



MMI ADVISORY PTY LTD

Reconciliation of DBCT Demand Forecasts Submitted by Stakeholders

**Prepared for the Queensland
Competition Authority**

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Reconciliation of demand forecasts

The following table seeks to reconcile the materially different demand forecasts submitted by DBCT Management (DBCTM) and the DBCT User Group based on publicly available information. The starting point for the analysis is the demand forecasts prepared by Houston Kemp for DBCTM (the HK forecast). It does not seek to validate projected throughput. Instead, it primarily focuses on whether an existing mine, or a mine project, should be included as part of total foreseeable demand. The decision rules applied are as follows:

1. **Is the mine in or outside of the Goonyella system (based on Aurizon Network’s defined boundaries¹)?** However, for mines outside of the system that were included in the HK forecast (being mines located at the southern end of the South Goonyella branch), an assessment was still made as to whether there was evidence that these mines were/could be preferred users of DBCT.
2. **Does the mine primarily use Hay Point Coal Terminal (HPCT)?** These mines have been identified as being outside of the defined market. If there was evidence of consistent and committed use of DBCT, that is, a long-term contract, there is an argument that these contracted volumes should be included as demand within this market. It is understood that BHP Mitsui Coal (BMC) has contracts with DBCT for its Poitrel and South Walker Creek mines [REDACTED] 8.55 mt included in the HK forecast². BHP states that while BMC has shipped coal through HPCT pursuant to an arrangement with BMA “it does not have committed capacity at HPCT available to it.”³ We have [REDACTED] included the total forecast volumes for these BMC mines in the DBCT forecast. It is also noted that Grosvenor West was identified by HK as being owned by BMA. However, Wealth Mining Ltd assumed ownership of this development project from Carabella Resources in 2014. It has therefore been assessed in the same way as the other non-BMA projects.
3. **Does the mine have current capacity contracted at other terminals?** These contracted volumes represent demand that is outside of the boundaries of this market (i.e. it is demand in another market). These volumes should therefore be excluded. An assumption then needs to be made as to where this capacity is likely to be recontracted upon expiration, noting that the company may apply the same, or completely different, decision rules at that point in time. It will also be influenced by prevailing market conditions. The two key examples here are Lake Vermont and Middlemount, which hold contracts at APCT until 2028 and 2027 respectively⁴. The APCT volumes have been

¹ Aurizon Network (2017). Goonyella System – Information Pack, version 7.0.

² DBCT Management (2018a). DBCT Declaration Review, DBCT Management Response to Initial Submissions, para.127.1.

³ BHP (2018). Submission to the Queensland Competition Authority on the Declaration Review of the Dalrymple Bay Coal Terminal, 16 July, para.2.2.

⁴ Dalrymple Bay Coal Terminal User Group (2018). Declaration Review Regarding Dalrymple Bay Coal Terminal, 16 July 2018, p.27; DBCT Management (2018b). DBCT Management Submission to the QCA, 30 May 2018, para. 132, p.29.

excluded for the duration of the contract periods and it is then assumed that they are then recontracted with DBCT, noting that the original driver of the decision to contract at APCT is understood to be a lack of available capacity at DBCT at that time.⁵

The more difficult area of assessment – and a likely source of contention between the DBCTM and DBCT User Group forecasts – is for the mine projects. The focus of the assessment is publicly available information from company websites, Environmental Impact Statement (EIS) processes, the Department of Natural Resources and Mines (DNRM), media and other industry websites. In a number of cases it was very difficult to determine the current status of a project, with some remaining on hold pending an improvement in market conditions. Some have recently been sold. Unless a development is currently active (e.g. proceeding through an EIS process or in construction), limited if any information is publicly available to enable a confident assessment as to if and when the project will proceed.

