



ASX/Media Release

7 August 2012

## COMPLETION OF KATINGAN RIA PROJECT STUDY

Realm Resources Ltd. (ASX: RRP) is pleased to announce the completion of the Project Study for the Katingan Ria Project (the “**Project**”), Indonesia.

The study, independently reviewed by Xenith Consulting Pty. Limited (“**Xenith**”), supports the undertaking of a further drilling programme to increase geological confidence to assist in completing a bankable feasibility study (“**BFS**”).

### HIGHLIGHTS

- The Project’s Base Case open-cut 3Mtpa mine plan with a designed life of 15 years, is technically viable;
- The coal deposit is structurally simple and with a large area of relatively homogenous low strip-ratio coal minimising mining costs and establishing the projected life of mine FOB operating costs at USD39.2/t ;
- The quality of a raw coal product should satisfy the specifications for Indonesian 4,200kcal/kg (GAR) low sulphur coal and be readily accepted in rapidly growing markets in China, India, Korea and Thailand;
- Low Project start-up capital estimate of USD23M, implying a capital intensity of less than USD10/annual tonne, thereby minimising investment risk;
- Permitting is well advanced, supporting forecast production and ramp up from mid-2013;
- The Base Case mine plan NPV of USD156M (100%) at a 10% discount rate is most sensitive to coal price and least sensitive to capital expenditure;
- Potential to increase the quantity and quality of the resource definition and to better optimise the mine’s economics through additional exploration and engineering work.

The Company is now working to incorporate Xenith’s recommendations into a new technical programme that would, when taken with additional engineering studies, potentially allow for conversion of some JORC compliant coal resources to a JORC compliant reserve estimate and the production of a **BFS**.

## 1. OVERVIEW

The Project is located near the town of Tumbang Samba in Central Kalimantan, Indonesia, approximately 175 km North West of the regional capital of Palangkaraya. The Project mining concession covers an area of some 4,258 ha within an area that has already been subject to commercial forestry operations.



Figure 1 Location of the Project

The Project's Base Case is designed to mine 1.0 to 1.5 Mtpa of coal ramping up to 3.0 Mtpa within three years. It is proposed to use a truck and excavator fleet to produce a thermal coal product for the domestic and export markets, initially over a period of 15 years.

Coal would be transported from the mine site to the Pegatan Anchorage at the southern coast of Central Kalimantan for loading to ocean shipping vessels and export. The total transportation distance to the anchorage (including road and barge) is approximately 450kms.

**The following strengths have been identified for the Project:**

- The deposit (10.2Mt indicated and 92Mt inferred JORC resource) is structurally simple with a low strip-ratio, therefore leading to lower mining costs.
- The coal (4,200 GAR kcal/kg raw coal basis) is relatively homogenous, low in sulphur and most likely to be marketed to the rapidly growing demand centres in China, India, Korea and Thailand.
- Low start-up capital and operating costs (FOB).
- The Project requires no rail or port infrastructure to be developed and therefore could be bought into production relatively quickly.

**The key technical risks for the Project are:**

- Converting the predominant inferred resource to indicated or measured through more drilling on the Project site. A thorough exploration plan for the next phase on nominal indicated resource status spacing has been submitted to Realm from Xenith, however the upgrading of existing inferred resources to increase the current 10.2Mt of Main seam indicated resource cannot be assumed at this point due to geological risks such as potential coal quality variation and coal seam structure.
- It cannot be assumed that a JORC compliant reserve estimate would result from the new technical programme contemplated herein as this would depend on the assumptions used in the mining and financial evaluation at that time.
- FOB cost factors associated with river seasonality and the transport distance to the coast.
- Margins received from the sale of the coal are very sensitive to coal price assumptions and potential increases in operating costs.

**The following are the main opportunities identified:**

- Improve knowledge of coal qualities, allowing for better economic optimisation.
- Expand the total coal resource via further drilling in the underexplored northern portion of the lease.
- Optimisation studies aimed at reducing FOB costs/t in areas such as mining (use of low cost dozer push methods) and transport logistics including barging/stock pile solutions.
- Establishing off-take partners given the expected specification for the Project's coal is typical of the 4,200 kcal/kg (GAR) specification for low rank Indonesian coal and therefore expected to trade consistently with comparable coals, with its low sulphur (0.2%) and relatively high volatiles (31%) potentially more appealing to some customers.
- Obtaining the final Pinjam Pakai Eksploitasi (forestry) permit which would allow operations to commence.

