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Corvus Metallurgical Coal Project Greenhouse Gas Emissions Review

Corvus Resources Pty Ltd

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1 Introduction

1.1 Project Overview

Corvus Resources Pty Ltd (Corvus), an Australian, privately-owned proponent, is seeking to develop an underground longwall coal mine with supporting infrastructure approximately 17 kilometres (km) north of Emerald in the Bowen Basin, Queensland, Australia (the Project).

The Project will extract up to 8 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal with saleable production of approximately 6.6 Mtpa over a planned mine life of 25 years. Approximately 90 percent (%) of coal produced by the Project would be used in blast furnaces to make steel (i.e. metallurgical/coking coal). A secondary coal product (approximately 10%) is subject to outcomes of further exploration and coal quality test work.

This underground mine will use autonomous longwall technology to reduce exposure of employees at the coal face and enhance the safety of employees. The mine design will require new infrastructure including mine access drifts/shafts and underground roadways to access and service the underground mining areas, a coal processing plant (CPP), train load-out facility, conveyor systems, power transmission infrastructure (powerlines and substations) and water management systems (dams and other water management infrastructure).

1.2 Purpose of this Review

Corvus met with the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) in February 2025 to provide an overview of the Project and discuss under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Whilst the EPBC Act does not specifically regulate greenhouse gas (GHG) emissions, DCCEEW advised that the potential indirect impacts of GHG emissions on matters of national environmental significance must be considered (under section 527E of the EPBC Act). This assessment is required to consider whether the proposed action is a substantial cause of the stated physical effects of climate change on matters of national environmental significance (MNES). Following the meeting, DCCEEW provided an information request specifying the information that should be included with the referral, including:

1. information regarding the scope 1,2 and 3 GHG emissions associated with the Project;
2. details about measures proposed to reduce, avoid and monitor GHG emissions; and
3. potential export destination countries and information regarding measures adopted in those countries to reduce, avoid and monitor GHG emissions.

This review has been prepared to satisfy this information request and allow DCCEEW to consider the potential indirect impacts of GHG emissions from the Project on MNES.

2 Scope 1, 2 and 3 Emissions Associated with the Project

The Project involves the following activities resulting in Scope 1, 2 and 3 GHG emissions:

- Construction and operation phase (approximately 25 years):
  - Fugitive emissions from underground mining (Scope 1).
  - Emissions from combustion of diesel on-site (Scope 1 and 3).
  - Emissions associated with the use of electricity (Scope 2 and 3).
  - Emissions associated with rail transport of coal (Scope 3, within Australia).
  - Emissions associated with shipping of coal (Scope 3, outside Australia).
- Decommissioning phase (approximately 3 years)[1]:
  - Emissions from combustion of diesel on-site associated with surface infrastructure decommissioning and minor subsidence remediation activities (Scope 1 and 3).
  - Emissions associated with the use of electricity (Scope 2 and 3). Note that Scope 2 and 3 emissions associated with electricity are expected to go to zero post-2050 due to the decarbonisation of the electricity grid.
  - As an underground mine, the portals would be sealed once mining is completed and therefore there would not be any further Scope 1 fugitive emissions during this phase.
  - Scope 3 emissions associated with transportation of coal would also reduce rapidly during the decommissioning phase as any residual stockpiled coal is depleted.

Potential fugitive emissions have been calculated using in-seam site-specific sampling of the coal resource and analysis in accordance with Australian or equivalent standards (i.e. Method 2). Other GHG emitting activities have been calculated using Method 1 (i.e. adopting emission factors from the NGA Factors [2024] and multiplying this by the anticipated annual usage). The emissions factor for electricity has been calculated using the projected emissions reported in *Australia's Emissions Projections 2024* (DCCEEW, 2024). This approach resulted in a steadily declining value in electricity related emissions associated with the progressive decarbonisation of Queensland's electrical grid.

The annual average Scope 1 and 2 emissions associated with the construction and operation phases of the Project (broken down by source) is provided in Figure 1. Scope 3 emissions are captured as Scope 1 emissions by the businesses that produce them. GHG emission estimates for the Project are provided in Table 1. The decommissioning phase has not been included in these calculations as the overall contribution to Scope 1, 2 and 3 emissions (relative to the construction and operation phase) would be extremely small and would skew the annual average presented.

[1] Greenhouse gas emissions associated with decommissioning are expected to be so small as to be negligible relative to the emissions from other activities undertaken over the life of the Project and therefore have not been quantified in this review.

Table 1 GHG Emissions Estimates for the Project

Emission Component	Estimated GHG Emissions (Mt CO_2-e)
Annual Average Scope 1 GHG Emissions	0.082
Total Scope 1 GHG Emissions	2.059
Annual Average Scope 2 GHG Emissions	0.019
Total Scope 2 GHG Emissions	0.464
Annual Average Scope 3 GHG Emissions (inside Australia)	0.070
Annual Average Scope 3 GHG Emissions (outside Australia)	15.88
Total Scope 3 GHG Emissions (inside Australia)	1.750
Total Scope 3 GHG Emissions (outside Australia)	397.00
Total GHG emissions (over the 25 year mine life)	401.27
Australia's Annual National Emissions for 2022*	432.62
Total average annual Scope 1, 2 and 3 emissions (within Australia only)	0.171
Total average annual Scope 1, 2 and 3 emissions (within Australia only) (% relative to Australia's Annual Emissions for 2022)	0.040%
Annual Global Emissions for 2021**	48,145.20
Total average annual Scope 1, 2 and 3 emissions (within and outside Australia)	16.05
Total average annual Scope 1, 2 and 3 emissions (within and outside Australia) (% relative to Global Annual Emissions for 2021)	0.033%

* The latest reported year, using the Department's published estimates for the Paris Agreement inventory, was 2022 at the time of preparing this document (March 2025).

** The latest year reported available from the Climate Watch's Historical GHG emissions site at the time of preparing this document (March 2025) was 2021.

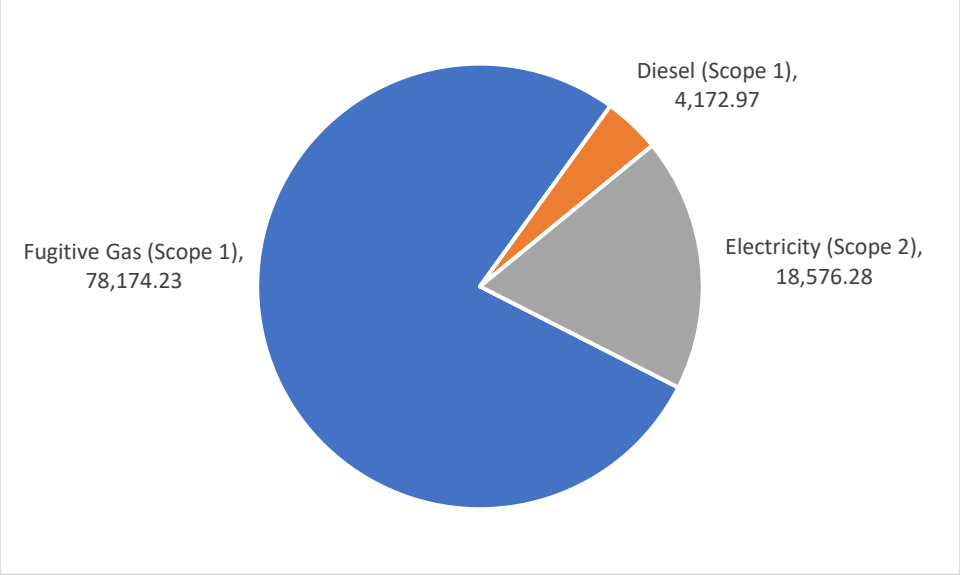


Figure 1 Annual Average Scope 1 and 2 GHG Emissions (t/CO_2-e) for the Project

The annual average Scope 1 and 2 GHG emissions intensity of the Project is estimated to be approximately 0.01479 t CO_2-e/t of run-of-mine (ROM) coal. The Scope 1-only emissions intensity of the Project is 0.01207 t CO_2-e/t ROM coal. This is significantly less than other approved and operating coal mines in Queensland, which have intensities ranging from 0.04 to 0.4483 (Table 2 and Figure 2). Where available, this information has been sourced from the reported emissions intensities available from the Clean Energy Regulator Emissions Intensity Determinations that are submitted by the operator of the mine. The low GHG emissions intensity is a result of a comparatively low gas content and other mitigation options incorporated into the initial design of the Project (refer Section 3.3 for further detail).

