based on guidance notes to the Australian Petroleum Statistics (see note on item 2 of the Update Determination above).

This item repeals the definition of *technical guidelines*, as the document referenced by this term (the NGER Technical Guidelines) has been superseded by reporting guidance material published by the Clean Energy Regulator and is no longer maintained by the Department. References to the technical guidelines in methods for estimating emissions of methane from landfills are therefore replaced by references to a separate document to be published by the Clean Energy Regulator on its website- see items 22 and 23 of the Update Determination.

[5] Section 1.8 (definition of fugitive emissions)

Fugitive emissions was previously defined by reference to the *Clean Energy Regulations 2011*. This amendment states the definition expressly in the Update Determination as those Regulations are no longer in force.

[6] Section 1.8 (definition of *natural gas distribution*)

This item repeals and substitutes the definition of *natural gas distribution*. The inclusion of the new definition supports the operation of methods to estimate fugitive emissions from natural gas distribution set out in new Divisions 3.3.8 and 3.3.9G inserted by item 15 of the Update Determination.

[7] Section 1.8 (definition of *natural gas transmission*)

This item repeals and substitutes the definition of *natural gas transmission*. The inclusion of the new definition supports the operation of methods to estimate fugitive emissions from natural gas transmission set out in new Divisions 3.3.7 and 3.3.9D inserted by item 15 of the Update Determination.

[8] Section 1.8 (definition of *well workover*)

Amends the definition of *well workover* to support revised oil and gas fugitive emissions methods in Part 3.3 of the Measurement Determination as amended by item 15 of the Update Determination.

[9] Subsection 1.9(4)

This item makes a routine update to subsection 1.9(4) of the Measurement Determination to specify that references in the Measurement Determination to standards, instruments or other writing are references to those standards, instruments or other writing as they were in force on 1 January 2020. This ensures more recent versions of the various standards are used, consistent with industry practice.

[10] Subsection 1.10(1)

This item repeals subsection 1.10(1) and substitutes it with an updated list of sources of emissions to capture the sources introduced by the Update Determination.

Item 3JB creates a new source 'Hydrogen production' in light of the new hydrogen production methods inserted by item 20 of the Update Determination.

Item 2ZH in this section creates a new source 'Enhanced oil recovery' in light of the expanded scope of Divisions 3.4.2 and 3.4.3 as amended by item 18 of the Update Determination.

Items 2D to 2ZG in this section reflect the revised structure of updated oil and gas fugitive emissions methods contained in Part 3.3 of the Measurement Determination as amended by item 15 of the Update Determination.

[11] Subsection 2.27(1)

Editorial change in light of item 12 below.

[12] Subsection 2.27(2)

This item amends section 2.27 to allow the optional use of technology-specific emission factors under Method 2 for emissions of methane from combustion of gaseous fuels, reflecting literature findings that these emissions are strongly technology-dependent.

The Department will continue to explore the appropriate scope of the application of technology-specific fuel combustion emission factors to inform future updates to the Measurement Determination.

[13] Subsection 2.45(1) (table items 3 and 4)

This item repeals table items 3 and 4 in subsection 2.45(1) of the Measurement Determination. This item also provides for the standards that the fuels - *crude oil* and *plan condensates and other natural gas liquids not covered by another item in this table* – must be analysed against.

The amendments to the Measurement Determination made by this item are a consequence of items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations, in which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and new terms *field condensate* and *plant condensate* are introduced based on guidance notes to the Australian Petroleum Statistics (see note on item 2 of the Update Determination above).

The relevant measurement standards have not changed from those previously referenced in the Measurement Determination and have been long used by industry for these measurements. The ASTM International standards can be obtained from htto://www.astm.org. Importantly, under subsection 2.45(2) of the Measurement Determination other equivalent standards may also be used, which would include any updates of the above standards.

[14] Subsection 2.47(3) (table items 3 and 4)

This item repeals table items 3 and 4 in subsection 2.47(3) of the Measurement Determination. This item also provides for the standards for which fuels – *crude oil* and *plant condensates and other natural gas liquids not covered by another item in this table* – must be sampled against.