## 2. TECHNICAL ASPECTS

### a. Mine Layout

A total of 10.2Mt indicated and 92.0Mt inferred JORC compliant resources have been identified in the Project area. The Base Case mine plan assumes mining would begin near the south-eastern limit of the concession, as shown in Figure 2.

This creates the following benefits:

- minimising coal haulage distance to the barge transfer station on the Katingan river;
- located close to readily available waste dumping locations;
- targeting a start-up area where current geological modelling indicates attractive coal quality; and
- lowest available strip ratio.



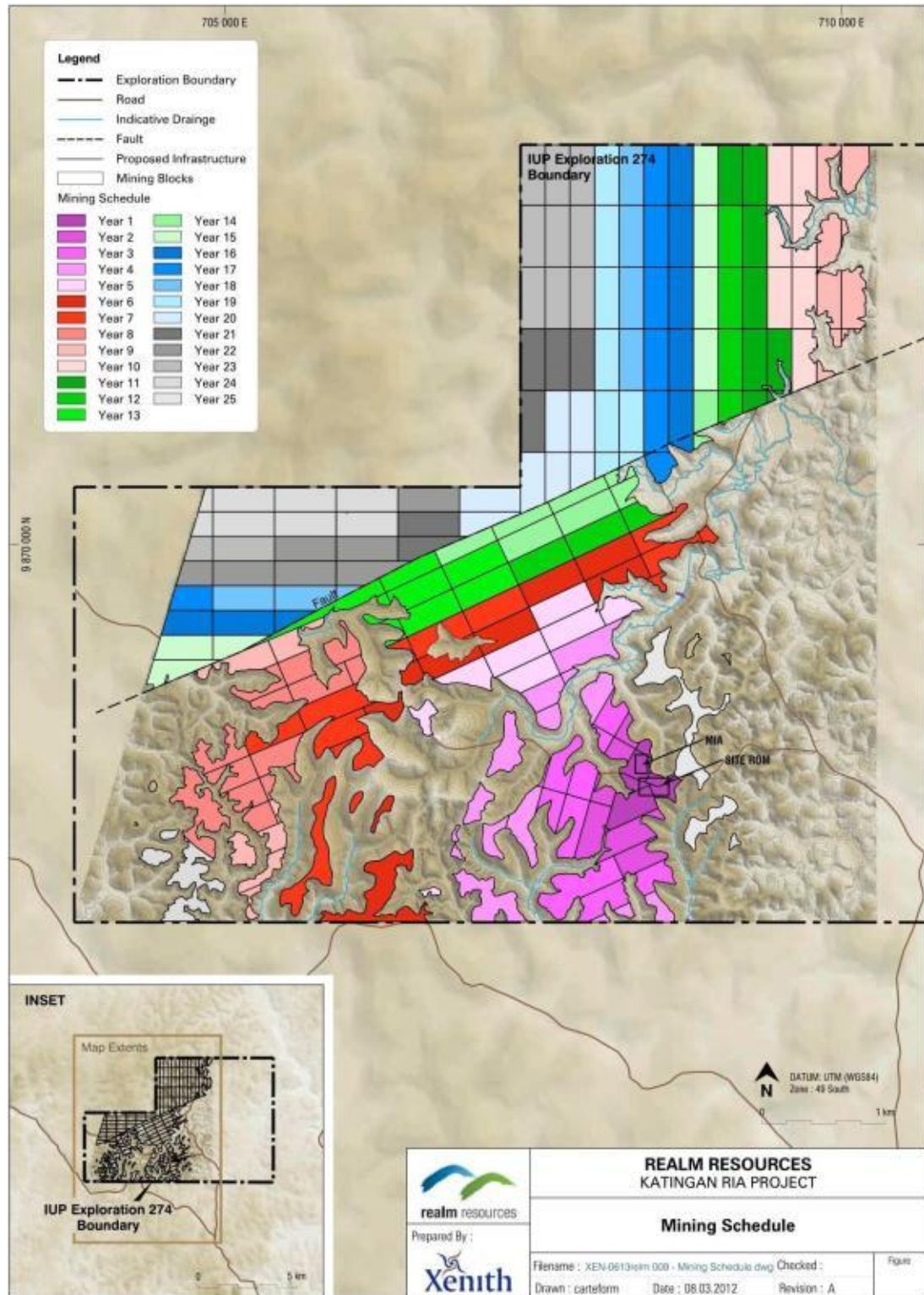


Figure 2 Mining Block Design and Schedule

Several key considerations have been made in the planning of the mine layout. The Main seam floor dip and strip ratio were taken into account in addition to the proposed method of mine development to design the mining strips. The strip widths proposed for the mine are 40m wide to compliment small scale equipment readily available from local contractors for the initial works.

## b. Mining

The Base Case mine plan was designed to extract approximately 40Mt of ROM over fifteen years at an annual production rate (after a 2 year ramp up) of 3Mtpa.

The mine plan been designed to commence at the location where the existing logging road enters the south-eastern extent of the deposit. The schedule assumes mining activities progress radially and with a number of faces from the infrastructure area until approximately Year 9 at which stage activities include areas north of the major fault.