Table 2 Comparison of Scope 1 Emissions Intensities at Queensland Underground Mines

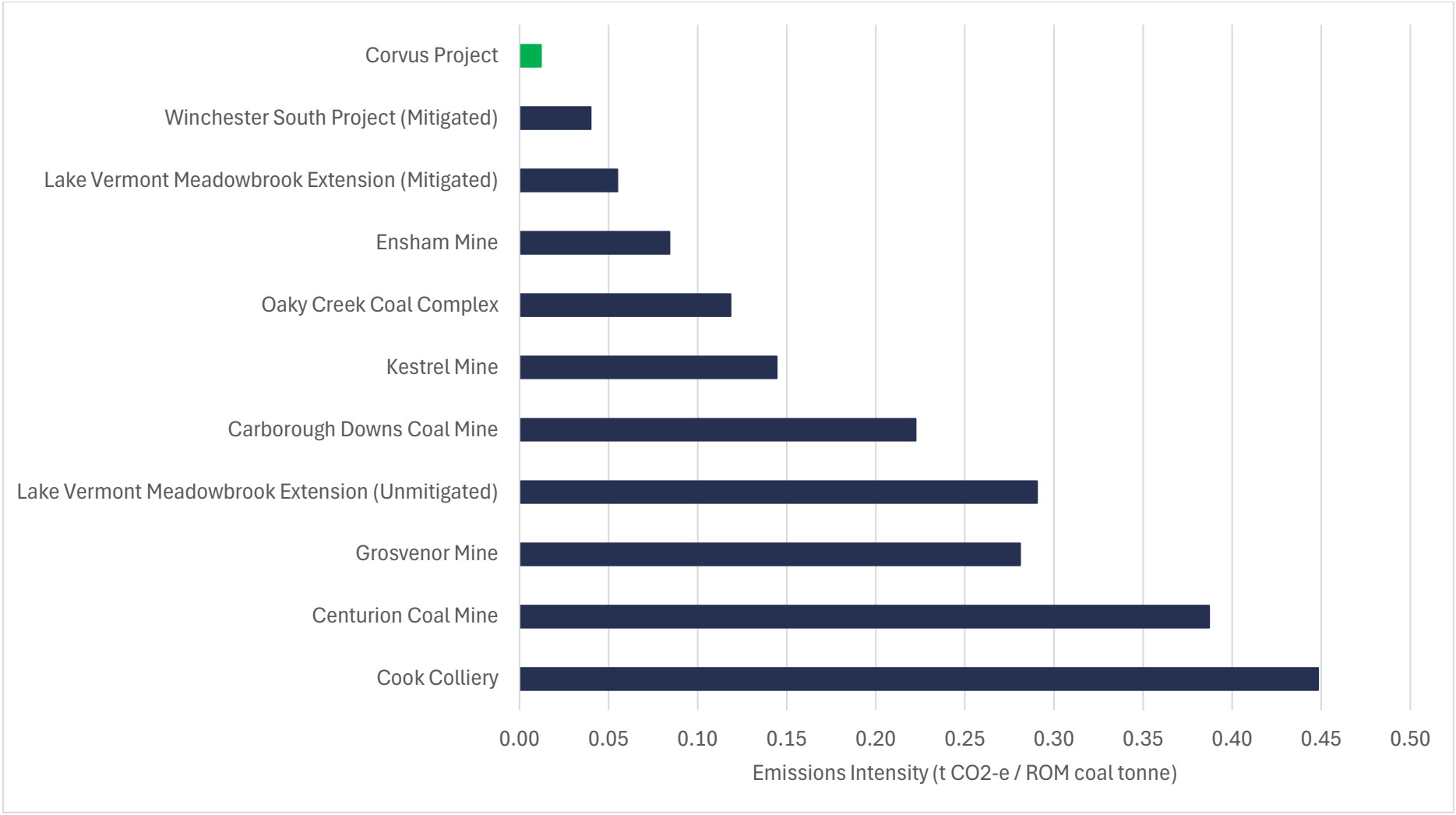
Coal Mine	Emissions Intensity (t CO_2-e / t ROM Coal)
Cook Colliery*	0.44830
Centurion Coal Mine*	0.38710
Lake Vermont Meadowbrook Extension (Unmitigated)^	0.29051
Grosvenor Mine*	0.28100
Carborough Downs Coal Mine*	0.22230
Kestrel Mine*	0.14440
Oaky Creek Coal Complex*	0.11850
Ensham Mine*	0.08424
Lake Vermont Meadowbrook Extension (Mitigated)^	0.05499
Winchester South Project (Mitigated)^	0.04000
Corvus Project	0.01207

* Sourced from Clean Energy Regulator Emissions Intensity Determinations. All Queensland underground coal mines with facility-specific emissions intensities as of March 2025 have been reported in the table above.

^ These projects have been included due to reference in 'Living Wonders Case' (noting Winchester South Project is open cut mining project). Emissions intensities obtained from the following documents:

- *Winchester South Project Greenhouse Gas Management and Abatement Plan* (Whitehaven Coal, 2022); and
- *Technical Addendum: Lake Vermont Meadowbrook Project – Fugitive Methane* (Katestone Environmental Pty Ltd, 2023).

Figure 2 Scope 1 Emission Intensities of Approved and Operating Coal Mines in QLD and NSW



3 Emissions Management

3.1 State Legislation and Policies

The Queensland Government has committed to action on climate change through the Queensland *Climate Action Plan* 2030 (Department of Environment, Tourism, Science and Innovation [DETSI], 2021a), including setting legislated GHG emission reduction targets. All sectors of the economy are expected to contribute and there are a range of plans and strategies in place to support emissions reduction across different sectors.

Factors relating to climate change are particularly relevant to applications for an Environmental Authority where the Environmentally Relevant Activities will contribute to GHG emissions. In this regard, consideration of the *Human Rights Act 1998* is also relevant when making any EA assessment decisions.

The Queensland Government has set a legislated target of zero net emissions by 2050 with interim emissions reduction targets of 30% by 2030 and 75% by 2035 from 2005 levels. As per the Intergovernmental Panel on Climate Change (IPCC), reaching zero "net" emissions means ensuring emissions released are balanced by the emissions being removed over a specific period.

The Queensland *Resources Industry Development Plan* (RIDP) (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2022) describes the following actions the Queensland Government is taking to manage GHG emissions associated with mining:

1. Complete the Bowen Basin pipeline concept study.
2. Investigate carbon capture, use and storage.
3. Continue to provide a rigorous environmental approval framework for resource projects.
4. Work with industry to investigate ways to reduce fugitive emissions from resource activities.
5. Facilitate industry access to renewable energy to reduce on-site emissions.
6. Require industry to develop plans to decarbonise operations.

The RIDP also outlines the expectations for industry, including:

- conduct thorough environmental impact studies and make environmental protection a central part of operational decision making;
- reduce emissions, including fugitive emissions, in line with the Government's climate targets by decarbonising mine operations;
- develop and implement plans that provide a pathway to net zero emissions operations and report on progress publicly; and
- support the research and development of innovative technology to reduce on-site emissions, including through collaboration with the Mining Equipment, Technology and Services sector.

The DETSI *Guideline – Greenhouse Gas Emissions* outlines the requirement for assessments to include details of the management practices proposed to be implemented to prevent or minimise adverse impacts. Proposed management practices should demonstrate that all reasonable and practical measures have been applied to manage GHG emissions through best practice design, process, technology, and management. The GHG abatement hierarchy provided in Figure 3 illustrates the preferred prioritisation of management practices to be implemented to minimise GHG emissions.

