



Explanatory Document

Exposure draft of the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Best Practice Emissions Intensities) Rules 2024*.

About this document

This document explains the draft amendments set out in the exposure draft *National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Best Practice Emissions Intensities) Rules 2024* (the draft Amendment).

Background

The Safeguard Mechanism

The Safeguard Mechanism provides a robust, legislated framework that limits the net emissions of around 215 large industrial facilities—those with more than 100,000 tonnes carbon dioxide equivalent each year. It sets legislated limits—known as baselines—on the greenhouse gas emissions of these facilities. These baselines will decline, predictably and gradually, on a trajectory consistent with achieving Australia’s emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050. The Safeguard Mechanism commenced in 2016. It was reformed in 2023 to ensure that covered facilities contribute to meeting these emission reduction targets, while strengthening their competitiveness as the world moves to net zero.

These reforms were implemented through the *Safeguard Mechanism (Crediting) Amendment Act 2023*, and the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reform) Rules 2023*, which amends the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015* (the Safeguard Rule). The Safeguard Rules provide detail on aspects of the Safeguard Mechanism, including the setting and decline of baselines, and arrangements for Safeguard Mechanism credit units (SMCs), which are issued to facilities with emissions below Safeguard baselines.

The reforms came into effect from 1 July 2023. Additional updates to production variables came into effect on 7 October 2023 and 26 April 2024. The update on 26 April 2024 also set the first tranche of international best practice benchmarks (referred to as ‘benchmarks’ or ‘best practice EI’), which were foreshadowed during the reform process.

The draft Amendment delivers within the carbon budget set under the *National Greenhouse and Energy Reporting Act 2007* (the NGER Act).

In summary, the draft Amendment:

- inserts 16 new benchmarks: processed natural gas (processing only), processed natural gas (integrated extraction and processing), liquefied natural gas (from unprocessed gas), ammonia, urea, manganese ore, lithium ore, non-metallic mineral quarrying, copper anode, primary nickel products from nickel bearing inputs, primary nickel products from imported

intermediate nickel products, intermediate nickel products from nickel bearing inputs, renewable aviation kerosene and renewable diesel;

- inserts two new production variables: phosphoric acid and rare earth processing;
- amends six existing production variables: processed natural gas (integrated extraction and processing), stabilised crude oil (integrated extraction and stabilisation, sodium cyanide, coke oven coke, continuously cast carbon steel products and ingots of carbon steel (manufacture of carbon steel products from cold ferrous feed), and primary steel;
- sets one default value: gaseous hydrogen; and
- inserts the requirement for the Clear Energy Regulator to publish the methods used by Safeguard Mechanism facilities to estimate each source of fugitive methane emissions from coal mining, oil and natural gas activities.

International best practice benchmarks

The Government consulted on *Guidelines for setting international best practice benchmarks* (the Guidelines) from July to August 2023. The Guidelines were finalised in November 2023 and published on the department's website¹. In April 2024, consistent with the Guidelines, 18 best practice emissions intensity numbers were set in the Safeguard Rules. The Government is consulting on a further tranche of benchmarks in this exposure draft to be set in mid-2024.

Consistent with the Guidelines, the Government will consider emerging international methane emissions standards in setting the best practice emissions intensity numbers for the production variables in the coal, oil and gas sectors. The Department has compared the standards set in the Oil and Gas Methane Partnership 2.0 to the relevant draft oil and gas benchmarks in the draft Amendment, finding they are more stringent than the emerging international methane emissions standards.

Production Variables

Production variables and default emissions intensity values are used to set existing facility baselines. They represent the output of a facility (e.g. tonnes of aluminium). Where it is impractical to use output for a production variable metric, a facility input, or intermediate product may be used as an alternative.

Production variable definitions and default emissions intensity values were determined in accordance with the *Framework for developing default production variables and emissions-intensity values* (the Framework Document)².

The draft Amendment makes technical changes to six existing production variable definitions and inserts two new production variables and one default value to ensure a comprehensive set of suitable production variables is in place for setting Safeguard Mechanism baselines. This is intended to ensure production variable definitions support incentives for decarbonisation.

