

# ASX ANNOUNCEMENT 30<sup>th</sup> November 2011

# BLACKHAM COMPLETES SCOPING STUDY FOR SCADDAN COAL EXPORT

- Plan to export 8 Mtpa of coal through Esperance Port
- Option 1 Capex A\$408M, NPV of A\$770M with IRR 23%
- Option 2 Capex A\$147M, NPV of A\$714M with IRR 27% by infrastructure group paying for additional port costs
- Estimated operating costs of A\$23/t
- Coal resource 1 billion tonnes
- Mine plan for coal production of 480Mt over 60 years

Blackham Resources Ltd (ASX Code: **BLK)** is pleased to announce it has finalised a scoping study for the export of coal from its 70% owned Scaddan Coal Project in Western Australia. Engenium, an independent Project Management and Engineering consulting firm, was commissioned by Blackham to complete the scoping study for the export of Scaddan coal through the Esperance Port. The Scaddan Coal Project is located 60km north of the Esperance Port.

The study evaluated several options for development with the preferred two options being listed below:

**Option 1:** 8 Mtpa production via an expanded bulk Port of Esperance with Blackham paying its additional port capital requirements

**Option 2:** 8 Mtpa production via an expanded bulk Port of Esperance with an Infrastructure Group paying additional port capital requirements. Blackham pays an additional tariff to access the third party infrastructure

**Table 1: Scoping Study Financial Analysis** 

Option	Scenario	Capex	Sales	NPV	IRR	BCR
#	Name	\$M	Mt	\$M	%	X
1	8 MTPA Rail	408	236	770	23%	1.9
2	8 MTPA Rail payback on Port	147	236	714	27%	4.9

The Esperance Port is currently planning a 20Mtpa expansion. The State government earlier this year announced \$120 million of State funding to upgrade the Esperance Port Access Corridor. Blackham continues its discussions with the Esperance Port and other infrastructure providers with a view to being export ready when the new capacity is available.

The project greatly benefits from its close location to existing and accessible infrastructure including road, rail, port, power and township. This access allows for the relatively rapid development and ramp up to full production within 3 years.

These positive results now allow for the advancement of government and non-government stakeholder consultation and the discussions on coal off-takes and financing.

#### **Coal Resources**

**Table 2 - Summary of Scaddan Lignite Resources** 

JORC <sup>1</sup> Resource	Total	Blackham Attributable			
	Tonnes	Tonnes			
Category	(millions)	(millions)			
Measured	80	50			
Indicated	490	340			
Inferred	470	340			
Total	1,040	730			

All figures are rounded to the negrest 10 million tonnes

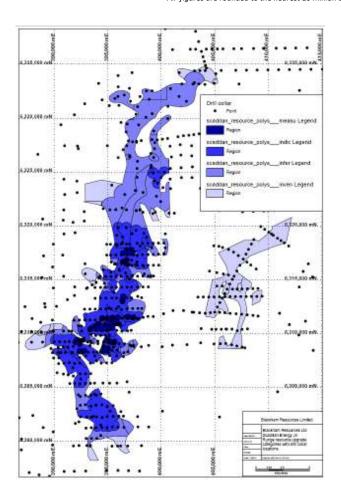


Figure 1 - Scaddan Coalfield Plan

	Resource
Moisture Basis % AR	56
Ash % AR	14.3
Volatile % AR	17.0
Fixed Carbon % AR	12.8
Sulphur % AR	2.2
Chlorine % AR	3.3
Specific Energy Gross Wet MJ/kg AR	7.9

Table 3 - Raw Lignite Quality

Borehole data at Scaddan was reviewed by Runge Limited, an independent resource consultancy, to calculate the resources contained within the tenements.

The Scaddan West coal seam now extends over 35 kilometres in length and is up to five kilometres wide in places. Thickness in the Scaddan West area varies from up to 19 metres, thinning rapidly at the edges of the body and around topographic highs. The main seam LGA averages 7.5 metres in thickness and contains 87% of the total coal resource.