The amendments to the Measurement Determination made by this item are a consequence of items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations, in which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and new terms *field condensate* and *plant condensate* are introduced based on guidance notes to the Australian Petroleum Statistics (see note on item 2 of the Update Determination above).

The relevant measurement standards have not changed from those previously referenced in the Measurement Determination and have been long used by industry for these measurements. The ASTM International standards can be obtained from http://www.astm.org. ISO standards can be obtained from http://www.iso.org. Importantly, under subsection 2.47(4) of the Measurement Determination other equivalent standards may also be used, which would include any updates of the above standards.

[15] Part 3.3

Part 3.3 of the Measurement Determination sets out the process for estimating fugitive emissions. This item repeals and substitutes Part 3.3 of the Measurement Determination in order to estimate fugitive emissions from oil and natural gas facilities to reflect the latest available research and reflect the results of LDAR programs.

More detailed description of the new estimation methods including is set out below.

Reference	Detailed commentary
Division 3.3.1—Preliminary	Provides an overview of the new Part 3.3 and rules for interpretation of terms as used in industry. Subsection 3.41(2) is an important provision to ensure that all fugitive emissions are included, but not double counted under the various segments of the oil and gas industry. For example, a piece

Reference	Detailed commentary
	of equipment may be operated such that it could be classified as natural gas production or natural gas gathering and boosting. It is important that it is included in the emissions of one of these, but not included in both. Subsection 3.41A(1) ensures that industry terms are interpreted with their technical meaning in the industry and API Compendium terms have the same meaning and scope as they do in that document. This ensures consistency in the calculations and correct application of emissions factors to relevant equipment. Subsection 3.41(2) is a general constraint on the use of manufacturer supplied emissions factors where those factors are inappropriate or inaccurate.
Division 3.3.2—Oil or gas exploration and development	Provides estimation methods for emissions from oil or gas exploration and development. See notes on Subdivisions contained within this Division below.
Subdivision 3.3.2.1—Preliminary	Sets the application of the division. These preliminary subdivisions are standardised across the Part.
Subdivision 3.3.2.2—Oil or gas exploration and development (emissions that are flared)	Provides estimation methods for emissions from flaring in oil or gas exploration and development activities and remains substantively unchanged, with minor amendments to table items 1 and 2 allow reporting of emissions from flaring of all relevant gaseous and liquid fuels. The structure of these substantive divisions is largely consistent across the Part and with the existing Measurement Determination. The first section outlines and cross references the available methods for the source (or component of a source). The methods for the source generally follow in the order of the methods (1, 2, 2A, 3, 4 etc).
Subdivision 3.3.2.3—Oil or gas exploration and development—fugitive emissions from system upsets, accidents and deliberate releases	Provides estimation methods for emissions from deliberate releases from process vents, system upsets and accidents in oil or gas exploration and development activities.
Subdivision 3.3.2.3.1—Fugitive emissions that result from deliberate releases from process vents, system upsets and accidents–well completions	Method 1 is based on the method used for the National Greenhouse Accounts. Emissions factors are based on US EPA, Natural Gas and Petroleum Systems in the GHG Inventory: Additional Information on the 1990-2015 GHG Inventory (published April 2017) (Annex 3.6: *Methodology for Estimating CH4 and CO2 Emissions from Natural Gas Systems*, Table 3.6-2), except for item 1 (Well completion without hydraulic fracturing) which is based on Day et al (2017), *Methane Emissions from CSG Well Completion Activities Report for the Department of the Environment and Energy*. Default gas share data is based on USEPA (2017) Natural Gas and Petroleum Systems in the GHG Inventory: Additional Information on the 1990-2015 GHG Inventory (published April 2017) (Table 3.6-4, 1996-2015 average for lower 48 States).

