

Talk on 'Construction and Operational Experience of a Malaysian Power Project: The 3x700MW Coal-Fired Manjung Deal'

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The Institution of Engineers, Malaysia via its Oil, Gas and Mining Technical Division (OGMTD) organised a talk at the IEM Conference Hall, Bangunan Ingenieur, Petaling Jaya, on 3 April 2007 entitled 'Construction and Operational Experience of a Malaysian Power Project: The 3x700MW Coal-Fired Manjung Deal'. A total of 116 participants attended the talk.

The talk was delivered by Mr. E. William Baker, Director of E.ON Projects Consultancy Ltd. (formerly Powergen plc). The 3x700MW Coal-Fired Manjung Power Project was developed and implemented on an Independent Power

Producer (IPP) basis. The power plant was taken over by TNB Janamanjung Sdn Bhd in September 2003.

The talk covered the following key aspects pertinent to a large coal-fired project:

1. Technical features of the project:

- its location on a reclaimed island near the Malaysian port of Lumut, Perak;
- interconnection to the national grid at the 500kV level
- the treatment of flue gas emissions via a flue-gas desulphurisation (FGD) plant based on seawater washing; and
- an intake system (which won an engineering prize) that extends 1.4km

into the straits of Malacca to avoid recirculation.

2. The reclaimed island and geotechnical aspects:

- the construction of a 324ha reclaimed island over an 18-month period; and
- the use of bored piling solution based on detailed geotechnical investigation with some piles being over 60m in length for critical foundations.

3. Use of coal at Manjung:

- the Malaysian Government's emphasis on the use of oil, gas, coal, hydro and other renewable forms of energy and a strategic choice; and
- the operation of a 2.3km long jetty that extends from the reclaimed island to reach relatively deep water (to allow the unloading of coal from Cape or Panamax-sized vessels); and
- the main fuel being sub-bituminous coal from Kalimantan and Australia.

4. Final size selection:

Detailed reviews that lead to the selection of a 3x700MW unit scheme based:

- on the land requirements; staffing requirements and system stability studies conducted by TNB; and
- financial modelling showed better economics.

5. Environmental considerations:

- emission guidelines published by the World Bank and local Malaysian standards;
- detailed Environmental Impact Assessment for Manjung;
- studies that assisted in the decision to use a seawater washing type FGD system; and
- use of low NO_x burners and highly efficient ESP's.

Baker also mentioned briefly several of the lessons learnt from the development, construction and commissioning of the huge and challenging Manjung Project. ■



Presentation by Mr. E. William Baker, Director of E.ON Projects Consultancy Ltd. (formerly Powergen plc)



Participants that attended and listened to the talk