The Paris Agreement and the Vickery Extension Project's coal

1.1 Australia has ratified the *Paris Agreement* under the *United Nations Framework Convention on Climate Change*. The *Paris Agreement* aims to hold the increase in global average temperatures to "well below 2°C" and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. To achieve this goal, countries aim to peak and then reduce greenhouse gas (**GHG**) emissions "as soon as possible" to "achieve a balance between anthropogenic emissions by sources and removals by sinks" in the second half of the century.

1.2 The *Paris Agreement* does not set binding emission limitation or reduction commitments, but requires countries to submit Nationally Determined Contributions (**NDCs**), which are high-level policy plans setting out each country's contribution that it intends to achieve in order to contribute to the aims of the *Paris Agreement*.

1.3 Australia's NDC includes an economy-wide target to reduce GHG emissions by 26-28% below 2005 levels by 2030 and sets out the measures by which it intends to achieve that target, including the Federal Government's Emissions Reduction Fund, the Safeguard Mechanism and the Renewable Energy Target which have been implemented under federal law. Australia's NDC does not contemplate the sterilisation of Australia's mineral resources and does not provide that the development of new coal mines, or expansion of approved coal mines, is to be prohibited or restricted in any way for the purpose of achieving Australia's NDC.

1.4 Almost all of the Vickery Extension Project's Scope 3 GHG emissions are generated by the burning or combustion of coal by the end-user of the coal. As the coal from the Project is planned to be exported, the generation of Scope 3 emissions will occur outside of Australia. In this regard, the Scope 3 emissions of the Project will count as Scope 1 emissions in each of the countries to which the coal is exported and, if Australia were to count the Scope 3 emissions from the Project in calculating its GHG emissions under the *Paris Agreement*, this would result in an unacceptable double counting of GHG emissions.

1.5 The importance of avoiding double counting of GHG emissions generally, including in the context of calculating a country's GHG emissions for the purpose of tracking progress towards achievement of its NDC, is well-recognised under international and Australian frameworks addressing climate change and GHG emissions.

1.6 At an international level, article 4(13) of the *Paris Agreement* requires parties to ensure the avoidance of double counting consistent with the guidance adopted under the *Paris Agreement*. In respect of accounting for countries' NDCs, the Katowice Climate Package (Transparency Framework) requires that countries avoid double counting when accounting for anthropogenic emissions and removals corresponding to their NDCs. The guiding principles of the Transparency Framework also provides that double counting should be avoided.

1.7 The Commonwealth Government's *National Greenhouse and Energy Reporting Act 2007* (Cth) imposes reporting obligations upon companies only in respect of Scope 1 and Scope 2 emissions. There is no requirement or obligation imposed on companies under Australian law to report on Scope 3 emissions. The exclusion of Scope 3 emissions from the reporting requirements under Australian law effectively avoids double counting of Scope 3 emissions since the end-user who is responsible for a project's Scope 3 emissions will ultimately account for them as Scope 1 emissions.

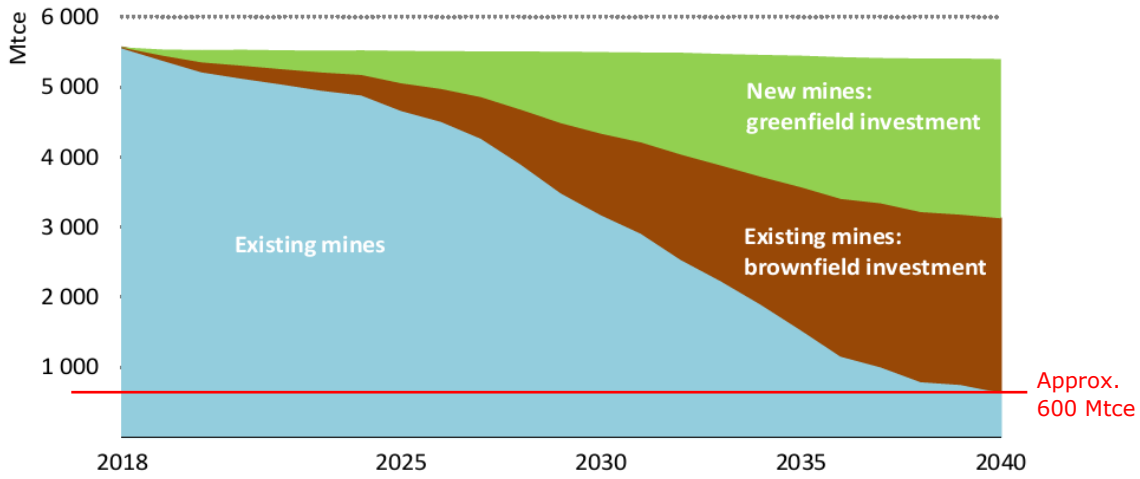
1.8 Under all three policy scenarios presented by the International Energy Agency (**IEA**) in its *World Energy Outlook 2019* (**WEO 2019**), there will be a continued global demand for coal that will need to be met by expansions of approved coal mines or the development of new coal mines. This is evidenced by Table 5.1 and Figure 5.13 from the WEO 2019 shown below.

