Stephen Thomas, a senior research fellow at the University of Greenwich, London, warned that the PBMR (pebble bed modular reactor) project presented an economic risk to Eskom’s consumers. This was at the NER hearing held on the 20th of January.

According to Thomas, Eskom, which developed the PBMR internally until 2000, hoped to reduce its share of the costs to 30% by bringing in several partners. This has been fraught with difficulties and Eskom is presently holding 52% of the shares. In addition, the project is in trouble with the feasibility phase, now expected to finish in December 2006, around three years late. The demonstration phase is also running late and over budget. In 1998 the demonstration plant was expected to be completed by 2003 at a cost of R2-billion. Completion is now expected in 2010 at a cost of R14.5-billion.

It is planned to recover these costs by building 10 commercially operating units for Eskom and selling further units to third parties. Thomas questions whether this is likely given, amongst other issues, the lack of third party interest to date, the cost over-runs and potential competitors, not least the Chinese.

In order not to compromise the consumer Thomas asked the NER to make it clear to Eskom that it will only allow the construction cost of the cheapest generation option to be added to the regulated asset base and allow Eskom only to recover the operating costs of the cheapest generation option.

In response to the above a spokesperson for PBMR (Pty) Ltd said that the pebble bed modular reactor demonstration power plant (DPP) to be built on the existing nuclear site at Koeberg in the Western Cape will cost R7.2-billion and not the ever frequently referred to R14.5bn. These numbers require to be looked at in their correct context rather than through the extrapolations doing the rounds.

R14.5-billion includes much more than just the demo plant at Koeberg, which will be unique in that it is a single full scale model with an electrical output of 165 MW. Included in the R14.5-billion is 11 years of research and development to reach the point where PBMR (Pty) Ltd feels satisfied that the pebble bed modular reactor has achieved the definition of a Generation IV nuclear reactor. It also includes the Pilot Fuel Plant to be constructed at Pelindaba for the manufacturing of the start-up fuel required to operate the demonstration plant together with the Helium Test Facility which is almost complete at Pelindaba. The total of R14.5-billion takes into consideration the cost of US Certification as well as factors like inflation and exchange rate fluctuations together with an amount which serves as a backstop for the commercialization phase in need.

Commercial plants to be built following the successful performance of the demo plant at Koeberg will come in significantly less than the present R7.2 billion and the best way to calculate the costs of the commercial plants would be at a rate of US$2 000 per kW. This price per kW is the PBMR costing for the construction of the commercial units and does not reflect any additional costs which the owners of these units may add in the future.

Copyrights and patents have been registered, and the initial costs associated with manufacturing world first systems will be eliminated once the first reactor (the DPP) has been built.

Sources: Stephen Thomas, University of Greenwich, Geraldine Bennett, PBMR (Pty) Ltd.