Regard was also given to the typical development timeframes for a project. An EIS process can take several years to complete. Once all approvals are obtained it is then necessary to secure final funding before commencing construction (which could take one to two years). A 2010 report by the Queensland Resources Council (QRC) stated that application for a mining lease with native title and an EIS can take between 24 and 36 months.⁶ It identifies three main phases for a project:⁷

1. The advanced exploration phase, involving exploration and proving up of the target resource – this is said to take around five years. It is assumed that this coincides with securing a mining development lease, which lasts five years.
2. Securing approvals to move into operations and commissioning – this also takes around five years.
3. Commissioning and operations.

In reviewing the HK forecasts that assumed a project would commence operations between 2021 and 2030, it is necessary to consider if this is realistic, having regard to the current status of the project and typical development timeframes. It is of course possible that a company may seek to accelerate development however in the absence of any public information the timing of many developments remains highly uncertain.

This has been particularly difficult for projects that appear to have been dormant for some time and there is no information on current status. Particularly if these developments are contingent on an expectation that coal prices will reach a target level, it is difficult to confidently conclude

⁵ DBCT Management (2018b). para.141.

⁶ Queensland Resources Council (2010). Supporting Resource Sector Growth – Industry Proposals for Streamlining Queensland's Approval Process, 30 April.

⁷ Queensland Resources Council (2010). p.9.

that they will be developed in the ten-year period. A number of these projects have therefore been excluded. However, it is recognised that development could still occur within that timeframe. Stakeholders may also have access to better information regarding the status of these developments.

Sensitivity analysis has therefore been conducted on the excluded development projects (the High Case). For projects that are not assumed to be developed over the horizon of the forecast under the base case, it is assumed that they are commissioned mid-way through the forecast period. This assumes that these projects have completed phase 1 of the QRC’s timeline (exploration) and that it will therefore take at least five years to secure approvals and complete construction. No specific judgements have otherwise been applied as to the timing of these projects in the absence of any publicly available information as to if and when development may commence.

It is emphasised that the reconciliation of the HK volumes in the table below is not a ‘forecast’. Instead, adjustments have been made where publicly available information questions the likelihood of the forecast volumes based on the decision rules applied above.

It is recognised that DBCTM (and the DBCT User Group) may have access to private information that supports its own assessment. All information sources we have relied upon are listed below.

The mines have been presented by geographical location (i.e. branch line). Information is presented in four tables:

- The first table presents the adjusted volumes by year. This includes the ‘base case’ adjustment along with the sensitivity analysis.
- The second table presents the rationale for the adjustments based on the decision rules.
- The third table presents the data sources.
- The fourth table summarises the adjusted volumes against the forecasts submitted by DBCTM and the DBCT User Group.

Table 1 Total foreseeable demand analysis: revised forecasts based on Houston Kemp (base case and sensitivity analysis)

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
GOONYELLA NORTH											
Grosvenor (Operating)	Anglo American	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Moranbah North (Operating)	Anglo American	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Moranbah South (Project)	Anglo American	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>1.80</i>	<i>5.00</i>	<i>9.00</i>	<i>14.00</i>	<i>14.00</i>
Talwood (Project)	Aquila	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.91</i>	<i>1.60</i>	<i>3.60</i>	<i>3.60</i>	<i>3.60</i>
Goonyella (Operating)	BHP Mitsui Alliance	Excluded – HPCT.									
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Grosvenor West (Project)	Wealth Mining Ltd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>1.50</i>	<i>2.60</i>	<i>3.80</i>	<i>3.80</i>	<i>3.80</i>
Ironbark No.1 (Project)	Fitzroy Resources	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
New Lenton (Project)	New Hope	0.00	0.00	0.00	0.00	1.30	1.30	1.30	3.16	3.16	3.16

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Denham (Project)	Peabody	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.70</i>	<i>2.90</i>	<i>3.50</i>	<i>4.50</i>	<i>5.50</i>
North Goonyella (Operating)	Peabody	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
West/North Burton (Project)	Peabody	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>	<i>0.40</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>
Isaac Plains (Operating)	Stanmore Coal	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
GOONYELLA FAR WEST											
Clermont (Operating)	Glencore	13.00	13.00	13.00	13.00	13.00	13.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Blair Athol (Operating)	Terracom	2.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
GOONYELLA WEST											