Reference	Detailed commentary
	This method applies to natural gas exploration and development which is a subset of oil and gas exploration and development. Method 4 is based on API Compendium sections 5.7.1 and 5.7.2.
Division 3.3.3—Crude oil production	Provides estimation methods for emissions from crude oil production. See notes on Subdivisions contained within this Division below.
Subdivision 3.3.3.2—Crude oil production (non-flared)—fugitive leak emissions of methane	Provides estimation methods for emissions from leakages of methane in crude oil production. Methods 1 and 2 remain substantively unchanged. Method 3 is based on section 6.1.3 of the API Compendium (Table 6-14).
Subdivision 3.3.3.3—Crude oil production (flared)—fugitive emissions of carbon dioxide, methane and nitrous oxide	Provides estimation methods for emissions from flaring in crude oil production and remains substantively unchanged, with minor amendments to table items 1 and 2 allow reporting of emissions from flaring of all relevant gaseous and liquid fuels.
Subdivision 3.3.3.4—Crude oil production (non-flared)—fugitive vent emissions of methane and carbon dioxide	Provides an estimation method for vented emissions in crude oil production. Method 1 remains substantively unchanged, except for prescribing the use of section 3.85P for emissions from well workovers.
Division 3.3.4—Crude oil transport	Provides estimation methods for emissions in crude oil transport, and remains substantively unchanged.
Division 3.3.5—Crude oil refining	Provides estimation methods for emissions from crude oil refining. See notes on Subdivisions contained within this Division below.
Subdivision 3.3.5.1—Fugitive emissions from crude oil refining and from storage tanks for crude oil	Provides estimation methods for emissions crude oil refining and storage tanks for crude oil. Methods 1 and 2 remain substantively unchanged. Introduces a new Method 3 allowing estimation using component emissions factors from section 6.1.3 of the API Compendium.
Subdivision 3.3.5.2—Fugitive emissions from deliberate releases from process vents, system upsets and accidents	Provides estimation methods for emissions from deliberate releases from process vents, system upsets and accidents in crude oil refining, and remains substantively unchanged.
Subdivision 3.3.5.3—Fugitive emissions released from gas flared from the oil refinery	Provides estimation methods for emission flared from oil refineries. A new item 2 is added to the table in s 3.69 to allow reporting of emissions from flaring of crude oil and liquids.
Division 3.3.6A—Onshore natural gas production (other than emissions that are vented or flared)	Provides estimation methods for leakage emissions from onshore natural gas production. See notes on Subdivisions contained within this Division below.

Reference	Detailed commentary
Subdivision 3.3.6A.1—Onshore natural gas production, other than emissions that are vented or flared—well-heads	Provides estimation methods for leakages from wellheads in onshore natural gas production. Subsections 3.73(3) and (4) are generic provisions which also appear in other sources for the gas supply chain (eg subsections 3.73E(3) and (4)). They ensure that method 2 is used consistently through the supply chain or method 3 is similarly used if those methods are chosen. This avoids the risk of missing emissions due to the classification of activities, equipment and components between the various sources and methods. Method 1 is based on the method used for the National Greenhouse Accounts. Emissions factors are based on Day et al (2014) *Field Measurements of Fugitive Emissions from Equipment and Well Casings in Australian Coal Seam Gas Production Facilities Report to the Department of the Environment*. Method 2 emissions factors and gas share data are based on API Compendium Section 6.1.2, with reciprocating compressor factors based on USEPA 2016 *Control Techniques Guidelines for the Oil and Natural Gas Industry* (Table 5-2). Method 3 subsection (2) emissions factors are based on API Compendium Section 6.1.3, with gas share data based on API Compendium Section 6.1.2. Method 3 subsection (3) factors are based on *Lev-On et al (2007): Derivation of New Emission Factors for Quantification of Mass Emissions When Using Optical Gas Imaging for Detecting Leaks*. Method 3 is the first method to adopt LDAR program specific factors and includes the common requirements for the use of those factors, including the survey of each component at least once a reporting year. Rules for the allocation of leakers are also set out in subsection 3.73C(5).
Division 3.3.6B—Offshore natural gas production (other than emissions that are vented or flared)	Provides estimation methods for leakage emissions from offshore natural gas production. See notes on Subdivision 3.3.6B.1 below.
Subdivision 3.3.6B.1—Offshore natural gas production, other than emissions that are vented or flared—offshore platforms	Provides estimation methods for emissions from leakages from offshore platforms. Method 1 is based on the method used for the National Greenhouse Accounts. Emissions factors are based on USEPA (2016) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014* (All Annexes, pp A-203, A-204). Default gas share data is based on USEPA (2017) Natural Gas and Petroleum Systems in the GHG Inventory: Additional Information on the 1990-2015 GHG Inventory (published April 2017) (Table 3.6-4, 1996-2015 average for lower 48 States). Methods 2 and 3 are based on the same data sources as onshore production.
Division 3.3.6C—Natural gas gathering and boosting (other than emissions that are vented	Provides estimation methods for leakages from natural gas gathering and boosting. Method 1 for gathering and boosting stations is the method used

