PUBLIC DISCLOSURE STATEMENT

LEIGH CREEK ENERGY LIMITED

ORGANISATION CERTIFICATION
FY2021–22 (PROJECTED)

Australian Government

Climate Active
Public Disclosure Statement

An Australian Government Initiative

NAME OF CERTIFIED ENTITY	LEIGH CREEK ENERGY LIMITED
REPORTING PERIOD	1 July 2021 – 30 June 2022 (Projected)
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.* 
	Phil Staveley Managing Director 17 March 2022

Australian Government
Department of Industry, Science, Energy and Resources

Version September 2021. To be used for FY20/21 reporting onwards.

1.CERTIFICATION SUMMARY

TOTAL EMISSIONS OFFSET	13,546 tCO_2-e
OFFSETS BOUGHT	81.5% CER and 18.5% VCU
RENEWABLE ELECTRICITY	0%
TECHNICAL ASSESSMENT	Date: 01/02/2022 Name: Mark Wallace Organisation: EnergyLink Services Pty Ltd Next technical assessment due: October 2025
THIRD PARTY VALIDATION	*To be completed at the end of the baseline year*

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2.CARBON NEUTRAL INFORMATION

Description of certification

This Climate Active Organisation certification includes all Australian business operations of Leigh Creek Energy Limited (LCK), ABN 31 107 531 822.

The Leigh Creek Urea Project (LCUP) is Leigh Creek Energy's (ASX:LCK) flagship project, developing low-cost nitrogen-based fertiliser for local and export agriculture markets. Located in South Australia, 550 kilometres north of Adelaide, the LCUP will initially produce 1Mtpa (with the potential to increase to 2Mtpa) of urea.

LCK is focused on developing its Leigh Creek Urea Project (LCUP), which will produce high value fertiliser from using in situ gasification technologies at the Leigh Creek site, LCK aspires to have a carbon neutral process to produce fertiliser in the form of urea. The urea will be supplied to the Australian and international marketplaces. LCK has a comprehensive environmental, social and governance strategy.

"'Climate Active accreditation provides transparent evidence to our external shareholders that what we have committed to is real"

The emissions reported within this public disclosure statement covers FY2021/22, acting as the first year of certification. A forecast prediction has been made for the period of 1st of January 2022 to 30th of June 2022, based on actual data for the period 1 July 2021 to 31 December 2021, all of which has been offset for the baseline period.

Organisation description

LCK is an Australian Securities Exchange (ASX) listed energy company that is headquartered in Adelaide, South Australia. Its focus is on producing urea from its gasification project as part of the LCUP. The project will be carried out at the Leigh Creek Site located 550km north of Adelaide, which has favourable conditions for an in-situ gasification (ISG) plant in terms of environmental, socio–economic, technical, and commercial aspects. The project will produce low-cost granular urea (fertiliser) using ISG technology, resulting in the generation of syngas. The urea synthesis and production process will consume large quantities of carbon dioxide gas generated during the syngas production process, with excess CO_2 being captured and stored by geo-sequestration.

LCK has strong ESG commitments that are signed off at the board level. This commitment is demonstrated by its qualification as a signatory to the United Nations Global Compact and its commitment to being carbon neutral from these early design and engineering phases of the LCUP. LCK wishes to reduce its operational impact on the environment and make positive impacts on the communities around it. To that end, LCK is working with local landholders to develop projects that will reduce atmospheric carbon through biological carbon sequestration.

The LCUP will be completed in two stages. Stage 1 will see the construction of the first gasification wells and the installation of a 5 MW gas fired power generation plant. Stage 2 will expand on the gasification fields and see the installation of a larger gas fired power generation plant, ammonia generation facility and urea facility. The scale of Stage 2 is yet to be determined.

LCK is in the closing stages of completing the final design and approvals works for the construction of Stage 1. LCK is expecting a significant increase in emissions as the organisation expands over Stage 1 and Stage 2 of the LCUP.

