

Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Western Areas Ltd (WSA) is Australia's class leading nickel producer, with high grade nickel production assets in Australia. Headquartered in Perth, Western Australia, WSA is listed on the Australian Securities Exchange (ASX). Production is built around two of the highest grade underground nickel mines in the world, Flying Fox and Spotted Quoll, which both form part of WSA's Forrestania Nickel Operations (FNO) in the Goldfields region of Western Australia. The high grade nature of these two mines, coupled with a consistent track record of meeting production targets, produce significant operating margins. In 2015 WSA purchased the Cosmos operation near Leinster in Western Australia which was in care & maintenance. The mine was undergoing early works construction during the FY19 CDP reporting year. The Cosmos mine has a reserve of 8.1Mt and an expected mine life of greater than 10 years which is forecast to commence first production in FY23. Western Areas also has exploration activity in South Australia with the Western Gawler project.

Western Areas Cosmic Boy concentrator facility incorporates the Mill Recovery Enhancement Project (MREP) infrastructure. The MREP incorporates the use of the Company's BioHeap™ technology to recover nickel from the tailings waste stream. The nickel recovered is then converted into a high-grade nickel sulphide product, with potential uses in the electric vehicle sector. The MREP produces a high-grade nickel sulphide precipitate (NSP) product that bypasses the emission intensive smelter complex and is fed straight into the refinery which results in an overall lower carbon nickel end product to our customers.

Western Areas acknowledges that it operates within an extractive industry, however the Company is committed to minimising any potential adverse impacts, and operating responsibly in the community. This commitment is reflected in its governance practices, its active engagement and strong relationships with stakeholders, and the resources it devotes to managing the health, safety, environmental and social impacts of the business. Western Areas' focus on sustainability is underpinned by five key principles:

1. Sustainability is a consideration in Western Areas' daily business activities and operations;
2. The key to Western Areas' success is the health, safety and targeted development of its employees;

3. Expertise, innovation and technology are important tools to ensure adverse environmental, community and social impacts are minimised;
4. The communities in which Western Areas operate are partners in the Company's development; and
5. Continual review and improvement is critical to maintaining the highest standards in sustainable business practice.

Western Areas follows the TCFD framework to manage our ESG and climate related risks and opportunities, namely:

1. Governance;
2. Strategy;
3. Risk Management; and
4. Metrics & Targets.

Western Areas' approach is supported by its global risk management program (RMP), which identifies and analyses material risks to the Company's sustainability objectives, and ensures that these risks are both adequately managed and reported to the Board.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	July 1, 2019	June 30, 2020	No

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Australia

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

AUD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-MM0.7

(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?

Row 1

Mining

Nickel

Processing metals

Nickel

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	<p>The Board Chair has ultimate responsibility of climate related issues.. The Board has delegated to the Audit and Risk Committee, a committee of independent directors appointed by the Board, specific oversight of the Company’s Risk Management Program (RMP) which assesses, monitors and reports on the risks of climate-change risks to the business.</p> <p>Audit and Risk Committee is composed of the Board Chair (independent) and 2 independent board directors.</p> <p>The Board receives updates from the Audit and Risk Committee on the RMP regularly throughout the year.</p> <p>WSA follows the TCFD framework and considers Governance, Strategy, Risk Management and Metrics & Targets which the Board takes into account including sustainability and climate-related risks assessments, when preparing, evaluating and approving company wide strategy, acquisition evaluations, annual budgets and forecast and capital expenditure approvals.</p>

Chief Financial Officer (CFO)	Chief Financial Officer & Company Secretary – Reports to the Board on risk management, and when relevant, climate related risk management – standing board meeting agenda item.
-------------------------------	---

C1.1b

(C1.1b) Provide further details on the board’s oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p>	<p>The Audit & Risk Committee are responsible for the governance and risk management program at Western Areas’.</p> <p>Sustainability and climate related risks are assessed as part of the Group Risk Management Program. This involves an minimum annual (or 6-monthly) risk review which includes all General Managers and Group Managers. Material changes to the risk management programme are raised to the Audit and Risk Committee and the Board throughout the year as required.</p> <p>In 2021 WSA conducted a stand alone sustainability/climate change/ESG risk assessment at the request of the Board.</p> <p>The full Board receive reports on the outcomes of risk management activities as a regular standing agenda item (Board meeting are held more often than not on a monthly basis).</p> <p>Chief Financial Officer & Company Secretary – Reports to the Board on risk management, and when relevant, climate related risk management – standing board meeting agenda item.</p>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
---	----------------	---

Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Half-yearly
Chief Financial Officer (CFO)	Both assessing and managing climate-related risks and opportunities	Half-yearly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Audit & Risk Committee are responsible for the risk management program at Western Areas. CEO and Chief Financial Officer & Company Secretary – Reports to the Board on risk management and climate related risk management. During the normal course of the business the CEO and CFO regularly assess climate related risks. In 2021 WSA conducted a stand alone sustainability/climate change/ESG risk assessment at the request of the Board.

Senior Executive Position – Climate related issues and risks are captured at a high level in a risk register database, the database quantifies and ranks the various risks (which climate change and regulation is a risk) on a likelihood of occurrence and consequence matrix. Depending on the severity of the outcome of the individual risk to the organisation, the controls in place to limit the risk, future actions required to control the risk and mitigating factors are assigned to the risk.