Reference	Detailed commentary
or flared)	for the National Greenhouse Accounts and is based on *Zimmerle et al (2020) Methane Emissions from Gathering Compressor Stations in the U.S.* Method 1 for gathering and boosting pipelines is the method used for the National Greenhouse Accounts and is based on API Compendium Section 6.1.2. Default gas share data is based on the same data as for oil or gas exploration development (3.3.2.3). Subsection 3.73KB(3) allows the method 2 approach to be used for these pipelines as 'method 1' without triggering the use of method 2 elsewhere under subsection 3.73J(3). Method 2 for gathering and boosting stations is based on the same sources as for onshore natural gas production. Method 2 emissions factors for gathering and boosting pipelines are based on API Compendium Table C-16. Method 3 is based on the same sources as for onshore natural gas production.
Division 3.3.6D—Produced water from oil and gas exploration and development, crude oil production, natural gas production or natural gas gathering and boosting (other than emissions that are vented or flared)	Provides estimation methods for emissions from produced water from oil and gas exploration and development, crude oil production, natural gas production or natural gas gathering and boosting. Method 1 and 2 emission factors are based on API Compendium Table 5-10. Default gas share data is based on USEPA (2017) Natural Gas and Petroleum Systems in the GHG Inventory: Additional Information on the 1990-2015 GHG Inventory (published April 2017) (Table 3.6-4, 1996-2015 average for lower 48 States). The method 2 provisions are drafted in relation to the pressure of the water entering a separator, but subsection 3.73NB(4) makes provision for when no separator is present.
Division 3.3.6E—Natural gas processing (other than emissions that are vented or flared)	Provides estimation methods for leakages from natural gas processing. Method 1 is the method used for the National Greenhouse Accounts. Emissions factors are based on Marchese et al (2015) *Methane Emissions from United States Natural Gas Gathering and Processing*, with default gas share data based on the same sources as natural gas gathering and boosting. Method 2 emission factors are based on USEPA (2016) *Control Techniques Guidelines for the Oil and Natural Gas Industry* (Table 5-2), with the factor for screw compressors based on Clearstone Engineering (2014) *Update of Fugitive Equipment Emission Factors, Report to Canadian Association of Petroleum Producers*, February, 2014 Report 2014-003 and default gas share based on API Compendium section 6.1.2. Method 3 subsection (2) factors are based on API Compendium section 6.1.3 (Table 6-16). Method 3 subsection (3) factors are based on *Lev-On et al (2007): Derivation of New Emission Factors for Quantification of Mass Emissions When Using Optical Gas Imaging for Detecting Leaks*.