The mining operations processes include:

- Clearing and grubbing of vegetation;
- Topsoil stripping;
- Truck/excavator movement of waste including coal roof clean up;
- Truck/excavator movement of coal including coal floor clean up; and
- Rehabilitation.

Based on the geology and topography an opportunity to exploit lower cost dozer push methods to potentially lower stripping costs will be further considered.

## c. Logistics

Coal is to be transported from the mine site to the Intermediate Stockpile at Jahan Jang where it is then sold to domestic customers or delivered to the Pegatan Anchorage at the southern coast of Central Kalimantan for loading aboard ocean going vessels for sale to foreign customers. The total transportation distance to the anchorage (including road and barge) is approximately 450kms.

Logistics for transport are as follows:

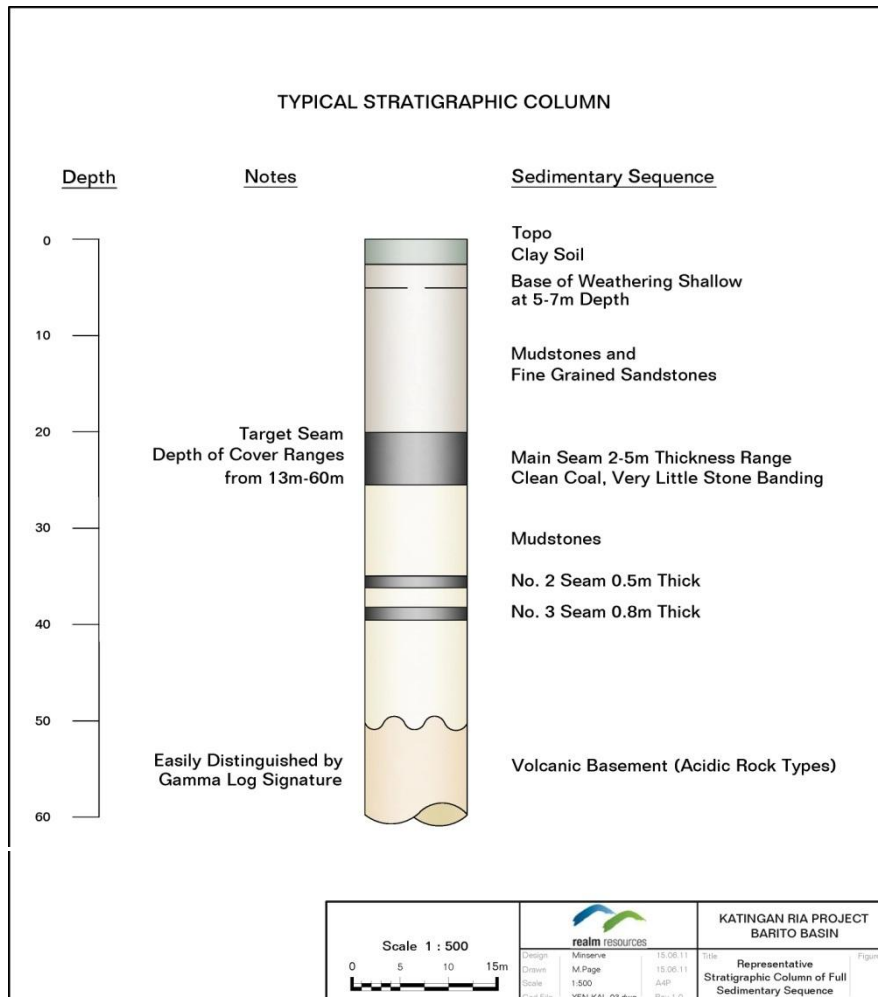
- Mining and road haulage of ROM coal to the barge loading port on the Katingan River;
- Crushing and sizing of coal to 50mm;
- Loading of coal to barges and transport down the Katingan River to the Intermediate Stockpile at Jahan Jang;
- Unloading, stockpile, blending and cargo assembly operations at the Intermediate Stockpile; and
- Loading of coal to barges and transport to mother vessels at Pegatan Anchorage.

