



PUBLIC DISCLOSURE STATEMENT

AGL ENERGY LIMITED

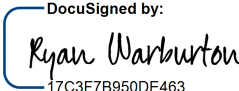
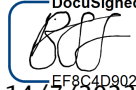
**PRODUCT CERTIFICATION
SOLAR BATTERIES
CY2021 (TRUE-UP)**

Australian Government
Climate Active
Public Disclosure Statement



An Australian Government Initiative



NAME OF CERTIFIED ENTITY	AGL ENERGY LIMITED
REPORTING PERIOD	1 January 2021 – 31 December 2021 (True-up)
DECLARATION	<p>To the best of my knowledge, the information provided in this public disclosure statement is true and correct and meets the requirements of the Climate Active Carbon Neutral Standard.</p> <p>Signature Ryan Warburton</p> <p>DocuSigned by:  <small>17C3F7B950DE463...</small></p> <p>Signature Bruce Hardy</p> <p>DocuSigned by:  <small>EF8C4D9023EE45D...</small></p> <p>Date: 14/7/2023</p> <hr/> <p>Name of signatory: Ryan Warburton</p> <p>Position of signatory: General Manager, Commercial & Industrial Customers</p> <p>Name of signatory: Bruce Hardy</p> <p>Position of signatory: General Manager, Emerging Business</p>



Australian Government
**Department of Industry, Science,
Energy and Resources**

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Version March 2022. To be used for FY20/21/CY2021 reporting onwards.

1.CERTIFICATION SUMMARY

TOTAL EMISSIONS OFFSET	477 tCO ₂ -e
THE OFFSETS BOUGHT	29% ACCUs, 71% VERs
RENEWABLE ELECTRICITY	N/A
TECHNICAL ASSESSMENT	14/04/2021 Adina Cirtog Pangolin Associates Next technical assessment due: 14/04/2024
THIRD PARTY VALIDATION	Type 3 01/04/2021 Tim Grant Life Cycle Strategies Pty Ltd

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2. CARBON NEUTRAL INFORMATION

Description of certification

This public disclosure statement supports the carbon neutral product certification for the supply and installation of **solar battery systems** provided by **AGL Energy Services Pty Limited**, or **AGL Electricity (VIC) Pty Limited** (through its subsidiary businesses Epho Holding Pty Ltd and SEGH Pty Limited and their subsidiary entities), all being subsidiary entities of AGL Energy Limited. This includes the Life Cycle Assessment of the solar batteries and quantification of Scope 1, 2 and 3 emissions associated with the retail operations component.

The emissions reported here are for CY2021 which is the first year of certification.

In June 2021, AGL launched a certified Carbon Neutral Solar Battery Systems product to all AGL residential customers and to business customers that opt-in. Solar systems are sold to residential customers as part of a solar and battery bundle.

“Climate Active certification makes it easier for consumers to make a conscious decision to identify and choose electricity, gas and telecommunications products that are making a difference.”

Scope

‘Solar Battery Systems product’ includes all components and services associated with the supply and installation of solar battery systems sold by AGL Energy Limited’s subsidiary businesses – **AGL Energy Services Pty Limited or AGL Electricity (VIC) Pty Limited** (through its subsidiary businesses Epho Holding Pty Ltd and SEGH Pty Limited and their subsidiary entities).