1.9 The three policy scenarios used by the IEA in the WEO 2019 are as follows (p 23):

> **The Current Policies Scenario shows what happens if the world continues along its present path, without any additional changes in policy.** In this scenario, energy demand rises by 1.3% each year to 2040, with increasing demand for energy services unrestrained by further efforts to improve efficiency…
>
> **The Stated Policies Scenario, by contrast, incorporates today's policy intentions and targets.** Previously known as the New Policies Scenario, it has been renamed to underline that it considers only specific policy initiatives that have already been announced. The aim is to hold up a mirror to the plans of today's policy makers and illustrate their consequences, not to guess how these policy preferences may change in the future.
>
> In the Stated Polices Scenario, energy demand rises by 1% per year to 2040. Low-carbon sources, led by solar photovoltaics (PV), supply more than half of this growth, and natural gas, boosted by rising trade in liquefied natural gas (LNG), accounts for another third. Oil demand flattens out in the 2030s, and coal use edges lower. Some parts of the energy sector, led by electricity, undergo rapid transformations. Some countries, notably those with "net zero" aspirations, go far in reshaping all aspects of their supply and consumption. However, the momentum behind clean energy technologies is not enough to offset the effects of an expanding global economy and growing population. The rise in emissions slows, but with no peak before 2040, the world falls far short of sustainability goals.
>
> **The Sustainable Development Scenario maps out a way to meet sustainable energy goals in full, requiring rapid and widespread changes across all parts of the energy system.** This scenario charts a path fully aligned with the Paris Agreement by holding the rise in global temperatures to "well below 2°C… and pursuing efforts to limit [it] to 1.5°C", and meets objectives related to universal energy access and cleaner air. The breadth of the world's energy needs means that there are no simple or single solutions. Sharp emission cuts are achieved across the board thanks to multiple fuels and technologies providing efficient and cost-effective energy services for all.

1.10 Figure 5.13 from the WEO 2019 (p 244) extracted below indicates that, absent new mines or brownfield expansions, the global production of coal in the Stated Policies Scenario would be approximately 600 million tonnes of coal equivalent (**Mtce**) in 2040. We have drawn a red line on Figure 5.13 to illustrate that.

Figure 5.13 ▷ Global coal production by type in the Stated Policies Scenario



As production from existing mines declines, so demand in the Stated Policies Scenario requires investment either to expand existing mines or to open new ones

1.11 Table 5.1 from the WEO 2019 (p 222) extracted below (highlighting added) projects that even under the Sustainable Development Scenario, global coal demand would be 2,101 Mtce in 2040 of which 858 Mtce would be for electricity and 1,206 Mtce would be for

industrial use, including steelmaking. Table 5.1 projects that demand would largely be met by production of 1,515 Mtce of thermal coal (steam coal) and 497 Mtce of metallurgical (coking) coal under the Sustainable Development Scenario in 2040.