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Caval Ridge (Operating)	BHP Mitsui Alliance	Excluded – HPCT.									
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
GOONYELLA SOUTH											
Capcoal (Operating)	Anglo American	7.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Eagle Downs (Project)	Aquila	3.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Daunia (Operating)	BHP Mitsui Alliance	Excluded – HPCT.									
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Peak Downs (Operating)	BHP Mitsui Alliance	Excluded – HPCT.									
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Saraji (Operating)	BHP Mitsui Alliance	Excluded – HPCT.									
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Saraji East (Operating)	BHP Mitsui Alliance	Excluded – HPCT.									
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Poitrel (Operating)	BHP Mitsui Coal	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Oaky Creek (Operating)	Glencore	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11	5.11
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Lake Vermont (Operating)	Jellinbah Group	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	9.30	9.30
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Middlemount (Operating)	Middlemount Coal	0.80	0.80	0.80	0.80	0.80	0.80	0.80	3.80	3.80	3.80
<i>Sensitivity analysis (High Case)</i>		<i>No change from base case.</i>									
Codrilla (Project)	Peabody	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		0.00	0.00	0.00	0.00	0.90	1.80	3.20	3.20	3.20	3.20
Moorvale (Operating)	Peabody	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Moorvale West (Project)	Peabody	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		0.00	0.00	0.00	0.00	0.00	0.40	1.00	1.00	1.00	1.00

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Olive Downs North (Project)	Pembroke Resources	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Vermont East/Willunga (Project)	Pembroke Resources	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	1.25	1.95
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Foxleigh (Operating)	Realm Resources	3.30	3.30	3.30	3.30	3.30	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Kestral (Operating)	Rio Tinto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Winchester South (Project)	Rio Tinto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		0.00	0.00	0.00	0.00	0.00	1.80	3.60	4.00	4.00	4.00
Teresa (Project)	United Mining Group	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case</i>									
GOONYELLA CENTRAL											

Mine	Owner	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
South Walker Creek (Operating)	BHP Mitsui Coal	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Coppabella (Operating)	Peabody	4.00	4.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Hail Creek (Operating)	Rio Tinto	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Hillalong (Project)	Shandong Energy	3.60	3.64	3.60	3.62	3.64	3.64	3.60	3.61	3.54	3.54
<i>Sensitivity analysis (High Case)</i>		<i>No change to base case.</i>									
Harrybrandt (Project)	Yanzhou	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Sensitivity analysis (High Case)</i>		0.00	0.00	0.00	0.00	0.00	1.00	2.51	2.51	2.51	2.51
TOTAL - HOUSTON KEMP (including HPCT)		150.9	156.10	164.84	172.73	182.42	186.70	178.96	181.87	181.60	182.10
TOTAL - HOUSTON KEMP (excluding HPCT)		91.05	95.15	102.69	109.58	117.77	120.55	111.31	112.72	112.45	112.95
TOTAL – ADJUSTED – BASE CASE		83.69	80.23	80.19	76.21	77.53	72.23	59.19	64.69	70.04	70.74
TOTAL – ADJUSTED – HIGH CASE		83.69	80.23	80.19	76.21	78.43	82.54	82.60	96.30	107.65	109.35

