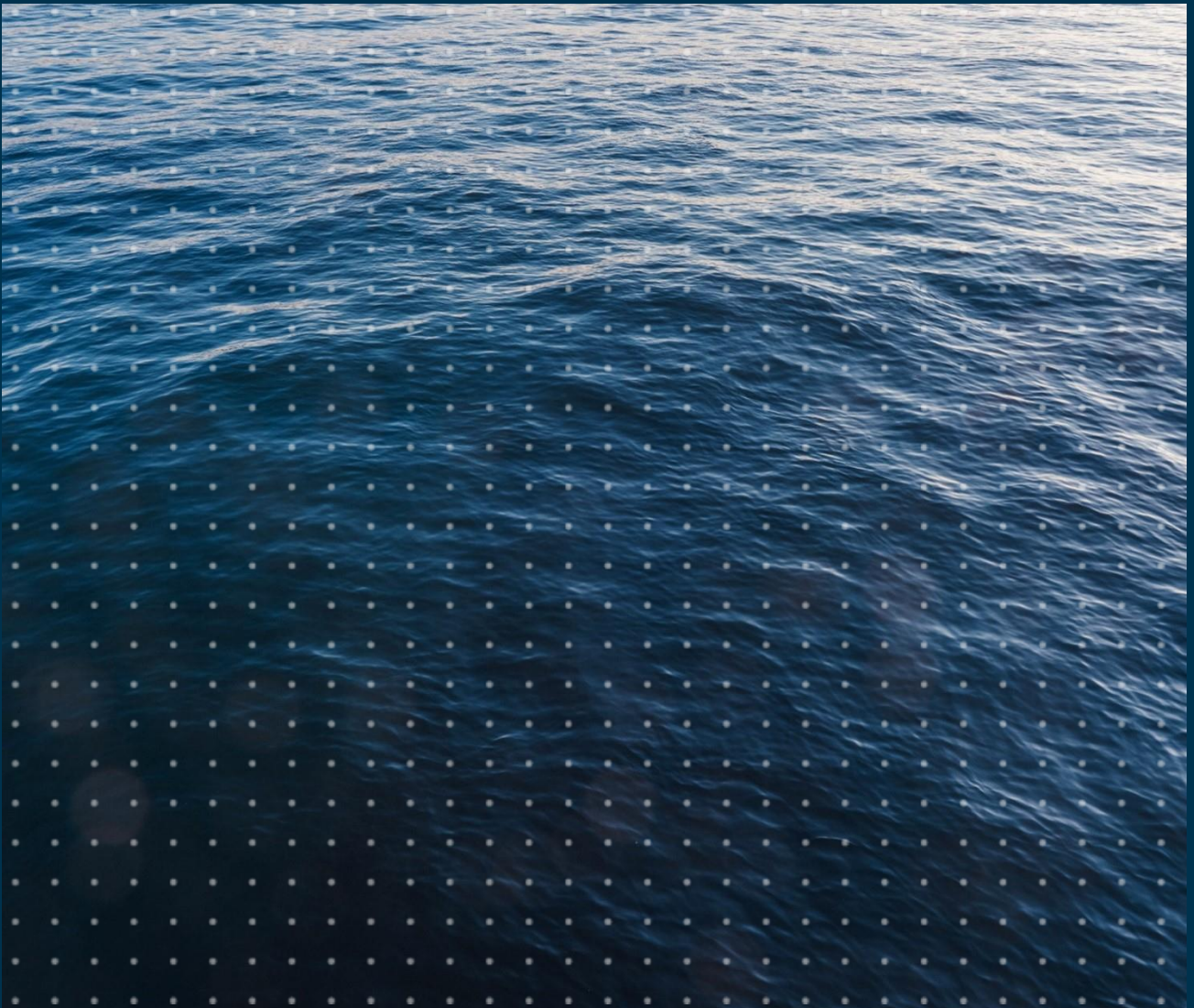




Environment Protection Authority

Guideline on offsetting requirements for electricity firming infrastructure

October 2023



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This guideline outlines the role of the NSW Environment Protection Authority (EPA) as a regulator under the *Electricity Infrastructure Investment Act 2020* (EII Act) and *Electricity Infrastructure Investment Regulation 2021* (EII Regulation).

It also provides guidance to long-term energy service operators on requirements they must comply with under Part 12 of the EII Regulation.

The EPA's role includes calculating and comparing greenhouse gas emissions from electricity firming infrastructure facilities with greenhouse gas emissions from the NSW grid, to determine if offsets need to be procured and surrendered for the facility. The EPA must also report on offset obligations and whether they have been satisfied.