¹ The Guidelines are available here: <https://www.dcceew.gov.au/climate-change/publications/benchmark-guidelines-setting-international-best-practice>

² In March 2024, the Framework Document was available at: www.dcceew.gov.au/climate-change/publications/framework-developing-production-variables-default-emissions-intensity-values

Other amendments

The draft Amendment introduces a new subsection that requires the Clean Energy Regulator to publish, by 15 April each year, the methods that each Safeguard Mechanism facility used to estimate each source of fugitive methane emissions from coal mining, oil and gas activities, for the previous financial year.

The draft Amendment is consistent with recommendations from the 2023 Climate Change Authority (CCA) review of the NGER scheme to further improve the transparency of reported emissions and builds on the enhanced data transparency measures introduced by the Government through the 2023 Safeguard Mechanism reforms.

The draft Amendment is also included in the public consultation on the 2024 Proposed Amendments to the NGER scheme, which covers a range of proposed amendments to improve the operation of the NGER scheme and transparency and accuracy of reported emissions. That public consultation can be accessed from the “Have Your Say” section of the department’s homepage.

Structure of the draft Amendment

The draft Amendment contains one schedule that amends the Safeguard Rules.

Notes on clauses

Clause 1: Name

This clause provides for the draft Amendment, when enacted, to be cited as the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Best Practice Emissions Intensities) Rules 2024*.

Clause 2: Commencement

The table in this clause provides for the commencement of the Schedule in the draft Amendment, which is on the day after it is registered.

Clause 3: Authority

This clause states the authority under which this instrument is made.

Clause 4: Schedules

This is a machinery clause that gives effect to the provisions in the Schedule to the draft Amendment according to its terms.

Schedule 1—Amendments

Outline

To enable the calculation of baselines under the Safeguard Mechanism reforms, this Schedule inserts best practice emissions intensity values, updates production variable definitions and ensures that production variable and default emissions intensity value are robust and effective in the context of the Safeguard Mechanism reforms and declining baselines. Application and transitional provisions set out the implementation of the changes.

Item 1 - Application for determination that a facility is a trade-exposed baseline-adjusted facility

Item 1 repeals and substitutes section 39 to insert additional requirements for non-manufacturing facilities when calculating their revenue for the purpose of applying for a trade-exposed baseline

adjusted determination. In addition to requiring the use of the Australian Accounting Standards as in force at the end of the first financial year, the rule amendment requires non-manufacturing facilities to also calculate revenue in accordance with the earnings before interest and tax (EBIT) Guidelines in force at that time, with the EBIT Guidelines prevailing to the extent of any inconsistency. All previous requirements for non-manufacturing facilities when calculating revenue have been retained.

This requirement is being introduced as the Australian Accounting Standards alone do not provide sufficient direction to enable non-manufacturing facilities to accurately calculate revenue at a facility level or sufficiently accommodate a range of organisational structures. Although the EBIT Guidelines were originally intended only to be used by manufacturing facilities to calculate their EBIT, the guidance provided is agnostic to whether a facility is a manufacturing facility or non-manufacturing facility. The EBIT Guidelines therefore provide an appropriate reference for non-manufacturers to ensure revenue is calculated accurately.

Item 2 – Publication

This item introduces a new subsection to section 72 that requires the Clean Energy Regulator to publish, by 15 April each year, the methods that each Safeguard Mechanism facility used to estimate each source of fugitive methane emissions from coal mining, oil and natural gas activities, for the previous financial year.

Item 3 – Ammonia

Item 3 inserts a draft best practice emissions intensity number for ‘ammonia’ into Schedule 1.

Consistent with the Guidelines, the number is based on a supplementary approach as suitable global data was not available and the relevant domestic data set produced a number that was lower than the equivalent number for hydrogen production. This was considered inappropriate, as ammonia production requires hydrogen to be produced as an intermediate step.