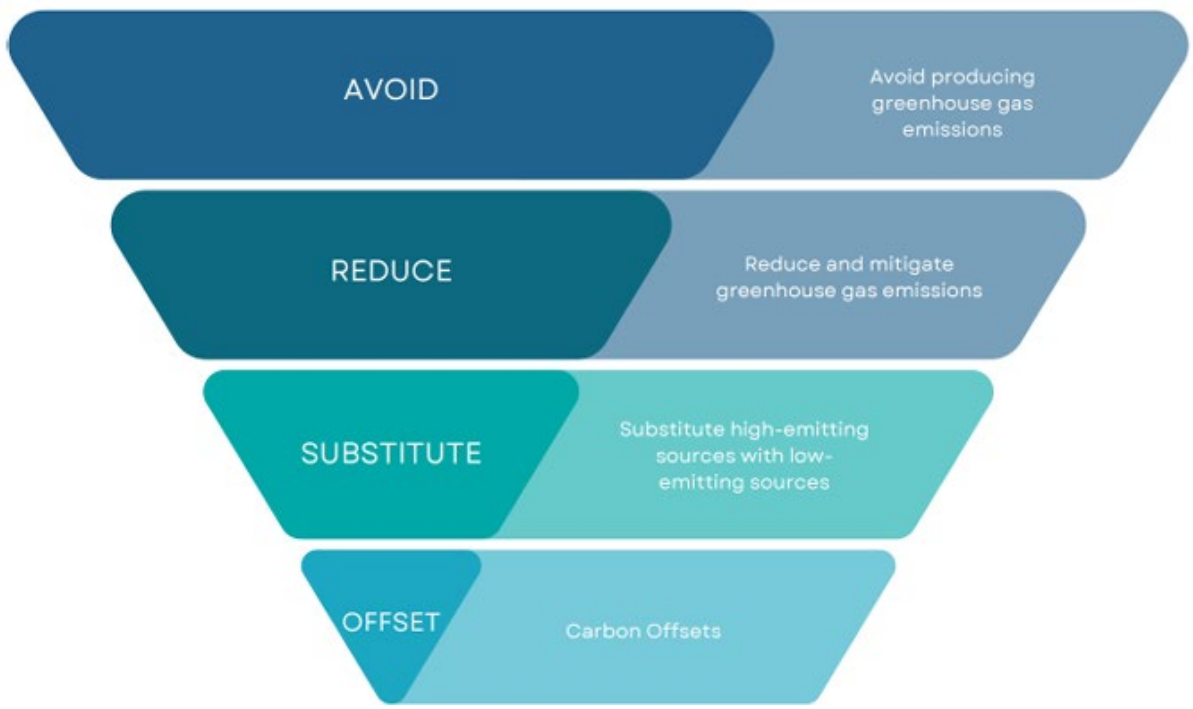


Figure 3 GHG Abatement Hierarchy

Applicants are required to demonstrate how the proposed GHG emission reduction measures:

- meet best practice environmental management and are reasonable for the specific industry; and
- will avoid or reduce Scope 1 and Scope 2 emissions at commencement and throughout the life of relevant activity.

Applicants are required to demonstrate that consideration has been given to reducing Scope 3 emissions, where reasonably practicable.

Details of how the Project has been developed with this hierarchy in mind are provided in Section 3.3 (i.e. proposed avoidance, reduction, substitution and offset measures for Scope 1 and 2 emissions).

Applications for activities that meet the medium to high emission category at any point during the carrying out of the authorised activity will be required to include a GHG Abatement Plan.

A GHG Abatement Plan identifies the GHG emissions to be generated by a project and details ongoing emission mitigation and management measures proposed to be implemented throughout the life of the project to progressively reduce Scope 1 and Scope 2 GHG emissions.

Accordingly, Corvus will prepare and include a GHG Abatement Plan in the Environmental Impact Statement for the Project. This GHG Abatement Plan will further develop and expand on the measures described in this report.

3.2 Commonwealth Legislation and Policies

The Safeguard Mechanism is the Australian Government's policy for reducing emissions at Australia's largest industrial facilities. It sets legislated limits—known as baselines—on the GHG emissions of these facilities. These emissions limits will decline, predictably and gradually. These limits will help achieve Australia's emission reduction targets of 43% below 2005 levels by 2030 and net zero by 2050.

The Safeguard Mechanism applies to industrial facilities emitting more than 100,000 tonnes of carbon dioxide equivalent (CO_2-e) per year. This includes:

- mining;
- oil and gas production;
- manufacturing;
- transport; and
- waste facilities.

Safeguard Mechanism facilities have an annual emissions limit known as a baseline. In general, baselines will fall by 4.9% each year to 2030. This will enable industrial facilities to contribute to Australia's emissions reduction targets. This baseline decline rate applies to all Safeguard facilities, including existing and new facilities. Different rates may be approved for facilities classed as a trade-exposed baseline-adjusted facility. The business with operational control of the facility must ensure its net emissions do not exceed the baseline determined by the Clean Energy Regulator.

Baselines are set each year. They are based on a facility's production multiplied by an emissions-intensity value. For existing facilities, the emissions-intensity value is set at the average of Australian industry emissions performance (with transitional arrangements until 2030). For new facilities (i.e. the Project), the emissions-intensity value is set at international best practice emissions performance (benchmarks). The best practice emissions intensity for ROM coal production (i.e. the Project) is 0.00592 t CO_2-e / t ROM coal. The emissions-intensity value established for existing facilities is 0.0653 t CO_2-e / t ROM coal (i.e. approximately 11 times higher than the best practice emissions intensity).

It is relevant to note that applying the new emissions intensity of 0.00592 t CO2-e per tonne of coal to a production rate of 8 Mtpa yields annual emissions of approximately 47,000 t CO_2-e, which is less than the 100,000 t CO_2-e threshold for qualifying for the Safeguard Mechanism. The annual average Scope 1 emissions for the Project is 82,347 t CO_2-e (Chart 1), which is below the threshold for qualifying for the Safeguard Mechanism.

If necessary, Corvus could acquire Australian Carbon Credit Units (ACCUs) to offset any excess emissions over the baseline emissions intensity (i.e. Scope 1 emissions over 100,000 t CO_2-e) in order to meet its obligations under the Safeguard Mechanism.

3.3 Measures Considered or Proposed for the Project

Key sources of GHG emissions from underground coal mines are:

- fugitive emissions (Scope 1);
- on-site diesel usage (Scope 1 and 3);
- electricity usage (Scope 2 and 3);
- transportation of coal (Scope 3); and
- product end use (Scope 3).

Measures for the mitigation and management of each of the key Scope 1 and 2 sources are discussed further in the subsections below. As a greenfield project, these measures have been incorporated into the design of the Project at the earliest possible stage and will ensure that the Project is operating at a high standard from commencement.

Management and mitigation of Scope 3 emissions are outside the control of Corvus. Specific commitments made in relation to Scope 3 emissions (e.g. foreign policy in relation to the use of the end product) are discussed in Section 4.

3.3.1 Fugitive Emissions

Fugitive emissions are losses, leaks and other releases of gases such as methane and carbon dioxide (CO_2) to the atmosphere that are associated with industries producing natural gas, oil and coal. All coal seams contain some level of gas because of how the coal is formed. These gases escape (thus becoming fugitive) during both open-cut and underground mining operations.

Fugitive mine emissions are a significant component of GHG emissions. Mine methane emissions account for approximately 8% of total global anthropogenic methane emissions. In addition to environmental concerns, methane is a highly explosive gas and a serious safety concern in coal mining.

Testing of the target coal seams for the Project within the Project area indicates that the average gas content of the resource that would be extracted is relatively low (average of 0.8034 m^3/t) compared to other mining operations in Queensland (Section 2). This translates to an emissions intensity of 0.0115 t CO_2-e/ROM tonne.