Glossary

Term	Definition
Annuity payment	Additional operational revenue generated by a facility.
Australian carbon credit units (ACCUs)	Units issued by the Clean Energy Regulator (CER) to a person or company looking to offset their carbon footprint or meet emissions reduction obligations. ACCUs can be traded and sold by that person or company. Each ACCU represents one tonne of carbon dioxide (1tCO ₂ -e) that is not released into the atmosphere as a consequence of eligible activities undertaken under the Australian Government's Emissions Reduction Fund.
Australian Energy Regulator (AER)	Established by section 44AE of the <i>Competition and Consumer Act 2010</i> (Cth) and appointed as regulator under the <i>Electricity Infrastructure Investment Act 2020</i> (NSW) to carry out specific functions under that Act.
Australian National Registry of Emissions Units (ANREU)	An electronic registry administered by the Clean Energy Regulator and used to record the issuance, holding, transfer and acquisition of ACCUs.
Clean Energy Regulator (CER)	An independent statutory authority established under the <i>Clean Energy Regulator Act 2011</i> (Cth). The functions of the CER include contributing towards the achievement of Australia's greenhouse gas emissions targets.
Consumer Trustee	AEMO Services Ltd, in its capacity as the NSW Consumer Trustee appointed by the Minister under the <i>Electricity Infrastructure Investment Act 2020</i> (EII Act), s 60.
Demand response	Energy consumers reduce or shift their use of power from the NSW grid to free up electricity during peak periods or periods of high demand.
Demand response long-term energy service agreement (LTESA)	Consumers paid to reduce their aggregated loads on the NSW grid, scheduled through the Wholesale Demand Response mechanism.
Designated generation facilities	Has the same meaning as in the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth). The principal activity of these facilities is electricity production.
EII Act	<i>Electricity Infrastructure Investment Act 2020</i> (NSW)
EII Regulation	<i>Electricity Infrastructure Investment Regulation 2021</i> (NSW)
Electricity Infrastructure Fund	A fund established and maintained by the Scheme Financial Vehicle under Part 7 of the EII Act for the purposes of the EII Act. Payments into and out of the fund are prescribed by sections 54 and 55 of the EII Act.
Emissions Reduction Fund	A scheme enacted through the <i>Carbon Credits (Carbon Farming Initiative) Act 2007</i> (Cth) and the Carbon Credits (Carbon Farming Initiative) Rule 2015 (Cth) which offers landholders, communities and businesses the opportunity to run projects in Australia that avoid the release of greenhouse gas emissions or remove and sequester carbon from the atmosphere.
Electricity firming infrastructure or firming infrastructure	Electricity generating infrastructure that is contracted under a Firming LTESA, that can deliver electricity to the market when demand is high or renewable energy is not sufficient to meet demand.
Emissions intensity	Amount of direct greenhouse gas emissions generated per unit of electricity (tCO ₂ -e/MWh)
Firming long-term energy service agreement (LTESA)	A financial derivative contract between the long-term energy service (LTES) operator and the Scheme Financial Vehicle specifying the electricity generating infrastructure to be constructed and operated by the LTES operator and providing an LTES operator with a series of options to access a variable annuity payment. If an option is

Term	Definition
	exercised, the annuity payment will be in the form of a top up to net operational revenues achieved by the project.
Financial Trustee	The Financial Trustee is appointed by the Consumer Trustee to administer the Scheme Financial Vehicle (SFV) pursuant to the EII Act, section 61.
Greenhouse gas (GHG)	Has the same meaning as in section 7 of the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth). GHGs include carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons and prescribed gases.
Independent Pricing and Regulatory Tribunal (IPART)	A tribunal established under the <i>Independent Pricing and Regulatory Tribunal Act 1992</i> (NSW) and appointed as regulator under the EII Act to carry out specific functions under that Act, including the preparation of an annual report containing information about the calculation, procurement, surrender and payment for offset units under Part 12 of the EII Regulation.
LTES operator	Party responsible for the operation and management of firming infrastructure in connection with a Firming LTESA
Minister	NSW Minister for Energy
National Greenhouse and Energy Reporting (NGER) scheme	A national scheme enabling reporting and publishing of NGER data by all registered corporations and designated generation facilities. NGERs is established under the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth) and administered by the CER.
National Greenhouse and Energy Reporting (NGER) scheme data	Information about greenhouse gas emissions, energy production and energy consumption reported under the NGER scheme. The CER is required under the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth) to publish NGER data on its website by 28 February each year.
NSW carbon credit units	ACCUs for eligible offset projects in NSW as defined in clause 60 of the Electricity Infrastructure Investment Regulation 2021.
NSW designated generation facilities	Has the same meaning as in Part 12 of the EII Regulation, being designated generation facilities connected to the NSW region of the national electricity market.
NSW grid emissions intensity or NSW emissions intensity	Greenhouse gas emissions intensity of the NSW electricity grid
NSW Environment Protection Authority (EPA)	A statutory authority constituted under the <i>Protection of the Environment Administration Act 1991</i> and a regulator under the EII Act for the exercise of functions relating to firming infrastructure under Part 12 of the EII Regulation.
Offset units	NSW carbon credit units or other carbon credit units approved by the EPA in its role as regulator as defined in clause 60 of the EII Regulation.
Scheme Financial Vehicle (SFV)	A company limited by shares that is established and administered by the financial trustee under the EII Act, section 62. The SFV establishes and maintains the Electricity Infrastructure Fund and is the counterparty to Firming LTESAs. The role and functions of the SFV are defined in section 62 of the EII Act.
Scope 1 greenhouse gas emissions or scope 1 emissions	Greenhouse gas emissions released into the atmosphere as a direct result of an activity or series of activities (including ancillary activities) that constitute a facility under the <i>National Greenhouse and Energy Reporting Act 2007</i> (Cth).
Secondary market	The secondary market consists of financial institutions, traders, agents and installers, parties that are involved in the buying and selling of renewable energy certificates or ACCUs between private entities.
Spot price	The price of an ACCU on the secondary market at which private entities agree to trade ACCUs at the current market price.