The supplementary approach uses the same engineered calculation that was used for the hydrogen best practice number. It is based on gas-fuelled steam methane reforming technology, which was assessed as being the lowest emissions-intensity commercial hydrogen production (that is, not a pilot or demonstration plant and not receiving significant subsidies). The engineered number assumes a best practice efficiency of the steam methane reforming reaction of 80%; a methane destruction efficiency of 98%; and no carbon capture and storage.

It also assumes the process for transforming hydrogen to ammonia is a combination of waste heat recovery and electrification. If there are additional emissions from generating electricity at the facility, this is covered by the on-site electricity production variable. If grid electricity is used, these are scope 2 emissions and not covered by the Safeguard Mechanism. The treatment of on-site electricity generation is consistent for all facilities across the Safeguard Mechanism.

As the calculation of the number did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 4 – Urea

Item 4 inserts a draft best practice emissions intensity number for ‘urea’ into Schedule 1.

Consistent with the Guidelines, the number is based on a supplementary approach as suitable global or domestic data was not available.

The supplementary approach uses an engineered calculation. The calculation assumes the best practice heating process is electric or waste heat recovered, while compression is fuelled by natural

gas. It assumes a best practice compressor efficiency of 85% for the compression of ammonia and carbon dioxide in the urea making process.

As the calculation of the number did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 5 – Phosphoric acid

Item 5 inserts Part 9A into Schedule 1 to include a new production variable for ‘phosphoric acid’, which is applicable to a facility that conducts the activity of producing phosphoric acid from phosphate bearing minerals. The definition has been determined consistent with the Framework Document. The metric is kilolitres of 100% equivalent phosphoric acid contained in a solution where the concentration of phosphoric acid is greater than 70% by weight.

The production variable is not applicable to a facility which further processes the phosphoric acid into monoammonium phosphate or diammonium phosphate, as the respective production variables include the production of phosphoric acid.

Consistent with the Guidelines, a draft best practice emissions intensity number for ‘phosphoric acid’ is also included in this item. The number is based on suitable data from five international facilities located in the United States. According to the Guidelines, the combined production of these five facilities should be compared to the relevant Australian production to confirm the selection of the facilities. However, for ‘phosphoric acid’ there is no relevant Australian production, therefore five facilities are used.

The Guidelines state that adjustments for Australian conditions will be made if the relevant international facility has characteristics impossible to replicate in Australia, and this has a material impact on achieving best practice emissions intensity; and that geology and climate are relevant. Adjustments for Australian conditions were not required given the geology and climate of the international facilities were equivalent to conditions in Australia.

Item 6 – Sodium Cyanide

This item updates the definition of sodium cyanide to change the term ‘hydrogen isocyanine’ where it appears in the definition to ‘hydrogen cyanide’.

Item 7 – Manganese ore

Item 7 inserts a draft best practice emissions intensity number for ‘manganese ore’ into Schedule 1. The number is based on the top 10 per cent of Australian industry performance, as Australian mines were found to be less emissions-intensive than international mines with suitable data.

Consistent with the Guidelines, an emissions intensity was calculated as the production-weighted average of the data from the two lowest emissions intensity mines with suitable data in the world. This consisted of one mine in Australia and one mine in South Africa. This emissions intensity was higher than the emissions intensity of the top 10 per cent of Australian performance, which was calculated using the same data that was used to calculate the default emissions intensity for run-of-mine manganese ore. As such, the emissions intensity corresponding to Australian performance sets the draft best practice number for ‘manganese ore’.

As the calculation of the number did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 8 – Lithium ore

Item 8 inserts a draft best practice emissions intensity number for 'lithium ore' into Schedule 1. Consistent with the Guidelines, the best practice number is based on the top 10 per cent of Australian industry performance, as suitable data could not be found globally for lithium ore mining. The number was calculated using the same data that was used to calculate the default number for 'lithium ore'.

As the calculation of the number did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 9 – Reference to reservoir CO₂

Item 9 updates the definition of the 'stabilised crude oil (integrated extraction and stabilisation)' production variable to refer to both the reservoir CO₂ production variables in sections 35 and 35A of Schedule 1.