The Scaddan resource estimate in Table 1 is reported on a 56% moisture basis and an approximate relative density of 1.2. No thickness or quality cut-offs were applied to the Resource Estimate due to the lignite having reasonable prospects for eventual economic extraction as outlined in the Australian "Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves". Exploration drilling, to define the Scaddan lignite deposit is based upon the historical drill holes and recent drilling programmes over the last three years. It includes a total of 1,547 boreholes, 311 of which are cored, and 1,236 drilled as open holes.

Diamond cored holes, sonic and air core holes with valid analysis were used to calculate the average lignite analysis of the resources in Table 3. For more information on the coal resources please refer to ASX announcement of 21<sup>st</sup> June 2011.

# Mining

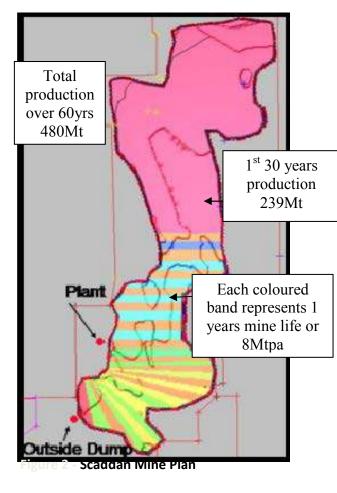
RWE Power International (RWE) completed a Mining Scoping Study for the Scaddan Project. The philosophy behind the RWE development of the mine was:

- mine exit located close to processing plant;
- boxcut location in area of low stripping ratio;
- mine development in direction of best lignite; and
- mine design optimized for 30 years mine life, without obstructing further mine development beyond project year 30.

RWE investigated a number of mining options. For the purposes of this Study, the preferred mine operation is dragline overburden removal and in-pit crushing and conveying of product. The nominal production rate is 8 Mtpa, with a 50% ramp-up in the first year. Mining will be by contract operation with all capital being invested by the contract miner.

Initially the product would be stockpiled and loaded onto trains for transport, and the waste stockpiled south of the pit shell. Projected strip ratios were 3.1 and 3.2m<sup>3</sup> waste per tonne of coal over the first 5 and 30 years, respectively.

Description Units



# **Processing**

The Study assumed the direct saleable product would be at an acceptable size for sale following minus 80 mm sizing in pit and subsequent degradation in transport and handling en route to the port. Under this provision, no processing facility is required to further size the material, post mining and in pit treatment. In the event of future testwork or customer requirements showing that further processing would be required to obtain a suitably sized direct saleable product, this is likely to be a simple operation utilising a secondary sizer.

# Logistics

Two rail load-out options were considered in this Study for an 8 Mtpa production rate. These were a rail siding and a rail loop, for road-rail and sole rail logistic options respectively. The rail siding option provides a lower capital expense option, however due to increased double handling and the requirement for a road transport fleet, and subsequent higher operating costs, the rail loop option was chosen as the preferred option.

Rail haulage for the Port of Esperance would be by a third party rail operator on the Brookfield Public Rail Network. This would be on the rail section between Norseman and Esperance, which is standard gauge with the following attributes:

- 23 tonne axle load with likely upgrade to 24 t, and
- Freight volume carried of 8.1 Mt (2008/2009).

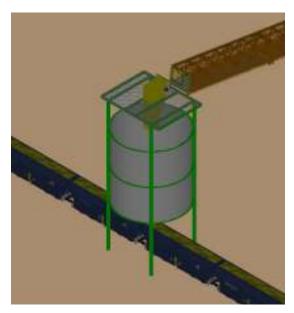


Figure 3 - Rail Load Out Facility

The preferred rail cars are purpose built 100 tonne coal wagons with underbelly gates to allow for bottom dump operation.

#### Port

The preferred port for the Project is Esperance Port, at 60 km from the township of Scaddan. This is an existing port, and although it has limited capacity, their expansion plans have a 2 year time frame. Esperance is the deepest port in southern Australia, capable of handling Cape Class vessels up to 200,000 tonnes.

The Scaddan Scoping Study Report has been based on the eventuality of a land based port concept coming to fruition. The inland port is the preferred option for expansion, as it would provide increased storage outside of the port and would overcome the congestion, noise and capacity issues in the main transport corridor. The inland port would entail car dumpers, storage sheds and a partially buried conveying system transporting the coal to the port.

The majority of the loading and unloading would be at the land based port with conveyors running alongside the existing rail route into the port and either straight onto shiploaders or into surge capacity storage sheds at the port.



Figure 4 - Cape Size Vessel Loading at Number 3 Berth

#### Infrastructure

Blackham would require a modest site establishment to cater for its own site organisation with an appropriate number of site personnel. The amount of site personnel would increase as the operation ramps up to 8 Mtpa. The precise number of personnel will be determined in future studies. As the Project is located only 75 km by road from the town of Esperance, it is expected labour accommodation can be found in the townsite, negating the requirement for a camp at site.

# **Environmental, Heritage, Community and External Approvals**

Environmental and social impact studies have not yet been undertaken in the Project area. The first phase of field studies could commence as early as Quarter 1 2012 to be incorporated into subsequent project studies. Mining, heritage and environmental approvals still need to be sought.

# Marketing

Blackham has the options of exporting either raw lignite or an upgraded coal product. Recent test work on the lignite has confirmed the lignite can be dried to less than 0.01% moisture then the coal is expected to reabsorb 8% moisture which would result in a gross wet calorific value of 19.6 MJ/kg (4,690kcal).

For the purposes of this scoping study it has been assumed the lignite will be shipped in its raw state. The target market for the lignite is primarily the power and gasification markets in India, China and Korea. The lignite in its raw state is most suitable for use in circulating fluidised bed power plants.

A lignite price of US\$30.20 (A\$35.95) has been assumed for the 2015 year escalating to US\$77/t (A\$96/t) by 2044. Lignite pricing has been estimated based upon current USD Indonesia lignite prices and adjusted for energy content, impurities and transport.

Blackham is planning further marketing studies and engaging potential buyers of the lignite.

# **Capital Cost Estimate**

The capital cost estimate for base case option is presented at a summary level in Table 4.

The capital estimate for Option 1 assumes 8 MTPA Contract Mining using draglines for waste removal and truck and shovel on the seam. It also assumes a rail loop being constructed adjacent to the Scaddan ROM pad. The assumption is Blackham pays for the Port facilities listed below:

- site developing, clearing and grubbing;
- inland port sheds and conveyors;
- inland port rail unloading facility;
- inland port rail loop;
- conveying system to Port;
- mobile equipment; and
- surge bin, shed and conveyors at Port;

The Option 2 capital estimate is the same as Option 1 but assumes that \$264 million in Port capital cost is build and paid for by an infrastructure group and recovered through the charge of an additional tariff of \$8.57/tonne over a 10 year period.

**Table 4 - Capital estimates** 

	Option 1 Including Port \$M	
Mine Development Stockpile reclaim Loadout Logistics/Rail Port Total Direct	13 37 43 166 260	13 37 43 - 93
Construction indirects Owners costs EPCM Contingency 30%	8 23 39 78	3 8 14 28
TOTAL CAPEX	\$408	\$147

The capital cost estimate has been prepared in line with Engenium's estimating guidelines for a Type 1 Scoping Study (SS) level estimate. This estimate is to target a predicted accuracy of between +/-30% to 35%.

### **Financial Model Assumptions**

The following are the assumptions relating to the financial model:

- Mining rate of 8 Mtpa of lignite
- Stripping Ratio with a 30 year average of 3.1 m<sup>3</sup> waste per tonne lignite.
- Project life of 30 years
- Exchange rate of 1.00 USD/AUD decreasing to 0.80 USD/AUD over LOM
- Operating costs of \$22.70/t
- Capital contingency 30%
- Additional port infrastructure tariff \$8.57/t (Option 2 only)
- 7.5% royalty rate
- 30% tax rate
- Discount rate of 9%

**Table 5: Scoping Study Financial Analysis** 

Option	Scenario	Capex	Sales	NPV	IRR	BCR
#	Name	\$M	Mt	\$M	%	Х
1	8 MTPA Rail	408	236	770	23%	1.9
2	8 MTPA Rail with Port tariff	147	236	714	27%	4.9

Blackham has a 70% interest in the Scaddan Coal Project. Each party to the Scaddan Energy Joint Venture is required to meet their share of costs and standard dilution clauses apply.

With the planned expansion of the Esperance Port, the Coal Export Scoping Study confirms the value of the Scaddan Coal Project. Blackham believes by first developing a mine for export it will also significantly reduce the risks and cost of developing the Coal to Liquids (CTL) diesel plant. Blackham completed a preliminary process study on the Scaddan CTL plant in October 2011.

The Scaddan development focus will now move to:

- further marketing studies and engaging potential buyers of the lignite
- continuing discussions with the Esperance Port and infrastructure groups interested in developing the multi user bulk commodity terminal; and
- engage both above ground and below ground rail operators for future rail development access

For further information on Blackham please contact:

Bryan Dixon
Managing Director
Blackham Resources Limited
Office: +618 9322 6418

David Tasker / Colin Hay Professional Public Relations Office: +618 9388 0944

#### About Blackham

Blackham is evaluating the development of the Scaddan Coal Project and is focused on exploration and development of Matilda Gold Project, both in Western Australia.

Blackham is evaluating the development of the Scaddan Coal Projects for the export of coal via the Esperance Port. The Scaddan and Zanthus Coal Projects, located near Esperance, Western Australia, contain world scale coal deposits totalling 1.4 billion tonnes with over 10,600 PJ of energy at shallow depth and very low mining costs. The company is also evaluating a Coal to Liquids project in the Esperance region with the potential to produce 860 million barrels oil equivalent, consisting mainly of a clean diesel, as well as additional power for the region. The Scaddan Energy Project is surrounded by complimentary infrastructure approximately 60 kilometres north of the town and major port of Esperance and 10 kilometres east of the Esperance to Kalgoorlie highway, gas pipeline and railway line.

Blackham has now acquired 100% acquisition the Matilda Gold Project which includes the old Matilda and Williamson Gold Mines in the Wiluna gold belt of Western Australia (Project). The Matilda Gold Project covers 40km of strike along the Wiluna Mine sequence which has produced over 4Moz of gold. In addition, there is also 10kms of strike of the prospective Coles Shear. Blackham have the largest landholding (>600km2) in the Wiluna mining centre which is one of Western Australia's major Archaean greenstone belts. Blackham is targeting the resources mostly to be converted to near term reserves.

#### **Competent Persons Statement**

The information in the report to which this statement is attached, that relates to the Scaddan Project Coal Resources, is based on information reviewed by Mr Simon Bruzzone. Mr Bruzzone is a full time employee of Runge Limited. Mr Bruzzone is a member of the Australasian Institute of Mining and Metallurgy. Mr Bruzzone has reviewed the geological data, including drillhole location, lithology and quality, and has constructed the geological model, and estimated the resources. Mr Bruzzone has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserves. Mr Bruzzone is signing off as the Competent Person for this statement and consents to the inclusion in the report of the matters based on this information in the form and context in which is appears.

<sup>1</sup> The JORC Code – "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves", the Joint Ore Reserves Committee of the AusIMM AIG and MCA, December 2004.

The JORC Code – "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves", the Joint Ore Reserves Committee of the AusIMM AIG and MCA, December 2004.

**ENDS**