1. Introduction

An objective of the *Electricity Infrastructure Investment Act 2020* (the EII Act) is to improve the affordability, reliability, security and sustainability of electricity supply in NSW.¹ One way to improve reliability is by using electricity firming infrastructure (referred to as ‘firming infrastructure’), which is infrastructure that can deliver electricity to the market when energy is not enough to meet demand.

Operators of eligible firming infrastructure enter into long-term energy service (LTES) agreements with the Scheme Financial Vehicle. These operators must comply with greenhouse gas emissions and offsetting requirements under the *Electricity Infrastructure Investment Regulation 2021* (EII Regulation). The NSW Environment Protection Authority (EPA) is the regulator for these requirements.

1.1. Requirements under Part 12 of the EII Regulation

Part 12 of the EII Regulation requires the EPA to calculate the greenhouse gas emissions intensity of the NSW electricity grid (grid emissions intensity) and the greenhouse gas emissions intensity of specific firming infrastructure facilities, for each calendar year. Where a firming infrastructure facility’s emissions intensity is above that of the NSW grid, the EPA is required to calculate the number of offset units that must be procured or surrendered.

Part 12 of the EII Regulation requires the LTES operator to procure and surrender offset units if required. Alternatively, if NSW offset units are unavailable to procure, the LTES operator is required to pay the costs for the EPA, or another entity acting on behalf of the EPA, to procure and surrender appropriate offset units.

1.2. Who does this guideline apply to?

This guideline applies to facilities that have signed a Firming LTESA with the Scheme Financial Vehicle.

The guide does not apply to:

- battery energy storage systems (as the emissions intensity is taken to be zero);² and
- LTES operators who have entered into Demand Response LTESAs.

¹ Section 3, Electricity Infrastructure Investment Act 2020

² Clause 67, Electricity Infrastructure Investment Regulation 2021

2. Roles and responsibilities

2.1. EPA's role

Part 12 of the EII Regulation requires certain conditions to be included in LTES agreements for firming infrastructure. These include conditions that will contribute to reducing scope 1 greenhouse gas emissions in the NSW electricity sector.³

The EPA is the regulator for functions under Part 12 of the EII Regulation that relate to firming infrastructure.⁴ This guideline outlines how the EPA will meet its obligations. The EPA's key obligations include:

- calculating the annual emissions intensity of the NSW grid according to the methodology in clause 66(2) of the EII Regulation
- calculating the annual emissions intensity of a firming infrastructure facility and comparing it to the NSW grid emissions intensity according to the methodology in clause 66(3) of the EII Regulation
- determining if a firming infrastructure facility has met its emissions requirements, and if not, calculating the number of offsets a facility must procure and surrender according to the methodology set out in clause 66(4) of the EII Regulation
- estimating the cost of offsets, in the event the EPA needs to procure them
- procuring and surrendering offsets if an LTES operator is not able to do so because NSW carbon credit units⁵ are not available
- monitoring firming infrastructure operators' compliance with their obligations under Part 12 of the EII Regulation
- reporting to the Independent Pricing and Regulatory Tribunal on the offsets procured and surrendered and any payments made for the purpose of offset procurement.

³ Clause 61, Electricity Infrastructure Investment Regulation 2021

⁴ Clause 41A, Electricity Infrastructure Investment Regulation 2021

⁵ These are ACCUs which are based in NSW

3. Requirements for firming infrastructure

3.1. Emissions intensity – requirements

Before 2036, firming infrastructure must have a greenhouse gas emissions intensity lower than the most recent emissions intensity for the NSW grid, calculated over the calendar year.

To determine if firming infrastructure's emissions intensity is lower or higher than the NSW grid emissions intensity, the EPA will calculate:

- the emissions intensity for the NSW grid (in total) for the calendar year,⁶ and
- the emissions intensity for individual firming infrastructure for the calendar year.⁷

If the EPA finds that the firming infrastructure emissions intensity is **lower** than the NSW grid emissions intensity, no offsets are required.

If the EPA finds that the emissions intensity for a firming infrastructure facility is **higher** than the NSW grid emissions intensity, the LTES operator must procure and surrender offset units as calculated by the EPA.⁸

On or after 1 January 2036, firming infrastructure must achieve net zero for annual scope 1 emissions.⁹

3.2. Emissions intensity – data source

The EPA uses data reported to the Clean Energy Regulator under the *National Greenhouse and Energy Reporting Act 2007* to calculate emissions intensity (wherever possible). Corporations that meet facility or corporate group thresholds¹⁰ are required to report under this Act.