Item 10 – Processed natural gas (processing only)

Item 10 inserts a draft best practice emissions intensity number for 'processed natural gas (processing only)' into Schedule 1. Consistent with the Guidelines, the number is based on a production-weighted average of the emissions intensity of three gas processing plants. Two are in Norway and one is in the United Kingdom. These were found to be the least emissions-intensive sites globally with suitable data.

The production of the lowest emissions intensity facility was greater than Australia's relevant total production. While the lowest emissions intensity facility could therefore have been used on its own, consistent with the Guidelines, additional facilities were used for the calculation to produce a more representative number. Two additional facilities were included because the production of the next lowest emissions intensity facility was comparatively very small so did not materially contribute to a more representative number.

The Guidelines state that adjustments for Australian conditions will be made if the relevant international facility has characteristics impossible to replicate in Australia, and this has a material impact on achieving best practice emissions intensity; and that geology and climate are relevant. Given there is no universal correlation between the climate temperature and energy requirement for gas processing, on balance it was concluded that adjusting for Australian climatic conditions is unnecessary for 'processed natural gas (processing only)'.

The best practice number published in the draft Amendment (0.000243) is increased from the number that was consulted on in the December/January exposure draft of the Safeguard Rules (0.000178) due to refining the information on the processing facilities that process gas from multiple gas fields.

Item 11 – Processed natural gas (integrated extraction and processing) – production variable definition

Item 11 amends the integrated natural gas production variable ('processed natural gas (integrated extraction and processing)'), so that it can be used together with the non-integrated natural gas production variable ('processed natural gas (processing only)'). This accommodates a facility that processes gas extracted at the facility *and* third-party gas.

Item 12 – Processed natural gas (integrated extraction and processing) – best practice number

Item 12 inserts a draft best practice emissions intensity number for ‘processed natural gas (integrated extraction and processing)’ into Schedule 1. The number is based on a production-weighted average of the emissions intensity of two gas processing plants in Norway and the United Kingdom. These were found to be the least emissions-intensive sites globally with suitable data.

The production of the lowest emissions intensity facility was less than 25 per cent of relevant Australian production and including two facilities meant that total production was greater than Australia’s total production. Two facilities were used for the calculation to produce a more representative number.

The Guidelines state that adjustments for Australian conditions will be made if the relevant international facility has characteristics impossible to replicate in Australia, and this has a material impact on achieving best practice emissions intensity; and that geology and climate are relevant. The number has not been adjusted for Australian conditions, since geological conditions enabling sufficient pressure to extract the resource without compression are replicable in Australia’s offshore assets.

The best practice number published in the draft Amendment (0.000394) is increased from the number that was consulted on in the December/January exposure draft of the Safeguard Rules (0.000319) due to more complete information on a facility undertaking drilling alongside extraction.

Item 13 – Liquefied natural gas (from unprocessed natural gas)

Item 13 inserts a draft best practice emissions intensity number for ‘liquefied natural gas (from unprocessed natural gas)’ into subsection 32(6) of Schedule 1.

Section 4.7 of the Guidelines provides for supplementary approaches to be considered in circumstances where historical data is either not available, or not suitable for use in calculating benchmarks. Suitable data could not be found globally for this production variable, so consistent with the Guidelines, a supplementary approach was taken. As such, the best practice emissions intensity number was calculated by taking the sum of the best practice emissions intensity numbers for ‘natural gas processing (processing only)’ and for ‘liquefied natural gas (from processed natural gas)’.

The best practice number published in the draft Amendment (0.000876) is increased from the number that was consulted on in the December/January exposure draft of the Safeguard Rules (0.000801). The previous value had taken the sum of the best practice emissions intensity numbers for ‘natural gas processing (integrated extraction and processing)’ and for ‘liquefied natural gas (from processed natural gas)’. The number should not include the emissions from gas extraction. The change is also due to subsequent changes in the best practice numbers of these two production variables.

Item 14 – Definition of coke oven coke

This item updates the definition of coke oven coke so that it can be produced from material other than coal. This enables coke oven coke to be produced from feedstocks with lower emissions intensity, such as biomass, charcoal and coal blends.