Reference	Detailed commentary
Division 3.3.7—Natural gas transmission (other than emissions that are flared)	Provides estimation methods for leakage from transmission of natural gas and plant condensates. Method 1 is the method used for the National Greenhouse Accounts and is substantively unchanged. Method 2 is based on sections 5 and 6.1.2 of the API Compendium and remains substantively unchanged. A new Method 3 is added based on section 6.1.3 of the API Compendium.
Division 3.3.7A—Natural gas storage (other than emissions that are vented or flared)	Provides estimation methods for leakage from natural gas storage. Method 1 is the method in the National Greenhouse Accounts and is based on USEPA (2016) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014* (All Annexes, Table A-137). Method 2 factors are based on section 6.1.2 of the API Compendium (Table 6-6), with the factor for screw compressors based on Clearstone Engineering (2014) *Update of Fugitive Equipment Emission Factors, Report to Canadian Association of Petroleum Producers*, February, 2014 Report 2014-003. Method 3 subsection (2) factors are based on section 6.1.3 of the API Compendium (Table 6-18). Method 3 subsection (3) factors are based on *Lev-On et al (2007): Derivation of New Emission Factors for Quantification of Mass Emissions When Using Optical Gas Imaging for Detecting Leaks*.
Division 3.3.7B—Natural gas liquefaction, storage and transfer (other than emissions that are vented or flared)	Provides estimation methods for leakage from natural gas liquefaction, storage and transfer. Method 1 is the method in the National Greenhouse Accounts and is based on USEPA (2016) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014* (All Annexes, Table A-137, sum of entries for: *LNG Stations*, *LNG Reciprocating Compressors*, *LNG Centrifugal Compressors*). Method 2 is based on section 6.1.2 of the API Compendium. Method 3 subsection (2) factors are based on API (2015) *Liquefied Natural Gas (LNG) Operations Consistent Methodology for Estimating Greenhouse Gas Emissions* section 4.3.1 (Table 13). Method 3 subsection (3) factors are based on *Lev-On et al (2007): Derivation of New Emission Factors for Quantification of Mass Emissions When Using Optical Gas Imaging for Detecting Leaks*.
Division 3.3.8—Natural gas distribution (other than emissions that are flared)	Provides estimation methods for leakages in natural gas distribution and remains substantively unchanged.
Division 3.3.9A—Natural gas production (emissions that are vented or flared)	Provides estimation methods for emissions that are vented or flared in natural gas supply chain and remains substantively unchanged.
Subdivision 3.3.9A.1—Natural gas production—emissions that	Provides estimation methods for emissions that are vented in gas treatment processes in natural gas production.

Reference	Detailed commentary
are vented—gas treatment processes	Method 1 is based on section 5.1 of the API Compendium.
Subdivision 3.3.9A.2—Natural gas production—emissions that are vented—cold process vents	Provides estimation methods for emissions from cold process vents in natural gas production. Method 1 is based on section 5.3 of the API Compendium.
Subdivision 3.3.9A.3—Natural gas production—emissions that are vented—natural gas blanketed tanks and condensate storage tanks	Provides estimation methods for emissions from natural gas blanketed tanks and condensate storage tanks in natural gas production. Method 1 is based on section 5.4 of the API Compendium.
Subdivision 3.3.9A.4—Natural gas production—emissions that are vented—gas driven pneumatic devices	Provides estimation methods for emissions from gas driven pneumatic devices in natural gas production. Method 1 is based on section 5.6.1 of the API Compendium.
Subdivision 3.3.9A.5—Natural gas production—emissions that are vented—gas driven chemical injection pumps	Provides estimation methods for emissions from chemical injection pumps in natural gas production. Method 1 is based on section 5.6.2 of the API Compendium.
Subdivision 3.3.9A.6—Natural gas production—emissions that are vented—well blowouts	Provides estimation methods for emissions from well blowouts in natural gas production. Method 1 is based on section 5.7.1 of the API Compendium.
Subdivision 3.3.9A.7—Natural gas production—emissions that are vented—CO2 stimulation	Provides estimation methods for emissions from CO2 stimulation in natural gas production. Method 1 is based on section 5.7.1 of the API Compendium.
Subdivision 3.3.9A.8—Natural gas production—emissions that are vented—well workovers	Provides estimation methods for emissions from well workovers in natural gas production. Method 1 is based on the same sources as subdivision 3.3.2.3.1 under oil or gas exploration and development activities. Method 4 is based on section 5.7.1 of the API Compendium.
Subdivision 3.3.9A.9—Natural gas production—emissions that are vented—vessel blowdowns, compressor starts and compressor blowdowns	Provides estimation methods for emissions from vessel blowdowns, compressor starts and compressor blowdowns in natural gas production. Method 1 is based on sections 5.7.1 and 5.7.2 of the API Compendium.
Subdivision 3.3.9A.10—Natural gas production (emissions that	Provides estimation methods for emissions that are flared in natural gas production. A new table item 2 is added to allow

