



ELECTRICITY ACCOUNTING

August 2023

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INTRODUCTION

[Climate Active](#) is an ongoing partnership between the Australian Government and Australian businesses to drive voluntary climate action. Climate Active certification is awarded to businesses that measure, reduce and offset their carbon emissions to achieve the state of carbon neutrality.

This paper **details how to account for and report a business's electricity emissions under a Climate Active carbon neutral claim**. The electricity accounting rules have been adapted from the [Greenhouse Gas Protocol Scope 2 Guidance \(GHG Protocol\)](#) and informed by stakeholder consultation. These rules may evolve over time.

Sections 1-10 of the paper details **how to account for and report a business's emissions for electricity consumption in Australia**. Section 11 and the appendices details how to account for **a business's electricity consumption outside of Australia**.

For more information visit our website: climateactive.org.au

You can also email us at: climate.active@dcceew.gov.au

Version history

Date	Changes summary
17 March 2023	<ul style="list-style-type: none">- Updated LGC vintage requirements.- Added guidance for liable entities.- Updated rules regarding electricity exported from a behind the meter system.- Updated Residual Mix Factor methodology and value.- Added guidance on international electricity accounting.- Defined eligible Renewable Energy Certificates for international electricity and applicable market boundaries.- Other minor updates.
August 2023	<ul style="list-style-type: none">- Updated Residual Mix Factor methodology and reference

1. ACCOUNTING METHODS – DUAL REPORTING

There are two international best-practice methods for calculating electricity emissions – the location-based method and the market-based method. Reporting electricity emissions under both methods is called dual reporting.

Dual reporting of electricity emissions is useful, as it provides different perspectives of the **emissions associated with a business's electricity usage**.

The location-based method shows **a business's electricity emissions in the context of its location. It shows the physical emissions from a business's electricity consumption, as it reflects the emissions intensity of the electricity grid(s) it relies on to operate.**

A business operating in a State with a high amount of renewable generation will report lower electricity emissions than if it operates in a State with a high amount of fossil fuel electricity generation. This method relies on State average emission **factors to convert a business's electricity consumption into an emissions equivalent.**

The market-based method shows **a business's electricity emissions in the context of its electricity purchases. It reports emissions according to a business's investments in different electricity products and markets, including from voluntary purchases of renewable electricity and mandatory schemes like the Renewable Energy Target.**

This method assigns an emissions factor of **zero for a business's investments in renewables** (Box 3) and uses a residual mix factor to calculate emissions from any remaining electricity consumption (Box 4). This method may result in different reported emissions than what is calculated from the electricity network the business is locally connected to.

Climate Active members must report their electricity emissions under both methods. However, they will be able to choose one of these methods as primary – this primary method will determine how many offsets are required to reach carbon neutrality.

The choice of the primary method must be disclosed in a Climate Active Public Disclosure Statement.

Box 1: Double counting and dual reporting

Double counting occurs when the zero emissions attribute of renewable generation is included in both the electricity emissions factor and in renewable energy certificates used to make an emissions reduction claim in a carbon account. Dual reporting avoids this issue.

Double counting of the zero emissions benefit of renewables is removed *within* the location-based method by disallowing separate renewable energy claims from grid imported electricity. The emissions benefit of renewable generation is included in the National Greenhouse Accounts (NGA) Scope 2 and 3 emissions factor and no other claims on renewable generation from grid imported electricity is permissible. Double counting is avoided *within* the market-based method by using a Residual Mix Factor (Box 4) and allowing for the use of renewable electricity claims through surrendering LGCs.

Reporting under both methods provides a different perspective of electricity emissions according to the different accounting methodologies. There is inherent double claiming of the emissions benefit of renewables *across* methods in the same way as there is double claiming of the emission sources. Comparisons of the electricity emissions of two businesses must be undertaken from the perspective of the same accounting method.

All claims on renewable electricity, with the exception of direct usage ('behind-the-meter' consumption), must be made under the market-based method.

Rules:

1. All Climate Active organisation, precinct, building and event certifications must report electricity emissions in their public disclosure statement (PDS), using both location- and market-based methods (i.e. dual reporting approach).
2. Either the location- or market-based method can be set as the primary electricity accounting method.
3. The primary method will determine how many offsets are required to account for electricity emissions in a Climate Active carbon account.
4. The Climate Active electricity calculator must be used for calculating emissions under the location-based and market-based methods for Climate Active organisation, precinct and event certifications. For clarity, Climate Active building certifications are delivered in partnership with the National Australian Built Environment Rating System (NABERS) or the Green Building Council Australia (GBCA), which will provide electricity calculation tools for building certifications.
5. Product and service certifications can, but are not required to, use dual reporting and the Climate Active electricity calculator.