The outcome reports related to these assessments are provided to the Board on a regular basis. In 2021 WSA conducted a stand alone sustainability/climate change/ESG risk assessment at the request of the Board.

Mine site managers are involved through the monitoring of climate related issues (eg weather pattern changes) and inclusion through the site based risk assessment process, which feeds into the corporate risk assessment reporting process. For example, increasing drought and increased thunder storm intensity/weather patterns is observed at the operation site which has resulted in increased lightning related fires (impacting power supply to the mine site).

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	No, not currently but we plan to introduce them in the next two years	CEO, CFO, General Managers and other senior managers remuneration is linked to business outcomes and shareholder returns. A short-term incentives (STI) programme comprises a number of business outcomes including ESG performance.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	We consider 0-3 year period being a short-term horizon that Western Areas has a high amount certainty of our operations and the impact of climate change related risks on our operation.
Medium-term	3	7	We consider 3-7 year period being a medium-term horizon that Western Areas has a fair amount certainty of our operations and the impact of climate change related risks on our operation. This time frame reflects the current life of mine of our Spotted Quoll at Forrestania and the new Cosmos Nickel operation .
Long-term	7	20	Beyond 7 years we consider this to be a long-term horizon of which we have a much lower certainty of any operational impact of climate related risks.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Yes, Western Areas defines substantive financial or strategic impact to our business as part as our risk management process. We consider >\$10M financial impact to the business as being a substantive impact.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Upstream

Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

- Short-term
- Medium-term
- Long-term

Description of process

WSA applies a standard risk management program (RMP) throughout all levels of the company to identify and assess all relevant business risks and opportunities, including those relating to climate.

The RMP aims to:

- 1) Identify material risks and group them into specific risk registers;
- 2) Identify established controls that mitigate the identified risks;
- 3) Regularly assess if new controls are required to manage the risk; and
- 4) Monitor that established controls remain effective and fit for purpose.

The RMP process outlined above is an iterate process that occurs regularly throughout the year, engaging senior staff and managers across the Company.

All risks, including climate risks, are captured in a consolidated corporate risk register database, where the database quantifies and ranks the various risks on a likelihood of occurrence and consequence matrix. Depending on the severity of the outcome of the individual risk to the organisation, the controls in place to limit the risk, future actions required to control the risk and mitigating factors are assigned to the risk. The outcome reports related to these assessments are provided to the Board on a regular basis.

In-addition to the consolidated risk assessment process, during 2021 WSA conducted a stand alone sustainability/climate change/ESG risk assessment at the request of the Board. This process was completed and report provided to the Board.

The CFO/Company Secretary is responsible for overseeing the Company’s Risk Management Program (RMP).

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

Relevance & inclusion	Please explain

Current regulation	Relevant, always included	<p>Transitioning to a low carbon economy provides a number of challenges for governments around the world. How governments will introduce and modify existing and future legislation to drive adaptation to this change is particularly relevant to the mining industry. Regulation risk is therefore a risk that WSA monitors closely. WSA's Group Manager Environment sits on a number of industry committees including the AMEC Climate Change and Water Committee which provides a good mechanism for staying abreast of proposed legislation changes.</p> <p>For example, monitoring the Renewable Energy Target (RET) and the Partial Exemption Certificates (PECs) provided to the Nickel industry due to Energy Intensive Trade Exposed (EITE) status. The change in the RET or PECs could have a cost impact to the company.</p> <p>Other relevant legislation that WSA keeps a close watch on is the existing Australia's climate safeguard mechanism and Emission Reduction Fund (ERF) and the possible implications for the company. The Emissions Reduction Fund is the Australian Government's central climate change policy tool. The Fund's objective is to help achieve Australia's greenhouse gas (GHG) emissions reduction targets of 5% below 2000 levels by 2020 and 26 to 28 per cent below 2005 levels by 2030. Western Areas facilities are currently and forecast to stay below the ERF threshold of 100,000 tonnes CO₂-e per facility.</p>
Emerging regulation	Relevant, always included	<p>Transitioning to a low carbon economy provides a number of challenges for governments around the world. How governments will introduce and modify existing and future legislation to drive adaptation to this change is particularly relevant to the mining industry. Regulation risk is therefore a risk that WSA monitors closely. WSA's Group Manager Environment sits on a number of industry committees including the AMEC Climate Change and Water Committee which provides a good mechanism for staying abreast of proposed legislation changes.</p> <p>For example, monitoring a potential carbon price or emissions trading scheme in Australia. The Australian Labor government introduced a carbon tax in 2011 which was subsequently repealed in 2014 by the Coalition government.</p>
Technology	Relevant, always included	<p>Western Areas is continuously monitoring and considering new technology to assist in the transition to a lower carbon economy. Some opportunities include lower carbon fuels such as gas at Cosmos rather than diesel, renewable energy opportunities at both Cosmos and Forrestania. Low carbon transportation such as electric mobile fleet or hydrogen vehicles. New technologies in the emerging nickel market for batteries in EV vehicles. Potential new products or value added products including Nickel sulphate and its variants. WSA is looking at new processing technologies such as our MREP project and bioheap demonstration project. And other projects such as carbon capture and storage/sequestration in tailings.</p>