Table 5.1 ▷ Global coal demand, production and trade by scenario (Mtce)

			Stated Policies		Sustainable Development		Current Policies	
	2000	2018	2030	2040	2030	2040	2030	2040
Power	2 233	3 500	3 470	3 395	1 872	858	3 789	4 156
Industrial use	869	1 680	1 852	1 903	1 461	1 206	1 926	2 075
Other sectors	207	279	175	100	137	36	220	168
World coal demand	**3 309**	**5 458**	**5 498**	**5 398**	**3 471**	**2 101**	**5 934**	**6 399**
Asia Pacific share	*47%*	*75%*	*81%*	*83%*	*86%*	*84%*	*79%*	*81%*
Steam coal	2 504	4 342	4 393	4 394	2 672	1 515	4 753	5 266
Coking coal	449	955	857	790	676	497	885	854
Lignite and peat	302	270	247	214	123	89	297	280
World coal production	**3 255**	**5 566**	**5 498**	**5 398**	**3 471**	**2 101**	**5 934**	**6 399**
Asia Pacific share	*48%*	*73%*	*78%*	*79%*	*80%*	*83%*	*77%*	*78%*
Steam coal	310	859	733	726	381	197	888	964
Coking coal	175	319	314	371	258	247	332	404
World coal trade	**471**	**1 169**	**1 039**	**1 087**	**633**	**413**	**1 206**	**1 355**
Trade as share of production	*14%*	*21%*	*19%*	*20%*	*18%*	*20%*	*20%*	*21%*
Coastal China steam coal price ($2018/tonne adjusted to 6 000 kcal/kg)	**34**	**106**	**89**	**92**	**74**	**76**	**98**	**105**

Notes: Mtce = million tonnes of coal equivalent; kcal/kg = kilocalories per kilogramme. Unless otherwise stated, industrial use in this chapter reflects volumes also consumed in own use and transformation in blast furnaces and coke ovens, petrochemical feedstocks, coal-to-liquids and coal-to-gas plants. Historical supply and demand volumes differ due to changes in stocks. World trade reflects volumes traded between regions modelled in the *WEO* and therefore does not include intra-regional trade. See Annex C for definitions.

1.12 The Vickery Extension Project will produce approximately 145 Mt of saleable coal, comprising thermal coal and semi-soft coking coal (**SSCC**). The life of mine average proportion of thermal coal to SSCC will be 40:60. However, given its high energy content, SSCC can be used as premium quality thermal coal. At times during the life of mine, the prevailing pricing differentials between SSCC and thermal coal can drive SSCC into the premium quality thermal coal market for power generation.

1.13 SSCC is classified as metallurgical coal, along with hard coking coal (**HCC**) and pulverised coal for injection (**PCI**). Metallurgical coals are essential inputs for blast furnace-based steelmaking. HCC and SSCC are both used in the production of coke before entering the blast furnace. The proportion of each coal used in the coking process is determined by various factors, including pricing differentials, blast furnace requirements and specific characteristics and qualities of the coal. Unlike HCC and SSCC, PCI is injected directly into the blast furnace.

1.14 One of SSCC's key contributions to the coke blend is its lower impurities such as ash and sulphur, as well as being lower in cost compared to HCC. Sulphur is a local air pollutant and contributor to acid rain. Ash is the non-combustible residue left after the coal is burnt – a waste which increases operating costs and has local environmental impacts.

1.15 The ash content of the Vickery Extension Project's SSCC is lower than the average ash content of Australian SSCC and all other major seaborne SSCC suppliers save for Canada.

The sulphur content of the Vickery Extension Project's SSCC at 0.4% is also near the bottom end globally and lower than the average sulphur content of Australian SSCC.

1.16 The relevant benchmark for premium thermal coal is a calorific value (i.e. energy content) of 6,000kcal/kg net as received (**NAR**). The calorific value of Vickery Extension Project's thermal coal is above this benchmark, and is higher than the average for Australia and other major coal exporters, including Indonesia, Russia, South Africa, Colombia and the United States. This means that the Project's coal performs at a higher level of boiler efficiency in power stations, compared to coal from other sources, and that a greater volume of inferior quality coal would need to be combusted to achieve the same energy output as the Project's coal.

1.17 The sulphur and ash content of the Project's thermal coal is also lower than the Australian average and lower than other major seaborne thermal coal suppliers.

1.18 The quality of the Vickery Extension Project's coal has important consequences for considering the GHG emissions of the Vickery Extension Project and the consequences of not carrying out the Vickery Extension Project.

1.19 Given the projected future demand for coal, if the Vickery Extension Project is not approved, it is likely that the demand will be met by other coal supply sources, which would result in more coal being mined and combusted to satisfy the same power needs. This would result in higher Scope 3 GHG emissions and higher concentrations of ash and sulphur being produced.