### 3. Mineral Resources

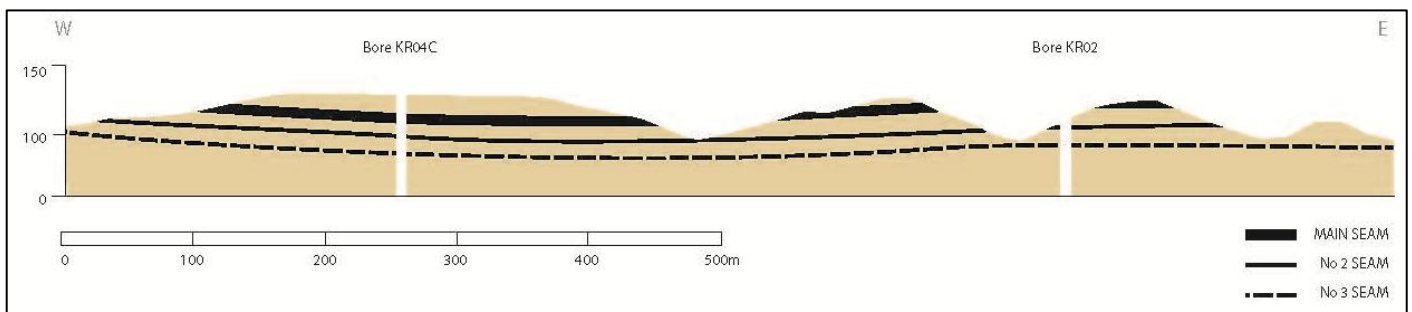
The coal sequence, which is found within the Dahor formation in the Barito Basin, occurs as a series of flat lying seams ranging in thickness from 0.1m to 8m, interbedded with weathered sandstones. Structurally, the sequence displays some gentle folding with a 20m – 40m fault down throwing the sequence to the north of the tenement.

For the purposes of this study only the Main seam was evaluated for mining. The Main seam averages approximately 3.80m across the entire deposit, with a slight increase in thickness in the central and south-eastern parts of the deposit (where mining is proposed to start). At present, while there is preliminary information regarding the Upper Seams in the north, there is currently insufficient data to model the extents, tonnages and coal quality. The lower seams (No. 2 and No. 3) have been excluded from the current mine plan and schedules due to their reduced thickness (0.21 - 0.84m thick and 0.36 - 1.57m thick respectively) and expected higher incremental strip ratios.

A typical stratigraphic column from the proposed southern mining area is shown in Figure 3 with cross section shown in Figure 4.



### Figure 3 Typical Stratigraphic Column – Southern Resource



#### Figure 4 Geological Cross Section – Southern Resource Proposed Mining Area



The JORC Resource Statement for the Project is summarised in Table 1 and Table 2 below.