Table 2 Adjustments: information and assessment

Mine	In Goonyella system?	Comments	Assessment
GOONYELLA NORTH			
Grosvenor (Operating)	In	In operation. Announced as a 5 Mtpa mine with a 26 year life by Anglo American in 2011. In 2017 saleable coal from the mine was just over 2Mt.	Include. Although the current tonnages are well below the announced tonnages there is no market announcements revising mine output.
Moranbah North (Operating)	In	In operation. In 2017 saleable coal from the mine was just over 6 Mt.	Include
Moranbah South (Project)	In	Timing of the development is uncertain. The current statement on the company website is: "Moranbah South is a future 50% joint venture project between Anglo American and Exxaro in Central Queensland, south of our Grosvenor project. In mid-2014 we received the draft environmental approval from the Queensland Government and in November 2014 we received approval from the Australian Federal Government. The resource consists of high quality coking coal and the project would involve developing a brand new underground longwall operation. The timings for project development are still to be determined and will be adjusted to suit favourable market conditions. In the meantime our focus has been on securing the environmental approvals for the project, providing us with the flexibility to progress the project when conditions improve." In February 2018 a company press release stated that it is currently looking at options to develop Moranbah South. Identified as an 'advanced' project by DNRM. Following receipt of Federal Government approval in 2014 Anglo American stated that more favourable market conditions were needed before the project can proceed. Wood McKenzie estimates current start date for this development as 2034 (DBCT User Group cross-sub, Wood McKenzie report, p.8).	Exclude. Environmental approvals not finalised. Project still under consideration. Timing too uncertain. The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.
Talwood (Project)	In	Aquila's website describes this project as being in its early stages. There is no evidence to suggest that the EIS process has commenced. Enable Advisory states that Aquila is currently looking for a buyer for this project.	Exclude. Project not likely to be developed in the declaration period.

Mine	In Goonyella system?	Comments	Assessment
			The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.
Goonyella (Operating)	In	Uses HPCT. No evidence of term contracts with DBCT.	Exclude. Uses HPCT.
Grosvenor West (Project)	In	Previously owned by Carabella Resources, who was originally progressing towards commencing production in 2015. The project came under the control of Wealth Mining Ltd in 2014. The TOR for an EIS was issued in 2012 however the EIS was not submitted by the due date, which was October 2015. The TOR has now ceased to have effect, requiring the proponent to go back to the draft TOR stage if it wishes to progress. No further information could be found on its current status.	Exclude. Project status and timeframes unknown. The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.
Ironbark No.1 (Project)	In	Fitzroy is currently finalising the feasibility and approval processes. Initial production date looks optimistic given stage of project approval but construction is expected to take one year. The company's most recent published plan for the mine, dated October 2917, has average saleable production of 2.1 Mtpa.	Include. Reduce saleable production to 2.1 mtpa.
New Lenton (Project)	In	The Draft EIS was due to be lodged on 27 June 2018. As at 25 July 2018 this has not been published on EHP's website. The project is still in early stages of development and given typical development timeframes, is unlikely to be producing coal by 2021.	Include. Recommend shifting production forecasts back by 5 years to allow for finalisation of the EIS, granting of approvals and construction.
Denham (Project)	In	Also known as the Eaglefields expansion. Operations at Eaglefield are currently on hold, with equipment parked up onsite from July 2015. No further updates available on Peabody Energy's website. The latest advice from the Bureau of Resource and Energy Economics list the expansion at the feasibility stage. EIS description notes coal would be shipped to DBCT or Abbot Point.	Exclude. Project status and timeframes uncertain. The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.
North Goonyella (Operating)	In	In operation. In 2017 saleable coal was 2.8 Mtpa	Include

Mine	In Goonyella system?	Comments	Assessment
West/North Burton (Project)	In	Investor presentation has nothing specific on Burton. It is in a map as a Mining Development Lease. It is a potential development project. Not included in the Bureau of Resources and Energy Economics' table of mining projects. No evidence an EIS has commenced.	Exclude. Project status and timeframes uncertain. The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.
Isaac Plains (Operating)	In	In operation. In 2017 saleable coal 0.78 Mt	Include
GOONYELLA FAR WEST			
Clermont (Operating)	In	In operation. In 2017 saleable coal was 11.6 Mt	Include
Blair Athol (Operating)	In	In operation. In 2017 saleable coal was 0.2Mt. Company announcement that mine life would be 8 years at 2 Mtpa.	Include
GOONYELLA WEST			
Caval Ridge (Operating)	In	Uses HPCT. No evidence of term contracts with DBCT.	Exclude. Uses HPCT.
GOONYELLA SOUTH			
Capcoal (Operating)	In	In operation. Capcoal consists of the Grasstree operation and the Aquila underground mine. Aquila is currently in care and maintenance with approval to develop as a standalone longwall mine (feasibility commenced in 2013). Commissioning date previously identified as early 2017. Grasstree's saleable production in 2015-16 was 8.7 mt.	Include. It is not known if Aquila project is included - however forecast tonnes below Grasstree production in 2015-16. Aquila itself is expected to produce 3.5 mtpa.
Eagle Downs (Project)	In	Eagle Downs is a fully permitted development project. After initial investment in site infrastructure, the project was placed into care and maintenance in mid-2013. In May 2018 it was announced that South32 will acquire a 50% interest in the project from China BaoWu Steel Group, which is expected to close by December 2018. The remaining 50% is held by Aquila. South32 then intends to launch a final feasibility to optimise the	Include. South32 acquisition suggests development is likely to progress. Some infrastructure has already been constructed. Question is whether 1.6 mtpa WICET capacity should be deducted and if so, over what time