2. RENEWABLE ENERGY CERTIFICATES (AUSTRALIA)

Renewable energy certificates (Large Generation Certificates (LGCs) - Box 2) are the mechanism to make unique claims on the zero emissions attribute of renewable electricity in Australia. One surrendered LGC is equivalent to 1 MWh of zero emissions electricity in a carbon account. LGCs can be used to reduce all entirely electricity based emissions (for example, a **business's electricity consumption (scope 2)** and attributed electricity use from a third party operated data centre (scope 3)).

While there is no legislative underpinning for claims on the zero emission attribute of renewable generation, there is a general market acceptance that the beneficiary of a surrendered LGC can uniquely claim this attribute. For example, GreenPower and the ACT Government both rely on LGCs for their zero emission renewable electricity claims. Other certificates will be considered when and if they are developed.

LGCs must be surrendered in, or on behalf of, the claimants name on the Renewable Energy Certificate Registry. Retiring the LGC ensures no other business can make a claim on that same unit of renewable electricity generation (see Box 3).

Given the differences between the purpose, use and accounting of abatement from STCs and LGCs (Box 2), STCs cannot be used to make emission reduction claims. Behind the meter electricity use from small-scale systems can, however, be treated as zero emissions regardless of whether any STCs for that generation have been created, transferred or sold.

Box 2: Renewable Energy Certificates and Targets

The Renewable Energy Target (RET) consists of two different schemes: the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). The LRET encourages investment in renewable power stations to achieve 33 000 gigawatt hours of additional renewable electricity generation by 2022. The SRES incentivises the installation of small-scale renewables, such as household rooftop solar.

LGCs represent actual generation of electricity from an accredited power station. Each year under the LRET, RET liable entities must purchase and surrender LGCs equal to the renewable power percentage (RPP), calculated by the Clean Energy Regulator to ensure the annual target for renewable electricity is met. LGCs may also be purchased and voluntarily surrendered by other companies or individuals wishing to claim zero emission attributes.

STCs are allocated upfront on the basis of a small-**scale system's expected generation** of renewable electricity or displacement of conventional electricity over a given deeming period. The SRES market is uncapped with supply effectively meeting demand though adjustments to the Small-scale Technology Percentage – this means there are no excess certificates for voluntary surrender.

NGA emissions factors are calculated using on-grid activity only. Certificates representing projected generation or displacement are not used to calculate NGA emissions factors, however the emissions benefit from the actual generation producing the certificates may be.

Rules:

Market-Based Method

6. LGCs can be used as a unique claim on the zero emissions attribute of renewable generation within a Climate Active carbon account.
7. LGCs are accounted for in MWh. One surrendered LGC equates to one MWh of zero emissions electricity consumption in the carbon account.
8. LGCs can only be used to account for electricity-based emissions, e.g. direct grid-based electricity (scope 2) or indirect emissions sources (scope 3) consisting entirely of electricity, such as third party operated data centres.
9. LGCs must be surrendered on the [Renewable Energy Certificate Registry](#), with evidence of their retirement, including serial numbers, provided to Climate Active.
10. LGCs should be surrendered directly in the name of the claimant, for example, 'Surrendered on behalf of Company X for 2022 **Climate Active carbon neutral claim**'.
11. **LGC's may be** surrendered indirectly on behalf of the claimant, for example, by GreenPower. Serial numbers should be provided to Climate Active.
12. In instances where discrete LGC serial numbers cannot be provided, Climate Active may consider accepting other evidence that LGCs have been surrendered, for example, certificates provided by an electricity generator or electricity bills listing accredited GreenPower usage.
13. LGCs must have a generation year of within three years from the end of a reporting year, or between the end of the reporting year and the reporting due date. For example, a calendar year 2022 report (ending 31 December 2022) could use LGCs with a generation year of 2020 but not a generation year of 2019. A financial year 2021-22 report (ending 30 June 2022) could use LGCs with a generation year of 2019 but not 2018.
14. STCs cannot be used to make renewable energy emission reduction claims for grid imported electricity consumption (see section 6 for behind the meter usage).

