

PEER REVIEW OF ECONOMIC SPECIALIST REPORT: NUCLEAR-1 EIR REPORT

Eskom proposes to construct Nuclear-1 with a power generation capacity of 4,000 MW on each of three sites, namely Thyspunt in the Eastern Cape, Bantamsklip in the Western Cape and Duynefontein in the Western Cape. The Economic Impact Assessment forms part of the Environmental Impact Report (EIR) as required by the Department of Energy. The EIR details the Impact Assessment Phase of the EIA process, which is aimed at investigating the potential impacts of the proposed nuclear power stations on the receiving environment.

1. Assess the document/ report in terms of its fulfilment of the Terms of Reference set

The authors of the Report state that “The primary objective of this study was to measure the nature and magnitude of the economic and socio-economic impacts of the nuclear power station at each of the three sites. The economic impacts associated with this entity consist of a construction and a production (operational) phase. For the purposes of this assessment, both phases will be assessed. Direct, indirect and induced impacts of the construction and operational phases will be assessed.” The general thrust of the Economic Impact Assessment report as well as the detail of the study are in conformity with the Terms of Reference as agreed between the relevant parties.

2. Consider whether the report is entirely objective.

There is no evidence that the Report in its entirety or specific sections are anything but impartial. This means that the Report does not favour any particular location as a site for a nuclear power plant without supporting evidence emanating from the study. The contents of the Report in terms of data analysed, the interaction with a range of role-players and interested parties and conclusions reached are entirely objective.

3. Consider whether the report is technically, scientifically and professionally credible.

I am of the opinion that the Report is technically sound, scientifically defensible and professionally credible. The authors of the study have canvassed widely, are experienced with regard to the field of study and have performed a large number of related studies both nationally and internationally.

4. Consider whether the method and the study approach is defensible.

Investigating the impact of an actual or proposed project at the regional or local level requires a suitable data base to be used during the analysis. Almost exclusively, such a data base is based on official data collected by official bodies in the form of the Input-Output Table (IUT) or the closely related Social Accounting Model (SAM). The authors of the Report are experts in the field and have compiled numerous IUT and SAMs in a s3cv gvariety of settings.

The calculating of multipliers (and the associated impacts) is also standard procedures in this type of project analysis.

5. Identify whether there are any information gaps, omissions or errors.

Of some concern is the fact that some of the data employed in the study date back to 2007 or earlier. The world has changed since that time: the Great Recession has impacted severely on almost every country in the world, geo-political developments and tensions have strained economic and political ties, the Fukushima nuclear power plant disaster of 2011 and deepening concerns about global warming and the impact of fossil fuels on the environment have changed the global landscape compared with less than a decade ago. Given the nature of the methodology employed in the study and the fact that economic structures change relatively slowly, the results obtained in this study are unlikely to be wide off the mark

There are a few minor errors, for example the heading of Figure 2.1 refers to Kg instead of Tons as the vertical axis indicates. In discussing power balancing (section 3.2.1.3), the authors work with power plants at the three possible locations producing 3 300MW while elsewhere the output at the power stations is given as 4 000MW. The duration of the construction phase of the projects is given as 7 years for Thyspunt (p41), 9 years for Bantamsklip (p43) and 7 or 9 years at Dwynefontein (p45). I thought that the construction phase would be similar at all three sites. The very last sentence on p60 repeat what the previous sentence says and is therefore superfluous. Table 4.2 on p65 is duplicated just below the first table.

A general comment is that the methodology employed assumes that there are no bottlenecks that appear as the direct and indirect impacts work their way through the economy. Clearly, with a large project some bottlenecks may become binding. The demand for certain types of labour is a case in point. The assumption in Input-Output and SAM modelling that job creation can be seen as a monetary transfer and not as a scarce resource should be kept perhaps does not reflect reality. However, towards the end of the document attention is given to the question of skills required for such ambitious building project.

Questions regarding the judiciousness of government's proposed nuclear programme will remain in the news, especially in the current political, economic and financial

environment. It is worth emphasising that this study is not concerned with the affordability or the financing of the proposed nuclear power stations.

6. Consider whether the recommendations presented are sensible and present the best options.

The recommendations presented in the report are sensible, based on solid research and present the best options as revealed by quantifiable data within a consistent framework of the relevant regions involved.

7. Consider whether there are alternative viewpoints around issues presented in the report and if these are clearly stated.

The analyses contained in the Report are relatively straight forward and are unlikely to generate major differences of opinion. Similarly, the assumptions on which the investigation is based are transparent and can readily be changed in the modelling framework. Differences in opinion may exist regarding issues such as the wisdom of going the nuclear route, the safety of nuclear power stations, the affordability and financing of the proposed nuclear programme, safety aspects, global warming and so on. Some of these aspects are briefly touched upon in this study but does not form part of the main thrust of the report.

8. Consider whether the style of the report is written so as to make it accessible to non-specialists, technical jargon is explained and impacts are described using comparative analogies where necessary.

The Report is written in plain English and is thus accessible to non-specialist readers. Technical jargon is limited to a minimum and concepts are adequately explained.

9. Report on whether normal standards of professional practice and competence have been met.

Given the general methodology applied in a study of this nature and the outcomes reported in this Report, it can be stated that the normal standards of professional practice have been fully met. The study in its totality is of the same standard as international research on the topic.