		<p>Western Areas Cosmic Boy concentrator facility incorporates the Mill Recovery Enhancement Project (MREP) infrastructure. The MREP incorporates the use of the Company's BioHeap™ technology to recover nickel from the tailings waste stream. The nickel recovered is then converted into a high-grade nickel sulphide product, with potential uses in the electric vehicle sector. The MREP produces a high-grade nickel sulphide precipitate (NSP) product that bypasses the emission intensive smelter complex and is fed straight into the refinery which results in an overall lower carbon nickel end product to our customers.</p>
Legal	Relevant, always included	<p>The legal implications of a carbon pricing mechanism or other regulatory changes associated with climate change are considered. This includes legal reporting changes such as to the NGRS reporting obligations, and climate change disclosure requirements.</p>
Market	Relevant, always included	<p>WSA monitors market changes and expectations such as the emerging Nickel market for batteries in EV cars. Potential new products or value added products including Nickel sulphate and its variants. WSA is looking at new processing technologies such as our MREP project and bioheap demonstration project.</p> <p>Western Areas Cosmic Boy concentrator facility incorporates the Mill Recovery Enhancement Project (MREP) infrastructure. The MREP incorporates the use of the Company's BioHeap™ technology to recover nickel from the tailings waste stream. The nickel recovered is then converted into a high-grade nickel sulphide product, with potential uses in the electric vehicle sector. The MREP produces a high-grade nickel sulphide precipitate (NSP) product that bypasses the emission intensive smelter complex and is fed straight into the refinery which results in an overall lower carbon nickel end product to our customers.</p>
Reputation	Relevant, always included	<p>There is increasing stakeholder, investor and shareholder expectation for companies to transition towards a lower carbon economy. WSA is aware of the importance of this to the business and is focusing on developing a climate change strategy to drive this transition as one of the identified controls.</p>
Acute physical	Relevant, always included	<p>Bush fires caused by ever increasing storm events (lightening) have been known to disrupt the operation by affecting power supply to the mines. The risk of prolonged business interruption due to power outages is a key risk that is considered in the risk assessment process.</p>
Chronic physical	Relevant, always included	<p>Physical risks such as the drying nature of south-west Western Australia are considered as this has a potential to exacerbate the risk and consequence of bush fires, and also impact on access to water to supply to the operations. This risk is always considered in our risk assessment process.</p>

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical
Increased likelihood and severity of wildfires

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Increased risk of the potential for an extended power outages at the Forrestania Nickel Mine caused by the increasing severity of wildfires (lightning) impacting a power line corridor. This is exacerbated by an increasing dryness index in the region.

Time horizon

Medium-term

Likelihood

Unlikely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

15,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Potential interruption to over the fence power supply for up to one month resulting in business interruption at the mill for up to 3 weeks until mobile gen sets can be installed.

Cost of response to risk

0

Description of response and explanation of cost calculation

There are a number of key controls in place to manage this potential risk, including: Supply agreement with Synergy and Western Power; Annual forecast of power demand; backup diesel generation capacity at mine and camp and limited generation capacity at mill; ongoing discussions with Western Power on ongoing maintenance requirements; fault reporting protocol; standby power installed at both mines (and switching programme), contingency in budget to replace one of the camp gensets. The cost of controls has not been identified.

Comment

The increasing dryness of the south Western Australia and an increase in extreme weather events are likely caused by climate change in the region.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical
Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Climate change in the south-west Western Australia is projected to lead to a reduction in rainfall and runoff in the region. This has potential to impact the access to water to supply operations in the longer term.

Time horizon

Long-term

Likelihood

Unlikely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

A financial figure has not been estimated.

Cost of response to risk

Description of response and explanation of cost calculation

Western Areas conducts regular annual water management reviews to understand the existing and future sustainability of our water supplies. There is no immediate or medium term risk identified for our operations however we monitor the potential for longer term risk to our operations.

Comment

Western Areas conducts regular annual water management reviews to understand the existing and future sustainability of our water supplies. There is no immediate or medium term risk identified for our operations however we monitor the potential for longer term risk to our operations.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

Driven by the global shift towards decarbonisation there is a risk of a carbon pricing mechanism in the future. Western Areas has developed a carbon forecasting model incorporating a range of shadow carbon prices.

Time horizon

Long-term

Likelihood

Unlikely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

4,000,000

Potential financial impact figure – maximum (currency)

15,000,000

Explanation of financial impact figure

Shadow carbon pricing ranging from \$25/tonne CO₂e- to \$90/tonne CO₂e-

Cost of response to risk

0

Description of response and explanation of cost calculation

Western Areas has developed a carbon forecasting model incorporating a range of shadow carbon prices to understand the potential risk. Western Areas is developing a Climate Change/Sustainability Strategy.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

The increasing emerging market demand for electric vehicles is an opportunity for Western Areas Ltd. Nickel is a key input material in electric vehicle batteries (cathode). Nickel is a key component of lithium batteries used by Tesla and other electric vehicles which is creating a new market and increased demand for Nickel. The stainless steel market will continue to be the main market for nickel products however the battery market will continue to grow share in the future. The emerging battery market will likely increase demand for nickel and also possibly provide a price premium for battery input materials.