Location-Based Method

15. Neither LGCs nor STCs can be used to make renewable energy emission reduction claims for grid-imported electricity consumption.

3. RENEWABLE ENERGY TARGET

The Renewable Energy Target (RET) is a legislated scheme designed to reduce emissions from the electricity sector and incentivise additional electricity generation from sustainable and renewable sources. The RET consists of two different schemes: the large-scale renewable energy target (LRET) and the small-scale renewable energy scheme (SRES).

Businesses that consume electricity from the grid incur a cost of meeting the LRET, either through a separate cost component in commercial energy contracts or passed through as an increased price for electricity in retail contracts. The LRET can therefore be thought of as an implicit contractual or purchasing arrangement on electricity consumers for renewable electricity. Consumers' investments in the LRET are accounted for under the Climate Active market-based method. See Box 3 for more detail.

Box 3: Renewable electricity investments

The Climate Active market-based method relies on a logic of only one party being able to make a claim on the zero emissions attribute of renewable electricity generation. This is represented by an LGC, considered a de facto property right for the attribute. The zero emissions benefit uniquely flows to the owner or beneficiary of the attribute in a carbon account.

Surrendering the LGC ensures against double claiming. Directly or indirectly purchasing LGCs is an investment in renewable electricity generation and helps drive emission reductions. All business investments in renewables, whether by choice or mandated, are captured in a carbon account using the market-based method.

A business's annual proportionate renewable electricity investment through the LRET is quantified through the [renewable power percentage](#) (RPP) published by the Clean Energy Regulator.

LRET exempt entities (emissions-intensive trade-exposed entities) are not eligible to claim the RPP as zero emissions as they have not invested in renewable generation through the LRET.

[Liable entities](#) (e.g. electricity retailers) cannot claim LGCs surrendered to meet the LRET to account for customer **electricity consumption within their own organisation's carbon** account. Grid electricity consumers can exclusively claim this renewable electricity under the Climate Active market-based method. Liable entities may claim their proportion of the LRET for their **organisation's direct** grid electricity consumption.

Rules:

Market-Based Method

16. The percentage of electricity consumption attributable to the LRET, as reflected by the [Renewable Power Percentage](#), for a given reporting year, is assigned an emission factor of zero in the carbon account. For example, a business using a total of 1,000 MWh of electricity from the grid in 2022, lists 186.4 MWh as zero emissions (1,000*18.64% (RPP for 2022)).
17. This deduction is not available to businesses, or parts of businesses, that are exempt from the LRET (e.g. Emissions Intensive Trade Exposed Industries).
18. Liable entities are not eligible to claim LGCs that they have surrendered to meet the LRET **within their own organisation's carbon account**, as grid electricity consumers can exclusively claim this renewable electricity under the Climate Active market-based method.

Location-Based Method

19. There is no separate accounting treatment for the LRET as it is already included in the state factors used to convert electricity into t CO₂-e.

4. GREENPOWER

GreenPower is a voluntary government accreditation program that enables electricity providers to purchase renewable electricity on behalf of a business or household. It works by retiring LGCs equivalent to an agreed percentage or amount of electricity usage of the business. GreenPower purchases are accounted for under the market-based method, and treated as MWh of zero emissions electricity as per surrendered LGCs.

Rules:

Market-Based Method

20. Accredited GreenPower purchases are assigned an emission factor of zero in a carbon account, regardless of the state in which GreenPower is used.
21. GreenPower purchases **in excess of what is required to account for a business's electricity** usage may be used to reduce other indirect entirely electricity-based emissions (e.g. data centre usage).
22. GreenPower purchases in excess of **what is required to account for a business's entire** electricity usage cannot be used to offset other non-electricity emission sources in the carbon account.

Location-Based Method

23. GreenPower cannot be used to make zero emission electricity claims under the location-based method.

5. POWER PURCHASE AGREEMENTS

Power Purchase Agreements (PPAs) are an increasingly common way for users of electricity to hedge against power price fluctuations and/or procure renewable electricity from a generator. PPAs may include the LGCs associated with the generation, bundled with or without electricity supply. Electricity sourced through PPAs is treated as grid-imported electricity (see section 10), unless LGCs have been surrendered.

Rules:

Market-Based Method

- 24. Zero emission electricity claims (above any mandatory LRET obligations) under a PPA must be made through surrendered LGCs in accordance with rules 6-14.
- 25. Where it is not possible to list the claiming business on the REC registry (rule 10), other evidence from the retiring body, such as certificates from the electricity provider, may be used in consultation with Climate Active.
- 26. Supplier-specific emission factors cannot be used in a Climate Active carbon account.