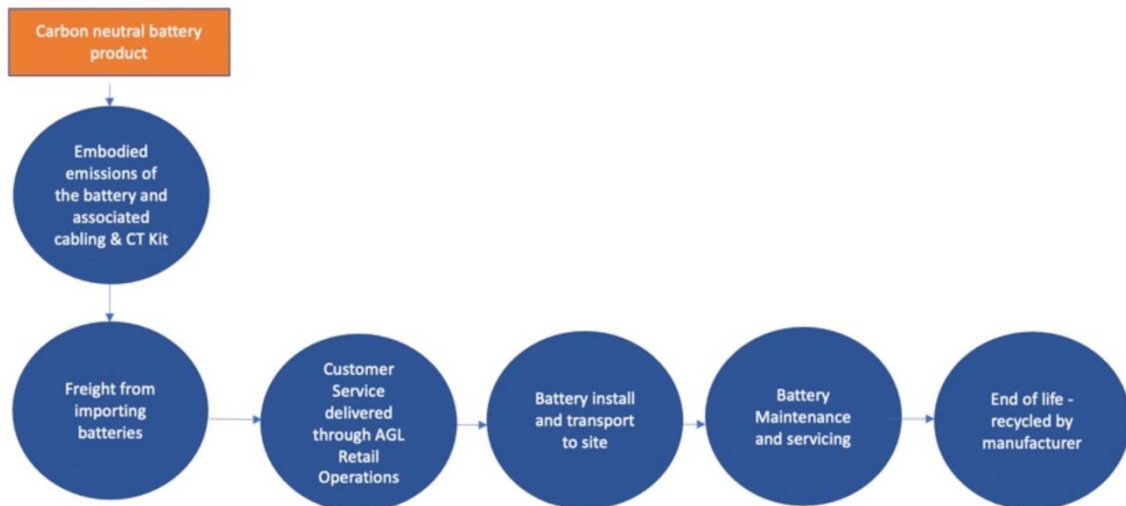
Product Description

The solar battery is a product that allows AGL customers to store excess electricity generated by their solar panels and/or to charge from the grid. Since June 2021, AGL Energy Limited has included its certified Carbon Neutral Solar Battery Systems product for all residential customers, and has made it available to business customers that opt-in.

Functional unit

A functional unit of ‘kg CO₂e per kWh capacity’ will be used as a quantifiable reference to the associated greenhouse gas emissions of a solar battery product.

Battery Product Process Map



Organisation description

AGL Energy Services Pty Limited and **AGL Electricity (VIC) Pty Ltd** are subsidiaries of **AGL Energy Limited** (AGL). AGL Energy Limited (AGL) operates Australia's largest electricity generation portfolio, with an operated generation capacity of 10,984MW² (as at 31 December 2021), which accounts for approximately 20% of the total generation capacity within Australia's National Electricity Market. We are also the country's largest publicly-listed operator of renewable generation and storage assets.

AGL has a proud 185-year history of innovation and a passionate belief in progress – human and technological.

We deliver around 4.2 million¹ gas, electricity, and telecommunications services to our residential, small and large business, and wholesale customers across Australia.

AGL Energy Limited includes related bodies corporate such as:

Data and Telecommunications providers include **Southern Phone Company Limited**, which trades as **AGL Telecommunications** and as **Southern Phone Company** and sells telecommunications products under both brands.

- **Southern Phone Company** is one of the largest providers of fixed line, mobile and Internet communications services in regional Australia. Formed in 2002 with a vision to provide regional

communities with affordable telecommunications services, SPC now serves a national customer base, and provides more than 250 jobs across its head office in Moruya, New South Wales, and its Bendigo office in regional Victoria.

- **AGL Telecommunications** launched its first telecommunications products, offering Internet services in November 2020, followed by mobile SIM plans in February 2021.

New energy provider - **AGL Energy Services Pty Ltd** sells energy solutions to residential and business customers including solar, battery storage, stand-alone power systems, energy efficient lighting and Power Factor Correction. AGL Energy Services Pty Ltd operates in all Australian states and territories and offers an end-to-end design, project management and installation service for all energy solutions sold.

Energy retailers – **AGL Sales Pty Limited; AGL South Australia Pty Limited; AGL Retail Energy Limited (“AGL energy retail entities”), Powerdirect Pty Ltd, Perth Energy Pty Ltd**

- **AGL energy retail entities** provide gas and electricity services to residential and business customers across New South Wales, Victoria, South Australia, Queensland and Western Australia. Offering a range of energy plans to suit varying preferences, customers can sign up to our products and services via our digital channels (AGL Website, AGL App, My Account) or by calling the AGL Contact Centre.
- **Powerdirect Pty Ltd** provides electricity services in South Australia, New South Wales, South East Queensland, and Victoria.
- **Perth Energy** services contestable gas and electricity business customers connected to the Western Power and ATCO gas networks in Western Australia including regional areas such as Albany, Geraldton and Kalgoorlie.