Western Areas Cosmic Boy concentrator facility incorporates the Mill Recovery Enhancement Project (MREP) infrastructure. The MREP incorporates the use of the Company's BioHeap™ technology to recover nickel from the tailings waste stream. The nickel recovered is then converted into a high-grade nickel sulphide product, with potential uses in the electric vehicle sector. The MREP produces a high-grade nickel sulphide precipitate (NSP) product that bypasses the emission intensive smelter complex and is fed straight into the refinery which results in an overall lower carbon nickel end product to our customers.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Increased demand for Nickel product realised by a higher Nickel price and therefore increased revenue.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

WSA has constructed a new plant facility at our Forresteria operation. WSA announced the completion of commissioning of the Mill Recovery Enhancement Project (MREP) which plans to increase overall plant recoveries by 3-5%. This project opens up new opportunities for WSA including nickel sulphate production for the expanding battery market, exploitation of lower quality resources (i.e. new projects such as New Morning and Diggers projects) and licencing the technology to third parties.

The MREP incorporates the use of the Company's BioHeap™ technology to recover nickel from the tailings waste stream. The nickel recovered is then converted into a high-grade nickel sulphide product, with potential uses in the electric vehicle sector. The MREP produces a high-grade nickel sulphide precipitate (NSP) product that bypasses the emission intensive smelter complex and is fed straight into the refinery which results in an overall lower carbon nickel end product to our customers.

Comment

It is difficult to put an objective value to this opportunity.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced direct costs

Company-specific description

Renewable energy reducing the cost of energy and carbon emissions for operational power supply. Renewable energy in the form of a hybrid renewable energy solution possibly involving wind, solar, gas and battery integrated with a controller and microgrid are being investigated for our Cosmos Operation. Battery storage is also being considered to reduce the spinning reserve at Cosmos for the shaft installation. Solar is also being considered for Forresteria to reduce peak capacity demand.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Reduced operational cost at Forrestania Nickel Operation.

Reduced operational cost and capital cost at Cosmos Nickel Operation.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

A deed of agreement with a renewable supplier has been completed.

A SoDar trailer was deployed in the field at the Cosmos Nickel Operation in November 2019 to capture wind (at high elevation) and solar data for a 12 month period to inform the renewable energy power study. The SoDar trailer collected 12-months of high elevation wind data in support of further power studies.

A study of a solar power installation at the Forrestania Nickel Operation was completed in 2019. This project was determined to be not viable as the existing life of mine of the project did not support the opportunity.

Comment

Renewable energy investigations are currently underway and implementation cost and annual savings are still being determined for the Cosmos Nickel Operation.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Construction of mining shaft infrastructure at the Cosmos Nickel Mine will provide significant economical and environmental benefits against trucking ore to the surface. The shaft will save approximately 1.5ML of diesel annually consumed by the trucking alternative, and therefore reduce the carbon footprint of the operation. The shaft will remove approximately 5W of heat generated from diesel engines which has the flow on effect of reducing the cooling demand from the ventilation cooling plant (estimated to remove a minimum of 200 m³/s of additional ventilation requirement). This also has a health and safety aspect by reducing diesel particulate emissions from underground.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

25,000,000

Potential financial impact figure – maximum (currency)

30,000,000

Explanation of financial impact figure

The capital cost of purchasing a second hand shaft is offset by the significant reduction in life of mine operating cost of the shaft versus the trucking alternative.

The shaft is estimated to save approximately 1.75 GL of diesel per year that would have otherwise been consumed by trucks hauling to the surface. In addition, the shaft is estimated to save approximately 56,000 MWh per year of electricity due to reduced electrical demand for the primary fans and refrigeration plant.

The cost savings over an estimated 10 year mine life are in the range of \$25M-\$30M AUD in total savings LOM.

In addition, the shaft is estimated to save approximately 4750 tonnes CO₂-e associated with the avoided diesel of the trucks and approximately 1250 tonnes CO₂-e per year

due to reduced electricity consumption. A total saving of approximately 6000 tonnes CO₂-e per year attributed to the shaft project versus trucking to surface.

Cost to realize opportunity

20,000,000

Strategy to realize opportunity and explanation of cost calculation

Capital cost of purchasing a second hand shaft is offset by the significant reduction in life of mine operating cost of the shaft versus the trucking alternative.

Western Areas purchased a high quality second hand head gear and winder from South Africa.

The shaft infrastructure has been dismantled in South Africa and is currently being refurbished in South Africa prior to shipping to Perth.

Once in Perth the shaft infrastructure will be transported to the Cosmos Nickel Operation and installed by experienced contractors.

The shaft pilot hole is scheduled to be sunk in FY20.

Comment

The capital cost of purchasing a second hand shaft is offset by the significant reduction in life of mine operating cost of the shaft versus the trucking alternative. The shaft is expected to save significant diesel and power costs over the life of mine. In addition, the shaft project is projected to save approximately 6000 tonnes CO₂-e per year.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at Annual General Meetings (AGMs)	Comment
Row 1	Yes, in the next two years	No, we do not intend to include it as a scheduled AGM resolution item	

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
2DS IEA Sustainable development scenario	The Paris Agreement has an objective of "holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels" (IEA Sustainable development scenario). Western Areas has conducted qualitative analysis of a number of climate related scenario analysis to understand a range of possible and probable challenges and opportunities presented by climate change and the path to a decarbonised future.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Western Areas produces nickel concentrate as our primary product. The historical demand for nickel has predominantly been for the stainless steel market. More recently, there has been an emerging market demand for batteries in electric vehicles. Western Areas strategy is therefore influenced by the emerging battery market to supply appropriate product. This is evidenced by Western Areas investment in the Mineral Recovery Enhancement Project (MREP) project at Forrestania. The MREP plant produces additional higher grade product (45%-50% Ni) being sold to new EV battery linked customers, mainly refineries. Western Areas has ongoing discussions with offtake parties that are linked to the Electric Vehicle battery pre-cursor sector for future MREP production of high grade premium nickel sulphide and potential for Odysseus concentrate to feed this market.
Supply chain and/or value chain	Yes	Western Areas has ongoing discussions with our supply/value chain on climate related risks and opportunities. Mineral carbonisation, or storage/sequestration of carbon in our tailings storage facilities, our bioleach facility and in our heap leach pads is an identified opportunity. WSA has commenced collaborative discussions with our customers and business partners on mineral carbonisation.