If National Greenhouse and Energy Reporting data is not available, e.g., if a specific firming infrastructure facility does not trigger reporting under it, the EPA will request data directly from the LTES operator. The request will seek data for:

- scope 1 emissions in tonnes of carbon dioxide equivalent for the requested year,
- energy produced/electricity generated for the previous year either in gigajoules (GJ) or megawatts per hour (MWh)

As specified in their LTES agreement, the LTES operator must comply with the EPA's information request within the timeframe and by the method specified in the request. The EPA's information request will be sent via email to the LTES operator's address for service and limited to data required for the EPA to undertake calculations under Part 12 of the EII Regulation.

⁶ Clause 65(1)(a), Electricity Infrastructure Investment Regulation 2021

⁷ Clause 65(1)(b), Electricity Infrastructure Investment Regulation 2021

⁸ Clause 65(1)(c), Electricity Infrastructure Investment Regulation 2021

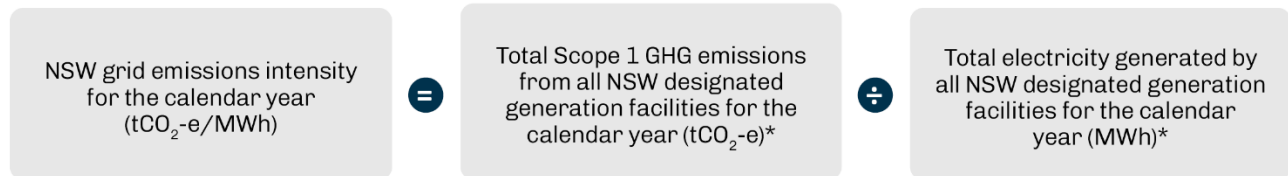
⁹ Clause 65(2), Electricity Infrastructure Investment Regulation 2021

¹⁰ <https://www.cleanenergyregulator.gov.au/NGER/Reporting-cycle/Assess-your-obligations/Reporting-thresholds#n1>

4. Calculations – emissions intensity

4.1. Emissions intensity for the NSW grid

The EPA will calculate the emissions intensity of all NSW electricity generation facilities using the following methodology.¹¹

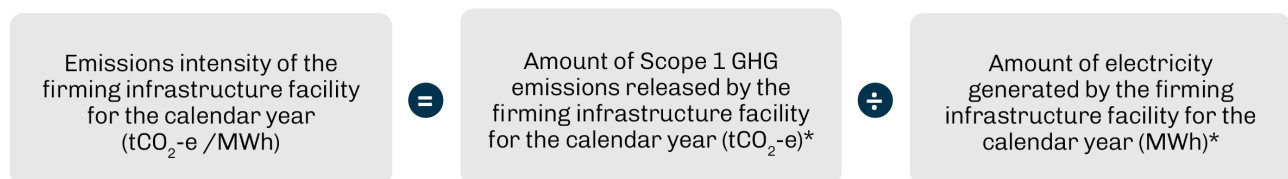


*National Greenhouse and Energy Reporting data is reported on financial year. The EPA will use data from the two previous financial years to calculate calendar year data. Refer to **Appendix A** for an example of this.

The EPA must calculate and publish on its website¹² (www.epa.nsw.gov.au), the emissions intensity of the NSW grid no later than **3 months** after NGERs data is available.¹³

4.2. Firming Infrastructure emissions intensity

The EPA will calculate the emissions intensity of a firming infrastructure facility using the following methodology.¹⁴



*National Greenhouse and Energy Reporting data is reported on financial year. The EPA will average this data reported from the two previous financial years to calculate emissions intensity for a calendar year. Refer to **Appendix A** for an example.

The EPA will calculate the emissions intensity of firming infrastructure using NGER data, if available, or using data provided by the LTES operator (refer to section 3.2 above).

The emissions intensity of battery firming infrastructure is taken to be zero in accordance with the EII Regulation.¹⁵

If an LTES agreement for firming infrastructure applies for only part of a calendar year, the EPA will adjust the calculation to reflect the proportion of the calendar year.¹⁶

¹¹ Clauses 66(1)(a) and 66(2), Electricity Infrastructure Investment Regulation 2021

¹² Clause 64(2)(b), Electricity Infrastructure Investment Regulation 2021

¹³ Clause 64(2)(a), Electricity Infrastructure Investment Regulation 2021

¹⁴ Clauses 66(1)(b) and 66(3), Electricity Infrastructure Investment Regulation 2021

¹⁵ Clause 67, Electricity Infrastructure Investment Regulation 2021

¹⁶ Clause 66(6), Electricity Infrastructure Investment Regulation 2021

The EPA must determine if the emissions intensity of the LTES operator is higher or lower than the NSW grid emissions intensity within **3 months** of receiving the data (either via National Greenhouse and Energy Reporting or from the operator).

