



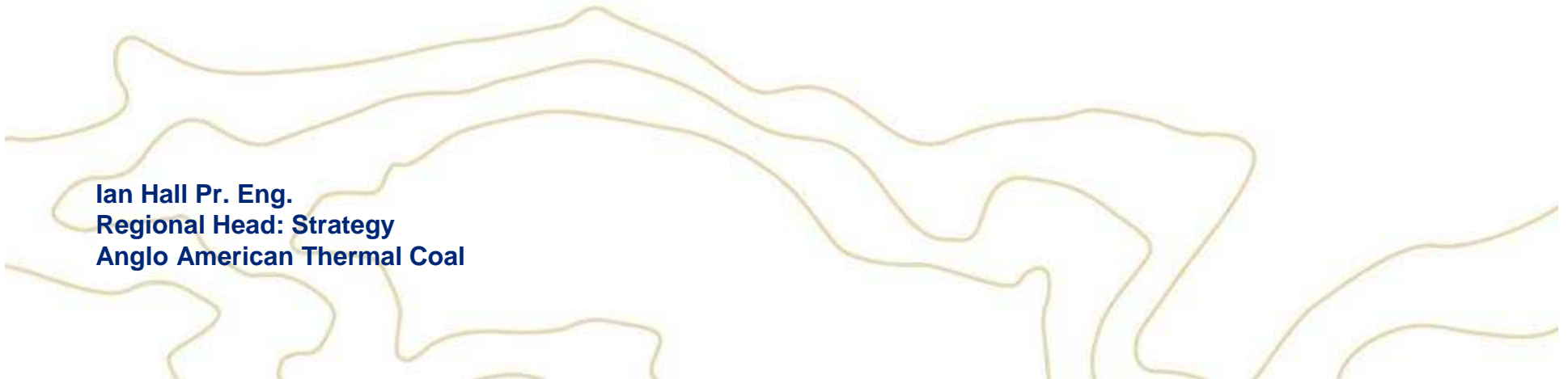
Real Mining. Real People. Real Difference.

Khanyisa Project

**450MW Discard Coal-fired Power Project, Emalahleni, South Africa
IRP 2010 Public Hearing Presentation**

2 December 2010

**Ian Hall Pr. Eng.
Regional Head: Strategy
Anglo American Thermal Coal**



Project Description

- The proposed Project will be a 450MW (up to 600MW), third-party built, owned and operated Independent Power Plant (IPP) fuelled by discard coal from Anglo American's collieries in the Emalahleni area, producing electrical energy for use at several of Anglo American's South African operations
- The IPP will be:
 - selected by Anglo American in an international competitive bid process
 - expected to access international financing for the project
- Anglo American will enter into
 - Coal Supply and Power Purchase Agreements with the IPP
 - Supplementary Supply agreements with Eskom to use the energy produced by the IPP at Anglo American's SA operations
- The IPP will enter into Connection, Transmission, Use of System and Operating Agreements with Eskom. The terms governing all these agreements are being discussed with Eskom
- The plant will utilise circulating fluidised bed (CFB) technology which will comply with or improve on air emission quality standards
- The plant will utilise dry cooling, with water supplied from Anglo American's Emalahleni Water Reclamation Plant
- The first unit is targeted to achieve commercial operation during 2015 – and will contribute towards enabling growth in Anglo American's mining project pipeline

Context of Khanyisa Project Representation to IRP 2010

- Supply and Demand Revised Balanced Scenario is highly constrained in the short to medium term
 - Targeted 15% reserve margin¹ is sensitive to many assumptions in the IRP 2010
- Supply and Demand Revised Balanced Scenario is dependent on ambitious EEDSM programme
 - Demand reduction of 35% is required from business-as-usual over the forecast period ²
- Certain assumptions do not appear clearly aligned with national policy objectives
 - EEDSM versus mineral beneficiation targets & maturing (e.g. deeper) mining requirements
 - Creation of 5-million jobs in energy-constrained scenario?
- There is a very high economic impact of not being able to supply electricity
 - Cost of unserved electricity as per IRP 2010 Draft: ZAR75/kWh ³



**To support achieving a 15% reserve margin and secure economic growth
it is essential to facilitate increased co-generation and own-use power plants**

1 : IRP 2010 Draft Rev 2 Report, page 5 – Scenarios, paragraph 1

2 : IRP 2010 Draft Rev 2 Report, page 29 – Electricity Intensity, paragraph 1

3 : IRP 2010 Draft Rev 2 Report page 3 – Planning Parameters, paragraph 5

Comments on IRP 2010

- Co-generation and own build allocation is stated to be 600MW ⁴ from 2015 onwards
 - It is unclear whether this allocation refers to co-generation for possible Eskom purchase - or for own use
 - 600MW is insufficient for planned and potential projects, Khanyisa Project alone is 450 (or up to 600) MW
 - Is 600MW a cap or an expectation?
- Third party grid access framework ⁵
 - Use of System costs determined solely by Eskom – and high by global standards
 - Terms of connection agreements and timing of infrastructure determined solely by Eskom
 - NERSA and DOE support is required to facilitate and approve framework arrangements
 - Support required to ensure fair allocation of costs

4 : IRP 2010 Draft Rev 2 Report, page 17 – Recommended Expansion Plan, Table 4 Proposed IRP (Revised Balance Scenario)

5 : IRP 2010 Draft Rev 2 Report, page 22 – IRP Projects, paragraph 3 (section 6.a.)

Khanyisa Project benefits to achieving IRP 2010 Objectives

Affordability

- Providing some 450 (up to 600) MW new generation capacity at no additional cost to Eskom, National Treasury or SA's consumers
- Beneficiation of a waste product to electricity - maximising resource utilisation
- Lower capital cost than current Eskom new build

Job Creation

- Direct and indirect job creation and capacity building
- Significant labour requirements during construction
- No impact on public sector jobs
- Enabling further mining growth projects in SA

Regional Development

- Significant FDI (Foreign Direct Investment - Capex around US\$1Bn)
- Development of a primary private electricity market

Environmental impact

- Reducing environmental impact of discard coal dumps
- Lower SOx and NOx emissions than existing SA coal-fired power stations
- Water reclaimed from underground mine workings

Water usage

- Dry cooling, reduced water consumption

Localisation Benefit

- Contributing to local development / community / skills transfer, as well as secondary industries (e.g. limestone)
- CSR investments
- Tax revenues, royalties

New technology uncertainties

- CFB (Circulating Fluidised Bed) is a proven technology

Summary

- IRP 2010 appears to provide insufficient allocation for own generation (co-generation and own build) coal-fired IPP's
 - These could contribute to alleviating reserve margin pressures at low risk and no cost to the consumer
 - Own build has been identified as one of the most achievable mitigation solutions ⁶
- NERSA and DOE support and approval is required to finalise third-party use of system arrangements:
 - Regulatory framework
 - Appropriate pricing
 - Timing of connection
- The successful completion of the project depends on Eskom support in respect of:
 - Appropriate pricing for Use of System
 - Timing and cost of connection

6 : MTRM 17 September 2010, Phase 1 Report, page 10 – An Assessment of Available Risk Mitigation Solutions, 3.1.4 Non Eskom Generation and Emergency Power Purchase Agreements

Questions