The most effective and economic way to control methane emissions is to proactively capture methane by means of boreholes before methane enters the mine workings (i.e. pre-drainage). However, a successful methane capture system, marked as consistently stable flow with high methane concentration, can be hard to achieve. Many variables add complexity to managing mine methane including:

- methane desorption rates under various coal microstructures and the petrography of coal type;
- the magnitude and extent of methane emissions;
- methane flow dynamics and its interactions with mine ventilation systems; and
- the stability and integrity of methane capture boreholes under the dynamic strata deformation process.

Pre-drainage of methane by boreholes is commonly used when methane concentrations are above 5 cubic metres per tonne (m^3/t). Flaring of methane from gas extracted from a mined-out area (goaf) is used to convert methane into carbon dioxide (as carbon dioxide has a lower global warming potential than methane). This process requires a minimum concentration of methane to be effective.

The flaring of methane gas via enclosed flares is applied at many New South Wales and Queensland underground mines. Additionally, in Queensland, the practice of flaring methane gas is also applied using open flaring (candle stick flares). The flaring of gas is applied to both pre-drainage and goaf gas with pre-drainage gas normally offering higher concentrations of methane. Gas composition and concentration of methane gas and oxygen are critical design criteria for a flare along with gas flow. When sizing a flare and determining the gas composition operating range, the gas nozzle tip pressure and gas mixing velocity ratios must be carefully considered. This becomes even more critical as the levels of methane reduce and the presence of oxygen exists (Palaris, 2021).

Mines that currently implement pre-drainage and/or flaring activities are typically targeting a reduced gas seam content above 5 m^3/t. It is widely accepted that fugitive emissions abatement (i.e. lowering gas content) below 1 m^3/t is not currently viable. For example, the Ensham Life of Mine Extension Project (DETSI, 2021b) included a proposed residual gas content of 2.0 m^3/t and the draft Decarbonisation Plan included as part of the Lake Vermont Meadowbrook Extension (2022) stated "*it is considered technically possible to pre-drain coal seam gas ahead of open cut mining where coal seams are thick enough and where gas contents are of order of magnitude material, say 6 m^3/t, so that they can be then reduced to 3 m^3/t by surface to in seam drainage wells. Injection of compressed inert gas into these existing drainage wells will preferentially displace more methane from the coal seam and further accelerate gas drainage down to lower than 1 m^3/t*".

The maximum recorded gas content from in-seam sampling undertaken across the Project Area is 1.32 m^3/tonne, with an average of 0.80 m^3/tonne. Given the very low in situ gas content at the Project, fugitive emission abatement through pre-drainage, capture and/or flaring is not currently considered to be viable for the Project. Notwithstanding, Corvus will review continue to review developing and new technologies over the life of the Project as they continue to improve and to determine whether they could be feasibly applied to the Project.

3.3.2 Diesel

As part of the design for the Project, Corvus has considered opportunities to minimise diesel usage and promote increased efficiency where usage cannot be avoided. This includes:

- A major reduction in road haulage of coal through the use of conveyors (i.e. between the Pit Top Area and the CPP Area). This conveyor will replace 440 road train movements per day (220 trips each way) with each road train having a delivery payload of 100 tonnes.
- The conveyor adds capital expenditure of approximately $130 million.
- Minimising the re-handling of material (i.e. coal, overburden and topsoil).
- Training of staff on continuous improvement strategies regarding efficient use of plant and equipment and the opportunity to introducing low emission technology.
- Monitoring and maintaining the mobile plant fleet and other equipment in good operating order to reduce emissions (i.e. in accordance with manufacturer recommendations).
- Implementing underground vehicle battery technology for personnel transport when the mining equipment and technology sector has commercialised the current developments into such transport vehicles.

Corvus estimates that operating a conveyor system between the Pit Top Area and CPP Area rather than road haulage avoids Scope 1 CO_2-e emissions of approximately 16,000 tonnes per annum because of the foregone diesel usage.

Corvus will also regularly review opportunities for improvement in this area, alternative fuels and any other improvements that may become available throughout the life of the Project.

3.3.3 Electricity

Emissions associated with electricity generation are projected to reduce by more than 50% in the 6 years between 2024 and 2030. This is driven by the expanded Capacity Investment Scheme (included in the baseline emissions projections for the first time) as well as state and territory renewable energy targets. Together these policies will deliver on the government's target to reach 82% national on-grid renewable energy generation.

Notwithstanding the forecast decarbonisation of the grid, Corvus will also implement the use of energy efficient pumps and motors, variable speed drives and LED lighting where applicable. Corvus will also implement procurement policies that preference the selection of energy efficient equipment and vehicles.

3.4 Performance Review Process

The GHG Management and Abatement Plan to be prepared as part of the Project will include commitments to review the performance of the Project. This is expected to include:

- monitoring of diesel and electricity usage to track diesel and electricity efficiency;
- annual assessment of GHG emissions to be reported in accordance with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and the *National Greenhouse and Energy Reporting (Measurement) Determination 2008*;
- an annual energy audit to review and evaluate the energy efficiency of the Project, including:
  - a comprehensive review of the diesel and electricity usage at the Project over the past year, which includes a comparison of these results against the relevant objectives for diesel consumption and energy usage, and monitoring results of the previous years;
  - identification of any trends in the data over the life of the Project; and
  - descriptions of what mitigation or control measures that will be implemented over the next year to improve the performance of the Project;
- a commitment to review and, if necessary, revise the GHG Management and Abatement Plan after the completion of each annual energy audit, or as a result of other changes to the Project (e.g. amendments to the Environmental Authority).

4 Customers (Consumers of End-Product)

Corvus anticipates that the primary customers for the Project (and the respective percentage of expected product volume) would be a combination of the following countries:

- Japan (40%);
- India (20%);
- South Korea (10%);
- Vietnam (6%);
- Brazil (6%);
- China (5%);
- Taiwan (5%);
- Europe (5%); and
- other markets (3%).

Corvus has provided an indicative estimate of relative volume expected to be provided to each customer, however this remains a preliminary prediction only and is subject to market dynamics, commercial contracts, etc.

Table 3 provides details for each potential customer of any known and anticipated measures to reduce, avoid of offset GHG emissions that have been submitted under the Paris Agreement and published on the United Nations Framework Convention on Climate Change (UNFCCC) secretariat Nationally Determined Contributions (NDC) registry.

Table 3 Policies and Measures of Expected Customers

Country	Summary of Known/Anticipated Measures
Japan	NDC Emissions reduction target: Japan aims to reduce its GHG emissions by 46% in 2030, 60% in FY 2035 and by 73% in FY 2040, respectively, from its FY 2013 levels. With a long-term goal of net-zero by 2050. Coverage: 100% Gases: Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3). Other Relevant Measures / Domestic Policies *Long-term Strategy under the Paris Agreement* The Long-term Strategy under the Paris Agreement (Long-term Strategy) was adopted by the Cabinet of Japan on 11 June 2019. The Strategy covers the period from 2018 to 2050. The Long-term Strategy was updated in October 2021 and included the revised target of net-zero by 2050. The Long-term Strategy identifies that energy-related CO_2 accounts for over 80% of Japan's GHG emissions. As a consequence, much of Japan's decarbonisation requires transformation of the energy sector. In relation to energy, the Long-term Strategy sets out a future vision with low-carbon energy sources, electrification of demand and an increase in energy efficiency all contributing to decarbonising the sector. For areas that are hard to decarbonise, Japan proposes to rely on CCUS, specifically "Direct Air Carbon Capture and Storage, Bio-Energy with Carbon Capture and Storage, and forest sink measures". Japan has no end date for domestic coal, and while the Government has indicated support for the closure of inefficient coal power plants, Japan continues to rely on coal power and supports the building of new plants. *Global Warming Tax* Japan was an early adopter of economic policy measures to achieve emissions reduction: • in 1998, Japan passed the 'Law concerning Promotion of Measures to cope with Global Warming promoting emissions reduction on a voluntary basis; • in 2005, Japan introduced the Voluntary Emissions Trading Scheme (now superseded). Both policies did not see effective reductions in carbon emissions.