5. Offset units

Prior to 2036, the emissions intensity of a firming infrastructure facility must be equal to, or **below**, the emissions intensity of the NSW grid for each calendar year. If the emissions intensity of a firming infrastructure facility is higher than that of the NSW grid, the LTES operator must obtain and surrender enough NSW carbon credit units to offset the higher emissions.¹⁷ After 2036, firming infrastructure operators must achieve net zero and offset all their facility's scope 1 emissions.¹⁸

5.1. NSW carbon credit units

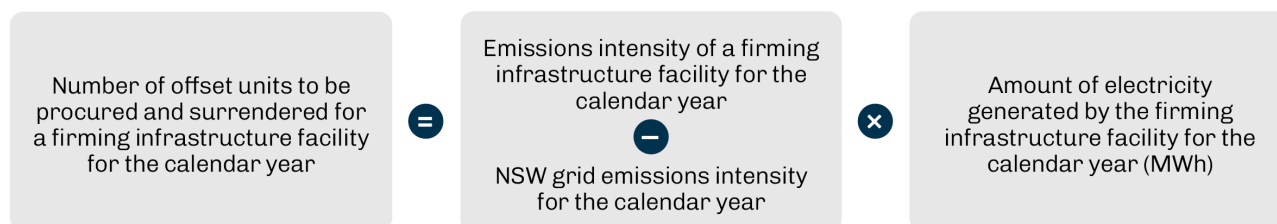
LTES operators must only procure and surrender NSW carbon credit units. These are Australian carbon credit units registered for a project area under s 147 of the Commonwealth's *Carbon Credits (Carbon Farming Initiative) Act* for eligible offset projects in NSW.

One Australian carbon credit unit represents one tonne of carbon dioxide equivalent (1tCO₂-e) greenhouse gas that is not released into the atmosphere (through either emissions reductions or carbon sequestration). The LTES operator can offset its facility's greenhouse gas emissions for a calendar year by surrendering procured offset units.

Buying offset units requires an account with the Australian National Registry of Emissions Units.¹⁹

5.2. Offset units – calculating the amount required

The EPA will use the following equation²⁰ to calculate the number of offset units that must be procured and surrendered by a firming infrastructure facility for the specific calendar year. If the result of the calculation is less than zero, the result will be taken as zero.



Refer to **Appendix A** for an example of this calculation.

5.3. Requirement to procure and surrender offset units

The EPA will calculate the number of offset units the LTES operator must obtain and surrender for a specific calendar year to offset its scope 1 emissions (refer section 5.2). The EPA will advise the number of offset units that an LTES operator must procure and surrender to meet its obligations for that year.²¹ The EPA will also advise the Scheme Financial Vehicle of the number of offset units that an LTES operator must procure and surrender.

The LTES operator must respond to the EPA within one month if it does not agree with the number of offset units calculated by the EPA. The response should detail why the LTES operator disagrees

¹⁷ Clause 65(1), Electricity Infrastructure Investment Regulation 2021

¹⁸ Clause 65(2), Electricity Infrastructure Investment Regulation 2021

¹⁹ <https://www.cleanenergyregulator.gov.au/OSR/ANREU/Opening-an-ANREU-account>

²⁰ Clauses 66(1)(c), 66(4) and 66(5), Electricity Infrastructure Investment Regulation 2021

²¹ Clause 65(3)(a), Electricity Infrastructure Investment Regulation 2021

with the calculations and provide evidence to support the claim. The EPA will review its calculation and advise both the LTES operator and Scheme Financial Vehicle of any change to the offset requirement.

The LTES operator has up to **3 months** to procure and surrender the required offsets after receiving the EPA's initial written notice.²² The LTES operator must notify the Scheme Financial Vehicle and EPA in writing as soon as practicable after doing this²³ and include details about the number and type of offsets procured and surrendered.

All correspondence to the EPA must be sent to firminginfrastructure@epa.nsw.gov.au.

It is important to note that it is an offence under the EII Act to provide information to the EPA that the person giving the information knows is false or misleading.²⁴

The EPA must confirm that the LTES operator has procured and surrendered the required offset units within **2 months** of being informed that the LTES operator has fulfilled its obligation.²⁵

To procure NSW carbon credit units, LTES operators can:

- search the [Emissions Reduction Fund project register](#) for any NSW projects and agents that may have ACCUs available for sale²⁶
OR
- search the [Carbon Market Institute's Carbon Marketplace](#)²⁷ project registry to identify parties that may have ACCUs for sale or can facilitate a sale.

Refer to the [Clean Energy Regulator's website](#) for more information about [buying ACCUs](#).