Item 15 – Primary steel

This item inserts subsection (5) to the ‘primary steel’ production variable.

This provision adjusts the metric for tonnes of 'primary steel' production depending on the level of cold ferrous feed. The new subsection addresses a potential situation when iron ore feeds and cold ferrous feed will be co-processed, potentially beyond the approximate 20 per cent scrap limit for conventional steelmaking.

The subsection would only be relevant when the level of scrap exceeds 30 per cent. If this occurred, then the production metric for primary steel would be reduced by the amount of cold ferrous feed exceeding 30 per cent and the balance of any steel production added to the cold ferrous feed production variable. In this way, there is no limit on scrap usage in practice and all steel production would be assigned to one of the steel production variables.

The limit of 30 per cent was identified as the theoretical upper limit on cold ferrous feed inclusion in a traditional blast furnace – basic oxygen furnace steelmaking process.

These provisions are needed so that the baseline allocation for primary steel, which includes making iron from iron ore feeds, is not over-allocated to steel made from cold ferrous feed. This is also consistent with the Safeguard Mechanism defining two different production variables for primary steel and cold ferrous feed steel.

Paragraphs (a) and (b) clarify what is considered cold ferrous feed, which is either feed imported to the facility or feed produced at the facility, as long as it does not count towards another production variable. This addresses the situation that iron or steel produced at the facility might be used as cold ferrous feed in the steelmaking process (but should not be counted towards two production variables). Note 2 clarifies that any iron produced at the facility should not count as cold ferrous feed because ironmaking is part of the primary steel manufacturing activity.

The parameter $CCF_{adj}\%$ is the key element of the equation in subsection (5) and clarifies that it is the iron content in the feeds that is important. This recognises that iron ore and cold ferrous feeds can have various levels of iron. The $CCF_{adj}\%$ is calculated as the percent of the iron content of the cold ferrous feed in the total iron content of the combined iron ore and cold ferrous feeds, adjusted by subtracting 30%. The example illustrates how this equation works. Note 1 highlights that any steel that does not count towards the primary steel metric due to subsection (5) automatically meets the requirements of the cold ferrous feed steel production variable in section 44.

Subsection (1) is updated to indicate that the metric is subject to the adjustments in both subsections (4) and (5). Subsection (4) is the existing adjustment to the metric as a result of imported coke oven coke, which if applicable, should be done before applying the adjustment in subsection (5).

Item 16 – Continuously cast carbon steel products and ingots of carbon steel (manufacture of carbon steel from cold ferrous feed)

This item updates the cold ferrous feed steel production variable in section 43 to reflect the updates to the primary steel production variable in item 15. The purpose of the updates is to ensure that any steel produced as part of the primary steel manufacturing activity that does not count towards the primary steel metric because the level of cold ferrous feed (by iron content) exceeded 30 per cent of total feed, instead counts towards the cold ferrous feed steel production variable.

Subsections (1) and (2) are updated so that the metric applies to both the steel produced from the manufacture of carbon steel from cold ferrous feed at the facility (consistent with the original production variable), as well as the relevant steel produced from the primary steel manufacturing

activity. The relevant steel is that for which subsection 41(5) applies, which relates to the adjustment for the level of cold ferrous feed co-processed with iron feed material.

Subsection (3) sets out that the metric should be the sum of the tonnes of steel produced as part of carrying on the manufacture of carbon steel from cold ferrous feed at the facility (such as from an electric arc furnace dedicated to scrap recycling), plus any steel from carrying on the primary steel manufacturing activity that did not meet the requirements of subsection 41(5).

Item 17 – Non-metallic mineral quarrying

Item 17 inserts a draft best practice emissions intensity number for ‘non-metallic mineral quarrying’ into Schedule 1.

Consistent with the Guidelines, the number is based on the top 10 per cent of Australian industry performance, as Australian mines were found to be less emissions-intensive than international mines with suitable data. The number was calculated using the same data that was used to calculate the default emissions intensity number for ‘non-metallic mineral quarrying’.