Country	Summary of Known/Anticipated Measures
	In 2012, the Government introduced a tax that aims to reduce 80% of Japan's GHG emissions by 2050. The tax applies to coal and is calculated on the carbon content. Tax generated is recycled into renewable energy projects and energy efficiency programs. *Plan for Global Warming Countermeasures* The Plan for Global Warming Countermeasures was adopted by the Cabinet of Japan on 13 May 2016 and amended in October 2021. The Plan incorporates the emissions reduction target and the sectoral targets and measures set out in Japan's updated NDC. It also emphasises the key role of technology, which the Government is promoting though its "Environmental and Energy Technology Innovation Plan" and its "National Energy and Environment Strategy for Technological Innovation towards 2050". *Joint Crediting Mechanism* Japan has introduced a Joint Crediting Mechanism (JCM), through which it cooperates with developing countries to achieve a reduction in GHG emissions through the distribution and uptake of low-carbon technologies. Although commencing before the Paris Agreement, the JCM is reflective of article 6 of the Paris Agreement. As at March 2025, the JCM's partnership document has been signed by 29 countries. Credits generated from emission reductions under the JCM will be allocated according to agreed terms between the participating countries. Under the JCM, Japan aims to secure accumulated emission reductions and removals by partner countries at the level of approximately 100 million tonnes of CO_2 by fiscal year 2030. Japan will appropriately count the acquired credits to achieve its NDC.
India	NDC *Emissions reduction target:* India has a long-term goal of reaching net-zero by 2070, with a reduction in emissions intensity of its GDP by 45% by 2030, from its 2005 levels. India also committed to: • achieving about 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030; and • creating an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030. *Coverage:* 100% Other Relevant Measures / Domestic Policies *Perform, Achieve and Trade Scheme* India has a Perform, Achieve and Trade Scheme which reduces energy consumption in energy intensive industries. The scheme involves the trading of energy saving certificates and operates as a market based mechanism. Specific high energy intensive industries are identified as Designated Consumers within certain key sectors, who are required to appoint an energy manager, file energy consumption returns every year and conduct mandatory energy audits regularly.

Country	Summary of Known/Anticipated Measures
	National Action Plan on Climate Change In 2006, India introduced the National Environment Plan. India's National Action Plan on Climate Change (NAPCC), introduced in 2008, outlines priorities for mitigating and adapting to climate change. NAPCC established "missions" to develop mitigation and adaptation policies, including: • National Solar Mission; • National Mission for Enhanced Energy Efficiency; • National Mission on Sustainable Habitat; • National Water Mission; • National Mission for Sustaining the Himalayan Eco-system; • National Mission for a Green India; • National Mission for Sustainable Agriculture; and • National Mission on Strategic Knowledge for Climate Change. Localised policies are also developed through the State Action Plan on Climate Change. *Clean Environment Cess* In 2010, India introduced a "carbon tax equivalent" on local and imported coal to feed into the National Clean Energy and Environment Fund. The introduction of the Goods and Service Tax in India in 2017 was abolished by the cess. A new cess on coal production, called the GST Compensation Cess, was put in its place at the same rate of 400 rupees per tonne. *National Electricity Plan* In April 2018, India released its National Electricity Plan (NEP), which is valid to financial year 2026/27. The NEP provides electricity demand forecasts for the period 2017-2026/27, calculates installed capacities from conventional and renewable energy sources needed to meet that demand and describes relevant policies. During the period 2017-22, no additional capacity of coal will be added (except for the coal power plants currently under construction). Instead, demand growth will be met by additional installed capacities in gas, hydro, nuclear and renewables. A share of 56.5% of installed capacity is expected to come from non-fossil sources by 2027. In 2027 the country aims to have 275 gigawatts (GW) installed capacity of solar and wind, 72 GW of hydro and 15 GW of nuclear. The Central Electricity authority estimates that this means that no additional coal capacity is needed until at least 2027. *Draft National Energy Policy* According to India's Draft National Energy Policy, published in 2017, coal based power generation capacity is likely to increase to more than 330-441 GW by 2040 (from 192 GW in FY 2017). The Draft Policy indicates India's preference for demand to be met by domestic coal, however the percentage of coal that is imported is likely to remain high unless domestic production increases rapidly.

Country	Summary of Known/Anticipated Measures
	According to India's NDC, coal will continue to dominate power generation in the future. The Government has introduced the following initiatives to improve the efficiency of coal-fired power plants: • all new, large coal based generating stations have been required to use highly efficient supercritical technology; • renovation, modernisation and life extension of existing old power stations is being undertaken in a phased manner; • approximately 144 old thermal stations have been assigned mandatory targets for improving energy efficiency; and • the introduction of ultra-supercritical technology, as and when commercially available, is part of future policy.
South Korea	NDC *Emissions reduction target:* South Korea has a long-term goal of reaching net-zero by 2050, with a reduction of 40% by 2030, from its 2018 levels. South Korea also committed to: • achieving about 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030; and • creating an additional carbon sink of 2.5 to 3 billion tonnes of CO_2 equivalent through additional forest and tree cover by 2030. *Coverage:* 100% *Gases:* CO_2, CH_4, N_2O, HFCs, PFCs and SF_6. Other Relevant Measures / Domestic Policies *Carbon Neutrality Act 2021* In September 2021, Korea enacted the Framework Act on Carbon Neutrality and Green Growth for Climate Crisis Response which enshrined the 2050 net zero goal and set a minimum emissions reduction target of 35% or more below 2018 levels by 2030. The Act specifies procedures of implementing 2050 carbon neutrality vision, detailing the establishment of the carbon neutrality commission and the framework plan. Various policy options for climate impact assessment, climate response fund and just transition are also included in the Act. *Korean New Deal* Under the Korean New Deal, the recovery from the coronavirus pandemic is through the lens of supporting a structural transition towards a digital and green economy. The overarching goals of the policy are achieving a universal employment insurance system and setting the national path towards net-zero emissions. The policy pillars of the Green New Deal are a green transition of infrastructure, low-carbon and decentralised energy systems, and innovation in the green industry.

Country	Summary of Known/Anticipated Measures
	Eleventh Electricity Plan The *11th Basic Plan for Long-term Electricity Supply and Demand 2024-2038* was approved by the National Assembly's Trade, Industry, and Energy Small and Medium Venture Business Committee on 19 February 2025. This plan, which outlines South Korea's energy strategy from 2024 to 2038, includes the construction of two new nuclear power plants and a small modular reactor, alongside a target to increase the renewable energy share to 29.2% by 2038. *Act on the Allocation and Trading of Greenhouse Gas Emission Permits* South Korea enacted the Act on the Allocation of Trading GHG Emission Permits in 2012 and launched an Emissions Trading System (ETS) on 1 January 2015. The ETS covers emissions from the industry, power, aviation, building and waste sectors. Liable emitters (controlled entities) comprise companies and factories in the relevant sectors which produce over 125,000 tons of CO_2 per year or 25,000 tons of CO_2 during the preceding three years. This represents approximately 600 companies, including 5 domestic airlines. During the first phase of the scheme (2015-2017), only domestic offset credits could be used for compliance. Certified Emission Reductions generated from Clean Development Mechanism projects and Korean Offset Credits were allowed. These credits had to be converted to Korean Credit Units before being used for compliance. Offsets could only be used for up to 10% of each entity's compliance obligation. During the second phase of the scheme (2018-2020), Certified Emission Reductions generated from international Clean Development Mechanism projects developed by domestic companies could be used for compliance (up to 5% of each entity's emission volume). During the third phase of the scheme (2021-2025), credits of up to 10% of each entity's compliance obligation with a maximum of 5% coming from international offsets are allowed.
Vietnam	In 2021, Vietnam announced its intention to reach net zero by 2050. This is not included in the NDC which was submitted in 2020. NDC *Emissions reduction target:* Formal goals in the NDC are an unconditional target of reducing GHG emissions by 9% compared to business-as-usual (BAU) by 2030 and a conditional target of reducing GHG emissions by 27% compared to BAU by 2030. *Coverage:* 100% *Gases:* CO_2, CH_4, N_2O, HFCs, PFCs and SF_6. Other Relevant Measures / Domestic Policies *Power Development Plan 8* Vietnam's current power development plan (PDP8) outlines the long-term plan to transition completely away from coal fired power plants by 2050. PDP8 includes a commitment to only implement existing coal-fired power projects included in PDP7 and others currently under construction until 2030.

