

28 March 2018

Australian Pacific Coal Limited (ASX: AQC)

## Completion of Open Cut Pre-Feasibility Study for Dartbrook Project

### Highlights:

- Study confirms the technical and financial capability of the Dartbrook Open-Cut Project
- The Owner-Operator and Contractor cases both deliver an NPV of approximately AU\$1.3 billion with strong internal rates of return, 23.2% and 24.6% respectively
- Consistently low run of mine coal strip ratio delivers very competitive, low life-of-mine operating costs in the 1<sup>st</sup> quartile for global seaborne thermal coal producers
- Modelling of key environmental parameters indicates the Project meets or exceeds stringent environmental requirements
- Substantial benefits for the region, State and Federal governments delivered by employment, royalties and taxes
- Environmental Impact Statement commenced with completion and submission anticipated by Q3FY19

Australian Pacific Coal Limited (**Company** or **AQC**) is pleased to announce the results of the Dartbrook Open Cut Pre-Feasibility Study (**OC PFS**) for the Dartbrook Project (**Dartbrook** or **Project**). The OC PFS is the culmination of 12 months' work and marks a major milestone for the Company since completion of the acquisition of Dartbrook on 29 May 2017.

AQC's vision is to develop Dartbrook as a low impact, open cut, mining operation. The OC PFS considers two main options – an owner operator case and a contract mining case.

**Table 1 – Investment Highlights<sup>1</sup>**

Parameter	Unit	Owner Operator Case	Contractor Case
Project Net Present Value <sub>10</sub> <sup>1</sup>	AU\$ million, as at 1 July 2017	1,341	1,292
Project Internal rate of return <sup>1</sup>	%, as at 1 July 2017	23.2	24.6
AU\$ Free on Board (FOB) operating cost	LoM, all-in, excluding state royalties, 2017 AU\$	42.1	47.8
US\$ FOB	LoM, all-in, excluding state royalties, 2017 US\$	31.6	35.8
Payback period	Year of production	5	5
Development Capex	2017 AU\$ to first coal	937	699
Average EBITDA Margin	Steady State Earnings before interest, tax, depreciation and amortization, as a % of revenue	52%	46%
Total ROM tonnes	LoM	226	226
Total Product tonnes	LoM	172	172

The Project is financially robust primarily due in part to:

- The low, stable run of mine (ROM) strip ratio (4.0 waste bank cubic metres per 1 tonne ROM) over the life of the Project; and
- Total yield of 76% for ROM coal to product coal, producing a high-quality Newcastle benchmark premium coal and a secondary higher ash standard product. Approximately two thirds of product coal produced is premium coal.

The Owner-Operator and Contractor cases both deliver an NPV of approximately AU\$1.3 billion with strong internal rates of return, 23.2% and 24.6% respectively. The low operating cost and ramp-up schedule is estimated to deliver a nominal payback period of 5 years under both cases with operating margins averaging 52% and 46% respectively, following completion of ramp up to steady state operations.

Dartbrook will support approximately 550 direct jobs throughout its operational life. The recruitment philosophy is expected to have a local community focus with indirect benefits to flow to support industries in the region.

**Table 2 – Operating Cost breakdown**

LOM Free-On-Board operating cost (AU\$/product tonne)	Owner Operator Case AU\$/tonne	Contractor Case AU\$/tonne
Waste & coal mining	30.8	36.5
Transport & Logistics	11.3	11.3
<b>FOB (excluding NSW State Royalty)</b>	<b>42.1</b>	<b>47.8</b>
Estimated NSW State Royalty <sup>2</sup>	8.2	8.2
<b>FOB (including NSW State Royalty)</b>	<b>50.3</b>	<b>56.0</b>

The operating cost estimates that have been developed are presented in real 2017 Australian dollars. The competitively low operating cost estimate places Dartbrook in the 1<sup>st</sup> quartile for global seaborne thermal coal producers (refer **Figure 1**).

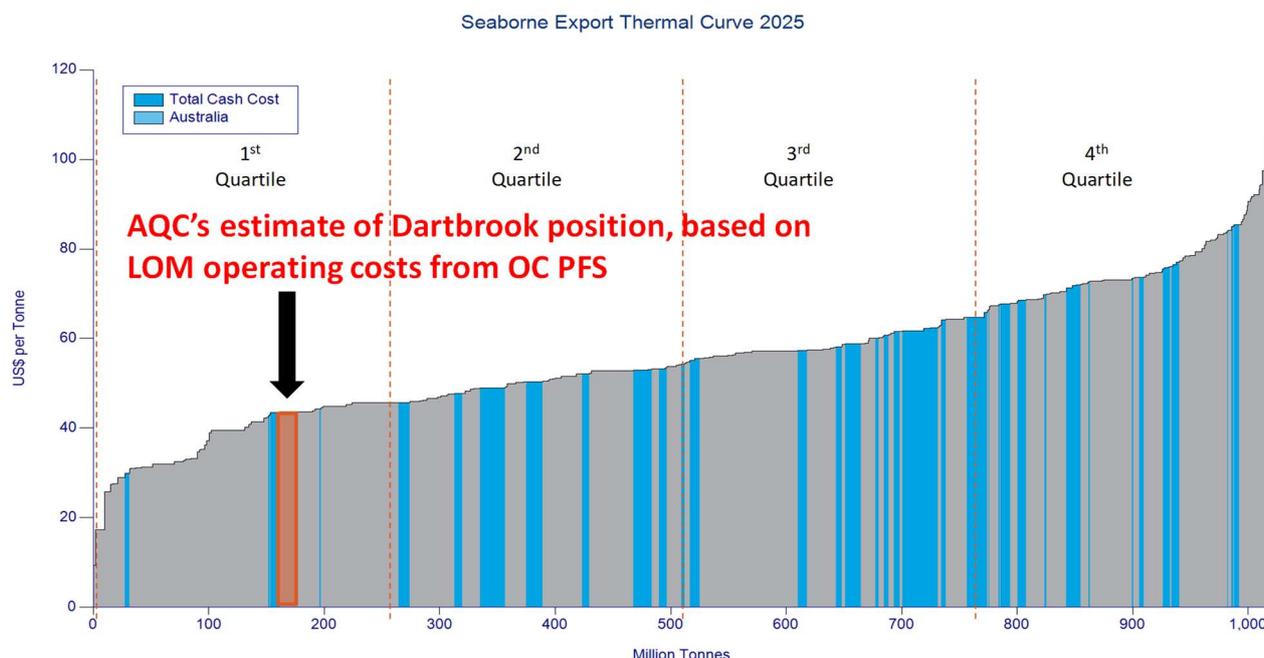
The vast detail of geological information available for mine planning and scheduling provides confidence in the Project operating costs.