As the calculation did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 18 – Copper anode

Item 18 inserts a draft best practice emissions intensity number for ‘copper anode’ into Schedule 1. The number is based on a production-weighted average of the emissions intensity of two copper smelters in Spain and Australia. These were found to be the least emissions-intensive sites globally with suitable data.

The production of the lowest emissions intensity facility was less than 25 per cent of relevant Australian production and including two facilities meant that total production was greater than 25 per cent of relevant Australian production. Two facilities were used for the calculation to produce a more representative number.

The Guidelines state that adjustments for Australian conditions will be made if the relevant international facility has characteristics impossible to replicate in Australia, and this has a material impact on achieving best practice emissions intensity; and that geology and climate are relevant. The draft number has not been adjusted for Australian conditions, since the conditions at the relevant international facility are comparable to Australian conditions.

Item 19 – Primary nickel products from nickel bearing inputs

Item 19 inserts a draft best practice emissions intensity number for ‘primary nickel products from nickel bearing inputs’ into Schedule 1.

Consistent with the Guidelines, the number is based on a supplementary approach, calculated as the sum of the best practice emissions intensity numbers for ‘intermediate nickel products from nickel bearing inputs’ and ‘primary nickel products from imported intermediate nickel products’

Suitable data was found for international facilities with lower emissions intensities. However, using the data for these facilities would result in a lower number for ‘primary nickel products from nickel bearing inputs’ compared to ‘primary nickel products from imported intermediate nickel products’. The Guidelines state that international best practice benchmark emissions intensities should be set in a way that is consistent with four principles that underpin the Framework Document, namely that production variables and emissions intensities should be effective, consistent, practical and robust. Consistent with the Guidelines, the resulting number is not proposed to be used, as publishing a

lower number for the activity of producing primary nickel from nickel bearing inputs compared with producing primary nickel from intermediate nickel products would not treat facilities and industries consistently.

As the calculation did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 20 – Primary nickel products from imported intermediate nickel products

Item 20 inserts a draft best practice emissions intensity number for ‘primary nickel products from imported intermediate nickel products’ into Schedule 1. Consistent with the Guidelines, the number is based on the top 10 per cent of Australian industry performance, as suitable data could not be found globally for ‘primary nickel products from imported intermediate nickel products’. The key challenge related to accurately apportioning emissions among outputs of different nickel concentration at a nickel refinery.

The number was calculated using the same data that was used to calculate the default emissions intensity number for ‘intermediate nickel products from nickel bearing inputs’.

As the calculation did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 21 – Intermediate nickel products from nickel bearing inputs

Item 21 inserts a draft best practice emissions intensity number for ‘intermediate nickel products from nickel bearing inputs’ into Schedule 1. Consistent with the Guidelines, the number is based on the top 10 per cent of Australian industry performance, as suitable data could not be found globally for ‘intermediate nickel products from nickel bearing inputs’. The key challenge related to accurately apportioning emissions among outputs produced from different feedstocks at a nickel refinery.

The number was calculated using the same data that was used to calculate the default emissions intensity number for ‘intermediate nickel products from nickel bearing inputs’.

As the calculation did not depend on international data, consideration of an adjustment for Australian conditions was not required.

Item 22 – Gaseous hydrogen

Item 22 inserts a draft default emissions intensity number for ‘gaseous hydrogen’ into Schedule 1.

There was limited information of domestic exported gaseous hydrogen production at the time of the calculation however it was noted gaseous hydrogen would be produced in significant quantities as an intermediate product at Australian fertiliser and refinery plants. Given the lack of emissions and production data, the number was calculated consistent with the *Guidance on supplementary approaches to determine default emissions intensity values*³, which is the companion document to the Framework Document. For consistency, the default number was calculated using the same supplementary approach used to set the best practice emissions intensity number.

The supplementary approach uses an engineering calculation based on gas-fuelled steam methane reforming technology, which is the applicable technology for fertiliser production and refineries. The best practice number assumed a best practice efficiency of the steam methane reforming reaction of

³ The supplementary approaches are described in a guidance document published on the Department’s website: www.dcceew.gov.au/climate-change/publications/framework-developing-production-variables-default-emissions-intensity-values

80%; a methane destruction efficiency of 98%; and no carbon capture and storage. The default number assumed an efficiency at the lower end of theoretical performance at 65%; a methane destruction efficiency of 98%; and no carbon capture and storage.