Location-Based Method

- 27. Surrendered LGCs, including under PPAs, cannot be used to make zero emission claims under the location-based method.

6. LOCAL RENEWABLE ELECTRICITY GENERATION

Businesses with their own solar or other eligible renewable energy generation system can **directly consume electricity from that system ‘behind the meter’**. Behind the meter usage of renewable generation is treated as zero emissions under both location- and market-based methods, provided no LGCs were created, transferred or on sold for that generation. The generation asset must be under the operational control of the claimant, or Climate Active may also consider evidence of ownership of the generation in the form of a contractual instrument between the system owner and the claimant. Behind the meter usage from small-scale systems can be treated as zero emissions regardless of the creation, sale or transfer of STCs.

Businesses that export electricity to the grid cannot claim this electricity as zero emissions in their carbon account except where LGCs have been created and voluntarily surrendered.

Rules:

Market-Based Method

- 28. Behind the meter usage of renewable electricity may be reported and assigned an emissions factor of zero when the renewable electricity generation is from a renewable energy source as defined by section 17(1) of the *Renewable Energy (Electricity) Act 2000* and under the operational control of the claimant.
- 29. In instances where a claimant consumes behind the meter generation from a renewable energy generation system not under their operational control, Climate Active may consider accepting other evidence that the claimant has ownership of the generation, for example, a lease contract between the claimant and the system owner.

30. Behind the meter usage of renewable electricity from large scale systems may be reported and assigned an emissions factor of zero in the carbon account, only if any LGCs associated with that generation are surrendered or none will be created.
31. If LGCs are created and sold, behind the meter usage from large scale systems must be treated the same as electricity consumption from the grid (that is, treated as residual electricity – see section 10).
32. Behind the meter usage of electricity from small-scale systems may be reported and assigned an emissions factor of zero in the carbon account, regardless of whether any STCs associated with this generation have been created, transferred or sold.
33. Exported electricity cannot be claimed as zero emissions electricity except where LGCs have been created and voluntarily surrendered.

Location-Based Method

34. Behind the meter usage of renewable electricity may be reported and assigned an emissions factor of zero when the renewable electricity generation is from a renewable energy system under the operational control of the claimant.
35. In instances where a claimant consumes behind the meter generation from a renewable energy generation system not under their operational control, Climate Active may consider accepting other evidence that the claimant has ownership of the generation, for example, a lease contract between the claimant and the system owner
36. Behind the meter usage of electricity from large scale systems may be reported and assigned an emissions factor of zero in the carbon account, provided any LGCs associated with that generation are surrendered or none will be created.
37. If LGCs are created and sold, behind the meter usage from large scale systems must be treated the same as electricity consumption from the grid.
38. Behind the meter usage of electricity from small-scale systems may be reported and assigned an emissions factor of zero in the carbon account, regardless of whether any STCs associated with this generation have been created, transferred or sold.
39. Exported electricity cannot be used as a reduction in electricity emissions under the location-based method.

7. JURISDICTIONAL RENEWABLE ENERGY TARGETS

States and territories may have renewable energy targets over and above the LRET requirement. Where the jurisdictional government retires LGCs as part of a renewable energy target, a business operating in that jurisdiction can claim the corresponding percentage of **their business's total electricity consumption as zero emissions under the market-based method**.

Consistent with Box 3, such targets may result in an explicit or implicit obligation on electricity consumers within that jurisdiction to invest in renewable electricity generation. Each consumer within the jurisdiction then has a unique, proportionate claim on the zero emissions attribute of the surrendered LGCs and can therefore claim it as zero emissions electricity in a carbon account. This is provided that LGCs are surrendered **on behalf of the jurisdiction's** citizens and the claiming business has either explicitly or implicitly paid for that investment.

The renewable electricity percentage for relevant jurisdictions is published in the [National Greenhouse Accounts](#) and included in the Climate Active electricity calculator.

Rules:

Market-Based Method

40. A business operating in a jurisdiction where the government retires LGCs can claim the corresponding percentage of emissions impact on their electricity consumption as zero, provided that the LGCs are surrendered **on behalf of the jurisdictions' citizens and the claim is auditable for the given reporting year.**

Location-Based Method

41. There is no separate accounting treatment, as the emissions benefit is already included in the state factors used to convert electricity consumption into its emissions equivalent.