Procured offset units must be held in an LTES operator's account in the Australian National Registry of Emissions Units established under the *Australian National Registry of Emissions Units Act 2011* of the Commonwealth.²⁸

5.4. Where NSW carbon credit units are not available

5.4.1. EPA procurement of offset units

There may be times when NSW carbon credit units are not available for purchase. In this case the EPA will arrange for equivalent (non-NSW) Australian carbon credit units to be procured and surrendered. The LTES operator will be responsible for covering all costs relating to procuring and surrendering of Australian carbon credit units on their behalf (including administrative costs), by making a payment to the Scheme Financial Vehicle under clause 62(3) of the EII Regulation.²⁹

The LTES operator must tell the EPA as soon as possible if it cannot procure NSW carbon credit units. The EPA will tell the LTES operator and Scheme Financial Vehicle of a cost estimate for procuring equivalent Australian carbon credit units and the cost of an administration fee

²² Clause 62(4)(a), Electricity Infrastructure Investment Regulation 2021

²³ Clause 62(4)(b), Electricity Infrastructure Investment Regulation 2021

²⁴ Section 74, *Electricity Infrastructure Investment Act 2020*

²⁵ Clause 65(3)(b)(i), Electricity Infrastructure Investment Regulation 2021

²⁶ <https://www.cleanenergyregulator.gov.au/ERF/project-and-contracts-registers/project-register>

²⁷ Search the tab "Markets" then "Project Registry" for projects that have generated ACCUs

²⁸ Clause 62(2)(b), Electricity Infrastructure Investment Regulation 2021

²⁹ Clause 63, Electricity Infrastructure Investment Regulation 2021

determined by the EPA (refer to section 5.4.2) (or another government entity acting on the EPA's behalf). The total cost must be paid by the LTES operator to the Scheme Financial Vehicle.³⁰

Payment to the Scheme Financial Vehicle must be made within **3 months** of the EPA's initial correspondence to the LTES operator about procuring and surrendering offsets to meet its obligations for that year (refer section 5.3). The LTES operator must notify the EPA and Scheme Financial Vehicle in writing as soon as possible after the payment has been made.³¹

Correspondence to the EPA must be sent to firminginfrastucture@epa.nsw.gov.au.

The EPA will notify the LTES operator and Scheme Financial Vehicle if the offset procurement costs end up being more than the original fee estimated by the EPA and paid by the LTES operator to the Scheme Financial Vehicle. In this case, the LTES operator will be required to pay the difference. If the offset procurement costs are less than the fee estimated by the EPA and paid by the LTES operator, the LTES operator will receive a refund.³²

The EPA must confirm that the LTES operator has paid the full actual amount (including any adjustments) to the Scheme Financial Vehicle within **2 months** of the LTES operator notifying the EPA that it has satisfied the offset requirements by making a payment to the Scheme Financial Vehicle.

A timeline of the offsetting requirements is included in **Appendix B**.

5.4.2. Estimating the cost of offset units

The EPA will estimate the cost of procuring offset units. The EPA may do this by obtaining a direct quote from a broker or by using generic spot prices for Australian carbon credit units from the Clean Energy Regulator's quarterly carbon market reports. If the EPA uses the latter approach, it will do this by taking the highest quarterly spot price for the previous calendar year, plus inflation. The estimated unit cost will be multiplied by the number of offset units that need to be procured.

In either case, a reasonable administrative fee will be added to cover the EPA's administrative costs for this task. The administrative fee will be adjusted annually by the previous year's annual consumer price index as published by the Australian Bureau of Statistics. The administrative fee will be published on the EPA's website.

³⁰ Clause 62(3), Electricity Infrastructure Investment Regulation 2021

³¹ Clause 62(4), Electricity Infrastructure Investment Regulation 2021

³² Clause 63(3), Electricity Infrastructure Investment Regulation 2021

6. Compliance and reporting

6.1. Compliance

The EPA will monitor compliance of LTES operators with Part 12 of the EII Regulation.³³ If the EPA reasonably believes that an LTES operator has not complied with a requirement under Part 12, it will notify the LTES operator in writing. This will:

- include details about the potential non-compliance
- invite the LTES operator to explain how it has or will satisfy the requirement
- ask the LTES operator how long it reasonably needs to meet the requirement, and
- ask the LTES operator how it will mitigate against any future non-compliance.

The LTES operator can respond in writing to the EPA if it disagrees with the issues raised.

The EPA will refer any confirmed non-compliance to the relevant regulator appointed under clause 64 of the EII Act.

Non-compliances may include:

- failure to notify the EPA that offsets have been procured and surrendered
- failure to notify the EPA that offset units are not available for procurement
- failure to notify the EPA that payment has been made into the Scheme Financial Vehicle
- failure to procure and surrender the required number of offset units
- failure to provide any information requested by the EPA, that is required so it can carry out its functions as regulator under Part 12
- failure to pay the required amount into the Scheme Financial Vehicle within the specified time frame
- failure to meet notification deadlines
- providing information considered to be false and misleading.

6.2. EPA reporting

The EPA must provide the following information to the Independent Pricing and Regulatory Tribunal, being the regulator responsible for annual reports under the EII Act:³⁴

- calculations made by the EPA under Part 12 of the EII Regulation
- offset units procured and surrendered by LTES operators, and
- payments made in lieu of the procurement of offset units.