Mine	In Goonyella system?	Comments	Assessment
		mine's design and development. Subject to the findings of the study and obtaining approvals, the plan is to progress with construction. DBCT User Group notes that Aquila as a long-term take or pay contract for 1.6 mpta at WICET (cross-sub, p.38). The term of that contract is not known or whether obligations assumed by the new owners.	frame (as ongoing contractual arrangements not known). In the absence of information on the term of the contract this adjustment has not been made.
Daunia (Operating)	In	Uses HPCT. No evidence of term contracts with DBCT.	Exclude. Uses HPCT.
Peak Downs (Operating)	In	Uses HPCT. No evidence of term contracts with DBCT.	Exclude. Uses HPCT.
Saraji (Operating)	In	Uses HPCT. No evidence of term contracts with DBCT.	Exclude. Uses HPCT.
Saraji East (Operating)	In	Uses HPCT. No evidence of term contracts with DBCT.	Exclude: Uses HPCT.
Poitrel (Operating)	In	DBCTM (cross-sub, para. 127.1) states that a current contract is held at DBCT but term and volume for this mine not known. This is similarly the case for BMC's South Walker Creek mine. The HK forecast is total volume of 8.55 mt for both mines. [REDACTED] BHP (July 2018 sub, para. 2.2) has advised that while BMC has used HPCT, it has no committed capacity at HPCT. We have therefore included the total forecast volumes for these two BMC mines.	Include
Oaky Creek (Operating)	In	In operation.	Include.
Lake Vermont (Operating)	In	In operation. DBCT User Group (cross-sub, p.34) states that Middlemount contracted at APCT during the mining boom due to perceived inability to contract through DBCT. It also states that it has 3 mpta contracted at APCT until 2027 (cross-sub, p.37 + DBCTM sub para. 132). DBCTM (sub, para. 141) stated that this mine also originally approached DBCT for capacity but was fully contracted at the time.	Include, however, adjustment should be made for APCT volumes at least until 2028 (i.e. deduct 6 mtpa). It is then assumed that those tonnages will be recontracted at DBCT.
Middlemount (Operating)	In	In operation. DBCT User Group (cross-sub, p.34) states that Middlemount contracted at APCT during the mining boom due to perceived inability to contract through DBCT. It also states that it has 3 mpta contracted at APCT until 2027 (cross-sub, p.37 + DBCTM cross-sub para. 132). DBCTM	Include, however adjustment should be made for APCT volumes until 2027 (i.e. deduct 3 mtpa). It is then assumed that