		<p>Western Areas is focusing on improving our accounting and reporting of our Scope 3 emissions. This involves engagement and discussions with both our supply chain as well as our customers in order to collect the relevant data. For example, some of our product is shipped to China. Western Areas has been tracking the data of the transportation of our product to the Esperance port, the transportation by ship from Esperance to China. Transportation of the concentrate in China to a smelter. And then the emissions associated with the smelting in China.</p>
Investment in R&D	Yes	<p>As noted above, Western Areas has invested heavily in R&D around the MREP project to produce a higher grade nickel product to supply the emerging EV battery market. Western Areas Cosmic Boy concentrator facility incorporates the Mill Recovery Enhancement Project (MREP) infrastructure. The MREP incorporates the use of the Company's BioHeap™ technology to recover nickel from the tailings waste stream. The nickel recovered is then converted into a high-grade nickel sulphide product, with potential uses in the electric vehicle sector. The MREP produces a high-grade nickel sulphide precipitate (NSP) product that bypasses the emission intensive smelter complex and is fed straight into the refinery which results in an overall lower carbon nickel end product to our customers.</p> <p>Western Areas is investigating low carbon renewable alternatives to our existing power supplies. At Cosmos Nickel Operation we are completing a renewable power study to determine viable renewable energy opportunities at Cosmos. We deployed a SoDar trailer in the field to gather 12 months of high elevation wind data and solar data to inform our ongoing studies.</p>
Operations	Yes	<p>Western Areas is investigating low carbon renewable alternatives to our existing power supplies. At Cosmos Nickel Operation we are completing a renewable power study to determine viable renewable energy opportunities at Cosmos. We deployed a SoDar trailer in the field to gather 12 months of high elevation wind data and solar data to inform our ongoing studies.</p>

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Indirect costs Capital expenditures Capital allocation Assets	Financial planning at WSA certainly gives consideration to climate-related risks, for example: <ol style="list-style-type: none"> 1. Financial planning and the budget process ensures the management of key risks (including climate related risks), particularly through the adequate funding of identified key controls. This links the financial planning process to key risks such as prolonged power interruption at FNO due to wildfire and the numerous controls that have been identified eg There are a number of controls in place, including: Supply agreement with Synergy and Western Power; Annual forecast of power demand; backup diesel generation capacity at mine and camp and limited generation capacity at mill; ongoing discussions with Western Power on ongoing maintenance requirements; fault reporting protocol; standby power installed at both mines (and switching programme), contingency in budget to replace one of the camp gensets. 2. Financial planning and the budget process ensures the management of key opportunities, such as the key capital projects like the shaft project at Cosmos Nickel Operation, and renewable energy opportunities at Cosmos. 3. WSA has developed a carbon forecast model including three shadow carbon price scenarios for the life of mine of each operation. The carbon forecast model informs the financial planning process to understand the financial decisions regarding key capital infrastructure and operating costs.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

All aspects have been covered in the answers above.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

No target

C4.1c

(C4.1c) Explain why you did not have an emissions target, and forecast how your emissions will change over the next five years.

	Primary reason	Five-year forecast	Please explain
Row 1	Important but not an immediate business priority		<p>WSA is currently focused on a number of climate related improvement initiatives including:</p> <ol style="list-style-type: none"> 1. Third party auditing of our Scope 1 and Scope 2 emissions for the first time - Completed. External verification was completed for FY19 and FY20. 2. Calculation of our Scope 3 emissions for the first time - Completed. Improvements to the Scope 3 estimation were made during FY20. 3. Development of a carbon forecast tool incorporating a shadow price of carbon to forecast our corporate carbon footprint to life of mine - Completed. 4. Develop an overarching climate change strategy - under development. <p>WSA is currently reviewing the potential for climate change targets in the future.</p>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO₂e savings.

	Number of initiatives	Total estimated annual CO ₂ e savings in metric tonnes CO ₂ e (only for rows marked *)
Under investigation	1	34,496
To be implemented*	1	5,913

Implementation commenced*		
Implemented*	1	408
Not to be implemented		

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO₂e savings (metric tonnes CO₂e)

408

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

2,000,000

Investment required (unit currency – as specified in C0.4)

2,200,000

Payback period

1-3 years

Estimated lifetime of the initiative

1-2 years

Comment

Mill Scats Heap Leach Project (MSP). The 20,000t demonstration heap leach pad was completed on time and on budget, with commissioning commenced in the quarter. The demonstration heap leach will provide the test data to evaluate a full-scale heap leach of the remaining scats (290kt @ 1.5% nickel for over 4kt nickel). The MSP uses leaching processing which has a lower carbon intensity than the standard crushing and flotation process. The 20,000 tonne demonstration project avoids 408 tonnes CO₂e-. The full scale project of 290kt would avoid 5913 tonnes CO₂e-.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Internal incentives/recognition programs	A continuous improvement project named Safe Smart Success (SSS) was approved by the Board of Directors and commenced back in October 2016. An improvement target of \$15M savings/year was identified and a financial incentive for employees to share in a proportion of the cost savings was implemented. The programme included energy efficiency projects and by default flows on to emission reductions. Although this programme no longer formally exists, the culture of continuous improvement continues within the company.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Product