This information will be included by the Independent Pricing and Regulatory Tribunal in an annual report that must be provided to the Minister within **4 months** of the relevant financial year. The annual report will be published on the Independent Pricing and Regulatory Tribunal's website as soon as practicable after being provided to the Minister.³⁵

³³ Clause 65(3)(b), Electricity Infrastructure Investment Regulation 2021

³⁴ Clause 64(2)(c), Electricity Infrastructure Investment Regulation 2021

³⁵ Section 70, Electricity Infrastructure Investment Act 2020

7. Interaction with the Safeguard Mechanism

Although not expected in the short term, the EPA acknowledges that the Commonwealth's Safeguard Mechanism scheme may apply to some firming infrastructure facilities at some point.

If this is the case, the EPA will take into account any offsets procured and surrendered under the Safeguard Mechanism scheme, when considering the emissions intensity of a firming infrastructure facility. This will make sure facilities are not required to procure offsets twice for the same emissions.

Appendix A: Example calculations

NSW grid – emissions intensity

NSW grid emissions intensity
for the calendar year
(tCO₂-e/MWh)

=

Total Scope 1 GHG emissions
from all NSW designated
generation facilities for the
calendar year (tCO₂-e)

÷

Total electricity generated by
all NSW designated generation
facilities for the calendar
year (MWh)

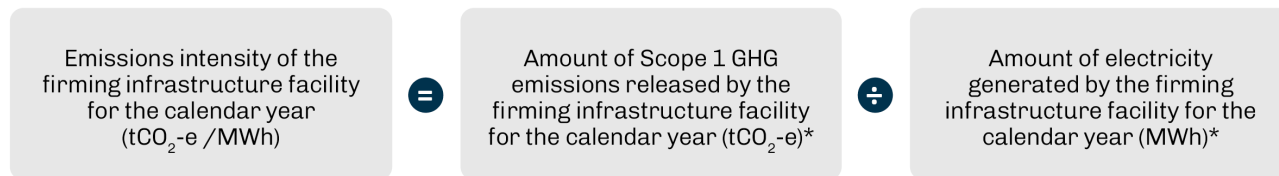
NSW grid – emissions intensity for 2021 calendar year	2020–21	Half (for 1 st half 2021 calendar year)	2021–22	Half (for 2 nd half 2021 calendar year)	Calendar year amount	Units
Total scope 1 greenhouse gas emissions from all NSW generation facilities that report under NGERs	46,914,983	23,457,492	43,658,859	21,829,430	45,286,921	tCO ₂ -e
Total energy produced by NSW generation facilities that report under NGERs	66,062,109	33,031,055	66,059,193	33,029,597	66,060,651	MWh
NSW grid emissions intensity for 2021 calendar year					0.69	tCO ₂ -e per MWh

$$= 45,286,921 \div 66,060,651$$

$$= 0.69$$

i.e. 0.69 tCO₂-e per MWh

Firming infrastructure – XYZ facility



*National Greenhouse and Energy Reporting data is reported on financial year. The EPA will average this data reported from the two previous financial years to calculate emissions intensity for a calendar year.

Firming infrastructure – emissions intensity for 2021 calendar year	2020-21	Half (for 1 st half 2021 calendar year)	2021-22	Half (for 2 nd half 2021 calendar year)	Calendar year amount	Units
Total scope 1 greenhouse gas emissions for XYZ firming infrastructure facility	104,491	52,245.5	196,371	98,185.5	150,431	tCO ₂ -e
Total electricity generation by XYZ firming infrastructure facility	163,386	81,693	348,040	174,020	255,713	MWh
XYZ firming infrastructure emissions intensity for the 2021 calendar year					0.59	tCO ₂ -e per MWh

$$= 150,431 \div 255,713$$

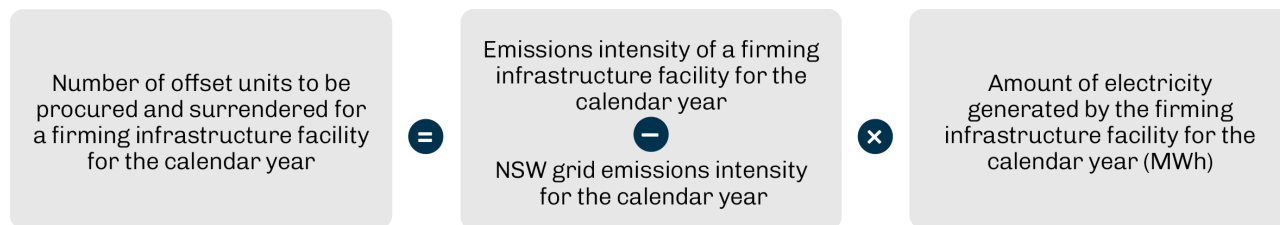
$$= 0.59$$

i.e. 0.59 tCO₂-e per MWh

Based on this example, the emissions intensity of the XYZ facility is lower than the emissions intensity of the NSW grid. Offsets would not be required.