Mine	In Goonyella system?	Comments	Assessment
		(cross-sub, para. 141) stated that this mine also originally approached DBCT for capacity but was fully contracted at the time.	those tonnages will be recontracted at DBCT.
Codrilla (Project)	In	Under development. Codrilla is located in the south-east of the Moorvale mine. The EIS process has been completed and approved - the EIS report was issued in October 2011. No recent information can be found on this project. It is not identified as an Advanced Project by DNRM.	Exclude. Cannot confirm current status. Timing too uncertain. The sensitivity analysis assumes commissioning and volumes as per Houston Kemp forecast.
Moorvale (Operating)	In	In August 2017 Peabody released a media statement saying that it intends to extend the life of the Moorvale mine to 2021, resulting in production of 1.5 mt.	Include
Moorvale West (Project)	In	No public information can be found on the current status of Moorvale West. A 2017 document identifies it as being in the 'feasibility/exploration' phase. Further: (1) in August 2017 Peabody announced that it intends to extend the life of the Moorvale mine, with 1.5 mt of additional production in 2021; (2) a 2017 AME Research article states that Peabody intends to develop the Moorvale West project once operations at Moorvale conclude.	Exclude. Cannot confirm current status. No information has been released by Peabody to confirm its future intentions. The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.
Olive Downs North (Project)	In	In 2016 Pembroke Resources acquired Peabody's interests in the Olive Downs coal tenements. The 'project' acquired includes Olive Downs North (87.3% interest), Olive Downs South and Willunga (100% interest). In May 2018 Pembroke lodged an application for an Environmental Authority (EA) for the Olive Downs Complex, which was stated to comprise Olive Downs South and Willunga. Preparation of the EIS has commenced. The Pembroke website currently states that first coal from Olive Downs South is expected in 2020, although this is questioned given the EIS is still under development (EA application contemplates a 2 year construction period). It is identified as an 'advanced project' by DNRM. The current status of Olive Downs North is not known, however two mining leases have been approved.	Include. The status of Olive Downs North is not known. Olive Downs South is expected to begin producing coal in 2020, although this is unlikely if EIS still under development. This is expected to ramp up to 6 mtpa by 2031. It is recommended that the source of these volumes (i.e. Olive Downs North, Olive Downs South) is clarified with DBCTM.

Mine	In Goonyella system?	Comments	Assessment
Vermont East/Willunga (Project)	In	Willunga was part of the portfolio of coal tenements sold to Pembroke. It is also subject to the EA application for the Olive Downs Complex (refer above). The EIS application states that construction will commence in 2027 and first coal is expected from Willunga in 2028.	Include, but overstated pre 2028. The EA application projects first coal from 2028 and will ramp-up to 6mpta from 2028 to 2033. Have shifted ramp-up profile to commence in 2028.
Foxleigh (Operating)	In	In operation.	Include
Kestrel (Operating)	Out	On South Goonyella branch but within Aurizon Network's boundary for Blackwater. In March 2018 Rio Tinto agreed to sell its interest in Kestrel to EMR Capital and Adaro. Rio Tinto's website states that coal is shipped to the Port of Gladstone. DBCTM refutes this (cross-sub, para 50), quoting an intent from Rio Tinto to redirect some or all of the mine's capacity to terminals other than the Port of Gladstone. This was from a document published in 2011 (relating to an extension to be completed in 2012). It is not evident that this has eventuated. The DBCT User group advises that [REDACTED] of terminal capacity at RGCT was assigned to the purchasers of Kestrel (cross-sub, para.29). It is not included on the list of mines that export through DBCT according to DBCTM's website. In its original submission (para.31) DBCTM states that Kestrel: "is located closest to RGCT and exports coal through that terminal, is sporadically exporting coal through DBCT."	Exclude. Within the Blackwater system boundary. More importantly, there is no evidence to support current or future material redirection of volumes from RG Tanna to DBCT. Term of contract with RGCT is not known.
Winchester South (Project)	In	In June 2018 Rio Tinto sold 75% of its interest in this project to Whitehaven Coal. Whitehaven intends to acquire the remaining 25% from Spectre Group. Whitehaven's plans for this project have not been announced (which is likely to be pending the acquisition of the remaining interest), although it sees the project as key to its long-term growth strategy. EIS has not yet been commenced.	Exclude. It is possible it will commence operations in ten years, however the development path for this mine remains highly uncertain at this stage. The sensitivity analysis assumes commissioning and volumes as per Houston Kemp forecast.