**Table 1 Summary of Coal Resources by Seam**


Seam	Indicated (Mt)	Inferred (Mt)	Total Indicated + Inferred (Mt)
Upper Seams		28.0	28.0
Main Seam	10.2	58.6	68.8
Lower Seams		5.4	5.4
<b>Total</b>	<b>10.2</b>	<b>92.0</b>	<b>102.2</b>

**Table 2 Raw Coal Quality - Main Seam**

	Seam	Thickness m	PRD in situ	TM %	IM adb%	Ash adb%	Volatiles adb%	TS adb%	Specific Energy kcal/kg adb	HGI adb
<b>South</b>										
Indicated	Main	4.34	1.30	33.2	15.1	8.7	38.1	0.21	5,240	48
Inferred	Main	3.58	1.31	31.0	15.6	9.8	38.5	0.20	5,147	48
<b>North</b>										
Inferred	Main	3.92	1.30	30.8	12.2	10.7	39.6	0.24	5,286	49

Indicative coal specifications for marketing purposes are shown in Table 3.

**Table 3 Indicative specifications for Katingan Ria Coal (Source: Xenith)**

		<b>Katingan Ria - Main Seam</b> Initial Mining Area Indicative product quality (no dilution )				Jul 12
		AS RECEIVED	AIR DRIED	DRY	DRY ASH FREE	
<b>Moisture (%):</b>	Total	32.0				
<b>Proximate Analysis (%) :</b>	Inherent Moisture		15.0			
	Ash	6.8	8.5	10.0		
	Volatile Matter	30.6	38.3	45.0		
	Fixed Carbon	30.6	38.3	45.0		
<b>Total Sulphur (%) :</b>		0.17	0.21	0.25		
<b>Calorific Value :</b>	Gross	(kcal/kg)	4200	5250	6176	
	Net	(kcal/kg)	3870	4800		
<b>Ultimate Analysis (%) :</b>	Carbon	44.5	55.6	65.4	72.7	
	Hydrogen	3.0	3.7	4.4	4.9	
	Nitrogen	0.48	0.60	0.71	0.79	
	Oxygen by difference	13.2	16.5	19.4	21.6	
	Sulphur	0.17	0.21	0.25	0.27	
<b>Ash Analysis</b> (% in dry ash)	SiO <sub>2</sub>	51		K <sub>2</sub> O	0.3	
	Al <sub>2</sub> O <sub>3</sub>	33		TiO <sub>2</sub>	1.9	
	Fe <sub>2</sub> O <sub>3</sub>	6.5		Mn <sub>3</sub> O <sub>4</sub>	0.01	
	CaO	3.2		P <sub>2</sub> O <sub>5</sub>	0.1	
	MgO	1.10		SO <sub>3</sub>	2.18	
	Na <sub>2</sub> O	0.04		Total	99	
<b>HGI:</b>	50					
<b>Ash Fusion Temperatures (°C):</b>		<b>Reducing</b>				
	Deformation		1325			
	Sphere (Softening)		1420			
	Hemisphere		1430			
	Flow		1440			
<b>Topsize (mm) nominal:</b>	50					

## 4. FINANCIAL PARAMETERS

### a. Summary of Results

The Project evaluation was based on the Base Case mine plane with discounted cash flows on an unleveraged basis. All costs and valuations are in real terms (i.e., no escalation of capital and operating costs) and based on a 15 year mine design.

**Table 4 Key Financial Model Assumptions and Outputs**

Item	Units	
FOB Cash Costs (LOM) <sup>1</sup>	USD/t ROM	39.2
Start-up Capital	USD	23.2
Tonnes Produced	Mt	40.4
Sale Price / Tonne	USD	52.0
Discount Rate	%	10.0
NPV	USD	156.0

## b. Capital Expenditure

Capital costs for the Project include study costs, mine haul road and infrastructure, the crushing and barging facility and capital expenditure required for improving the local community. These were based on previous capital expenditure at similar operations in Indonesia and quotes received. It is important to note that the capital intensity of the Project is extremely low (less than USD10/annual tonne). Future studies would focus on optimising the capital versus operating cost equation given the potential to reduce operating costs via limited additional capital investments.