During 2021, AGL acquired two of Australia’s largest commercial solar businesses, **Epho** and **Solgen Energy Group** (from Anchorage Capital Partners), both market leading commercial and industrial solar businesses.

1. Services to customers number is as at 31 December 2021 and includes ex-Click Energy customers and 100% of approximately 300,000 services to customers of ActewAGL, in which AGL owns a 50% equity stake of the retail operations.

2. Operated generation capacity sourced from AGL Energy Limited Annual Report, 2021

3. EMISSIONS BOUNDARY

Inside the emissions boundary

All emission sources listed in the emissions boundary are part of the carbon neutral claim.

Quantified emissions have been assessed as 'attributable processes' that become the product, make the product and carry the product through its life cycle. These have been quantified in the carbon inventory.

Non-quantified emissions have been assessed as attributable and are captured within the emissions boundary but are not measured (quantified) in the carbon inventory. All material emissions are accounted for through an uplift factor. Further detail is available at Appendix C.

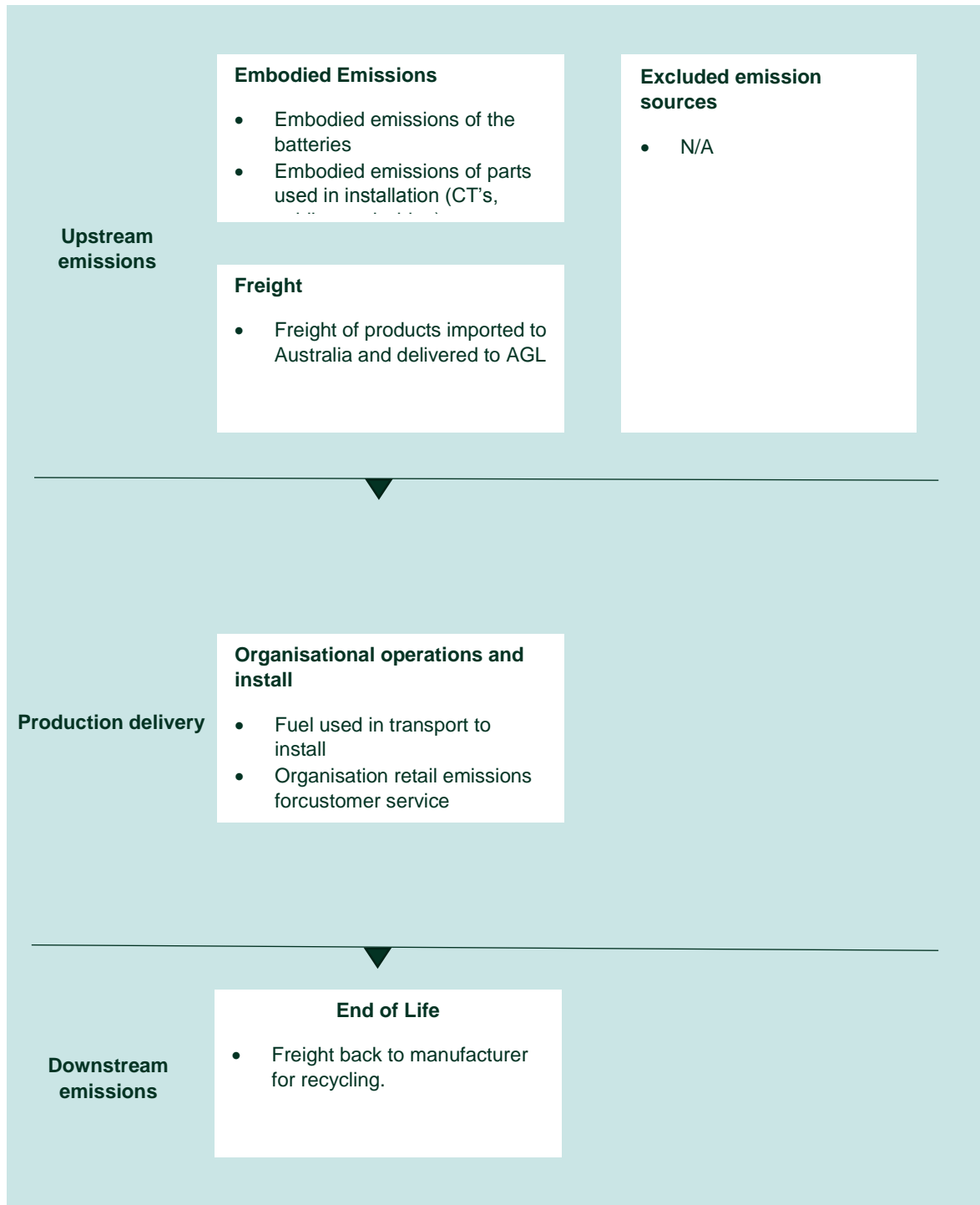
Outside the emissions boundary

Non-attributable emissions have been assessed as not attributable to a product or service. They can be **optionally included** in the emissions boundary and therefore have been offset, or they can be listed as outside of the emissions boundary (and are therefore not part of the carbon neutral claim). Further detail is available at Appendix D.

Inside emissions boundary		Outside emission boundary
<p><u>Quantified</u></p> <p>Embodied emissions of the batteries</p> <p>Embodied emissions of parts used in installation (CT's, cabling and wiring).</p> <p>Transport emissions for returning product to manufacturer for end-of-life treatment.