Mine	In Goonyella system?	Comments	Assessment
Teresa (Project)	Out	The EIS was originally released for public review in February 2014. United Energy had until May 2016 to submit its response, which it has not done. The EIS has therefore lapsed. There are no permits on record.	Exclude. Within Blackwater system boundary. The status of the project is unknown.
GOONYELLA CENTRAL			
South Walker Creek (Operating)	In	DBCTM (cross-sub, para. 127.1) states that a current contract is held at DBCT but term and volume for this mine not known. This is similarly the case for BMC's Poitrel mine. The HK forecast is total volume of 8.55 mt for both mines. [REDACTED] BHP (July 2018 sub, para. 2.2) has advised that while BMC has used HPCT, it has no committed capacity at HPCT. We have therefore included the total forecast volumes for these two BMC mines.	Include
Coppabella (Operating)	In	In operation.	Include
Hail Creek (Operating)	In	In operation.	Include
Hillalong (Project)	In	The final EIS has been submitted for approval. Development is proposed to commence in 2018. Construction is expected to take three years. The EIS contemplates transport to DBCT.	Include
Harrybrandt (Project)	In	Yancoal identifies Harrybrandt as an "advanced-exploration stage" project. The development timeframe is unknown. The EIS process has not commenced. No reference was made to the project in the 2017 Annual Report. Wood McKenzie estimates the start date for production as 2038 (DBCT User Group, cross-sub, Wood McKenzie report, p.8).	Exclude. Development timeframe is too uncertain. The sensitivity analysis assumes the mine is commissioned by 2026 and then applies a ramp-up based on the Houston Kemp forecasts.

In compiling the above, reference was made to the initial and cross-submissions made by DBCT Management, the DBCT User Group and BHP. The table below identifies all external data sources used, the focus being on those mines where adjustments have been made to the

Houston Kemp forecasts (which are mining projects). For recent production, reference was made to information published by the Department of Natural Resources, Mines and Energy.⁸

All information from the below data sources is current as at 25 July 2018.

Table 3 External data sources

Mine	Data source
GOONYELLA NORTH	
Grosvenor (Operating)	
Moranbah North (Operating)	
Moranbah South (Project)	http://australia.angloamerican.com/operations-and-projects https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/documents/moranbah-south-project-environmental-impact-assessment-report.pdf http://australia.angloamerican.com/media/press-releases/pr-2018/23022018 http://www.abc.net.au/news/2014-11-27/anglo-american-awaits-better-market-conditions/5921724
Talwood (Project)	https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/concluded.html https://www.aquilaresources.com.au/projects/talwood-coking-coal-project ; http://enableadvisory.com/2017/08/07/aquilas-talwood-market/
Goonyella (Operating)	
Grosvenor West (Project)	http://mininglink.com.au/site/grosvenor-west https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/grosvenor-west-project.html

⁸ Natural Resources, Mines and Energy, Queensland Government, 2017 calendar year—Coal production statistics.

Mine	Data source
Ironbark No.1 (Project)	http://www.fitzroyoz.com/_asset/pdf/Initial%20Development%20Plan.pdf http://www.fitzroyoz.com/the-business
New Lenton (Project)	https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/lenton-coal-project.html
Denham (Project)	https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2018/index.html http://mininglink.com.au/site/eaglefield-opencut-coal-mine
North Goonyella (Operating)	
West/North Burton (Project)	https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/concluded.html https://www.peabodyenergy.com/Peabody/media/MediaLibrary/Investor%20Info/May-2018-Investor-Presentation.pdf https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2018/index.html
Isaac Plains (Operating)	
GOONYELLA FAR WEST	
Clermont (Operating)	
Blair Athol (Operating)	
GOONYELLA WEST	
Caval Ridge (Operating)	
GOONYELLA SOUTH	
Capcoal (Operating)	http://australia.angloamerican.com/operations-and-projects https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0011/238079/coal-mines-advanced-projects.pdf http://mininglink.com.au/site/aquila