8. CLIMATE ACTIVE CERTIFIED CARBON NEUTRAL ELECTRICITY

A business can purchase Climate Active certified carbon neutral electricity. The emissions associated with generating and consuming this electricity have been fully compensated for through the purchase of carbon offset units. Climate Active certified electricity is deducted **from the business's gross offset liability** under both the market- and location-based methods.

Rules:

Market-Based Method

42. Physical emissions from Climate Active certified carbon neutral electricity do not count towards total emissions liability, as the physical emissions have already been offset via the certified electricity product.

Location-Based Method

43. Physical emissions from Climate Active certified carbon neutral electricity do not count towards total emissions liability, as the physical emissions have already been offset via the certified electricity product.

9. OPERATIONS IN A CLIMATE ACTIVE CARBON NEUTRAL CERTIFIED BUILDING OR PRECINCT

A business may be located within a building or precinct that is Climate Active carbon neutral certified. The emissions associated with generating and consuming electricity at this location have been fully compensated for through the purchase of carbon offset units. Electricity consumed within a Climate Active carbon neutral certified building or precinct is deducted **from the business's gross offset liability** under both the market- and location-based methods.

Rules:

Market-Based Method

44. Physical emissions from electricity that is consumed within a Climate Active certified carbon neutral building or precinct do not count towards total emissions liability, as the physical emissions have already been offset via the certified building or precinct.

Location-Based Method

45. Physical emissions from electricity that is consumed within a Climate Active certified carbon neutral building or precinct do not count towards total emissions liability, as the physical emissions have already been offset via the certified building or precinct.

10. GRID IMPORTED (RESIDUAL) ELECTRICITY

The majority of businesses making a carbon neutral claim rely on power supplied by an electricity grid. It is not possible to determine the emissions from the exact source of electricity consumed by an individual business, as electricity from the grid comes from multiple and varied generation sources in operation at the time of consumption (e.g. from both fossil fuel-based and renewable generation across a wide geographic area).

Under the location-based method, **the emissions from a business's use of grid electricity is calculated using a measure of the grid's average emissions intensity**, calculated using the relevant emissions factors published in the [National Greenhouse Accounts](#).

Under the market-based method, the **emissions from a business's use of electricity that is not matched with eligible renewable electricity investments is calculated using the national residual mix factors (RMF)** published in the [National Greenhouse Accounts Factors](#).

Box 4: Residual Mix Factor

The RMF is used under the market-based method. It removes the emissions benefit of renewable electricity generation from the emission factor used in the location-based method (which includes this benefit). This results in an increase to the relative emissions intensity of a unit of electricity usage compared to the location-based electricity emissions factor.

The RMF is used to convert any electricity usage in a carbon account not matched by renewable electricity investments (through surrendered LGCs) elsewhere. It avoids double counting of the zero emissions attribute of renewable generation (Box 1).

If a business consumes 10 MWh of electricity and half of is matched from surrendered LGCs, the residual 5 MWh is converted into t CO₂-e using the RMF.

Rules:

Market-Based Method

46. Electricity usage not matched by zero emission electricity attribute claims (residual electricity) is converted into t CO₂-e using the NGA combined scope 2 and scope 3 national RMF. Financial year reports will use the RMF for the previous calendar year.

Location-Based Method

47. Electricity usage in **each state of a business's operations is converted into t CO₂-e** using the relevant state NGA factor (either scope 2 and scope 3; or the full fuel cycle factor).
48. The emission factor used should correspond to the reporting year where possible, i.e. a 2018 reporting year should use the 2018 NGA factors.

11. ELECTRICITY CONSUMPTION OUTSIDE OF AUSTRALIA

Electricity consumption from international sources is deemed relevant if it is in the **organisation's control, or may be assessed as relevant if it is outside of the organisation's control but arises due to the organisation's operations. If the international electricity consumption is deemed or assessed as relevant, the organisation must include that international electricity consumption in their Electricity Account.**

In instances where electricity consumption outside of Australia is included, international electricity emissions can be calculated by multiplying total relevant international electricity consumption by a regionally appropriate (bespoke) grid emissions factor. When applying the bespoke emissions factor in the inventory, you must include details of where you sourced the emission factor (reference, database, year published, hyperlink if web accessible and any assumptions and limitations. You must account for both the scope 2 and scope 3 (transmission and distribution losses and upstream emissions) components of grid electricity. If you are matching international electricity with eligible Renewable Energy Certificates (RECs) (Appendix A), you must use a regionally appropriate Residual Mix Factor, if available, to calculate emissions from any remaining international electricity consumption from that grid. International electricity cannot be reported via the Climate Active electricity calculator.

Eligible RECs are the mechanism to make unique claims on the zero emissions attribute of electricity consumption outside of Australia. One surrendered REC is equivalent to 1 MWh of zero emissions electricity in a carbon account. RECs can be used to reduce all entirely electricity based emissions, but cannot be used to reduce or offset non-electricity emissions.

The following rules apply to businesses reporting emissions from international electricity consumption. For the applicable rules in relation to reporting electricity consumption within Australia, refer to sections 1-10.

Rules:

49. Eligible RECs can be used to claim the zero emissions attribute of renewable generation within a Climate Active carbon account.
50. Eligible RECs are accounted for in MWh. One retired REC equates to one MWh of zero emissions electricity in the carbon account.
51. RECs can only be used to account for electricity-based emissions, i.e. direct grid-based electricity (scope 2) or indirect emissions sources (scope 3) consisting entirely of electricity, such as third party operated data centres.
52. RECs must be retired on their relevant registry, with evidence of their retirement including serial numbers (or the equivalent), provided to Climate Active and disclosed in the **certification's Public Disclosure Statement**.
53. RECs should be retired **directly in the name of the claimant, for example, 'retired on behalf of Company X for 2022 Climate Active carbon neutral claim'**.
54. RECs may be retired indirectly on behalf of the claimant. Serial numbers (or the equivalent) should be provided to Climate Active.
55. In instances where discrete REC serial numbers cannot be provided, Climate Active may consider accepting other evidence that RECs have been retired which must also be **disclosed in the certification's Public Disclosure Statement**.

56. RECs must have a generation year of within three years from the end of the reporting year, or between the end of the reporting year and the reporting due date. For example, a calendar year 2022 report (ending 31 December 2022) could use RECs with a generation year of no earlier than 2020. A financial year 2021–22 report (ending 30 June 2022) could use RECs with a generation year of no earlier than 2019.
57. RECs can only be used when they are **created in relation to** generation from an eligible renewable energy source as defined by section 17(1) of the *Renewable Energy (Electricity) Act 2000*.
58. RECs must represent generation from the same country or electricity market boundary that the consumption occurs. In countries or electricity market boundaries where there are no eligible RECs or it is infeasible to purchase small quantities of locally issued RECs, Climate Active may consider allowing LGCs to be used.

WORKED EXAMPLE

A business with operations in NSW, SA and VIC reports its electricity emissions for CY2022. The business uses 1,000 MWh in NSW, including 200 MWh of GreenPower and 100 MWh certified Climate Active carbon neutral power. In SA, the business uses 200 MWh of electricity, including 45 MWh of on-site solar (for which no LGCs are created) and purchases and retires 60 LGCs. In VIC, the business uses 100 MWh and is located in a carbon neutral certified precinct that matches all of their electricity with renewable sources.

Under the location based method, its electricity emissions equals 762 tCO₂-e. Under the market based method, its electricity emissions equals 571 tCO₂-e.

Market-based method

Electricity source	Activity Data (MWh)	Emission factor	t CO ₂ -e	Total % Renewable
NSW OPERATIONS				
Renewable Energy Target (2022 RPP = 18.64% * 900)	168	0	0	13%
GreenPower	200	0	0	15%
Remaining NSW electricity	632	0.955(RMF)	604	-
SA OPERATIONS				
Renewable Energy Target (2022 RPP = 18.64%*155 (total grid imported electricity))	29	0	0	2%
Surrendered LGCs	60	0	0	5%
Behind the meter (small-scale renewables)	45	0	0	3%
Remaining SA electricity	66	0.955 (RMF)	63	-
VIC OPERATIONS				
CA certified location (2022 RPP = 18.64*100	19	0	0	1%
CA certified location (renewable electricity)	81	0	0	6%
TOTAL ELECTRICITY (SA+NSW+VIC)	1300	-	667	-
TOTAL RENEWABLE ELECTRICITY	602	0	0	46%
Emissions liability (adjusted for already offset carbon neutral electricity)	1100	-	571	

Note: totals are not exact due to rounding.