</p> <p>Freight to import products to Australia</p> <p>Fuel used in transport for install</p> <p>AGL Retail Operations</p> <p>Electricity use</p> <p>Employee commute</p> <p>Working from home</p> <p>Transport fuels used in fleet vehicles</p> <p>Waste</p> <p>Water use</p> <p>Business flights</p> <p>Business accommodation</p> <p>Telecommunications</p> <p>IT Equipment</p> <p>Printing & Stationery</p> <p>Paper</p> <p>Advertising</p> <p>Stationery</p> <p>Travel Expenses</p> <p>Catering & Entertainment</p> <p>Postage & Couriers</p> <p>Refrigerants</p>	<p><u>Non-quantified</u></p> <p>N/A</p>	<p><u>Non-attributable</u></p> <p>N/A</p>
	<p><u>Optionally included</u></p> <p>N/A</p>	

Product/service process diagram

The following diagram is cradle to grave.



Data management plan for non-quantified sources

There are no non-quantified sources in the emission boundary that require a data management plan.

4. EMISSIONS REDUCTIONS

Emissions reduction strategy

Proudly Australian for 185 years, AGL supplies energy and other essential services to residential, small and large businesses and wholesale customers. We operate Australia's largest private electricity generation portfolio with a total installed capacity of 10,984MW¹, which accounts for approximately 20% of the total generation capacity within Australia's National Electricity Market (NEM). We are also the operator of the largest portfolio of renewable generation and storage assets of any ASX-listed company.

We have a strong track record in delivering action on climate change and the energy transition and provide a range of products and services to help our customers decarbonise their businesses and homes.

We are committed through our Climate Transition Action Plan to do the following:

The targeted closure of Loy Yang A Power Station by the end of FY35². This targeted exit from coal-fired generation, up to a decade earlier than previously announced, would avoid up to 200 MtCO₂e³ of greenhouse gases being emitted compared to previous Loy Yang A Power Station closure date.