Country	Summary of Known/Anticipated Measures
	Coal-fired power plants which have operated for 20 years will be converted from coal to biomass and ammonia when cost-effective. Plants with over 40 years of operation will be closed if fuel conversion is not feasible. *Law on Environmental Protection* In 2020, Vietnam decided to establish a domestic emissions trading scheme requiring emitting parties to offset emissions through the purchase of carbon credits. High emitting industries will be first affected by the scheme before reaching further smaller scale entities. The pilot phase is set to start in 2025, and the system set to be fully operational in 2028. *Resolution No 55NQ/TW on the orientation of the National Energy Development Strategy of Vietnam to 2030* On 11 February 2020, this Resolution established the National Energy Development Strategy. The Resolution focuses on incentivising renewables in the energy mix with a goal of 15-20% proportion of renewables in the energy mix by 2030, reaching 25-30% by 2045. This is related to a requirement to reduce GHG emissions by 15%. This goal is supported by preferencing large-capacity and high efficiency coal-fired thermal power generating units. Where technological upgrades of power producers are not completed or not possible, retirement of those plants will occur. *National Energy Efficiency Program 2019-2030 (VNEEP3)* In 2018, the national Government adopted the third VNEEP. The first VNEEP was developed in 2006. By 2015, energy supply required in Vietnam grew from 29.171 to 70.588 million of tonnes of oil equivalent when compared to 2000. Supply of coal as an energy source has grown eight times across that same period. Forecasts for the period covered by the VNEEP3 expect an average increase of 8.7% per year. The VNEEP3 forecasts an average increase in total power demand domestically of 8.7% per year to 2030. The focus on energy efficiency by the Vietnamese Government is due to the high potential for economic and emissions savings. For example, the efficiency of coal power plants is 10% below the standard performance of developed countries. The VNEEP3 sets out specific objectives to achieve energy efficiency. *The National Climate Change Strategy and Green Growth Strategy* Developed in 2011, and designed to be a "living" document, the National Climate Change Strategy has broad objectives linked to sustainable development and GHG mitigation. The National Climate Change Strategy had an immediate focus on the period 2011-2015, however also sets plans for 2016–2025 as well as objectives for 2050, with a vision to 2100 which are economy-wide including advanced energy technologies, improved energy efficiency. Vietnam's Green Growth Strategy for the 2021-2030 period was ratified on 1 October 2021 and aims to work with the National Climate Change Strategy. Key to the Strategy is the access to new and "green technology" and improving energy efficiency through the introduction of market-based instruments.
Brazil	NDC Brazil's Second NDC was submitted on 13 November 2024 and includes the below commitments. *Emissions reduction target:* 43 per cent by 2030 and 60 per cent by 2035 relative to the 2019 level and reaching net zero carbon dioxide emissions by 2050. *Coverage:* 100%

	Gases: CO_2, CH_4, N_2O, HFCs, PFCs and SF_6. Other Relevant Measures / Domestic Policies *National Plan on Climate Change* The Climate Plan will establish an integrated vision for the national climate agenda, engaging the federal government, states, the Federal District, and municipalities, along with civil society, the private sector, and the scientific community, in response to the climate crisis. Its general objective is to guide, promote, catalyse and monitor coordinated actions aimed at the transition to an economy with net-zero GHG emissions by 2050 and at the adaptation of human and natural systems to climate change, through short, medium and long-term strategies, in the light of sustainable development and climate justice. The Brazilian Climate Plan will include the topic of the Ocean and Coastal Zones for the first time. Aware of the critical importance of oceans for sustainable development and regulation of climate stability, the Brazilian government will include related initiatives in the Adaptation Plan, such as the comprehensive Marine Spatial Planning and Integrated Coastal Zone Management, as well as "ProManguezal" (mangroves) and "ProCoral" (coral reefs) initiatives, which will serve as relevant policies for both mitigation and adaptation. *Pact for Ecological Transformation* The Executive, Legislative and Judicial branches have established the Pact for Ecological Transformation between the three branches of the Brazilian State. The Pact is a clear demonstration that Brazil's vision of ecological transformation is a long-term State commitment. Established by Decree 12.223, of October 14, 2024, the instrument represents a commitment among the three branches to act harmoniously and cooperatively to adopt a set of actions and measures aimed at the objectives of (i) ecological sustainability; (ii) sustainable economic development; (iii) social, environmental and climate justice; (iv) consideration of the rights of children and future generations; and (v) resilience to extreme climate events. The Pact enshrines ten commitments from the heads of the three branches of the Brazilian State, together with 26 priority issues, organized into three axes. *Ten Year Expansion Plan (PDE) 2034* The Brazil PDE 2034 lays out ambitious goals for energy efficiency and renewable energy over the next decade. The plan aims to reduce Brazil's energy consumption by 7% by 2034 through advances in energy efficiency. This reduction, equivalent to the annual energy use of large industries like steel and cement, aligns with Brazil's goal to transition to a more sustainable, resilient energy grid. PDE 2034 acknowledges the ongoing demand for traditional energy sources while transitioning to renewables. The plan projects a peak in oil production at 5.3 million barrels per day by 2030, with an anticipated gradual decline thereafter. The report highlights residential energy as a key contributor to Brazil's renewable capacity. By 2034, it is projected that 98.3% of residential energy will come from photovoltaic systems, securing solar power as the dominant energy source for Brazilian homes. Alongside solar, other renewable energy sources like wind, biodiesel, and hydroelectric power will remain crucial in Brazil's energy matrix, contributing around 48% to 49% of the national energy supply between 2024 and 2034. Renewable sources are projected to grow, particularly in the "Other Renewables" category, which includes wind, solar, and biofuels, expected to increase from 12% in 2024 to 16% by 2034. The PDE 2034 emphasizes a balanced approach, stressing that the energy transition must be inclusive and equitable to ensure energy security, environmental sustainability, and economic resilience.

Country	Summary of Known/Anticipated Measures
China	NDC *Emissions reduction target:* China has a long-term goal of reaching net-zero by 2060, with a reduction of emissions of 65% by 2030, from its 2005 levels. *Coverage:* 100% Other Relevant Measures / Domestic Policies *China's Mid-Century Long-term low Greenhouse Gas Emission Development Strategy* In 2021, China also submitted its Long-term low GHG Emission Development Strategy. The Strategy has 10 strategic priorities. Priority 2 is to build a clean, low-carbon, safe and efficient energy system. This includes promoting clean utilisation of coal and control the growth of coal consumption during the "14th Five-Year Plan" (14th FYP, 2021-2025) period, and gradually reduce it during the 15th FYP period (2026-2030). *14th Five-Year Plan* China published its 14th Five-Year Plan in March 2021. The Plan sets out the pathway for development over the next five years. Specifically on sustainability, the Plan supports the updated NDC aiming for peak emissions before 2030 will put enormous pressure on the economy to reach carbon neutrality by 2060. During 2021–2025, energy and carbon intensity are targeted to decline by 13.5% for energy and 18% for carbon intensity per unit of GDP. While coal consumption will continue during this five year plan, it is expected that over the 15th Five-Year Plan it will be phased down with fossil fuel consumption peaking in 2030. *National Emissions Trading Scheme* In July 2021, China launched the national carbon emission trading market. China's national ETS is the world's largest in terms of covered emissions, estimated to cover around 5 billion tCO_2 and accounting for over 40% of the country's CO_2 emissions. The China national ETS regulates more than 2,000 companies from the power sector with annual emissions of more than 26,000 tCO_2, including combined heat and power, as well as captive power plants in other sectors. Covered entities must surrender allowances for all their covered emissions, and allocation is based on intensity, with allowances freely allocated using benchmarks and based on actual production levels. Compliance obligations are currently limited and vary between different types of power generation. The system's coverage will expand to other sectors over time. The national ETS builds on the successful experience of pilot carbon markets implemented in eight regions. These pilots continue to operate in parallel with the national ETS, covering sectors and entities not included in the national system. As the national system expands, entities covered by regional systems are expected to be integrated into it. The national ETS will also gradually be expanded to include another seven sectors: aviation, building materials, chemicals, iron and steel, non-ferrous metals, pulp and paper, and petrochemicals. Offsets will eventually be available to be used in the ETS, it is expected that domestic offsets that have been used in China's existing regional ETS pilots will be able to be used.