The estimated start-up capital requirement of USD23.2M includes a 30% contingency and is summarised in Table 5.

**Table 5 Capital Costs Assumptions**

Capital	USD M
Mine Development	5.0
Haul Road	3.4
River Dredging	3.0
Upper Stockpile	2.2
Intermediate Stockpile	2.9
Project Management	1.5
Misc & Contingency	5.2
<b>Total</b>	<b>23.2</b>

## c. Operating Costs Assumptions

The scope of Xenith's review included making an assessment of the reasonableness of the operating costs used by the Company in its financial models (Table 6). Xenith's life of mine operating cost assumption, arrived at using typical Indonesian contractor costs, varied only

<sup>1</sup> Company estimate (excluding royalties). Weighted average for first 5 years = USD35.8/t

slightly from (and were less than) the Company's estimates which they considered to be reasonable, realistic and achievable. Importantly, Xenith noted that there were a number of areas that could be focussed on to potentially reduce operating costs (namely mining, haulage, barging and handling). These would be the subject of further studies.

**Table 6 Average LOM Operating Cost (ex. Royalty)**

Activity	USD/t
Waste Removal	7.4
Coal mining	1.8
Coal haulage	9.9
Coal processing/handling	3.7
Barging & transshipment	14.8
Rehabilitation	0.2
Administration (inc. Corporate)	0.7
Community	0.2
Marketing	0.5
<b>Total<sup>2</sup></b>	<b>39.2</b>

#### d. Markets and Coal Price

Salva Resources were engaged to provide market advice (July 2011). Their view has been that Indonesian coal exports would continue their strong growth, adding a further 120Mt (for a total of 391Mt) to 2015. This would include a large proportion of 'low-rank' coals, such as that from the Project, which are gaining increasing acceptance in the thermal coal markets particularly in India and China. In addition, Indonesia remains competitively positioned with ability to expand production relatively quickly. This is expected to ensure it captures a substantial share of demand growth in the Pacific, at least until the opening up of other large supply basins.

Indian thermal coal import demand is forecast to almost triple over the period, from 67Mt in 2010 to 197Mt in 2015, on the back of a surge in imported coal required for new coastal coal-fired power plants. China remains more opaque due to its current huge domestic production capacity. China is expected to remain a large importer of thermal coal to 2015, while Korea and Thailand would have steady growth over the period. All of these countries already take low-rank coal and blend it for use in power generation.

As reserves of bituminous and higher energy sub-bituminous thermal coals continue to be depleted, emerging consumers are building new power stations with boilers designed to

<sup>2</sup> Company estimate (excluding royalties). Weighted average for first 5 years = USD35.8/t

use lower rank coals which is expected to lead to increased demand. Emerging consumers in developing economies such as China, India and Thailand need low cost fuel, long term security of supply and, as much as practically possible, control of their fuel pricing. These developing economies view emerging suppliers favourably if they can offer supply security and cost advantage. The Project is well positioned to supply to these markets commencing in the near term.

All Indonesian export coal is priced relative to a benchmark system which itself is linked closely to Newcastle thermal coal indices. Various sub-grades are then indexed based on coal quality parameters and using this (approximate) method Salva's advice to Realm is that coal from the Project would be priced in the range of 47% - 52% of Newcastle thermal coal indices, with the provision that the benchmarking system remains intact and operational.

A price of USD52/t has been used as the base case selling price for the Project's coal. This was based on 47% of the consensus forecast of USD110/t FOB Newcastle for the period 2013 - 2016 as compiled by Bloomberg.

#### e. Sensitivity Analysis

A sensitivity analysis was undertaken for the Base Case mine plan by varying the key cost drivers by plus and minus 10%. The Project is most sensitive to coal price and operating costs and is largely insensitive to capital. Future studies would therefore include a review of the capital versus operating cost assumptions with the aim of further reducing operating costs and protecting margins. The results are presented in Figure 5.