Description of product/Group of products

WSA's nickel sulphide concentrate has a favorable Fe-MgO ratio compared to other suppliers, resulting in less energy intensive refining and reduced overall emissions per unit of refined nickel. The nickel sulphide product is also a substitute for "Nickel Pig Iron" which is very energy intensive during the refinery process.

Furthermore, nickel is a key requirement to produce electric vehicle batteries which assists in reducing global transportation GHG emissions.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

% revenue from low carbon product(s) in the reporting year

Comment

More than 10% but less than or equal to 20%

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

July 1, 2014

Base year end

June 30, 2015

Base year emissions (metric tons CO₂e)

17,019

Comment

Scope 2 (location-based)

Base year start

July 1, 2014

Base year end

June 30, 2015

Base year emissions (metric tons CO₂e)

44,834

Comment

The Forrestania Nickel Operation purchases grid electricity from Synergy via the South West Interconnected System (SWIS).

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO₂e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Australia - National Greenhouse and Energy Reporting Act

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO₂e?

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

24,967

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

Comment

Scope 2 emissions are based on the grid emission factor of the South West Interconnected System (SWIS).

The facilities with scope 2 emissions are the Forrestania Nickel Operation, the Perth corporate office and the Perth laboratory.

The Cosmos Nickel Operation is provided by diesel gensets.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO₂e?

Reporting year

Scope 2, location-based

45,060

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

8,012

Emissions calculation methodology

NGERS Measurement Determination - methods for calculating GHG emissions from cement production.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Please explain

Scope 3 emissions for cement were calculated from internal data on cement production. Scope 3 emissions relating to lime consumption were based on data obtained from supplier.

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

Not relevant.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1,850

Emissions calculation methodology

Scope 3 emission factors provided within 2008 National Greenhouse Accounts (NGA) Factors (Australian Department of Climate Change).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Scope 3 emissions for transport and refining of fuel based on data provided diesel fuel supplier.

Upstream transportation and distribution

Evaluation status

Not evaluated

Please explain

Waste generated in operations

Evaluation status

Not evaluated

Please explain

Business travel

Evaluation status

Not evaluated

Please explain

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1,210

Emissions calculation methodology

Number of flights and fuel consumption provided by aviation contractor. Energy and emission factors from NGERS Measurement Determination applied to calculated fuel consumption. Number of buses and routes sourced from supplier invoices. Bus fuel efficiency sourced from Australian Bureau of Statistics for vehicles of equivalent size and weight. Energy and emission factors from NGERS Measurement Determination applied to calculated fuel consumption.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

60

Please explain

Number of flights and fuel consumption provided by aviation contractor, and the number of buses and routes sourced from supplier invoices. Bus fuel efficiency sourced from Australian Bureau of Statistics for vehicles of equivalent size and weight. Energy and emission factors from NGERS Measurement Determination applied to calculated fuel consumption.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

WSA has no upstream leased assets.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

10,640

Emissions calculation methodology

Fuel consumption provided by haulage contractors. Energy and emission factors from NGERS Measurement Determination applied to calculated fuel consumption. Shipping emissions calculator provided by shipping contractor (MSC), based on transport origin, destination, route and container type. Emission factors applied are based on the UK Department for Business, Energy and Industrial Strategy (BEIS) greenhouse gas reporting: conversion factors 2019.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

Fuel consumption provided by haulage contractors. Energy and emission factors from NGERS Measurement Determination applied to calculated fuel consumption. Shipping emissions calculator provided by shipping contractor (MSC), based on transport origin, destination, route and container type. Emission factors applied are based on the UK Department for Business, Energy and Industrial Strategy (BEIS) greenhouse gas reporting: conversion factors 2019.

Processing of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

65,578

Emissions calculation methodology

Emissions per tonne of product calculated and provided by Australian smelter operators, using methods aligned with Australian NGERS. Australian emission factor also applied to smelters in China, Japan and Norway. Majority of product is processed in Australian smelters.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

80

Please explain

Emissions per tonne of product calculated and provided by Australian smelter operators, using methods aligned with Australian NGERS. Australian emission factor also applied to smelters in China, Japan and Norway. Majority of product is processed in Australian smelters.

Use of sold products

Evaluation status

Not evaluated

Please explain**End of life treatment of sold products**

Evaluation status

Not evaluated

Please explain**Downstream leased assets**

Evaluation status

Not relevant, explanation provided

Please explain

WSA has no downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

WSA has no franchises.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

WSA has no other investments.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

There are no other upstream considerations.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

There are no other downstream considerations.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO₂e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

3.35

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO₂e)

70,027

Metric denominator

metric ton of ore processed

Metric denominator: Unit total

20,926

Scope 2 figure used

Location-based

% change from previous year

9.8

Direction of change

Increased

Reason for change

The reason for the 9.8% increase in the emission intensity figure, is the emissions from our Cosmos Nickel Operation with no associated ore tonnes processed. The Cosmos Nickel Operation is under construction with first ore production schedule for FY23.