Country	Summary of Known/Anticipated Measures
	In February 2024, the State Council of People's Republic of China published a regulation for the national ETS, which significantly increased the punishment for non-compliance, data fraud and market manipulation behaviours. *China Certified Emissions Reduction Scheme (CCER)* In January 2024, China launched its domestic offsetting scheme, the China Certified Emissions Reduction scheme (CCER), after six years of suspension during which time it was undergoing reform. The CCER incentivizes companies to voluntarily engage in emission reduction activities and facilitates the trading of carbon credits. This program supplements the country's existing Emissions Trading System, which has been operational since July 2021 and is limited to enterprises with designated emission quotas. The CCER aims to incentivize the growth of certain industries, particularly those in clean energy, to accelerate the nation's transition towards environmental sustainability and support its carbon-neutral objectives. *Energy Supply and Consumption Revolution Strategy (2016-2030)* The Energy Supply and Consumption Revolution Strategy was released in 2016 and sets out the plan for improving energy efficiency, diversifying energy, embracing new technologies and cooperating with other countries in improving energy security. China is still relying on coal in its energy mix, although is seeing an uptake in renewables. Coal power that is still operational is increasingly reliant on high quality development of coal power with the aim that ultra-low polluting coal-fired power should represent more than 80% of the fleet. *Carbon Capture Utilization and Storage Projects* China supports CCUS and has several ongoing pilot projects. As of September 2023, China had more than 100 CCUS demonstration projects in operation or planning, with more than half of them operational.
Taiwan	NDC Taiwan is not a member of the United Nations and consequently cannot be a party to the Paris Agreement. Notwithstanding, it has put forward an Intended Nationally Determined Contribution (INDC) and is also implementing measures to achieve its INDC. In March 2022, Taiwan published "Taiwan's Pathway to Net-Zero Emissions in 2050" and has since taken steps towards amending its Greenhouse Gas Reduction and Management Act 2015 to include the goal of net zero emissions by 2050. *Emissions reduction target:* Taiwan has an emissions reduction target of 50% from baseline levels by 2030. *Coverage:* 100% *Gases:* CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3.

	Other Relevant Measures / Domestic Policies *Greenhouse Gas Reduction and Management Act 2015* Taiwan enacted its *Greenhouse Gas Reduction and Management Act* on 1 July 2015. Key features of the Act are: • A goal to reduce GHG emissions to no more than 50% of 2005 emissions by 2050. • Requires the Government to draft mid- to long-term strategies for gradually reducing dependence on fossil fuels, with a mid- to long-term aim of improving renewable energy policies, and the gradual realisation of a nuclear-free homeland. • Recommends that the government implement tax mechanisms on imported fossil fuels based on their CO_2-e emissions, and actively help traditional industries achieve energy conservation and carbon reduction or transition, develop green technology and green industry, create new employment opportunities and green economies, and promote a low-carbon green growth plan for Taiwan's infrastructure. • Requires relevant government agencies to promote GHG reduction and climate change adaption through, relevantly, development of renewable energy and energy technology, reduction in GHG emissions by industrial sectors, establishment of GHG cap-and-trade scheme and facilitation of international emission reduction cooperation mechanism, and research, development and implementation of GHG reduction technologies. • Requires Taiwan's Environmental Protection Administration to implement a domestic cap and trade scheme and outlines matters to be considered in the development of the scheme, including trade intensities of various sectors, avoiding carbon leakage and overall national competitiveness. *Taiwan Domestic Cap and Trade System* A domestic cap and trade system is planned for commencement in the next four years (starting in approximately 2028/29). The system would follow the Japanese model, with about 500 companies involved in the trial stage, and it would start with a pilot program for those that have made good progress in decarbonization. *National Climate Change Action Guideline* The *Greenhouse Gas Reduction and Management Act* also required the government to develop the *National Climate Change Action Guideline* and a *GHG Reduction Action Plan*. The *National Climate Change Action Guideline* is to include periodic regulatory goals, implementation timetables, implementation strategies and an evaluation mechanism. The guideline lists reduction policies in six sectors, including building zero-carbon power systems, enhancing electricity supply stability and resilience, facilitating industries' green transition, building circular economy-oriented sustainable production models, developing smart green transportation, promoting net zero transition for transportation, building sustainable, net zero buildings and promoting low-carbon transition, facilitating sustainable agriculture, improve ecological system management, and reducing environmental burden, setting up society for energy and resource circulation. In addition, to facilitate the implementation of climate governance policies, eight supporting measures are included, which include promoting green finance to enhance industries, climate resilience, completing legal bases for climate regulations, implementing carbon pricing system, promoting climate science and adaptation research, implementing public behavioural change, knowledge and awareness promotion, cultivating climate change response talent, and implementing just transition and civic engagement.

	GHG Reduction Action Plan Under the *GHG Reduction Action Plan*, the authorities responsible for Taiwan's energy, manufacturing, transportation, residential, commercial and agricultural sectors are required to formulate GHG Emission Control Action Programs. These Action Programs must include GHG emissions targets, timetables and economic incentive measures. These Action Programs are to be regularly reviewed and revised and are to propose improvement plans if sectors are failing to meet their emission targets. Multiple subsidiary regulations have been introduced, including the: • Regulations governing incentives for landfill sites to reduce GHG emissions. • Regulations governing greenhouse gases offset program management. • Management regulations governing GHG emission inventories and registration. • GHG reduction and management enforcement rules. • First batch of emission sources required to report GHG emission inventory and registration. • GHG management fund revenues and expenditures, safekeeping, and utilisation regulations. *Electricity Act 2017* Taiwan passed the *Electricity Act* in January 2017. Relevant objects outlined include: • effectively managing the national electric power resources; • regulating electricity supply; • facilitating the transformation of energy production; • reducing carbon emissions; and • promoting the supply diversification of the electricity industry. *National CCUS Strategic Alliance* Taiwan's EPA established a national CCUS strategic alliance in 2011. This alliance brings together domestic experts from government, academia and industry, for the purpose of developing the technology and regulatory framework required for the commercial use of CCUS technology, with the ultimate goal of achieving widespread use of CCUS technology by 2020. *Taiwan Carbon Capture Storage and Utilization Association (TCCSUA)* TCCSUA was founded on 23 December 2014 and was officially established in February 2015. The purpose of the TCCSUA is to promote technical development of carbon capture and storage and utilization, enhance the capacity for legality, help industries reduce carbon, expand international collaboration, and strengthen public communication in order to reduce GHG emissions and alleviate the greenhouse effect. TCCSUA has the following tasks: 1. Plan strategies for industrial development of carbon capture and storage, reuse, and monitoring technologies 2. Establish and integrate databases for domestic and foreign carbon capture and storage and geothermal development