Location-based method

Electricity source	Activity Data (MWh)	Emission factor	t CO ₂ -e
Grid electricity (NSW) (scope 2 and 3)	1000	0.79	790
Grid electricity (SA) (scope 2 and 3)	155	0.33	51
Grid electricity (VIC) (scope 2 and 3)	100	0.92	92
Behind the meter (SA) (small-scale renewables)	45	0	0
TOTAL ELECTRICITY (SA+NSW+VIC)	1300	-	933
Emissions liability (adjusted for already offset carbon neutral electricity)	1100	-	762

Climate Active carbon neutral electricity products

Electricity source	Activity Data (MWh)	Emission factor	t CO ₂ -e
NSW OPERATIONS	100	0	0

These electricity emissions have been offset by another Climate Active member through their electricity product certification. This electricity consumption is also included in the market based and location based summary tables. Any electricity that has been sourced as renewable electricity by the electricity product under the market based method outlined as such in the market based summary table.

Climate Active carbon neutral building/precincts

Electricity source	Activity Data (MWh)	Emission factor	t CO ₂ -e
VIC OPERATIONS	100	0	0

These electricity emissions have been offset by another Climate Active member through their building or precinct certification. This electricity consumption is also included in the market based and location based summary tables. Any electricity that has been sourced as renewable electricity by the building/precinct under the market based method outlined as such in the market based summary table.

Appendix A: Eligible Renewable Energy Certificates

LGCs are currently the only certificate eligible for matching with Australian electricity consumption.

Where an organisation's emissions boundary includes electricity consumption outside of Australia, eligible Renewable Energy Certificates may be used for matching with electricity consumption where:

- Eligible Renewable Energy Certificates are created in relation to generation from an eligible renewable energy source as defined by section 17(1) of the *Renewable Energy (Electricity) Act 2000*.
- Eligible Renewable Energy Certificates are used to match electricity consumption in the same country where the REC has been issued, with the exception of the European electricity market boundary (see Appendix B).

The following Renewable Energy Certificates are eligible under the Climate Active electricity accounting rules for matching with Australian electricity consumption:

- Large-scale Generation Certificate (LGC) – As issued under the Australian **Government's Large**-scale Renewable Energy Target.

The following Renewable Energy Certificates are eligible under the Climate Active electricity accounting rules for matching with international electricity consumption:

- Guarantee of Origin certificate (GO) – as issued consistently with revised renewable energy directive 2018/2001/EU (RED II).
- European Energy Certificate System (EECS) Certificate - as issued consistently with the EECS Rules and Domain Protocol for each domain.
- Renewable Energy Guarantees of Origin (REGO) – as issued consistently with the requirements administered by the Office of Gas and Electricity Markets (UK).
- International REC (I-REC) – as issued consistently with the requirements of the I-REC Standard.
- Tradeable Instruments for Global Renewables (TIGR) as issued consistently with the requirements of the TIGRs Standard and Procedures.
- NZ-ECs – as issued consistently with the NZECS system rules.

In international regions where there are no eligible RECs (as defined above) or it is infeasible to purchase small quantities of locally issued RECs, Climate Active may consider allowing LGCs to be used to match with international electricity consumption.

The list of eligible Renewable Energy Certificates may be updated as new information or new Renewable Energy Certificates become available. This may result in the addition of new certificates or the removal of existing ones.

Appendix B: European Electricity Market Boundary

Climate Active has defined an electricity market boundary for Europe. Within a market boundary an eligible REC can be used to match electricity consumption in a different country or area to where the REC has been issued.

The list of countries or areas in the European electricity market boundary are:

- | | |
|------------------|-----------------------|
| ○ Andorra | ○ Liechtenstein |
| ○ Austria | ○ Lithuania |
| ○ Belgium | ○ Luxembourg |
| ○ Croatia | ○ Monaco |
| ○ Czech Republic | ○ Netherlands |
| ○ Denmark | ○ Norway |
| ○ Estonia | ○ Portugal |
| ○ Finland | ○ San Marino |
| ○ France | ○ Slovakia |
| ○ Germany | ○ Slovenia |
| ○ Greece | ○ Spain |
| ○ Hungary | ○ Sweden |
| ○ Ireland | ○ Switzerland |
| ○ Italy | ○ The Channel Islands |
| ○ Latvia | ○ Vatican City |

The list of countries and areas within the European electricity market boundary will be updated as new information becomes available. This may result in the addition or removal of countries or areas.