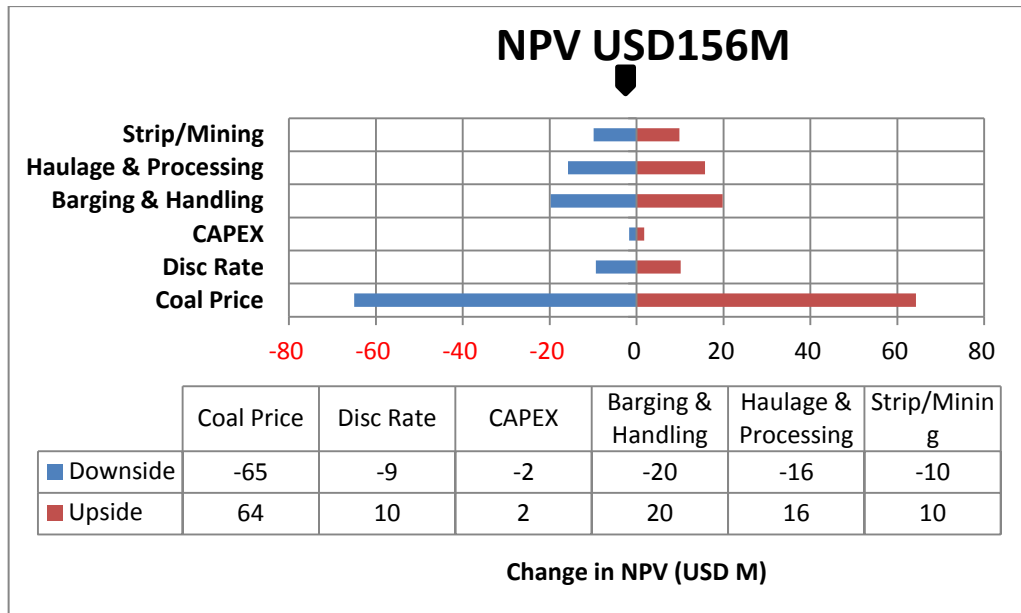


Figure 5 Sensitivity Analysis of Base Case Mine Plan

## f. Other Financial Assumptions

The divestment requirements of the Indonesian Government's regulations pertaining to permitted levels of foreign ownership in Indonesian mining companies are assumed to happen at arm's length. The financial analysis presented herein has therefore been done on a 100% basis.

The Company currently owns 51% of the Project, directly through a wholly-owned subsidiary. Subject to the satisfaction of the remaining conditions precedent, the Company has the right to acquire an additional 24% of the Project which would take its interest to 75%.

## 5. Conclusions

This Project Study establishes the viability of the Project using the realistic and reasonable assumptions made and all material risks are believed to have been considered. However, the recent sharp fall in coal prices have negatively impacted the Project's projected economics, although the medium-to-long term fundamentals remain robust. Given the additional time required to finalise permitting, Realm's near-term focus will be to potentially convert the coal resource to JORC code compliant reserves (this will require further indicated and/or measured resources to be classified) and optimisation work aimed at reducing FOB cash costs and



enhancing the Project's economics. The Board has therefore approved commencement of the work programme to support the creation of a BFS.

## 6. Timetable

A timetable for the production of a BFS and the revised plan for the development of the Project will be published during this quarter. Importantly, development can only be contemplated after the final Pinjam Pakai Eksploitasi (Forestry) permit has been issued. This permit, which was originally expected in Q1 2012, has been delayed and is now expected by Goku Resources (Realm's partners) to be received in Q4 2012.

### **For further information please contact:**

Richard Rossiter (Chairman) or Theo Renard (FD) on +61 2 8249 4542 or visit the Company's website at <http://www.realmresources.com.au/>

### **Competent Persons Statement – Katingan Ria Project**

The information in this announcement that relates to Exploration Results, Mineral Resources at the "Katingan Ria" Project is based on information compiled by Mr Troy Turner, who is a Member of the Australian Institute of Mining and Metallurgy. Mr Turner is a full-time employee of Xenith Consulting Pty Ltd. Mr Turner is a qualified geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Turner consents to the inclusion in the presentation of the matters based on his information in the form and context in which it appears.

### **About Realm**

Realm's strategy is to create shareholder value through exploration and development of bulk commodity projects, primarily in coal. In addition, the Company has platinum group metals, advanced exploration projects and an aluminium dross treatment plant in South Africa.