Country	Summary of Known/Anticipated Measures
	3. Actively promote demonstration plans of carbon capture and storage and reuse 4. Set up criteria for evaluation of domestic carbon capture and storage, geothermal regulations, and environmental impact 5. Establish the public communicating platform of carbon capture and storage 6. Participate in international organisations and technical collaboration relating to carbon capture and storage 7. Promote cooperation of domestic and foreign institutions and groups 8. Handle other related works.
Indonesia	NDC Indonesia submitted an INDC to the UNFCC prior to the Paris Agreement. Indonesia decided to strengthen its original commitments through the submission of an Enhanced NDC which was submitted on 23 September 2022. This Enhanced NDC is the transition towards Indonesia's Second NDC which will be aligned with the Long-Term Low Carbon and Climate Resilience Strategy (LTS-LCCR) 2050 with a vision to achieve net-zero emission by 2060 or sooner. *Emissions reduction target:* The Enhanced NDC increased Indonesia's original emission reduction target from 29% to 31.89% unconditionally and 41% to 43.2% conditionally, by 2030. Indonesia also commits to achieving net zero by 2060 or sooner. *Coverage:* 100% *Gases:* CO_2, CH_4 and N_2O. Other Relevant Measures / Domestic Policies *Presidential Regulation (PERPRES) No. 61/2011* Codifies the National Action Plan to achieve the quantified emission reduction target of 26% in 2020 is 0.767 Gt CO2-e, and of 41% is 1.189 GtCO2-e. *National Energy Policy Government Regulation No. 79/2014 (KEN)* This National Energy Policy establishes the energy mix in Indonesia out to 2050 as follows: • renewable energy at least 23% in 2025 and at least 31% in 2050; • oil less than 25% in 2025 and less than 20% in 2050; • coal should be minimum 30% in 2025 and minimum 25% in 2050; and • gas should be minimum 22% in 2025 and minimum 24% in 2050.

Country	Summary of Known/Anticipated Measures
	Electricity Supply Business Plan 2019-2028 (RUPTL) To achieve the quantitative targets set out in the National Energy Policy, the Indonesian Government regularly prepares and revises the national Electricity Supply Business Plan. This Plan, released in February 2019, presents the electricity development plan for the specified decade by projecting expected demand, and necessary infrastructure to supply this demand. The forecasts establish the share of power to be supplied by state owned energy companies, and independent power producers. Coal remains the largest power source due to low costs associated with construction and operation. The state-owned electricity company PLN has prioritised low carbon technology such as supercritical and ultra-supercritical technologies when developing new large scale coal-fired power plants. For example, the PLN will proceed with the development of the 1,000 MW class ultra-super critical coal-fired plant for the Java-Bali system. *Long-Term Low Carbon and Climate Resilience Strategy* Submitted to the UNFCC in 2021, the Long-Term Strategy for Low Carbon and Climate Resilience 2050, aims to contribute to global goal and to achieve national development objectives, taking into consideration the balance between emission reduction, economic growth, justice and climate resilience development. The LTS-LCCR 2050 also reflects the mandated Indonesian Constitution (UUD 45) Article 28 H on the state obligation to guarantee decent life and a healthy environment for all citizens. Under the LTS-LCCR 2050, Indonesia seeks opportunities for international partnerships to support a sustainable transition towards low carbon economy and green recovery post COVID-19 pandemic as well as global justice. Through LTS-LCCR 2050, Indonesia will reduce GHG emissions by ensuring the peak of national GHG emissions is in 2030 or prior, and will further explore opportunities to rapidly progress towards net-zero emission in 2060 or sooner. In order to achieve this target, the forestry sector will have to maintain an increasing trend of net-sink after 2030, and a significant transition of the energy sector will result from raising the proportion of renewable energy in the energy mix, increasing energy efficiency, reducing coal consumption and implementing CCS/ CCUS and BECCS.
Malaysia	NDC Malaysia submitted an INDC to the UNFCC prior to the Paris Agreement and subsequently updated its First NDC in 2021. In September 2021, the Prime Minister of Malaysia announced Malaysia' target of net zero by 2050. This goal is not contained within the updated NDC. *Emissions reduction target:* Malaysia intends to reduce its economy-wide carbon intensity (against GDP) of 45% in 2030 compared to 2005 level. This reduction is unconditional and is increased by 10% over the original target included in the INDC. *Coverage:* 100%

Country	Summary of Known/Anticipated Measures
	Gases: CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3. Other Relevant Measures / Domestic Policies *Twelfth Malaysia Plan* The Twelfth Malaysia Plan was announced on 27 September 2021. The Plan sets out Malaysia's recovery from the coronavirus and development goals over 2021-2025. This includes a key theme of sustainability moving towards low-carbon and encouraging net-zero domestic businesses. The Plan indicates the aspirational goal of net-zero by 2050 and not building further coal-fired power plants. Key policies to be implemented include: • preparing a NDC Roadmap setting out sectorial based emissions reductions; • considering an appropriate carbon pricing scheme; and • considering carbon offsetting market scheme. *Thirteenth Malaysia Plan* The Economy Ministry is finalising the 13th Malaysia Plan document, which is expected to be tabled in parliament in July 2025. The 13th Malaysia Plan currently incorporates sustainable practices to meet Malaysia's renewable energy and climate goals, including efforts to mitigate biodiversity loss, manage climate risks, and reduce GHG emissions. *Green Technology Master Plan 2017-2030* The Plan sets out various strategic plans across various sectors to achieve their NDC. In relation to coal, new advanced thermal power generation are expected to become a requirement for new coal-fired plants. No new major coal-fired power plants established post-2020. Further, the Government noted while there is intention to scale up renewable energy, coal-fired power plants are expected to continue to be used while waiting for existing power plant contracts to expire and new gas and renewable energies to scale up. *National Renewable Energy Policy* The Malaysian Government has set a renewable energy target of 20% by 2025. Additionally, 31% by year 2025, and 40% by 2035. *National Energy Efficiency Action Plan* The Plan covers 2016-2025 supports consistent energy supply and demand. It focuses on three main initiatives which are Equipment Programme Initiatives, Industrial Programme Initiative and Buildings Programme Initiative. The focus of the National Energy Efficiency Action Plan strategies and programmes is on electricity use in the industrial, commercial and residential sectors. Therefore, the target of the National Energy Efficiency Action Plan is to save electricity and reduce the electricity demand growth.

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6 Abbreviations and Acronyms

Abbreviation / Acronym	Meaning
ACCU	Australian Carbon Credit Units
BAU	business-as-usual
CCER	China's Certified Emissions Reduction Scheme
CCUS	Carbon Capture, Utilisation and Storage
CH_4	Methane
CHPP	Coal Handling and Preparation Plant
CO_2	Carbon Dioxide
CO_2-e	Carbon dioxide equivalent
Corvus	Corvus Resources Pty Ltd ACN 621 807 412
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DETSI	Department of Environment, Tourism, Science and Innovation (previously Department of Environment, Science and Innovation, or Department of Environment and Science)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ETS	Emissions Trading Scheme
FY	Financial Year
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GW	Gigawatts
HFCs	hydrofluorocarbons
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
JCM	Joint Crediting Mechanism (Japan)
km	Kilometres
LTS-LCCR	Indonesia's Long-Term Low Carbon and Climate Resilience Strategy 2050
Mt	Million tonnes
Mtpa	Million tonnes per annum
N_2O	Nitrous Oxide
NAPCC	India's National Action Plan on Climate Change
NDC	Nationally Determined Contributions
NEP	India's National Electricity Plan
NF_3	nitrogen trifluoride
NGER Act	National Greenhouse and Energy Reporting Act 2007
PDP7	Vietnam's Power Development Plan 7
PDP8	Vietnam's Power Development Plan 8
PFCs	perfluorocarbons
RIDP	Resources Industry Development Plan

Abbreviation / Acronym	Meaning
ROM	Run-of-mine
SF_6	sulfur hexafluoride
t	Tonnes
TCCSUA	Taiwan's Carbon Capture Storage and Utilization Association
The Project	The Corvus Metallurgical Coal Project
UNFCCC	United Nations Framework Convention on Climate Change
VNEEP	Vietnam's National Energy Efficiency Program 2019-2030