3. EMISSIONS BOUNDARY

Inside the emissions boundary

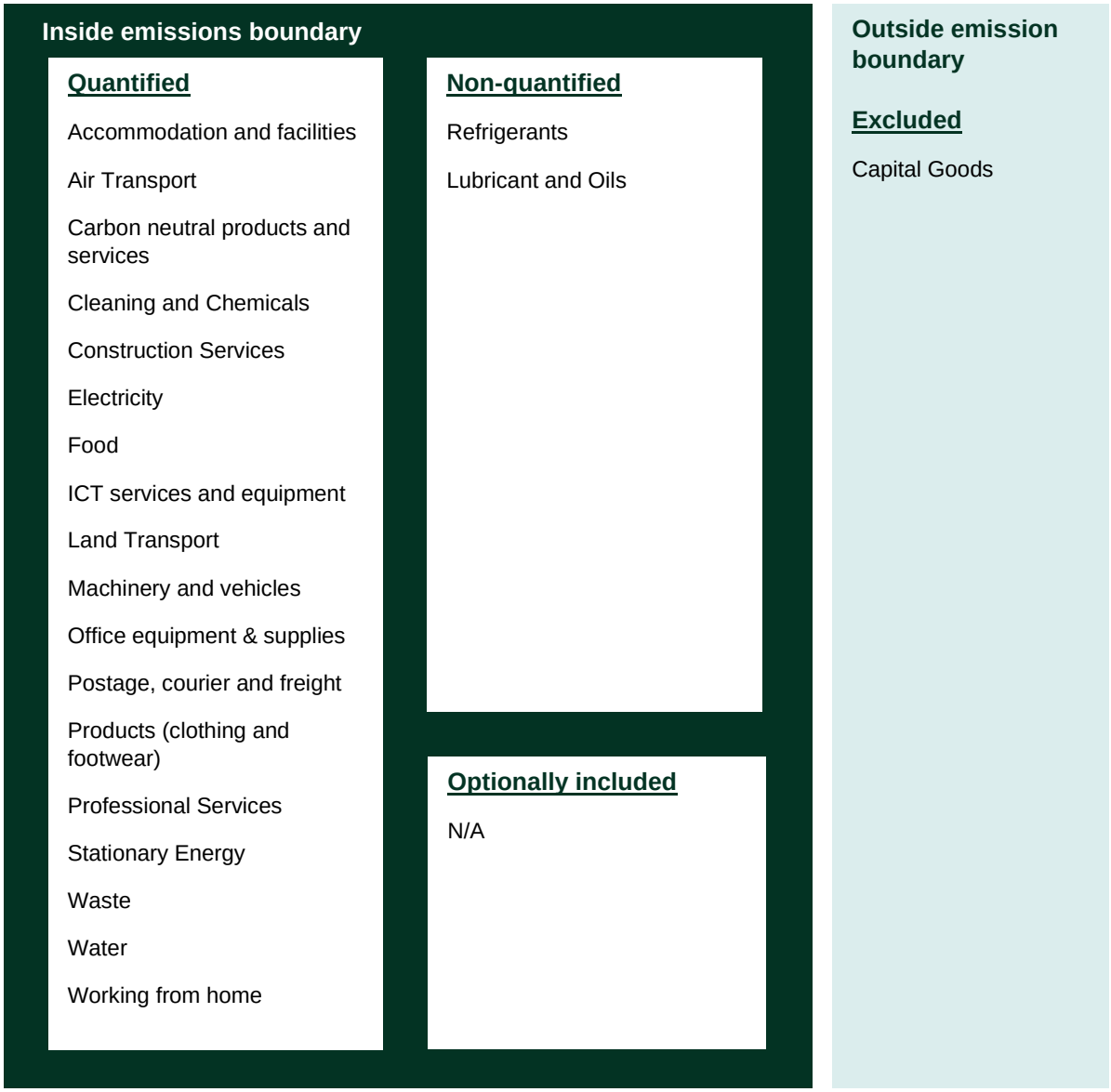
All emission sources listed in the emissions boundary are part of the carbon neutral claim. The organisation's primary operations are currently focused on Stage 1 of the LCUP, so all associated professional services related to the design and planning of the project are included in the emissions boundary. It is noted that these professional services will decrease once Stage 1 of the LCUP is operational however the emissions from operating the facility will increase and become part of the emissions inventory.

Quantified emissions have been assessed as relevant and are quantified in the carbon inventory.

Non-quantified emissions have been assessed as relevant and are captured within the emissions boundary but are not measured (quantified) in the carbon inventory. There were no material emissions unaccounted for in the inventory. Further detail is available in Appendix C.

Outside the emissions boundary

Excluded emissions are those that have been assessed as not relevant to the 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 in Appendix D.



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

Leigh Creek Energy Limited is committed to reducing its carbon footprint and becoming the first large scale fertiliser project in the world to be carbon neutral. To achieve this, LCK will utilise an integrated portfolio of innovative technology solutions from ISG syngas production, ammonia and urea synthesis, on-site gas-fired power generation and renewable electricity generation, and on-site carbon capture and storage.

LCK has committed to achieving its carbon neutral program across its operations and activities by 2022. This commitment begins with this voluntary commitment with Climate Active. As LCK expand exponential over the coming years, the decarbonisation pathway has been defined by LCK, with the key components including:

- Syngas generation to ammonia production
- Syngas fired electricity generation
- CO2 consumption through urea synthesis and production
- Renewable/hybrid electricity to reduce emissions from syngas fired electricity generation
- Carbon Capture and Storage (CCS)
- Low carbon density in finished product distribution
- Participating in Carbon Farming projects

At this point of the organisation's journey, it is impractical to set emissions reductions targets for the whole organisation as emissions are expected to increase until the LCUP is operational. However, once fully operational, the site is expected to operate with net zero emissions by implementing the aforementioned decarbonisation pathway elements. Once FID has been reached, the appropriate plans will be devised to achieve this outcome. FID is expected to be made in FY2023.

While it is impractical to set reduction targets during the construction phase, LCK recognises that there are some practical strategies that can be implemented in the early stage of the project to reduce site emissions during construction and site expansion. The first site initiative that may be implemented during the 12-month construction stage is the installation of a renewable energy source - to be defined when FID is reached - to reduce Scope 1 emissions by displacing diesel that would otherwise be used in the diesel generators. Other initiatives that LCK will explore at the site will be offsetting any flights using Climate Active carbon neutral products and services and installing solar PV arrays on purchased properties (staff housing) to reduce the consumption of emissions intensive grid electricity.

LCK is committed to reducing the carbon footprint of its office activities at its head office in Adelaide. Again, it is impractical to set emissions reductions targets at this time due to the expected exponential increase in staff numbers. However, LCK will implement the following initiatives to reduce its office-based emissions:

- Switching the current electricity retailer to a Climate Active certified alternative
- Install LED lighting
- Implement a switch-off campaign that will increase awareness of its employees and reduce energy

consumption

- Continue the work with LCK's "Going Green Initiative" that promotes staff to opt for low emission transport options by financially incentivising staff that make the environmentally friendly switch. The initiative promotes employees to commute to work by public transport, share ride, or bike rather than using private cars.
- A review of the company's supply chain to identify opportunities to engage with carbon neutral suppliers to reduce Scope 3 emissions.

5. EMISSIONS SUMMARY

Use of Climate Active carbon neutral products and services

LCK is committed to offsetting its emissions associated with flights from January 2022 onwards by selecting the carbon offsetting opt-in option on the commercial flights taken. LCK will use the following Climate Active carbon neutral products and services:

- Qantas Group's Fly Carbon Neutral program: passenger opts-in to fly carbon neutral with Qantas and/or Jetstar.
- Virgin Australia Holdings' Fly Carbon Neutral program: passenger opts-in to fly carbon neutral with Virgin Australia.

The true-up report will detail the exact carbon neutral products and services used by LCK over the projected period.

Organisation 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 (tCO_2-e)	Sum of Scope 2 (tCO_2-e)	Sum of Scope 3 (tCO_2-e)	Sum of total emissions (tCO_2-e)
Accommodation and facilities	-	-	93.58	93.58
Air transport (fuel)	-	-	-	-
Air transport (km)	-	-	15.45	15.45
Bespoke	-	-	-	-
Carbon neutral products and services	-	-	-	-
Cleaning and chemicals	-	-	3.31	3.31
Construction materials and services	-	-	304.45	304.45
Electricity	-	54.15	-	54.15
Food	-	-	16.35	16.35
Horticulture and agriculture	-	-	-	-
ICT services and equipment	-	-	23.49	23.49
Land and sea transport (fuel)	36.91	-	1.89	38.80
Land and sea transport (km)	-	-	44.96	44.96
Machinery and vehicles	-	-	56.55	56.55
Office equipment & supplies	-	-	2.60	2.60
Postage, courier and freight	-	-	274.02	274.02
Products	-	-	4.06	4.06
Professional services	-	-	12,570.34	12,570.34
Refrigerants	-	-	-	-
Roads and landscape	-	-	-	-
Stationary energy	25.25	-	1.30	26.55
Waste	-	-	12.05	12.05
Water	-	-	0.15	0.15
Working from home	-	-	4.49	4.49
Total	**62.17**	**54.15**	**13,429.04**	**13,545.36**

6.CARBON OFFSETS

Offsets strategy

Offset purchasing strategy: Forward purchasing for first year of certification (FY2021/22) then purchasing in arrears for FY2022/23 onwards.	
1. Total offsets previously forward purchased and banked for this report	0
2. Total emissions liability to offset for this report	13,546 tCO2-e
3. Net offset balance for this reporting period	13,546 tCO2-e
4. Total offsets to be forward purchased to offset the next reporting period	0
5. Total offsets required for this report	13,546 tCO2-e

Co-benefits

LCK has chosen carbon projects that not only offset its carbon emissions but also align with its SDGs and internal company values. Below is a highlight of each of the projects chosen and the co-benefits that each project will provide to the communities that they impact.

Malawi Cookstove Project

Carbon credits have been surrendered from the RIPPLE Africa cookstove project in Nkhata Bay District, Malawi. The project is run by RIPPLE Africa (a charity from the UK) and involves the installation of low cost, high efficiency wood fired cookstoves specially designed for local conditions. RIPPLE has so far replaced about 40,000 traditional three-stone cooking fires with fuel efficient cookstoves. The project has had a positive impact on approximately 200,000 people. These fuel efficiency wood stoves have significant benefits compared with the traditional three stone fires. The benefits include:

- Reducing approximately 80,000 bundles of wood consumed per week. This reduced consumption subsequently reduces deforestation as well as the time necessary to collect the additional wood. The time saved now allows the local woman to spend more time on other activities and education.
- Improved health of children and women who spend time around the stoves. The new stove produces less smoke and reduces injuries from burns.

RIPPLE Africa has made this fuel-efficient cookstove a way of life and has significantly reduced Malawi's greenhouse gas emissions. The benefits and impact the project has had on the community can be seen in RIPPLE's video.

RIPPLE Africa will use the funds from the sale of the credits to expand the project and support other RIPPLE Africa activities such as fish conservation, tree planting, forest conservation, education and health care services. RIPPLE Africa wants to expand the project so that 500,000 people will benefit from this fuel-efficient cookstove. All RIPPLE's activities address various Sustainable Development Goals (SDGs). The cookstove project alone addresses the following SDGs:

Guatemalan Deforestation

The forests of the Guatemalan Caribbean coastline are home to extraordinary beauty and biodiversity. The coastline is a migratory corridor for birds as they make their biannual journey between North and South America. Hundreds of species of birds depend on these forests as part of the Mesoamerican 'flyway,' and the area is home to almost 10% of the world's known bird species.

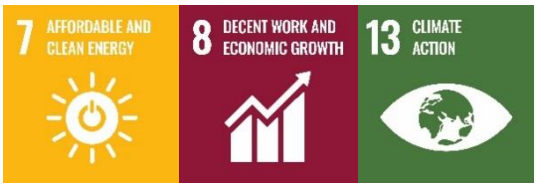
The Guatemalan Conservation Coast Project uses climate finance through the sale of carbon credits to protect this incredible landscape and reduce greenhouse gas emissions, aligning world-class conservation with viable, sustainable economic activities. Implemented by local NGO FUNDAECO, hundreds of landowners, including local communities, have joined together to protect almost 54,000 hectares of threatened forest coastline.

The project is also critical to the local water supply, building up natural coastal defences and supporting local agriculture. Its revenue supports agroforestry ecosystems and the growth of eco-tourism and provides resources to monitor the area and support community development programmes, such as health and education for women and girls. The project impacts over 100 local and indigenous communities, and they play a pivotal role in maintaining the integrity of the work through active participation in consultation, decision making and implementation of activities. This project aligns with the following SDGs:

Indonesia Geothermal

Located on the volcanic island of Java, 150km from Jakarta, this project avoids greenhouse gas emissions associated with electricity generation from fossil fuels by tapping into Indonesia's vast geothermal resources to generate electricity for the JAMALI grid. Recognised as one of the most efficient geothermal plants in the world, Darajat Unit III is helping to displace coal and oil in Indonesia's electricity infrastructure and supporting the Nation's transition to renewable energy.

Sitting within an area known for its biodiversity, Darajat Unit III has helped improve infrastructure in the region, and supports the local community through job creation and investment in schools, helping to address high illiteracy rates in the area. The project addresses the following SDGs:



Offsets summary

Proof of cancellation of offset units

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**	**Eligible quantity (tCO_2-e)**	**Quantity used for previous reporting periods**	**Quantity banked for future reporting periods**	**Quantity used for this reporting period claim**	**Percentage of total (%)**
Improved Cook Stove Project 1, Nkhata Bay District, Malawi	CER	CDM	30/01/2022	MW-5-329992-2-2-0-9933 – MW-5-332493-2-2-0-9933	CP2	2,502	0	0	2,502	18.5
REDD+ Project for Caribbean Guatemala: The Conservation Coast	VCU	Verra	31/01/2022	6370-317292345-317294888-VCU-024-MER-GT-14-1622-01012014-31122014-1	2014	2,544	0	0	2,544	18.8
Darajat Unit III Geothermal Project, Indonesia	CER	ANREU	31/01/2022	10,104,296 – 10,104,395 10,727,579 – 10,735,978	CP2	8,500	0	0	8,500	62.7
Total offsets retired this report and used in this report									13,546	
Total offsets retired this report and banked for future reports								0		

Type of offset units	Quantity (used for this reporting period claim)	Percentage of total
Certified Emissions Reductions (CERs)	11,002	81.2%
Verified Carbon Unit (VCU)	2,544	18.8%

7. RENEWABLE ENERGY CERTIFICATE (REC) SUMMARY

Renewable Energy Certificate (REC) summary

No addition RECs were purchased for the carbon neutral claim.

APPENDIX A: ADDITIONAL INFORMATION

No further information.

APPENDIX B: ELECTRICITY SUMMARY

Electricity emissions are calculated using a location-based approach.

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.

Market-based approach summary

Market-based approach	Activity data (kWh)	Emissions (kgCO2-e)	Renewable % 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 & Precinct LGCs)	0	0	0%
GreenPower	0	0	0%
Jurisdictional renewables (LGCs retired)	0	0	0%
Jurisdictional renewables (LRET) (applied to ACT grid electricity)	0	0	0%
Large Scale Renewable Energy Target (applied to grid electricity only)	19,707	0	19%
Residual electricity	84,423	90,593	0%
Total grid electricity	**104,130**	**90,593**	**19%**
Total electricity consumed (grid + non grid)	**104,130**	**90,593**	**19%**
Electricity renewables	19,707	0	
Residual electricity	84,423	90,593	
Exported on-site generated electricity	**0**	**0**	
Emission footprint ($kgCO_2$-e)		90,593	

Total renewables (grid and non-grid)	**18.93%**
Mandatory	**18.93%**
Voluntary	**0.00%**
Behind the meter	**0.00%**
Residual electricity emission footprint (tCO_2-e)	**91**

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

Location-based approach summary

Location-based approach	Activity data (kWh)	Emissions ($kgCO_2$-e)
ACT	0	0
NSW	0	0
SA	104,130	54,148
Vic	0	0
Qld	0	0
NT	0	0
WA	0	0
Tas	0	0
Grid electricity (scope 2 and 3)	**104,130**	**54,148**
ACT	0	0
NSW	0	0
SA	0	0
Vic	0	0
Qld	0	0
NT	0	0
WA	0	0
Tas	0	0
Non-grid electricity (behind the meter)	**0**	**0**
Total electricity consumed	**104,130**	**54,148**
Emission footprint (tCO_2-e)	**54**	

Climate Active carbon neutral electricity summary

Carbon neutral electricity offset by Climate Active product	Activity data (kWh)	Emissions ($kgCO_2$-e)
-	**0**	**0**

Climate Active carbon neutral electricity is not considered renewable electricity. The emissions have been offset by another Climate Active carbon neutral product certification.

APPENDIX C: INSIDE EMISSIONS BOUNDARY

Emissions from refrigerants, lubricants, and oils have been assessed as relevant and captured within the emissions boundary but are not quantified in the carbon inventory as they are considered immaterial at this stage of LCK's operations. Currently, LCK has only had a small number of vehicles and motors operating within the organisation's emission boundaries and small office-based refrigerators and air-conditioning units.

As the LCUP comes online, there will be a considerable increase in the number of vehicles, motor-driven equipment, and refrigeration systems in operation. As these emissions sources become material, they will be included in the carbon inventory.

Non-quantified emission sources

The following sources emissions have been assessed as relevant, 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
Refrigerant	Yes	No	No	No
Lubricant and Oils	Yes	No	No	No

APPENDIX D: OUTSIDE EMISSIONS BOUNDARY

Excluded emission sources

The below emission sources have been assessed as not relevant to an organisation's or precinct'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.

Emission sources tested for relevance	(1) Size	(2) Influence	(3) Risk	(4) Stakeholders	(5) Outsourcing	Included in boundary?
Capital goods	Yes	No	No	No	No	No

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