Reference	Detailed commentary
are flared)	reporting of emissions from flaring of crude oil and liquids
Division 3.3.9B—Natural gas gathering and boosting (emissions that are vented or flared)	Provides estimation for vented and flared emissions in natural gas gathering and boosting. Incorporates changes made to flaring provisions for gas production (3.3.9A.10 above).
Division 3.3.9C—Natural gas processing (emissions that are vented or flared)	Provides estimation for vented and flared emissions in natural gas processing. Incorporates changes made to flaring provisions for gas production (3.3.9A.10 above).
Division 3.3.9D—Natural gas transmission (emissions that are flared)	Provides estimation for flared emissions in natural gas transmission. Incorporates changes made to flaring provisions for gas production (3.3.9A.10 above).
Division 3.3.9E—Natural gas storage (emissions that are vented or flared)	Provides estimation for vented and flared emissions in natural gas storage. Incorporates changes made to flaring provisions for gas production (3.3.9A.10 above).
Division 3.3.9F— Natural gas liquefaction, storage and transfer (emissions that are vented or flared)	Provides estimation for vented and flared emissions in natural gas liquefaction, storage and transfer. Incorporates changes made to flaring provisions for gas production (3.3.9A.10 above).
Division 3.3.9G—Natural gas distribution (emissions that are flared)	Provides estimation for flared emissions in natural gas distribution. Incorporates changes made to flaring provisions for gas production (3.3.9A.10 above).

[16] Heading to Part 3.4

This item amends the title of Part 3.4 to reflect the expanded scope of Divisions 3.4.2 and 3.4.3 as a result of item 18 of the Update Determination (see below).

[17] Section 3.88

This item adds enhanced oil recovery to the description of the coverage of Part 3.4 in section 3.88 to reflect the expanded scope of Divisions 3.4.2 and 3.4.3 as a result of item 18 of the Update Determination (see below).

[18] Divisions 3.4.2 and 3.4.3

This item amends the existing method for the transport and injection of greenhouse gases captured for permanent storage to expand coverage of the methods to include greenhouse gas both captured for permanent storage, and captured for enhanced oil recovery, into a geological formation. Amendments made by the Update Determination do not otherwise alter the function of the methods. See further detail provided in the ‘Overview’ section of this Explanatory Statement above.

[19] At the end of paragraph 4.1(2)(b)

This item amends the Outline of Chapter 4 to reflect new methods for hydrogen production inserted by item 20 of the Update Determination (see below).

[20] At the end of Part 4.3

This item inserts new methods for the estimation of scope 1 emissions from the production of hydrogen from fossil fuel feedstocks where hydrogen is the main product at the facility.

Available methods are: Method 1 under section 4.62; Method 2 under section 4.63; Method 3 under section 4.64; and Method 4 under Part 1.3. These are based on existing methods for ammonia production.

See further detail provided in the 'Overview' section of this Explanatory Statement above.

[21] Subsection 5.17(2)

The NGER Technical Guidelines are no longer maintained by the Department and are superseded by guidance material published by the Regulator.

This item amends subsection 5.17(2) of the Measurement Determination to replace the existing reference to the NGER Technical Guidelines with references to a stand-alone guidance document to be published by the Regulator (*Landfill site plan and verification requirements (methods 2 and 3)*). The document can be obtained from http://www.cleanenergyregulator.gov.au.

[22] Subsection 5.17B(3)

The NGER Technical Guidelines are no longer maintained by the Department and are superseded by guidance material published by the Regulator.

This item amends subsection 5.17B(3) of the Measurement Determination to replace the existing reference to the NGER Technical Guidelines with references to a stand-alone guidance document to be published by the Regulator (*Landfill site plan and verification requirements (methods 2 and 3)*). The document can be obtained from http://www.cleanenergyregulator.gov.au.

[23] Subsection 8.6(1) (table items 33 and 34)

Part 8.3 of the Measurement Determination provides rules about estimating uncertainty when using Method 1 provisions.

This item amends section 8.6 (Assessment of uncertainty for estimates of carbon dioxide emissions from combustion of fuels) to update the names of items 33 and 34 of the table in 8.6(1) in light of changes made in the 2021 Regulations (see note on item 2 of the Update Determination above).

[24] Subsection 8.8(1) (table items 4 to 11)

Updates section 8.8 (Assessment of uncertainty for estimates of fugitive emissions) in light of updated methods set out in Part 3.3 of the Measurement Determination as amended by item 15 of the Update Determination.