Item 23 – Renewable aviation kerosene

Item 23 inserts a draft best practice emissions intensity number for ‘renewable aviation kerosene’ into Schedule 1.

Section 4.7 of the Guidelines provides for supplementary approaches to be considered in circumstances where historical data is either not available, or not suitable for use in calculating benchmarks. Suitable data was not available for this production variable, given the production of renewable aviation kerosene is globally an emerging industry, so a supplementary approach is proposed.

Benchmarking data from the Low Carbon Fuel Standard (LCFS), administered by the California Air Resources Board (CARB), was used for the calculation. The LCFS publishes facility level ‘carbon intensity’ for the entities producing sustainable aviation fuel (SAF). The ‘carbon intensity’ is calculated, reported and verified for each type of feedstock the facility processes. The data does not include production information so was not suitable for the calculation approach set out in the Guidelines.

An estimate for facility level emissions intensity was determined by averaging the carbon intensity of the feedstocks used at each facility. The benchmark was calculated by taking the average of the facility level emissions intensity of the three facilities with suitable data.

The Guidelines state that adjustments for Australian conditions will be made if the relevant international facility has characteristics impossible to replicate in Australia, and this has a material impact on achieving best practice emissions intensity; and that geology and climate are relevant. These factors do not materially impact the emissions intensity of SAF production, so an adjustment was not made.

Item 24 – Renewable diesel

Item 24 inserts a draft best practice emissions intensity number for ‘renewable diesel’ into Schedule 1.

Section 4.7 of the Guidelines provides for supplementary approaches to be considered in circumstances where historical data is either not available, or not suitable for use in calculating benchmarks. Suitable data was not available for this production variable, given the production of renewable diesel is globally an emerging industry, so a supplementary approach is proposed.

Benchmarking data from the Low Carbon Fuel Standard (LCFS), administered by the California Air Resources Board (CARB), was used for the calculation. The LCFS publishes facility level ‘carbon intensity’ for the entities producing renewable diesel. The ‘carbon intensity’ is calculated, reported and verified for each type of feedstock the facility processes. The data does not include production information so unsuitable for the calculation approach set out in the Guidelines.

An estimate for facility level emissions intensity was determined by averaging the carbon intensity of the feedstocks used at each facility. The benchmark was calculated by taking the average of the facility level emissions intensity of the five facilities with suitable data that had the lowest emissions intensity of renewable diesel production.

The Guidelines state that adjustments for Australian conditions will be made if the relevant international facility has characteristics impossible to replicate in Australia, and this has a material impact on achieving best practice emissions intensity; and that geology and climate are relevant. These factors do not materially impact the emissions intensity of renewable diesel production, so an adjustment was not made.

Item 25 – Rare earth processing

Item 25 inserts a new production variable ‘rare earth processing’ and corresponding draft best practice emissions intensity number in Part 51 of Schedule 1. Consistent with the Framework Document, the production variable is applicable to a facility that conducts the activity of producing separated rare earth products through the transformation of metal ore. The metric for the production variable is total rare earth oxide (TREO) equivalent contained in separated rare earth products that have weight by weight TREO greater than 95 per cent and are suitable quality and concentration as an input to a metallisation process.

The part also includes definitions for the terms ***rare earth elements***, ***rare earth oxide***, and ***separated rare earth products***.

The draft best practice emissions intensity value has been calculated based on the suitable data for an international facility in Malaysia. Additionally, consistent with the Guidelines, to ensure the best practice value is representative a second facility under development in Australia was included based on forecast data provided as part of its environmental approvals. Using forecast data is an approach described in section 4.7 of the Guidelines on supplementary approaches.

The draft number has not been adjusted for Australian conditions, since the geologic conditions at the relevant international facility are comparable to Australia in terms of processing metal ores rather than ion absorption clays.

Feedback is sought on the draft provisions in Schedule 1.