



**UNIVERSITY OF  
CAMBRIDGE**

Department of Engineering

## **CONSTRUCTION ENGINEERING MASTERS DISSERTATION ABSTRACT**

### **Private Investment in Baseload Power Generation; What experience can South Africa gain from the UK?**

South Africa's electricity crisis is real and tangible. Underinvestment in generation infrastructure has led to a lack of capacity, causing blackouts that harm economic development and quality of life. Its market is dominated by a single State Owned Enterprise – Eskom – which has been unable to meet required levels of investment. To tackle shortages the government is procuring capacity from Independent Power Producers (IPPs) – thus opening the Electricity Supply Industry to private investment.

Throughout the world, power markets in transition have faced numerous challenges. A case therefore exists for examining the experience of other markets to maximise opportunity for successful transition in South Africa (SA). This study selects the UK for detailed examination.

A literature review established the historic context of SA's market and the transition experiences of various countries – developed and developing. It found that investment environment and regulatory framework are more important than industrial structure for attracting private investment. It found that whilst much literature exists on the UK's journey, little relates this directly to SA's. This study aims to plug this gap.

Two rounds of semi-structured interviews provided data. The first included SA practitioners from academia, government consultants and private developers. Analysis of responses established real current and potential challenges. These specific challenges were taken forward to the second round. UK experience relating to these challenges is being collected through interviews with finance experts, government consultants, academia and developers.

Initial findings include that whilst attracting investment in the short term is not likely to be a problem due to a well developed procurement programme, the cost of finance in SA is relatively high. Since IPPs will be building costs into tariffs at bid stage the country will be locked into higher prices for the duration of Power Purchase Agreements. UK experience of establishing a competitive lending market as well as a guarantee scheme could be harnessed in this area. Longer term risks of SA's IPP programme relate to a lack of institutionalisation of the contracting and governance mechanism. UK power sector institutions are relatively mature - providing learning opportunities. Whilst mature, the UK has effectively lost control of its central energy planning. In an effort to decarbonise it must now reform its market again. SA has the opportunity to build sustainable energy planning into its own future.

Areas where experience can be harnessed are identified and discussed. This discussion considers calibration necessary to allow implementation in the SA context. The study concludes with recommendations to SA government.

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