<sup>1</sup> Refer Note 1 for key assumptions

<sup>2</sup> Based on AQC management estimates, refer Note 1

Dartbrook coal is well placed on the global seaborne coal cost curve with respect to its average costs of production. The cost of production is consistent over the life of the mine, due primarily to the consistent strip ratio and CHPP processing yield, delivering a stable 1<sup>st</sup> quartile cost of production (refer **Figure 1**). In late 2015, the lowest point of the recent coal cycle, the Newcastle export spot price reached a low of US\$47 per tonne. This multi-year low compares to the OC PFS operating cost of approximately US\$31.6 per tonne (FOB excluding NSW State Royalty).

**Figure 1 – Seaborne Thermal Coal Cost Curve – 2025 (nominal US\$)**



Source: Wood Mackenzie Ltd, Dataset: August 2017

**Table 3 – Capital Cost Breakdown**

Description	Owner Operator Case AU\$M	Contractor Case AU\$M
Pre-production	128.3	128.3
Mobile Fleet	219.6	-
Waste and Coal Clearance	275.0	275.0
Coal Handling & Preparation	109.2	109.2
Infrastructure & Other	135.1	135.1
<b>Total</b>	<b>867.2</b>	<b>647.6</b>
Contingency	69.4	51.8
<b>Total including Contingency (P50 estimate)</b>	<b>936.6</b>	<b>699.4</b>

Capital expenditure for the OC PFS is comparable with similar sized neighbouring mines in the Hunter Valley. Significant capital is also allowed for the CHPP to improve stockpile management, total throughput and product yield.

Capital expenditure estimates to first coal are based as at August 2017 and are presented to a P50 confidence level. Value engineering and optimisation will be undertaken in the definitive feasibility phase of the Project.

## Dartbrook Project Location

Dartbrook is located in the upper Hunter Valley in New South Wales, Australia. Muswellbrook is the closest major town.

Dartbrook is connected to port facilities in Newcastle (130 km southeast) via the Main Northern Railway and the New England Highway.

The Hunter River is located to the east of the lease areas, running north-south. Sandy Creek runs through the northern portions of the Dartbrook tenements, joining with Dart Brook to the east. Dart Brook is a tributary of the Hunter River, with confluence to the Hunter in the southeast of the Project area.

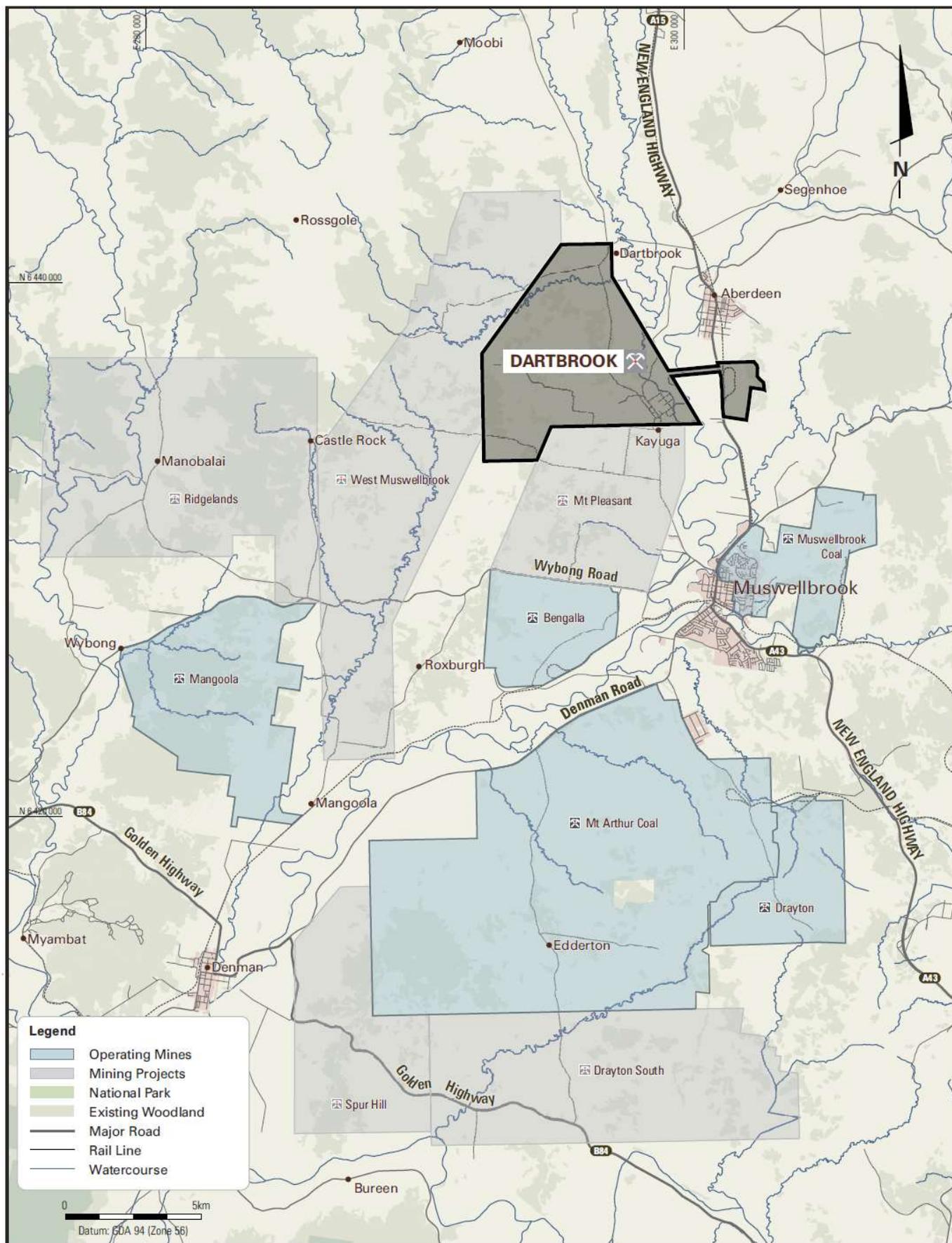
The eastern parts of the Dartbrook tenements are located on the Hunter River alluvial flats, at an elevation of approximately 170m (AHD<sup>3</sup>). The topography rises towards the south-west, where it reaches an elevation of 330m (AHD). Overall the topography undulates gently in a westerly direction, with areas of flat ground near the Hunter River and its tributaries. The proposed open cut Project lies in the hills west of the Hunter River alluvial flats.

Dartbrook is in a long and well-established mining precinct with continued active mining operations, mines under development and exploration licences, as shown in **Map 1**. Dartbrook contains several exploration licences and an underground mining lease – refer to **Table 4** and **Table 5** for Coal Reserve and Coal Resource summaries.

---

<sup>3</sup> AHD means Australian Height Datum

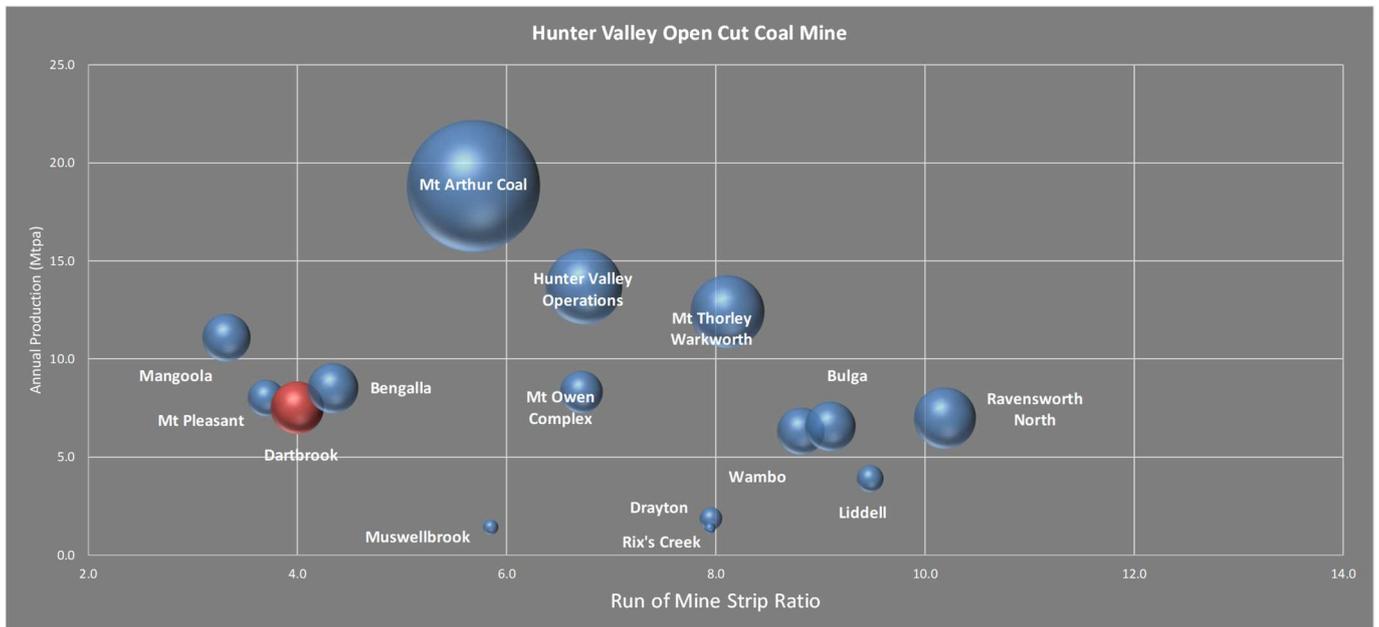
Map 1 – Regional Mining Operations & Projects



DARTBROOK

The Hunter Valley coal region is renowned for its large scale, low cost high quality operating mines. The OC PFS confirms Dartbrook as one of the most significant under-developed coal assets in the region by virtue of its low strip ratio and project scale (refer **Figure 2**).

**Figure 2 – Project Relativity by Saleable Product and Strip Ratio<sup>4</sup>**



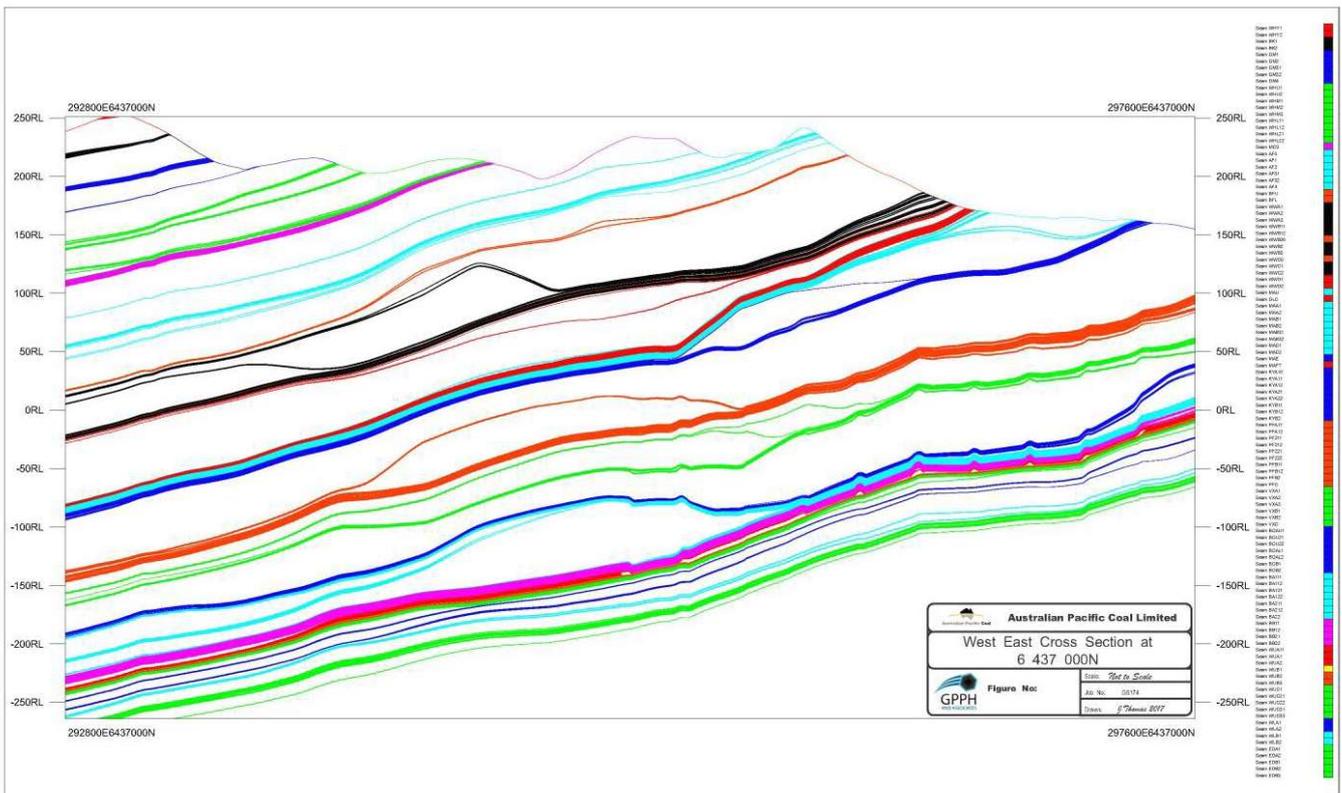
<sup>4</sup> International Energy Outlook 2016 and AQC Management estimates. Note: bubble size represents Marketable Coal Reserves

## Geology

Coal within Dartbrook is located on the western side of the Muswellbrook Anticline. Strata of the Permian Wittingham Coal Measures outcrop in the area and dip gently generally to the west. The location of the igneous intrusions and faults in the Dartbrook deposit is well-known. They have been considered for both resource estimation and mining operations. Based on observations from previous underground operations, the igneous intrusions and faults will have no material impact on the Dartbrook coal product qualities.

Within the Dartbrook OC PFS mine schedule there are 13 coal seams amenable to open cut mining.

Figure 3 – West East cross section at 6437000 N



## Resource

The Coal Resource have been estimated in accordance with the JORC Code, 2012 Edition. The Dartbrook tenements contain a total Coal Resource of approximately 2,534 Million tonnes (588 Mt Measured, 850 Mt Indicated, 1,097 Mt Inferred)<sup>5</sup>. Within this Coal Resource, open cut mining is amenable in areas for a total of 1,803 Mt at a depth shallower than 450m (refer **Table 4** – Summary of Dartbrook In Situ Resources by Depth).

**Table 4 – Summary of Dartbrook In Situ Resources by Depth**

Million Tonnes <i>in situ</i>				
Depth	Measured	Indicated	Inferred	Total
<450m	507	638	658	<b>1,803</b>
<450m Non-Open Cut	80	208	388	<b>675</b>
>450 m	2	3	51	<b>56</b>
<b>Total</b>	<b>588</b>	<b>850</b>	<b>1,097</b>	<b>2,534</b>

## Reserve

The Coal Reserve estimate (JORC, 2012 Edition) has the following quantities.

**Table 5 – Reserve Area**

	Total (Mt)
Mineable ROM	572
<b>Reserves</b>	
ROM Probable	470
Marketable Product	370

Note: the totals are rounded to reflect the accuracy of the estimate. The Competent Person has classified the entire Reserve as a Probable Reserve as presently Dartbrook does not hold any open cut mining leases.

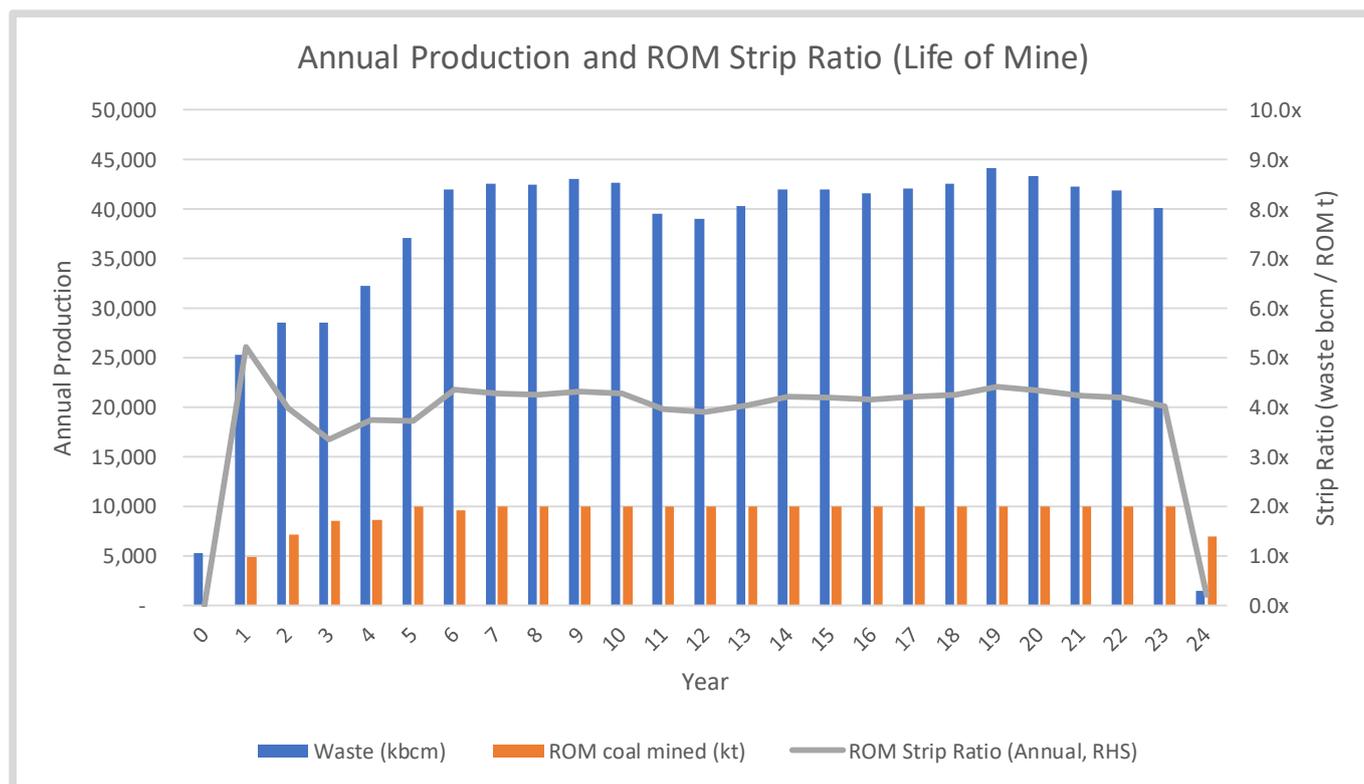
The mine plan underpinning the Coal Reserve (**Reserve Mine Plan**) considers the full area of the Dartbrook Mine leases. The Reserve Mine Plan mines 572 Mt run of mine (ROM) coal with 470 Mt, or 82%, classified as a ROM Coal Reserve<sup>6</sup>, at a strip ratio of 4.2 to 1 (bcm waste to ROM tonne coal).

The OC PFS mine plan mines 226 Mt ROM coal with 190 Mt, or 84%, classified as a ROM Coal Reserve. Based on the modelled processing yield applied by the Competent Person and rounding, this equates to a Marketable Reserve of 140 Mt. This reflects the capacity of the proposed 10 Mtpa pit operating for 25 years, at a strip ratio of 4.0 to 1. Beyond the OC PFS mining pit, the Coal Reserve extends to the south, west and north of the OC PFS mining pit. The OC PFS mine plan is a subset of the Reserve Mine Plan.

<sup>5</sup> Refer ASX announcement 27 June 2017 titled "Dartbrook Coal Resource Estimate 2.5 Billion tonnes"

<sup>6</sup> Refer ASX announcement 28 March 2018 titled "Dartbrook Coal Reserve Estimate"

Figure 4 – Open Cut PFS mine plan – Key annual physicals



## Infrastructure & Land

### Coal Handling & Preparation Plant

Dartbrook began operating exclusively with an unwashed (bypass) coal product that was crushed and sold directly to market. The existing Coal Handling & Preparation Plant (**CHPP**) was established several years later with a combination of washed and bypassed product produced. AQC’s CHPP technical consultant, Ausenco, has assessed the requirements to modify the existing CHPP to process approximately 30% as bypass coal whilst the remainder is washed at a nominal feed rate of 1,000 t/h as received across the wide number of coal types available to the Dartbrook operation.

The Dartbrook CHPP will produce two thermal export coal products with energy specifications of 6100 kCal/kg (GAR) and 5500 kCal/kg (GAR) for the high energy “Dartbrook Premium” and standard energy “Dartbrook Standard” products, respectively. Two-thirds of product coal produced will be Dartbrook Premium coal. The CHPP is a single product plant and will produce each of these products via a campaign strategy. Product stockpile and train load-out blending of washed and bypassed products support final product make-up prior to marketing of the product.

When the existing CHPP was shut down and placed on care and maintenance, there were a number of performance issues identified that restricted the plant from achieving its nameplate performance of 1,000 t/h when processing Dartbrook underground coal. Ausenco’s review has targeted the upgrades necessary to achieve this nameplate rating for the proposed open cut feed source. Ausenco has incorporated identified improvement and rectification works into a combined requirement to recommence operations with the requisite upgrade to achieve nameplate rating on the proposed open cut feed.

**Figure 5 – Current CHPP Facilities**



***Land***

AQC owns 3,402ha of freehold land, a significant portion of the land within the Dartbrook Project. Further land may be required to meet the anticipated mining area and zone of affectation criteria prior to the grant of mining licences.

***Rehabilitation***

AQC has assessed various rehabilitation strategies throughout the OC PFS. By design, rehabilitation is started early, completed progressively and included as part of annual operating costs and planning.

## Transport infrastructure

The Dartbrook CHPP and train load-out is connected to the Hunter Valley Coal Chain (HVCC). The HVCC is a significant logistics corridor, servicing approximately 35 operating mines delivering over 160 million tonnes to the Port of Newcastle for export to a range of customers.

Coal will be transported from Dartbrook CHPP 130km by rail to the Port of Newcastle. Rail and port infrastructure and operating costs are competitive by Australian mining industry standards, with total transport costs anticipated to be approximately AU\$8 per product tonne.

Figure 6 – Hunter Valley Coal Chain Overview<sup>7</sup>



<sup>7</sup> Hunter Valley Coal Chain Co-ordinator website - [www.hvccc.com.au](http://www.hvccc.com.au)

## Marketing

Previous underground mining at Dartbrook produced a product coal that was well-accepted in the international marketplace. Over a 10-year period, approximately 25Mt of high energy Dartbrook thermal coal product was sold into the Asian market.

Dartbrook is planned to produce two coal types to meet current market requirements – “Dartbrook Premium,” a 6100 kCal/kg GAR coal, and “Dartbrook Standard,” a 5500 kCal/kg GAR coal. The Project can produce a variety of different coal products ranging from domestic thermal coal, to export thermal coal and semi-soft metallurgical coals.

Dartbrook is best suited to producing export quality thermal coal with the indicative qualities for this coal shown in **Table 6** and **Table 7**.

Coal yield is maximised and quality variation is minimised as coal feed will be blended from the available coals off the ROM and Circular Stockpiles. The OC PFS identifies a blending and washing strategy for each of the working sections to be mined at Dartbrook.

**Table 6 – Indicative Specification ‘Dartbrook Premium’**

Indicative Coal Specification – Dartbrook Premium (high energy)					
		As Received	Air Dried	Dry	Dry Ash Free
Total Moisture	%	11.0			
Inherent Moisture	%		4.5		
Ash	%	12.00	12.9	13.5	
Volatile Matter	%	29.5	31.7	33.2	38.4
Fixed Carbon	%	47.5	50.9	53.3	61.6
Total Sulphur	%	0.37	0.40	0.42	0.48
Chlorine	%	0.02	0.02	0.02	0.02
Hardgrove Grindability Index	%		52		
Specific Energy					
Net	kcal/kg	5835			
Gross	Kcal/kg	6100	6545	6855	7920

**Table 7 – Indicative Specification ‘Dartbrook Standard’**

Indicative Coal Specification – Dartbrook Standard (standard energy)					
		As Received	Air Dried	Dry	Dry Ash Free
Total Moisture	%	11.0			
Inherent Moisture	%		4.5		
Ash	%	19.0	20.4	21.4	
Volatile Matter	%	26.9	28.8	30.2	38.4
Fixed Carbon	%	43.1	46.3	48.5	61.6
Total Sulphur	%	0.36	0.39	0.41	0.52
Chlorine	%	0.02	0.02	0.02	0.03
Hardgrove Grindability Index	%		53		
Specific Energy					
Net	kcal/kg	5280			
Gross	Kcal/kg	5545	5950	6230	7920

## Environment & Community

Within the OC PFS, a range of desktop and field studies have been undertaken by AQC's lead environmental agency, Hansen Bailey, covering various aspects of the environmental and social assessments related to the Dartbrook Project. The assessments include, but are not limited to, air quality, acoustics, surface water, groundwater, heritage, agriculture and social impacts. The Dartbrook Project is considered as meeting or exceeding stringent environmental requirements for open cut coal mining.

In addition to increased stakeholder engagement activity moving forward, AQC is well progressed with the Environmental Impact Study (**EIS**) which underpins the Company's future development application for an open cut mining licence at Dartbrook. The EIS is anticipated to be completed and lodged with relevant government bodies in Q3FY19.

## Coal outlook

The OC PFS considered the current and future coal industry dynamics that may play a critical role in the development of Dartbrook. Some of the conclusions include the following:

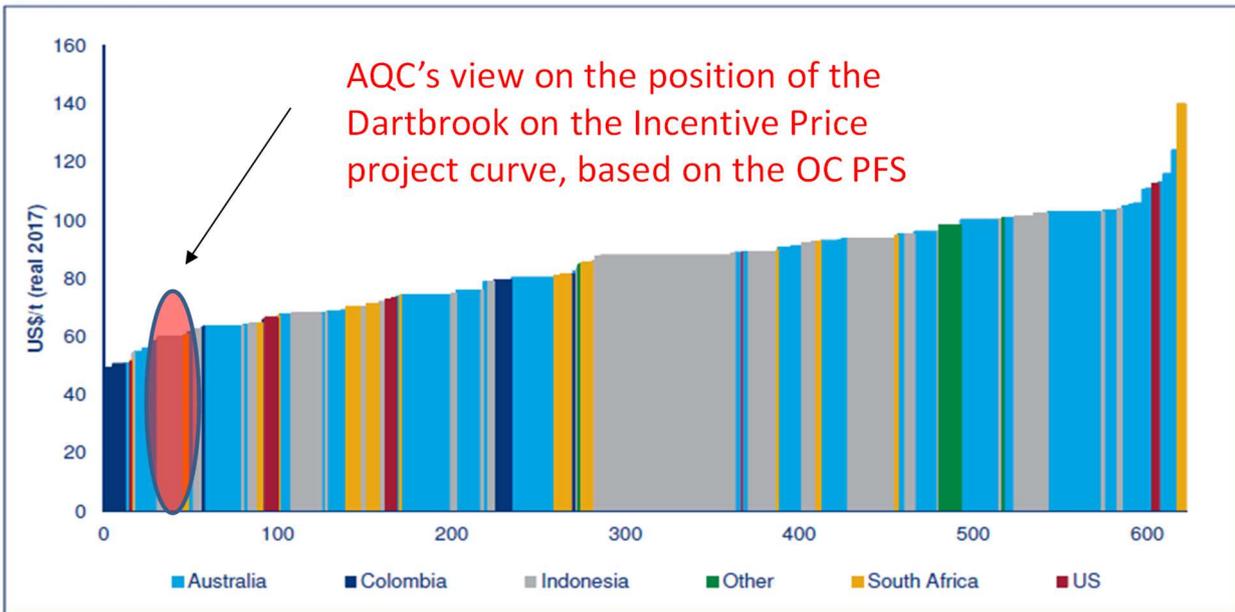
- The forecast global demand for seaborne coal is relatively stable. However, any reductions in supply from Australia will drive the achieved price per tonne for Dartbrook coal;
- Flat overall demand masks growth in a number of emerging markets including Vietnam and Thailand. This may facilitate new market entrants competing, rather than replacing existing suppliers in order to successfully market their coal. Forecast coal supply reductions may reduce the importance of this market substitution issue;
- Reducing export supply from Indonesia indicates Australia may be well positioned to supply the forecast coal supply gap, with lesser contributions from Russia and Colombia; and
- Dartbrook represents an opportunity to re-start a former mining operation. Many new projects are constrained from an infrastructure perspective with no current "path to market".

As existing mines deplete, new sources of production are required to replace these tonnes as the demand for high quality thermal coal continues to grow. The Dartbrook Project has a very low incentive price relative to other projects, meaning it is better positioned to generate positive cashflow returns for investors. Therefore, it is a more attractive development project relative to other new sources of production (refer **Figure 7**).

Figure 7 – Thermal coal project incentive curve

Thermal coal incentive prices (adjusted to FOB Newcastle 6,000 kcal NAR basis)

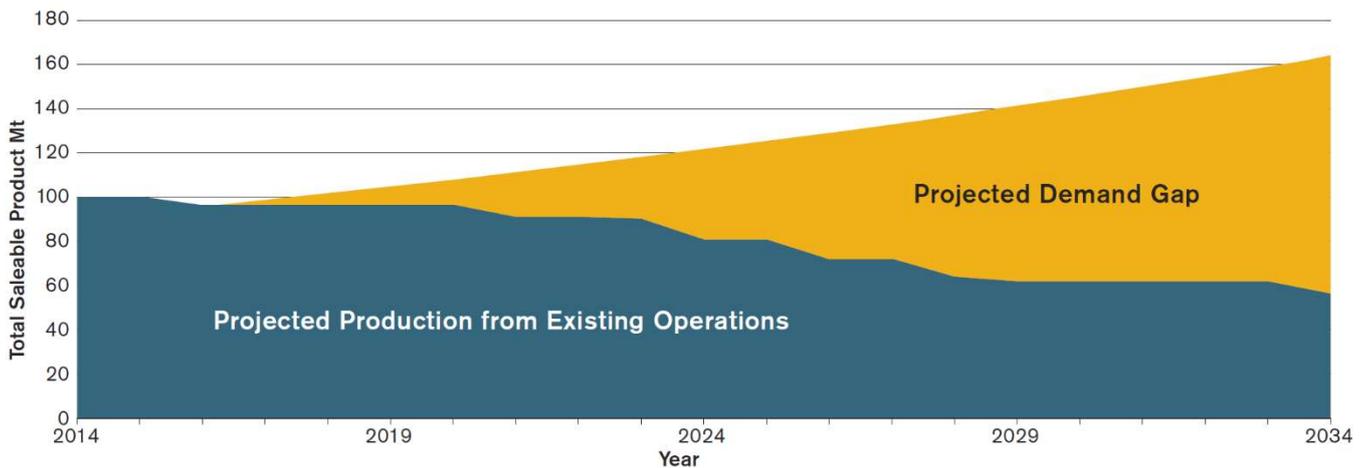
@15% IRR



Source: Wood Mackenzie's Coal Market Service - H1 Thermal Long Term Outlook, June 2017

Existing mines in the Hunter Valley are estimated to exhaust their remaining economic reserves over the next 15 years. Replacement of approximately 35% of existing Hunter Valley production is required to maintain the current output of highly-sought-after premium thermal coal. The Dartbrook Open Cut Project is ideally suited to meet the projected shortage in supply of Hunter Valley high quality, low emission, thermal coal in an environmentally sustainable manner (refer Figure 8).

Figure 8 – Hunter Valley Project Supply and Demand Outlook<sup>8</sup>



<sup>8</sup> NSW Coal Industry Profile 2014 – Department of Resources & Energy

\*\*\*\*\*

John Robinson Jnr, CEO of Australian Pacific Coal, said “The results of the open cut Pre-Feasibility Study confirm Dartbrook as a highly attractive development asset aligned with our strategy to focus on delivering a low impact, open cut, mining operation whilst maintaining a first quartile ranking asset.

The financial investment metrics are very compelling. They indicate the significant inherent value of the Dartbrook Project for our shareholders. The Company is actively engaged with a range of stakeholders as the Project enters the next phase of assessment, including completion of the EIS for submission in Q3FY19.

Dartbrook’s development will deliver substantial benefits to the local and wider community. It will also significantly benefit various levels of government, including over AU\$2.0 Billion in estimated corporate tax and AU\$2.2 Billion in estimated NSW State royalties. In addition, there will be direct and indirect employment taxes generated over the nominal 25-year life-of-mine.

On behalf of the Board I would like to thank our staff, key consultants and other contractors who have contributed to this study over the past 12 months. The PFS is a comprehensive reflection of AQC’s commitment to further developing one of Australia’s most significant coal deposits. I look forward to undertaking value engineering and critical planning works ahead of construction.

Dartbrook represents an opportunity to invest in a prized Tier 1 mining asset.”

Yours faithfully,



Andrew Roach  
Company Secretary  
Australian Pacific Coal Limited

Media enquiries:  
Chris Ford  
E: [mediarelations@aqcltd.com](mailto:mediarelations@aqcltd.com)  
P: +61 411 423 272

## Note 1:

### OC PFS Assumptions

Key management assumptions adopted for the for the OC PFS include foreign exchange (long term AU\$ US\$ of 0.75) Newcastle benchmark coal price (long term real US\$ 83), and project discount rate (10.0% nominal).

### Marketable Reserves Note

The Dartbrook Marketable Coal Reserve of 370Mt is derived from a run of mine Coal Reserve of 470 Mt estimated in accordance with JORC 2012 with a predicted overall yield of 78%. The 370Mt Marketable Coal Reserve is included in the 2.5 Bt Coal Resource (588Mt Measured, 850 Mt Indicated, 1,097Mt Inferred).

### Competent Persons Statement - Resources

The information in this report relating to Coal Resources for the Dartbrook Project was announced on 27 June 2017, titled "Dartbrook Coal Resource Estimate 2.5 Billion Tonnes" and is based on information compiled by Lynne Banwell, a Principal Consultant of Collective Experience Pty Limited and Associate Consultant of GPPH & Associates. Structure modelling was carried out by Rebecca Jackson and Monica Davis of Palaris; coal quality modelling, structure model audit and resource estimations were carried out by Lynne Banwell. Lynne Banwell is a qualified geologist (BSc (Hons) University of Sydney, 1980) with 30 years' experience in coal geology and over 20 years' experience in resource evaluation. Lynne is a Member of the Australasian Institute of Mining and Metallurgy and has experience in this style of mineralisation and qualifies as a Competent Person under the JORC code. This Resource Statement has been prepared under the guidelines of the December 2012 edition of the Australian Code for Reporting of Mineral Resources and Ore Reserves (The JORC Code). Neither Lynne Banwell nor GPPH & Associates has any material interest or entitlement, direct or indirect, in the securities of Australian Pacific Coal or any companies associated with Australian Pacific Coal Limited.

Lynne Barnwell consents to the release of this announcement.

### Competent Persons Statement - Reserves

The information in this report relating to Coal Reserves for the Dartbrook Project was announced on 28 March 2018, titled "Dartbrook Coal Reserve Estimate" and is based on information compiled by Ernst Brian Baumhammer, a Principal Consultant of GPPH & Associates. The Reserve estimations were carried out under the supervision and review of Brian Baumhammer. Brian Baumhammer is a qualified mining engineer (BE (Hons) University of Sydney, 1984) with 33 years' experience in mining, 24 years' experience in coal mining and over 15 years' experience in reserve estimation. Brian Baumhammer is a Member of the Australasian Institute of Mining and Metallurgy and has experience in this style of mineralisation and qualifies as a Competent Person under the JORC code. This Reserve Statement has been prepared under the guidelines of the December 2012 edition of the Australian Code for Reporting of Mineral Resources and Ore Reserves (The JORC Code). Neither Brian Baumhammer nor GPPH & Associates has any material interest or entitlement, direct or indirect, in the securities of Australian Pacific Coal Ltd or any companies associated with Australian Pacific Coal Limited.

Brian Baumhammer consents to the release of this announcement.

The information is extracted from the report entitled "Dartbrook Coal Reserve Estimate" created on 28 March 2018 and is available to view on [www.aqc.ltd.com](http://www.aqc.ltd.com). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Coal Resources or Coal Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.