Intensity figure

3.53

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO₂e)

70,027

Metric denominator

metric ton of product

Metric denominator: Unit total

19,857

Scope 2 figure used

Location-based

% change from previous year

14.6

Direction of change

Increased

Reason for change

The reason for the 14.6% increase in the emission intensity figure, is the emissions from our Cosmos Nickel Operation with no associated ore tonnes sold. The Cosmos Nickel Operation is under construction with first ore production schedule for FY23.

Intensity figure

227

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

70,027

Metric denominator

unit total revenue

Metric denominator: Unit total

308.4

Scope 2 figure used

Location-based

% change from previous year

7.7

Direction of change

Decreased

Reason for change

Increase in revenue was greater than the increase in total emissions.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	24,848	IPCC Fourth Assessment Report (AR4 - 100 year)

CH4	33	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	82	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	4	IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	0	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
Australia	

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By facility

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO ₂ e)	Latitude	Longitude
Forrestania Nickel Operation		32.344663	119.433835
Cosmos Nickel Operation (Care & Maintenance)		27.354021	120.345587
Exploration South Australia		31.495507	134.250317

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO₂e.

	Gross Scope 1 emissions, metric tons CO ₂ e	Comment

Metals and mining production activities	24,967	All of WSA Scope 1 emissions fall within the Metals and mining production activities sector.
---	--------	--

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Australia				

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Forrestania Nickel Operations		
Perth Corporate Office		
Perth laboratory		

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Metals and mining production activities	45,060		All of WSA Scope 2 emissions fall within the Metals and mining production activities sector.

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption				
Other emissions reduction activities				
Divestment				
Acquisitions				
Mergers				
Change in output				
Change in methodology				
Change in boundary				
Change in physical operating conditions	3,923	Increased	5.9	A 5.9% increase in emissions was due to a 56% increase in emissions from our Cosmos Nickel Operation, due to an increase in construction activities.
Unidentified				
Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 15% but less than or equal to 20%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value	0	109,844	109,844
Consumption of purchased or acquired electricity		0	65,303	65,303

Total energy consumption		0	175,147	175,147
--------------------------	--	---	---------	---------

C-MM8.2a

(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	Unable to confirm heating value	109,844
Consumption of purchased or acquired electricity		65,303
Consumption of self-generated non-fuel renewable energy		0
Total energy consumption		175,147

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Diesel

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

98,606

MWh fuel consumed for self-generation of electricity

10,716

MWh fuel consumed for self-generation of heat

0

Emission factor

69.2

Unit

metric tons CO2 per GJ

Emissions factor source

National Greenhouse Emission Reduction Scheme Measurement Determination for 2019/20.

<http://www.cleanenergyregulator.gov.au/NGER/Legislation/Measurement-Determination#Amendments-for-201920>

Comment

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Energy usage

Metric value

31.75

Metric numerator

630,528 GJ of total energy consumed

Metric denominator (intensity metric only)

19,857 tons Nickel concentrate sold

% change from previous year

23.5

Direction of change

Increased

Please explain

Increase of 23.5% on the previous year due to the energy consumed by the construction activities at the Cosmos Nickel Operation that does not currently generate and Nickel tonnes until FY23.

If only considering our active mine site, Forrestania Nickel Operation, the increase in the metric would be 14.7% (FY20 Energy consumed 439,706 GJ, 19,857 tons Nickel concentrate sold, compared to FY19 414,363 GJ and 21,483 tonnes Nickel concentrate sold).

C-MM9.3a

(C-MM9.3a) Provide details on the commodities relevant to the mining production activities of your organization.

Output product

Nickel

Capacity, metric tons

Production, metric tons

19,857

Production, copper-equivalent units (metric tons)

42,097

Scope 1 emissions

24,967

Scope 2 emissions

45,060

Scope 2 emissions approach

Location-based

Pricing methodology for copper-equivalent figure

Commodity prices @ 30 June 2020 = Ni USD \$12,790 and Cu USD \$6,038 (Source www.LME.com) resulting in a Conversion Factor of 2.12 for Copper Equivalents

Comment

Commodity prices @ 30 June 2020 = Ni USD \$12,790 and Cu USD \$6,038 (Source www.LME.com) resulting in a Conversion Factor of 2.12 for Copper Equivalents

C-MM9.3b

(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.

Output product

Nickel

Capacity (metric tons)

Production (metric tons)

19,857

Annual production in copper-equivalent units (thousand tons)

42,097

Scope 1 emissions (metric tons CO2e)

24,967

Scope 2 emissions (metric tons CO2e)

42,097

Scope 2 emissions approach

Location-based

Pricing methodology for-copper equivalent figure

Commodity prices @ 30 June 2020 = Ni USD \$12,790 and Cu USD \$6,038 (Source www.LME.com) resulting in a Conversion Factor of 2.12 for Copper Equivalents

Comment

Commodity prices @ 30 June 2020 = Ni USD \$12,790 and Cu USD \$6,038 (Source www.LME.com) resulting in a Conversion Factor of 2.12 for Copper Equivalents