Mine	Data source
Eagle Downs (Project)	https://www.australianmining.com.au/news/south32-acquire-eagle-downs-coal-project-qld/ https://www.south32.net/docs/default-source/media-releases/south32-to-acquire-50-interest-in-eagle-downs-and-assume-operatorship.pdf?sfvrsn=8a980155_2
Daunia (Operating)	
Peak Downs (Operating)	
Saraji (Operating)	
Saraji East (Operating)	
Poitrel (Operating)	
Oaky Creek (Operating)	
Lake Vermont (Operating)	
Middlemount (Operating)	
Codrilla (Project)	https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/codrilla_coal_mine_project.html
Moorvale (Operating)	"Peabody Reports Earnings For Quarter Ended June 30, 2017; Formalizes Debt Reduction And Capital Return Initiatives", https://www.peabodyenergy.com/Media-Center/Newsroom .
Moorvale West (Project)	https://www.peabodyenergy.com/Peabody/media/MediaLibrary/Investor%20Info/Annual%20Reports/2017-Peabody-Annual-Report.pdf?ext=.pdf ; https://www.peabodyenergy.com/Media-Center/Newsroom http://aus.amegroup.com/Website/FeatureArticleDetail.aspx?fald=386 http://www.pembrokeresources.com.au/documents/EA%20Application%20and%20Supporting%20Information%20[EXECUTED].pdf
Olive Downs North (Project)	http://www.pembrokeresources.com.au/media/20160510%20-%20Olive%20Downs%20-%20Pembroke%20Release.pdf https://www.statedevelopment.qld.gov.au/assessments-and-approvals/olive-downs-project.html http://www.pembrokeresources.com.au/olive_downs.php

Mine	Data source
	http://www.pembrokeresources.com.au/media/Pembroke%20Resources%2007%20April%202017.pdf http://www.pembrokeresources.com.au/documents/EA%20Application%20and%20Supporting%20Information%20[EXECUTED].pdf
Vermont East/Willunga (Project)	http://www.pembrokeresources.com.au/documents/EA%20Application%20and%20Supporting%20Information%20[EXECUTED].pdf
Foxleigh (Operating)	http://www.realmresources.com.au/site/our-assets/foxleigh-coal-mine/asset-overview
Kestrel (Operating)	http://www.riotinto.com/australia/rtca/kestrel-mine-10423.aspx ; http://www.dbctconstruction.com.au/coalchain/maps.aspx .
Winchester South (Project)	http://www.riotinto.com/media/media-releases-237_25479.aspx https://www.australianmining.com.au/news/whitehaven-completes-acquisition-winchester-south-rio-tinto/ http://www.whitehavencoal.com.au/whitehaven-to-acquire-winchester-south-project-from-rio-tinto/
Teresa (Project)	https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/teresa_coal_project.html#current_status_of_the_eis https://myminesonline.business.qld.gov.au/suite/apps
GOONYELLA CENTRAL	
South Walker Creek (Operating)	
Coppabella (Operating)	https://www.peabodyenergy.com/Operations/Australia-Mining/Queensland-Mining/Coppabella-Mine
Hail Creek (Operating)	http://www.riotinto.com/australia/rtca/hail-creek-mine-10422.aspx
Hillalong (Project)	http://sdenergy.com.au/index.php?c=msg&id=417&
Harrybrandt (Project)	http://www.yanzhoucoal.com.cn/en/profile/node_171.htm

To summarise, the adjusted volumes are presented below, along with the forecasts submitted by DBCTM and the DBCT User Group.

Table 4 Summary

Source	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
DBCTM – Including HPCT	150.90	156.10	164.84	172.73	182.42	186.70	178.96	181.87	181.60	182.10
DBCTM – Excluding HPCT	91.05	95.15	102.69	109.58	117.77	120.55	111.31	112.72	112.45	112.95
Adjusted – Base Case	83.69	80.23	80.19	76.21	77.53	72.23	59.19	64.69	70.04	70.74
Adjusted – High Case	83.69	80.23	80.19	76.21	78.43	82.54	82.60	96.30	107.65	109.35
DBCT User Group	68.00	67.00	68.00	69.00	69.00	57.00	51.00	49.00	48.00	43.00
DBCT User Group – Upper Bound	75.00	75.00	76.00	83.00	84.00	76.00	82.00	80.00	79.00	73.00