[25] After section 9.13

This item inserts an application provision into Chapter 9 of the Measurement Determination providing that the amendments in the Update Determination apply in relation to the 2021-22 and subsequent financial years.

[26] Part 3 of Schedule 1 (table items 33 and 34)

Schedule 1 of the Measurement Determination lists energy content factors and emission factors associated with the combustion of different fuels.

This item updates the names of items 33 and 34 of Part 3 of that Schedule as a consequence of items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations (by which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and new terms *field condensate* and *plant condensate* are introduced based on guidance notes to the Australian Petroleum Statistics- see note on item 2 of the Update Determination above).

[27] Part 6 of Schedule 1

Part 6 of Schedule 1 of the Measurement Determination lists emission factors used to calculate indirect emissions from the consumption of electricity from the grid.

This item makes a regular annual update to those factors in light of the latest available emissions data.

[28] Part 3 of Schedule 3

Schedule 3 of the Measurement Determination lists carbon content factors of different fuels.

This item updates the names of items 33 and 34 of that Schedule in consequence of items 4, 5, 6 and 12 of Schedule 1 to the 2021 Regulations, in which the term *crude oil condensates* is repealed following industry feedback that it is not a commonly understood term and new terms *field condensate* and *plant condensate* are introduced based on guidance notes to the Australian Petroleum Statistics (see note on item 2 of the Update Determination above).

[29] After Schedule 3

Schedule 3 to the NGER Regulations formerly listed reportable data points relevant to methods and calculations contained in the Measurement Determination.

This item (with contemporaneous amendments to the NGER Regulations made by the 2021 Regulations moves these matters from their previous location in the NGER Regulations to Schedule 4 of the Measurement Determination Because the data points are a direct result of the methods set out in the Measurement Determination, this change will simplify interpretation of NGER Scheme instruments, and will reduce procedural complexity involved in updating the Schedule in accordance with regular updates to methods in the Measurement Determination.

Updates are also made to items in this Schedule to increase clarity and reflect updates to methods made by the Update Determination as described below.

Hydrogen Production (Part 4, Source 6)

Lists matters to be identified relevant to calculation of emissions under new hydrogen production methods inserted by item 20 of the Update Determination. This includes reporting of hydrogen produced from fossil fuel feedstocks or from electrolysers, differentiation hydrogen produced using the new method or produced from electrolysers without scope 1 emissions. The Matters to be identified also include the requirement to report carbon dioxide captured and transferred from the facility, such as for permanent storage or secondary uses.

Enhanced oil recovery (Part 2, Source 2ZH)

Lists matters to be identified relevant to estimation of emissions from the capture of greenhouse gases for EOR under Divisions 3.4.2 and 2.4.3 as amended by item 18 of the Update Determination. This includes the amount of greenhouse gases captured, imported and injected for EOR, the amount of emissions from injection and transportation, and the source of the emissions (for example, if the emissions used for EOR came from an ammonia facility or cement facility).

Oil and gas- fugitive emissions (Part 2)

Updates matters to be identified relevant to calculations in updated methods in Part 3.3 of the Measurement Determination as amended by item 15 of the Update Determination.

ATTACHMENT B

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 (2021 Update) Determination 2021

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 (2021 Update) Determination 2021* makes minor amendments to the *National Greenhouse and Energy Reporting (Measurement) Determination 2008* in order to:

- introduce a new method providing explicit reporting guidance for hydrogen production facilities whose primary product is hydrogen for use outside of the facility;
- expand on the method for estimating fugitive emissions from the transport and injection of greenhouse gases for Carbon Capture and Storage (CCS) to also include Enhanced Oil Recovery (EOR) where it is conducted for commercial reasons as part of oil and gas production;
- update methods for estimating fugitive emissions from oil and natural gas facilities to reflect the latest available research and reflect the results of Leak Detection and Repair (LDAR) programs;
- provide optional technology-specific methane emission factors for combustion of gaseous fuels;
- make other minor technical updates.

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 Angus Taylor
Minister for Energy and Emissions Reduction