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-MM9.6a

(C-MM9.6a) Provide details of your organization’s investments in low-carbon R&D for metals and mining production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment	R&D investment figure in the reporting	Comment
-----------------	--	-----------------------------------	--	---------

		over the last 3 years	year (optional)	
Other, please specify	Large scale commercial deployment	≤20%		Western Areas is involved in a number of R&D projects over the last three years including research into the viability of heap leach production activities to produce nickel at a lower operating cost and carbon intensity. Western Areas completed an extensive laboratory test work programme. A large scale 20,000 tonne commercial demonstration project was constructed at our Forrestania Nickel Operation at a capital cost of \$2.2M. The demonstration heap leach will provide the test data to evaluate a full-scale heap leach of the remaining scats (290kt @ 1.5% nickel for over 4kt nickel).
Other, please specify	Basic academic/theoretical research	≤20%		Western Areas is involved in a number of R&D projects over the last three years including researching into the viability of renewable energy opportunities at our operations. At our Cosmos Nickel Operation Western Areas has worked closely with renewable energy providers to complete a number of studies to inform management decisions. The studies have focused on a hybrid solution of solar, wind and battery technologies to complement existing supply of natural gas. A sodar wind trailer was deployed in the field to gather 12 months of valuable high elevation wind data to

				inform further studies. Studies have also been conducted to review solar energy opportunities at the Forrestania Nickel Operation.
Other, please specify	Basic academic/theoretical research	≤20%		Western Areas is involved in a number of R&D projects over the last three years including investigations into mineral carbonation opportunities. Western Areas has identified mineral carbonisation as decarbonisation opportunity for the company. Mineral carbonation is a natural chemical weathering process where carbon dioxide reacts with mineral rocks to form a mineral carbonate. The result is a permanent and safe way of locking away carbon, and reducing greenhouse gases in the earth's atmosphere. In practice, mineral carbonation can include the capture of carbon dioxide within tailings and waste rock. The first phase of the studies will involve a desktop analysis. This will inform the testwork programme and further studies in this area.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 FY2020-GHG-Emissions-Verification-Statement.pdf

Page/ section reference

Page 1 and 2

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 FY2020-GHG-Emissions-Verification-Statement.pdf

Page/ section reference

Page 1 and 2

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, but we are actively considering verifying within the next two years

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment

Stress test investments
Identify and seize low-carbon opportunities
Supplier engagement

GHG Scope

Scope 1
Scope 2

Application

Western Areas has developed a life of mine carbon forecasting tool with shadow carbon pricing of Australian Dollars (AUD) \$30, \$60 and \$90 scenarios. Western Areas carbon shadow price forecasting models is used in large projects to determine future carbon emissions and potential carbon liabilities of large projects. Western Areas carbon shadow price forecasting models have use Australian Dollars (AUD) \$30, \$60 and \$90 scenarios.

Actual price(s) used (Currency /metric ton)

30

Variance of price(s) used

Western Areas carbon shadow price forecasting models is used in large projects to determine future carbon emissions and potential carbon liabilities of large projects. Western Areas carbon shadow price forecasting models have use Australian Dollars (AUD) \$30, \$60 and \$90 scenarios.

Type of internal carbon price

Shadow price

Impact & implication

Western Areas carbon shadow price forecasting models is used in large projects to determine future carbon emissions and potential carbon liabilities of large projects. Western Areas carbon shadow price forecasting models have use Australian Dollars (AUD) \$30, \$60 and \$90 scenarios.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

50

% total procurement spend (direct and indirect)

90

% of supplier-related Scope 3 emissions as reported in C6.5

80

Rationale for the coverage of your engagement

Western Areas engages with key suppliers on various climate related aspects including data collection and scope 3 calculations. The coverage outlined above reflects that the major contractors are included in this engagement, as are the key downstream transportation suppliers such aviation and bus companies.

Impact of engagement, including measures of success

Engagement with our suppliers on climate related aspects including information collection has been fundamental to Western Areas developing our inaugural Scope 3 emission estimation, and then expanding and improving on this estimation. The engagement has been positive.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

Meetings to discuss collaboration on shared decarbonisation opportunities

% of customers by number

50

% of customer - related Scope 3 emissions as reported in C6.5

50

Please explain the rationale for selecting this group of customers and scope of engagement

Western Areas has two key customers of our concentrate product. The coverage is estimated at 50% as this applies to engagement with one of our two key customers.

Impact of engagement, including measures of success

Positive engagement that will likely continue into the future.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Trade associations

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

No

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

The companies risk management process ensures a rigorous process is in place that considers all direct and indirect activities of the company and the companies commitment to a high level of ESG performance, inclusive of climate change strategy. A risk assessment is conducted regularly (quarterly) at the operations and 6-monthly at the corporate level to ensure all activities at a site and corporate level are considered. The Group Environmental Manager sits of the Water and Environment Committee for AMEC (Association of Mining and Exploration Companies) which provides oversight and alignment on Climate Change policy and strategies at a regulatory level and benchmarks against other company performance.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 Environmental-Social-Governance-Report-2020.pdf

Page/Section reference

Pages 15-18 of FY20 ESG Report (attached)

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures

Comment

Report is also publicly available on the WSA website
<https://www.westernareas.com.au/esg/corporate-governance>

Publication

In mainstream reports

Status

Complete

Attach the document

 WesternAreas_AR_2020_SMALL.pdf

Page/Section reference

Pages 34, 35

Content elements

Strategy
Risks & opportunities

Comment

Report is also publicly available on the WSA website

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Financial Officer	Chief Financial Officer (CFO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms