PUBLIC DISCLOSURE STATEMENT

VULCAN ENERGY RESOURCES LIMITED

ORGANISATION CERTIFICATION
CY2022

Australian Government

Climate Active
Public Disclosure Statement

An Australian Government Initiative

NAME OF CERTIFIED ENTITY	Vulcan Energy Resources Limited
REPORTING PERIOD	1 January 2022 – 31 December 2022 Arrears report
DECLARATION	*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.*  Francis Weddin CEO and Managing Director 26 May 2023

Australian Government
Department of Climate Change, Energy, the Environment and Water

Version March 2023.

1.CERTIFICATION SUMMARY

TOTAL EMISSIONS OFFSET	796 tCO_2-e
OFFSETS USED	81% CERs, 19% VCUs
RENEWABLE ELECTRICITY	N/A
CARBON ACCOUNT	Prepared by: Sustainable Business Consultants
TECHNICAL ASSESSMENT	25/04/2023 Sustainable Business Consultants Next technical assessment due: CY2025 report

Contents

2. CARBON NEUTRAL INFORMATION

Description of certification

This certification is for the Australian operations of Vulcan Energy Resources Limited, ABN 38 624 223 132.

The operational boundary of this Climate Active certification includes Scope 1, 2 and 3 emissions of the Australian operations, as well as international travel and the purchase of some services that have been utilised outside of Australia but paid for by Vulcan Energy.

Organisation description

Vulcan Energy Resources Limited (Vulcan Energy) is the parent company of a group of companies involved in geothermal exploration and the creation of the Zero Carbon Lithium™ Project. The Australian operations (located in Perth) consist of office-based activities and travel for senior management and the administration team, as well as goods and services purchased in the course of the activities described below.

Subsidiary companies, Vulcan Energy Resources Europe Pty Ltd and Vulcan Energy Ressourcen GmbH (both based in Germany) own licenses for the project and have office personnel and a pilot plant based in Germany. The German operations are outside of the boundary of this Climate Active certification and are currently being certified through Climate Impact Partners. This decision will be revisited in the future when the Climate Active trade mark becomes recognized and more popular in markets outside Australia.

Vulcan is aiming to become the world's first integrated lithium chemicals and renewable energy producer. Its unique Zero Carbon Lithium™ Project aims to produce both renewable geothermal energy, heating and lithium hydroxide for electric vehicle batteries from the same deep brine source in the Upper Rhine Valley, Germany. In doing so, Vulcan will address lithium's EU market requirements by reducing the high carbon and water footprint of production, and total reliance on imports, as well as helping to decarbonize the electricity grid. Vulcan aims to supply the lithium-ion battery and electric vehicle market in Europe, which is the fastest growing in the world. The Vulcan Zero Carbon Lithium™ Project has a resource which can satisfy Europe's needs for the electric vehicle transition, from a renewable source, for many years to come.

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 relevant and are quantified in the carbon inventory. This may include emissions that are not identified as arising due to the operations of the certified entity, however are **optionally included**.

Non-quantified emissions have been assessed as relevant 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

Excluded emissions are those that have been assessed as not relevant to an organisation's operations and are outside of its emissions boundary or are outside of the scope of the certification. These emissions are not part of the carbon neutral claim. Further detail is available at Appendix D.

Inside emissions boundary

Quantified

Transport fuel

Natural gas

Electricity purchased

Business travel

Air travel by directors, board members and consultants

Staff commute to work

Waste

International accommodation

Food - catering

ICT services and equipment

Office equipment and supplies

Professional services

Working from home

Telecommunications

Printing and stationery

Postage and courier services

Office equipment and supplies

Non-quantified

Cleaning and chemicals

Water

Refrigerants

Outside emissions boundary

Excluded

4. EMISSIONS REDUCTIONS

Emissions reduction strategy

Vulcan Energy Resources commits to reducing the total emissions of its business operations by 5 per cent by CY2026, from a CY2021 baseline.

This plan sets out how we intend to action carbon emissions reduction over the next five years. We will review, report and build on this plan each year.

The initiatives set out below are based on the emissions causing activities in our carbon inventory. In setting these initiatives we have considered our ability to control or influence emissions reduction, to switch to alternative sources and to purchase lower carbon supplies and services.

Initiative	CY23	CY24	CY25	CY26	CY27	Measure/target
Energy efficiency and savings						
Turn off lights when not needed through automation of task allocation	*x*	*x*	*x*	*x*	*x*	Continuous
Shut down computers and monitors at end of day	*x*	*x*	*x*	*x*	*x*	Energy policy set-up on all computers
Fully matching electricity consumption with RECs	*x*	*x*	*x*	*x*	*x*	Zero electricity emissions liability under the market-based method
Lease environmental printer	*x*	*x*	*x*	*x*	*x*	Epson, heat-free Workforce Pro printer and scanner, saves up to 80% electricity
Waste						
Reduce waste to landfill by implementing greater separation between different wastes, have bins specific to hard plastics, paper, organics and general waste	*x*	*x*	*x*	*x*	*x*	Implement food waste/ composting bin
Find companies to take waste for re-use	*x*	*x*	*x*	*x*	*x*	Donut Waste subscription
Reduce takeaway cups / single use plastics for lunches	*x*	*x*	*x*	*x*	*x*	Reduction of waste going to landfill
Paper						
Use electronic signatures where possible and use technology to proof documents	*x*	*x*	*x*	*x*	*x*	Complete transition to digital office workflows
Buy carbon neutral paper certified in Australia for A3 (already buying A4)	*x*	*x*	*x*	*x*	*x*	Complete transition to carbon neutral copy paper

Initiative	CY23	CY24	CY25	CY26	CY27	Measure/target
Policy						
Include ESG policy for new professional service providers	*x*	*x*	*x*	*x*	*x*	Sustainable supplier policy Pre-qualification ESG questionnaire Benchmarking and assessment process for procurement
Staff						
Utilise public transport where possible rather than private vehicle	*x*	*x*				Introduce company initiatives to incentivise staff
All homes have solar power so would be more energy efficient to work from home one day a week	*x*	*x*				Implemented – Thursday was chosen as the main WFH day

Emissions reduction actions

In CY2022, Vulcan Energy Resource implemented the following emission reduction measures:

- Purchase of reusable water bottles and coffee cups for all employees to reduce waste from disposable containers.
- Moved to a new office location in late 2022 with the purchase of RECs matching our electricity consumption. These impacts will occur in 2023.
- All office lighting connected to timers to reduce power consumption.
- Waste separation and reuse of organic waste for home composting.

5. EMISSIONS SUMMARY

Emissions over time

		Emissions since base year	
		Total tCO_2-e (without uplift)	Total tCO_2-e (with uplift)
Base year / year 1	CY 2020	269.12	282.58
Year 2:	CY 2021	568.68	597.12
Year 3:	CY 2022	795.37	795.37

Significant changes in emissions

Emission source	Previous year emissions (t CO_2-e)	Current year emissions (t CO_2-e)	Reason for change
Business services	69.99	211.06	Business development growth
Accounting services	52.47	119.92	Business development growth
Air travel (long business flights)	13.83	71.90	Uptake of business travel after lifting of travel restrictions.

Use of Climate Active carbon neutral products, services, buildings or precincts

Certified brand name	Product used
Reflex	50% recycled copy paper

Emissions summary

The electricity summary is available in the Appendix B. Electricity emissions were calculated using a location-based approach.

Emission category	Sum of scope 1 emissions (t CO_2-e)	Sum of scope 2 emissions (t CO_2-e)	Sum of scope 3 emissions (t CO_2-e)	Sum of total emissions (t CO_2-e)
Accommodation and facilities	0.00	0.00	1.01	1.01
Cleaning (not quantified)	0.00	0.00	0.00	0.00
Climate Active Carbon Neutral Products and Services	0.00	0.00	0.00	0.00
Electricity	0.00	1.76	0.00	1.76
Electric vehicle charging	0.00	0.00	0.25	0.25
Food	0.00	0.00	4.79	4.79
ICT services and equipment	0.00	0.00	5.50	5.50
Office equipment & supplies	0.00	0.00	10.66	10.66
Postage, courier and freight	0.00	0.00	17.10	17.10
Professional Services	0.00	0.00	665.40	665.40
Refrigerants (not quantified)	0.00	0.00	0.00	0.00
Stationary Energy (gaseous fuels)	0.00	0.00	0.00	0.00
Transport (Air)	0.00	0.00	81.87	81.87
Transport (Land and Sea)	0.00	0.00	5.33	5.33
Waste	0.00	0.00	1.50	1.50
Water (not quantified)	0.00	0.00	0.00	0.00
Working from home	0.00	0.00	0.21	0.21
Total emissions	**0.00**	**1.76**	**793.61**	**795.37**

Uplift factors

N/A

6. CARBON OFFSETS

Offsets retirement approach

This certification has taken an in-arrears offsetting approach. The total emissions to offset is 796 t CO_2-e. The total number of eligible offsets used in this report is 796. Of the total eligible offsets used, 0 were previously banked and 835 were newly purchased and retired. 39 t CO_2-e are remaining and have been banked for future use.

Co-benefits

Rimba Raya Biodiversity Reserve Project

This project is in Central Kalimantan in Indonesian Borneo and protects 65,000 hectares of tropical peat swamp forest, which is home to a rich array of species including the endangered orangutan. Indonesia is one of the world's largest producers of palm oil. The project's vision is to successfully compete with commercial agriculture interests and provide social and environmental benefits that would otherwise be difficult to attain.

In addition to conserving biodiversity and a precious forest ecosystem, the project is designed with community and social co-benefits at its core. The local community has been integral to the planning and development since inception. The project helps to increase access to clean drinking water, create more equal job opportunities, healthcare clinics, education programs and materials, create community centres and provide renewable energy.

The project also protects the integrity of the adjacent world-renowned Tanjung Putting National Park, by creating a physical buffer zone across 90 kilometres eastern order of the park.

This project has verified contributions to all 17 United Nations Sustainable Development Goals.

Global Renewable Energy Portfolio

In addition to delivering emissions reductions the projects offer a number of other benefits:

- Affordable and Clean Energy: Contribute to increasing the share of renewable energy in the global energy mix. Clean electricity generated by these projects displaces electricity which would otherwise be powered by fossil fuels.
- Decent Work and Economic Growth: Contribute to the local economy and livelihood of residents through the creation of jobs. These include full-time maintenance and operational roles, and temporary roles during planning and construction.
- Industry Development and Innovation: Support the development of sustainable and resilient energy infrastructure, helping reduce the instance of shortages of electricity during peak hours of demand. The projects also often help develop road infrastructure, which is improved to aid site access.

Eligible offsets retirement summary

Offsets retired 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 retired (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 (%)**
Sichuan Province Songpan County Muguadun Hydroelectric Project	CER	ANREU	04 May 2023	1,141,305,546 - 1,141,306,191	2016	-	646	0	0	646	81%
Rimba Raya Biodiversity Reserve Project, Indonesia	VCU	Verra	04 May 2023	9924-164099276-164099425-VCS-VCU-263-VER-ID-14-674-23062017-31122017-1	2017	-	150	0	0	150	19%
Huaneng Liaoning Fuxin Phase II Wind Farm Project	CER	ANREU	04 May 2023	967,862,982 - 967,863,020	2013	-	39	0	39	0	0%
									Total eligible offsets retired and used for this report	**796**	
									Total eligible offsets retired this report and banked for use in future reports	**39**	

Type of offset units	Eligible quantity (used for this reporting period)	Percentage of total
Certified Emissions Reductions (CERs)	646	81%
Verified Carbon Units (VCUs)	150	19%

7. RENEWABLE ENERGY CERTIFICATE (REC) SUMMARY

Renewable Energy Certificate (REC) summary

N/A

APPENDIX A: ADDITIONAL INFORMATION

Australian National Registry of Emissions Units

Logged in as: Justin Reamon / Industry User

Transaction Details

Transaction details appear below.

Transaction ID	AU27208
Current Status	Completed (4)
Status Date	05/05/2023 02:06:14 (AEST) 04/05/2023 16:06:14 (GMT)
Transaction Type	Cancellation (4)
Transaction Initiator	Reamon, Justin Matthew
Transaction Approver	Bell, Stella Elizabeth
Comment	Retired on behalf of Vulcan Energy Resources LTD. to compensate for carbon emissions of Australian Operations

Transferring Account

Account Number	AU-2931
Account Name	Natural Capital Partners Americas, LLC
Account Holder	Natural Capital Partners Americas, LLC

Acquiring Account

Account Number	AU-2764
Account Name	Voluntary Cancellation – CP2
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
CN	CER	Kyoto Voluntary Cancellation	2	2					CN-4499			1,141,305,546 - 1,141,306,191	646

Australian National Registry of Emissions Units

Logged in as: Justin Reamon / Industry User

Transaction Details

Transaction details appear below.

Transaction ID	AU27209
Current Status	Completed (4)
Status Date	05/05/2023 02:06:57 (AEST) 04/05/2023 16:06:57 (GMT)
Transaction Type	Cancellation (4)
Transaction Initiator	Reamon, Justin Matthew
Transaction Approver	Bell, Stella Elizabeth
Comment	Retired on behalf of Vulcan Energy Resources LTD. to compensate for carbon emissions of Australian Operations

Transferring Account

Account Number	AU-2931
Account Name	Natural Capital Partners Americas, LLC
Account Holder	Natural Capital Partners Americas, LLC

Acquiring Account

Account Number	AU-2764
Account Name	Voluntary Cancellation – CP2
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
CN	CER	Kyoto Voluntary Cancellation	2	2					CN-2918			967,862,982 - 967,863,020	39

VERRA

Verified Carbon Standard

Certificate of Verified Carbon Unit (VCU) Retirement

Verra, in its capacity as administrator of the Verra Registry, does hereby certify that on 04 May 2023, 150 Verified Carbon Units (VCUs) were retired on behalf of:

Vulcan Energy Resources LTD.

Project Name

Rimba Raya Biodiversity Reserve Project

VCU Serial Number

9924-164099276-164099425-VCS-VCU-263-VER-ID-14-674-23062017-31122017-1

Additional Certifications

01: No Poverty; 02: Zero Hunger; 03: Good Health and Well-being; 04: Quality Education; 05: Gender Equality; 06: Clean Water and Sanitation; 07: Affordable and Clean Energy; 08: Decent Work and Economic Growth; 09: Industry, Innovation and Infrastructure; 10: Reduced Inequalities; 11: Sustainable Cities and Communities; 12: Responsible Consumption and Production; 13: Climate Action; 14: Life Below Water; 15: Life on Land; 16: Peace, Justice, and Strong Institutions; 17: Partnerships for the Goals; CCB-Biodiversity Gold; CCB-Climate Gold; CCB-Community Gold

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APPENDIX B: ELECTRICITY SUMMARY

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.

Location-based method:

The location-based method provides a picture of a business's electricity emissions in the context of its location, and the emissions intensity of the electricity grid it relies on. It reflects the average emissions intensity of the electricity grid in the location (State) in which energy consumption occurs. The location-based method does not allow for any claims of renewable electricity from grid-imported electricity usage.

Market-based method:

The market-based method provides a picture of a business's electricity emissions in the context of its renewable energy investments. It reflects the emissions intensity of different electricity products, markets and investments. It uses a residual mix factor (RMF) to allow for unique claims on the zero emissions attribute of renewables without double-counting.

For this certification, electricity emissions have been set by using the **location-based approach.**

Market-based approach summary

Market-based approach	Activity Data (kWh)	Emissions (kg CO_2-e)	Renewable percentage of total
Behind the meter consumption of electricity generated	0	0	0%
Total non-grid electricity	0	0	0%
LGC Purchased and retired (kWh) (including PPAs)	0	0	0%
GreenPower	0	0	0%
Climate Active precinct/building (voluntary renewables)	0	0	0%
Precinct/Building (LRET)	0	0	0%
Precinct/Building jurisdictional renewables (LGCS surrendered)	0	0	0%
Electricity products (voluntary renewables)	0	0	0%
Electricity products (LRET)	0	0	0%
Electricity products jurisdictional renewables (LGCs surrendered)	0	0	0%
Jurisdictional renewables (LGCs surrendered)	0	0	0%
Jurisdictional renewables (LRET) (applied to ACT grid electricity)	0	0	0%
Large Scale Renewable Energy Target (applied to grid electricity only)	596	0	19%
Residual Electricity	2,604	2,486	0%
Total renewable electricity (grid + non grid)	596	0	19%
Total grid electricity	3,200	2,486	19%
Total electricity (grid + non grid)	3,200	2,486	19%
Percentage of residual electricity consumption under operational control	100%		
Residual electricity consumption under operational control	2,604	2,486	
Scope 2	2,299	2,196	
Scope 3 (includes T&D emissions from consumption under operational control)	304	291	
Residual electricity consumption not under operational control	0	0	
Scope 3	0	0	.

Total renewables (grid and non-grid)	18.64%
Mandatory	18.64%
Voluntary	0.00%
Behind the meter	0.00%
Residual scope 2 emissions (t CO_2-e)	2.20
Residual scope 3 emissions (t CO_2-e)	0.29
Scope 2 emissions liability (adjusted for already offset carbon neutral electricity) (t CO_2-e)	2.20
Scope 3 emissions liability (adjusted for already offset carbon neutral electricity) (t CO_2-e)	0.29
Total emissions liability (t CO_2-e)	2.49

Figures may not sum due to rounding. Renewable percentage can be above 100%

Location-based approach summary

Location-based approach	Activity Data (kWh) total	Under operational control			Not under operational control	
Percentage of grid electricity consumption under operational control	**100%**	**(kWh)**	**Scope 2 Emissions ($kgCO_2$-e)**	**Scope 3 Emissions ($kgCO_2$-e)**	**(kWh)**	**Scope 3 Emissions ($kgCO_2$-e)**
WA	3,200	3,200	1,632	128	0	0
Grid electricity (scope 2 and 3)	**3,200**	**3,200**	**1,632**	**128**	**0**	**0**
WA	0	0	0	0		
Non-grid electricity (behind the meter)	**0**	**0**	**0**	**0**		
Total electricity (grid + non grid)	**3,200**					

Residual scope 2 emissions (t CO_2-e)	**1.63**
Residual scope 3 emissions (t CO_2-e)	**0.13**
Scope 2 emissions liability (adjusted for already offset carbon neutral electricity) (t CO_2-e)	**1.63**
Scope 3 emissions liability (adjusted for already offset carbon neutral electricity) (t CO_2-e)	**0.13**
Total emissions liability	**1.76**

Operations in Climate Active buildings and precincts

Operations in Climate Active buildings and precincts	Electricity consumed in Climate Active certified building/precinct (kWh)	Emissions (kg CO_2-e)
N/A	**0**	**0**

Climate Active carbon neutral electricity is not renewable electricity. 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 is outlined as such in the market based summary table.

Climate Active carbon neutral electricity products

Climate Active carbon neutral product used	Electricity claimed from Climate Active electricity products (kWh)	Emissions (kg CO_2-e)
N/A	**0**	**0**

Climate Active carbon neutral electricity is not renewable electricity. 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 is outlined as such in the market based summary table.

APPENDIX C: INSIDE EMISSIONS BOUNDARY

Non-quantified emission sources

The following emissions sources have been assessed as relevant, are captured within the emissions boundary, but are not measured (quantified) in the carbon inventory. 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	Justification reason
Cleaning and chemicals	Immaterial
Water	Immaterial
Refrigerants	Immaterial

Data management plan for non-quantified sources

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

APPENDIX D: OUTSIDE EMISSIONS BOUNDARY

Excluded emission sources

The below emission sources have been assessed as not relevant to this organisation's operations and are outside of its emissions boundary. These emissions are not part of the carbon neutral claim. Emission sources considered for relevance must be included within the certification boundary if they meet two of the five relevance criteria. Those which only meet one condition of the relevance test can be excluded from the certification boundary.

Emissions tested for relevance are detailed below against each of the following criteria:

1. **Size** The emissions from a particular source are likely to be large relative to the organisation's electricity, stationary energy and fuel emissions.

2. **Influence** The responsible entity has the potential to influence the reduction of emissions from a particular source.

3. **Risk** The emissions from a particular source contribute to the organisation's greenhouse gas risk exposure.

4. **Stakeholders** Key stakeholders deem the emissions from a particular source are relevant.

5. **Outsourcing** 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.

Excluded emissions sources summary

N/A – no excluded emission sources identified in this reporting period.

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