- Annual greenhouse gas emissions reduction⁴ by at least 17% by FY24⁵ following the closure of Liddell Power Station in April 2023.
 - Greenhouse gas emissions reduction⁴ by at least 52% by FY35⁵ following the closure of the Bayswater Power Station by 2033.
 - Net Zero for operated Scope 1 and 2 greenhouse gas emissions following the closure of all AGL's coal-fired power stations.
 - Decarbonisation pathway development to achieve our ambition of being Net Zero for Scope 3 greenhouse gas emissions by 2050.
 - Seek to supply our customer demand with ~12 GW of additional renewable and firming capacity, requiring a total investment of up to \$20 billion⁶ before 2036. Our initial target is to have up to 5 GW of new renewables and firming capacity in place by 2030, funded from a combination of assets on our balance sheet, offtakes and via partnerships.
 - Together with our ambition to invest in new renewable and firming capacity, we have brought forward the targeted closure dates for AGL's coal-fired power stations to support the transition to a lower carbon world aligned with the Paris Agreement⁷ goals.
 - Our plan recognises that a balance needs to be struck between responsible transition and rapid decarbonisation to keep Australia's electricity supply secure, reliable and affordable. We are committed to working constructively with our stakeholders, including government, our people and the communities in which we operate, to lead a responsible and orderly transition.
-
- *1. Operated generation capacity sourced from AGL Energy Limited Annual Report, 2021.*
 - *2. Asset management plans will be structured to support the targeted closure of Loy Yang A Power Station by the end of FY35, and AGL will notify AEMO that the Expected Closure Year (per the National Electricity Rules (NER) 2.2.1(e)(2A)) for Loy Yang A Power Station is the end of FY35. Further, the carrying value of AGL's 'Generation' cash generating unit property, plant and equipment has been reduced as a result of the targeted closure of Loy Yang A Power Station by the end of FY35, as reflected in the impairment announced to the market on 29 September 2022. The ability for AGL to execute on this target will be subject to uncertainties and risks, as described on page 12.*
 - *3. Maximum emissions avoidance estimated based on maximum annual output from Loy Yang A Power Station over the FY36 - FY46 period.*
 - *4. Operated Scope 1 and 2 greenhouse gas emissions, as reported under the National Greenhouse and Energy Reporting Act 2007, against a FY19 baseline.*
 - *5. FY24 and FY35 represent the first full financial years where no emissions from Liddell and Bayswater power stations occur following the closure of these power stations in April 2023 (FY23) and CY33 (FY34) respectively.*
 - *6. Based on capital cost estimates from AEMO Inputs, Assumptions and Scenarios Workbook, June 2022, adjusted for AGL views where considered appropriate.*
 - *7. Based on scenario modelling of the National Electricity Market (NEM) undertaken by ACIL Allen (as outlined in Appendix A) utilising a carbon budget for the NEM which is consistent with limiting global temperature increases to well below two degrees Celsius above pre-industrial levels.*

The ability for AGL to execute on this target will be subject to uncertainties and risks, as described on page 12 of AGL's Climate Transition Action Plan.

5. EMISSIONS SUMMARY

Use of Climate Active carbon neutral products and services

The services provided by [Pangolin Associates](#) in preparing this inventory are carbon neutral.

Product/Service emissions summary

C&I Batteries	Projection (tCO ₂ -e)	True-up (tCO ₂ -e)
<i>C&I Solar - Product Emissions (Embodied emissions, Transport, Install and EOL)</i>	106.25	9.28
<i>C&I Solar - Organisation Emissions</i>	7.51	9.89

Residential Batteries	Projection (tCO ₂ -e)	True-up (tCO ₂ -e)
<i>Residential Solar - Product Emissions (Embodied emissions, Transport, Installation and EOL)</i>	1,226.17	419.36
<i>Residential Solar - Organisation Emissions</i>	19.24	37.78

C&I Batteries	Projection	True-Up
Emissions intensity per functional unit (kg CO₂-e/kW installed)	0.16854	0.35
Number of functional units to be offset (kWh installed)	340.27	54.0
Total emissions to be offset (tCO₂-e)	57.35	19.17