Offset procurement amount

The number of offsets required if a facility's emissions intensity is higher than NSW grid emissions intensity would be calculated as follows:



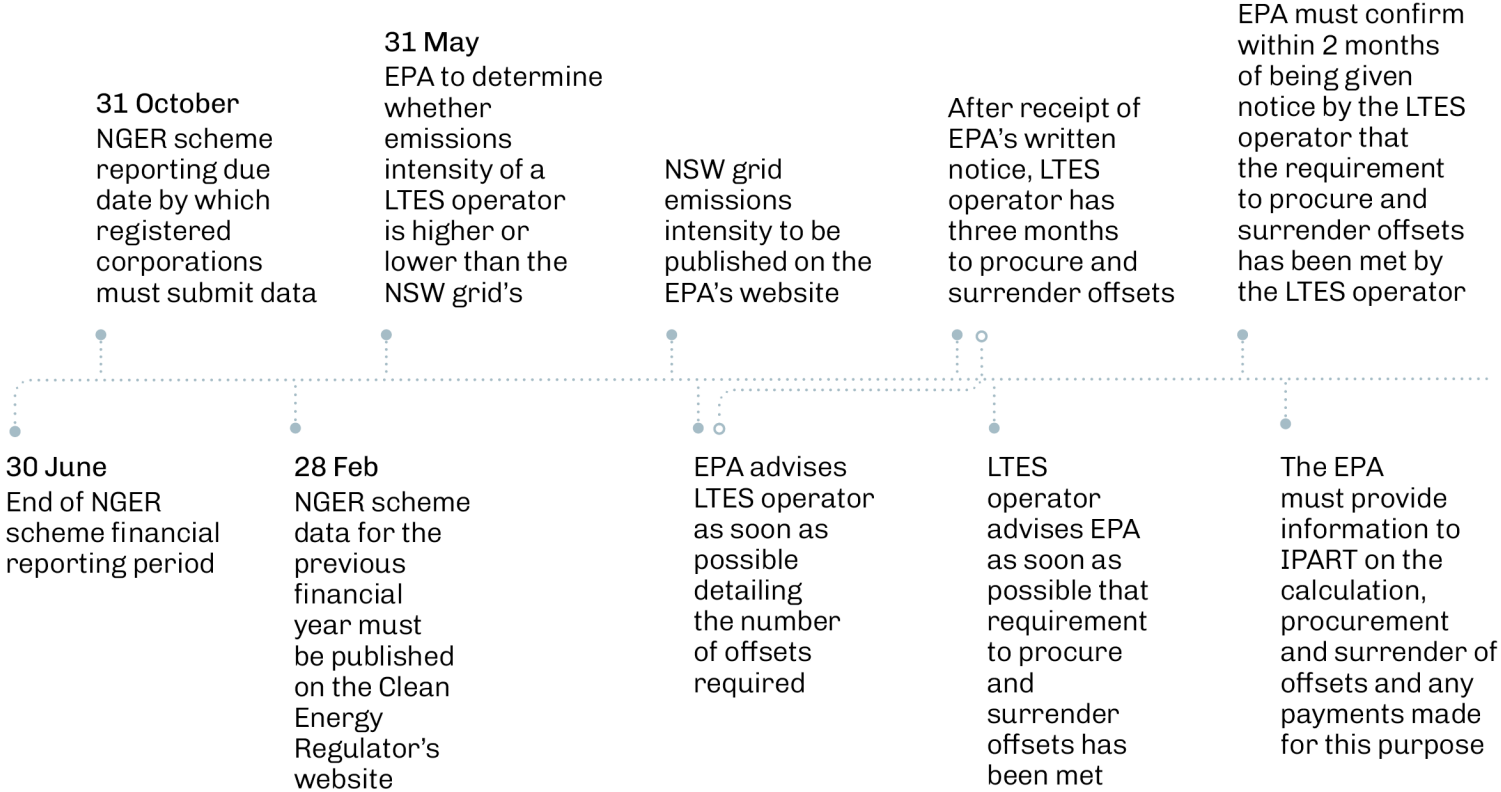
Number of offsets to be purchased	Amount	Units
Emissions intensity of ZXY firming infrastructure facility	0.71	tCO ₂ -e per MWh
NSW grid emissions intensity	0.69	tCO ₂ -e per MWh
Difference	0.02	tCO ₂ -e per MWh
Electricity generated by ZXY firming infrastructure facility	255,713	MWh
Offset procurement amount	5,114*	

*rounded down

$$\begin{aligned}
 &= 0.71 - 0.69 \\
 &= 0.02 \text{ emissions intensity difference} \\
 &= 0.02 \times 255,713 \\
 &= 5,114.26 \\
 &= 5,114 \text{ number of offset units to be procured and surrendered}
 \end{aligned}$$

Appendix B: Timelines

Timeline if offsets are available for procurement



Timeline if offsets are NOT available for procurement