Residential Batteries	Projection	True-Up
Emissions intensity per functional unit (kg CO₂-e/kW installed)	0.15198	0.15
Number of functional units to be offset (kWh installed)	4130.93	2997.0
Total emissions to be offset (tCO₂-e)	627.82	457.14

6. CARBON OFFSETS

Offsets retirement approach

In arrears	
1. Total emissions footprint to offset for this report	477
2. Total eligible offsets purchased and retired for this report	685
3. Total eligible offsets banked to use toward next year's report	208

Co-benefits

Not all carbon offset units are created equal. There's a wide range of carbon offsets that differ in source, methodology, and price. AGL undertake a rigorous selection process when it comes to the carbon offsets we purchase. The eligible carbon offsets we buy meet the Carbon Neutral Standard integrity requirements set by Climate Active.

There are many different offset methodologies. Some include reforestation, renewable energy, or energy efficiency projects that generate eligible carbon offsets; projects that involve the destruction of certain industrial gases; and projects that involve the capture and destruction of methane from landfills and certain agricultural activities. Many of these projects also provide additional positive environmental and social benefits.

We believe that the projects we've chosen will make a real difference. Listed below are some representative examples of projects that we have purchased carbon offsets from.

BURN Stoves Project in Kenya

AGL has pre-purchased and retired Gold Standard Verified Emissions Reductions (GSVERs) from the BURN Stoves Project, developed by ClimateCare Limited, who have pioneered carbon finance for community development projects and delivered some of the largest carbon offsetting programs in the world.

The project directly addresses several certified Sustainable Development Goal (SDG) impacts: 1, No Poverty; 3, Good Health and Wellbeing; 8, Decent Work and Economic Growth; and 13, Climate Action.

Carbon Conscious Capture Project 2 in Western Australia

AGL has pre-purchased and retired Australian Carbon Credit Units (ACCUs) from the Carbon Conscious Capture Project 2, developed by Carbon Conscious Investments Ltd (Carbon Conscious), a member of the Carbon Market Institute and a foundation signatory of the Australian Carbon Industry Code of Conduct.

Ceramic Water Purifiers Project in Cambodia

AGL has pre-purchased and retired Gold Standard Verified Emissions Reductions (GSVERs) from the Ceramic Water Purifiers Project, developed by Hydrologic Social Enterprise Company Ltd, a social enterprise which has a mission to ensure all families in rural Cambodia have access to safe, clean drinking water. The use of water purifiers eliminates the need for wood fuel, therefore reducing the depletion of Cambodia's forest resources, reducing greenhouse gas emissions and improving indoor air pollution.

Eligible offsets retirement summary

Offsets cancelled for Climate Active Carbon Neutral Certification											
Project description	Type of offset units	Registry	Date retired	Serial number (and hyperlink to registry transaction record)	Vintage	Stapled quantity	Eligible quantity (tCO ₂ -e)	Eligible quantity used for previous reporting periods	Eligible quantity banked for future reporting periods	Eligible quantity used for this reporting period	Percentage of total (%)
Carbon Conscious Carbon Capture Project 2 (EOP100638)	ACCUs	ANREU	8 April 2021	3,753,706,165 - 3,753,706,301	2016/17	0	137	0	0	137	29%
Ceramic Water Purifiers Project in Cambodia (GS1020)	VERs	GSF Registry	8 April 2021	GS1-1-KH-GS1020-16-2019-20065-6177-6724	2019	0	548	0	208	340	71%
Total offsets retired this report and used in this report										477	
Total offsets retired this report and banked for future reports										208	
Type of offset units		Quantity (used for this reporting period claim)				Percentage of total					
Australian Carbon Credit Units (ACCUs)		137				29%					
Verified Emissions Reductions (VERs)		340				71%					

7. RENEWABLE ENERGY CERTIFICATE (REC) SUMMARY

Renewable Energy Certificate (REC) Summary

N/A

APPENDIX A: ADDITIONAL INFORMATION

Transaction ID	AU17997
Current Status	Completed (4)
Status Date	08/04/2021 11:42:19 (AEST) 08/04/2021 01:42:19 (GMT)
Transaction Type	Cancellation (4)
Transaction Initiator	Xie, Chang Zuo
Transaction Approver	Merrington, Jane
Comment	On behalf of AGL for CY2021 Batteries Carbon Neutral Certification under Climate Active

Transferring Account

Account Number	AU-2680
Account Name	AGL Hydro Partnership
Account Holder	AGL HP1 Pty Limited

Acquiring Account

Account Number	AU-1068
Account Name	Australia Voluntary Cancellation Account
Account Holder	Commonwealth of Australia

Transaction Blocks

Party	Type	Transaction Type	Original CP	Current CP	ERF Project ID	NGER Facility ID	NGER Facility Name	Safeguard	Kyoto Project #	Vintage	Expiry Date	Serial Range	Quantity
AU	KACCU	Voluntary ACCU Cancellation			EQP100538					2016-17		3,753,706.165 - 3,753,706.301	137

Transaction Status History

Status Date	Status Code
08/04/2021 11:42:19 (AEST) 08/04/2021 01:42:19 (GMT)	Completed (4)
08/04/2021 11:42:19 (AEST) 08/04/2021 01:42:19 (GMT)	Proposed (1)
08/04/2021 11:42:18 (AEST) 08/04/2021 01:42:18 (GMT)	Account Holder Approved (97)
08/04/2021 11:26:55 (AEST) 08/04/2021 01:26:55 (GMT)	Awaiting Account Holder Approval (95)



APPENDIX B: ELECTRICITY SUMMARY

N/A

APPENDIX C: INSIDE EMISSIONS BOUNDARY

Non-quantified emission sources

The following sources emissions have been assessed as attributable, are captured within the emissions boundary, but are not measured (quantified) in the carbon inventory. These emissions are accounted for through an uplift factor. They have been non-quantified due to one of the following reasons:

1. **Immaterial** <1% for individual items and no more than 5% collectively
2. **Cost effective** Quantification is not cost effective relative to the size of the emission but uplift applied.
3. **Data unavailable** Data is unavailable but uplift applied. A data management plan must be put in place to provide data within 5 years.
4. **Maintenance** Initial emissions non-quantified but repairs and replacements quantified.

Relevant-non-quantified emission sources	(1) Immaterial	(2) Cost effective (but uplift applied)	(3) Data unavailable (but uplift applied & data plan in place)	(4) Maintenance
N/A				

Excluded emission sources

Attributable emissions sources can be excluded from the carbon inventory, but still considered as part of the emissions boundary if they meet **all three of the below criteria**. An uplift factor may not necessarily be applied.

1. A data gap exists because primary or secondary data cannot be collected (**no actual data**).
2. Extrapolated and proxy data cannot be determined to fill the data gap (**no projected data**).
3. An estimation determines the emissions from the process to be **immaterial**.

	No actual data	No projected data	Immaterial
N/A			

APPENDIX D: OUTSIDE EMISSION BOUNDARY

Non-attributable emissions have been assessed as not attributable to a product or service (do not carry, make or become the product) and are therefore not part of the carbon neutral claim. To be deemed attributable, an emission must meet two of the five relevance criteria. Emissions which only meet one condition of the relevance test can be assessed as non-attributable and therefore are outside the carbon neutral claim. Non-attributable emissions are detailed below.

Relevance test					
Non-attributable emission	<i>The emissions from a particular source are likely to be large relative to the organisation's electricity, stationary energy and fuel emissions</i>	<i>The emissions from a particular source contribute to the organisation's greenhouse gas risk exposure.</i>	<i>Key stakeholders deem the emissions from a particular source are relevant.</i>	<i>The responsible entity has the potential to influence the reduction of emissions from a particular source.</i>	<i>The emissions are from outsourced activities previously undertaken within the organisation's boundary, or from outsourced activities typically undertaken within the boundary for comparable organisations.</i>

N/A



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