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Our Ref: J27035  
Your Ref: Email received 04 August 2011

Email: tableviewratpayers@gmail.com

Dear Barbara Peacock-Edwards



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**RE: ESKOM EIA CONCERNS FOR THE PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE (DEA Ref. No: 12/12/20/944)**

**Comment 1:**

**OBJECTION TO THE PROPOSED CONSTRUCTION AND OPERATION OF A NEW NUCLEAR PLANT**

I would like to submit the following objection, written by Stephen Grant Bergh, which reflects the view of the Table View Ratepayers Association.

To Whom it may concern

I would like to make my objection known, and would hope to see that the **Government does not approve Eskom's plan to build another nuclear power station.**

I strongly recommend an alternative research and project implementation into renewable energies such as windmill farms, turbines using the wave action of the sea and solar panels.

Here is my motivation:

I know of a R 10 million solar panel project set up in Touws Rivier that generates 60 kw of power. This translates to a capital outlay cost of R 166 per Kw capacity. The running costs may be quite low when factoring in maintenance and a long term payment plan. Further development of solar power in this region is proposed. Refer to link for document [http://www.eeu.org.za/downloads/touwsrivier-documents/Touwsriver%20Solar\\_Final%20EIR\\_20%20April%202011.pdf](http://www.eeu.org.za/downloads/touwsrivier-documents/Touwsriver%20Solar_Final%20EIR_20%20April%202011.pdf)

**Response 1:**

Your comment is noted.

It is pointed out in the Revised Draft EIR that Eskom is not pursuing nuclear electricity generation exclusively and to the detriment of renewable electricity generation. A range of different generation alternatives need to be pursued in parallel in order to meet South Africa's electricity generation challenges. It is not within the mandate of a project-specific REIA process such as that for Nuclear-1 to question the strategic decisions that have been taken in the Integrated Resource Plan for the proportions that different generation technologies should contribute to South Africa's electricity generation mix. The IRP has examined these technologies and come to the conclusion that renewable energy sources must make up around 17,800 MW of future power supply and that demand-side management can achieve a maximum saving of around 3,420 MW by 2017, but that 9,600 MW of nuclear generation is also required.

### **Comment 2:**

Costs to build a nuclear power station can vary from R 7000 per Kw to R 49 000 per Kw. Refer to [http://en.wikipedia.org/wiki/Economics\\_of\\_new\\_nuclear\\_power\\_plants](http://en.wikipedia.org/wiki/Economics_of_new_nuclear_power_plants)

Refer to "Table 2" in link <http://www.greens.org/s-r/11/11-09.html> where Comparative Estimates based on Ottinger, et al. (1990). *Environmental Costs of Electricity*. Pace University Oceania Press: NY are given. NOTE THAT 'NUCLEAR' IS NOT REALLY THAT CHEAP COMPARED TO SO CALLED 'EXPENSIVE RENEWABLE ENERGY SOURCES'.

Refer to link <http://www.greentechmedia.com/articles/read/mixed-greens-ford-concocts-sounds-for-its-silent-evs-a123-in-china-and-more> where it mentions that solar power can cost R 21 000 [\$3 000] per Kw and wind power with battery reserve R 49 000 [\$ 7000] per Kw. Once the renewable energy sources are up and running the estimated charge can be calculated according to how long the capital investment will be paid off [consider amount of users in South Africa].

R 1.12 per KWh [16 American cents] has been given for solar power, although in South Africa Eskom still being a state owned asset can charge less to make it more affordable. The price can be reduced as the price of manufacturing solar power panels, windmills etc comes down.

### **Response 2:**

Your comment is noted. Please refer to Response 1 above, where it is pointed out that Eskom is pursuing renewable electricity generation technologies in parallel to nuclear technology. Also please refer to Chapter 5 of the EIR, where levelised costs of electricity (quoted from a study for South African conditions done for the Integrated Resource Plan) are provided for a range of generation technologies.

### **Comment 3:**

Reasons to consider renewable energies:

- Although renewable energies seem more expensive when taking Rand cost per kwh into account it is better for Eskom to build in smaller phases 'farms' like these that can pay itself off and eventually become profit generating centres in the long term. Nuclear power station will cost in the hundreds of billions and at the end of 30 years or so it will incur further cost to decommission and store waste fuel. Renewable energies only need to be maintained, no decommissioning.

### **Response 3:**

Please refer to Response 1 and 2.

Please note that the expected life-span of the Nuclear-1 power station is 60 years, not 30 years as claimed in your comment. The high capital costs increase the cost per unit but due to the long life of a nuclear power stations, over time it becomes more cost effective. Renewable technologies also require decommissioning. Wind turbines have an expected life-span of around 20 years. At the end of its life span, a wind turbine would need to be replaced and hence the capital cost of the plant is repeated. The same applies to solar generation facilities: solar panels have a limited life span.

### **Comment 4:**

- Renewable energies are safer and Nuclear carries with it risks. Example Fukushima where radiation leak has occurred. Other examples can be sited around the world. Nuclear is dangerous!

#### **Response 4:**

Your comment is noted. There are inherent dangers in nuclear technology but if these are responsibly managed the risk to the public is negligible. The release of radioactivity from the Fukushima Daiichi plant is a regrettable incident that could have been avoided with proper planning. Unfortunately planning for the Fukushima Daiichi plant in terms of catering for tsunami events was not adequate, in that a very low tsunami was assumed than should be the case for a country like Japan, which is prone to frequent earthquakes. In contrast, emergency planning for the Koeberg Nuclear Power Station (KNPS) assumed a tsunami of 4 m, even though no tsunami has ever been recorded on the West Coast, and in spite of the fact that Southern Africa is seismically stable. In addition to planning for a tsunami, planning for the KNPS assumes that a tsunami may coincide with a spring tide and major storm surges (a so-called meteo-tsunami event), and thus the terrace for the KNPS is built at a height of 8m above sea level. Backup generators to supply power to the cooling systems has also been placed at heights of 12m above sea level, besides the backup power that can be supplied from two gas-fired peaking power stations in proximity to the KNPS.

Whilst the Fukushima Daiichi incident is without a doubt a highly undesirable event, as it could have led to loss of life, some perspective is also required on this event. The tsunami was responsible for the loss of approximately 20,000 lives, the evacuation of approximately 450,000 people and the complete destruction of several coastal towns. On the other hand, not a single death or serious injury due to the radiation release from the power station has been recorded to date. This is not mentioned to minimise the significance of the nuclear incident, but to provide some perspective regarding the public perception of what is regarded as a significant risk. In the wake of the Fukushima incident, very critical attention has been focused on the nuclear power station. However, the everyday risk of living in vulnerable low-lying coastal areas prone to flooding seems to be tacitly accepted or at least not treated with nearly the same level of concern.

#### **Response from Independent Nuclear Specialist**

There are inherent risks in all human activities and as effectively stated the nuclear industry goes to extensive effort to ensure and demonstrate that these risks are as low as reasonably achievable - against these residual risks the energy benefits must be weighed and in terms of establishing this balance point there are a host of consultative and regulatory processes adopted

#### **Comment 5:**

- Quicker to deploy smaller renewable energy farms than a large Nuclear power station that can take years to construct. Further it is easier to exceed initial budget for nuclear due to the complexities in construction.

#### **Response 5:**

Your comment is noted. It is not contested to certain technologies are quicker and easier to construct than a nuclear power station. However, a nuclear power station has a specific purpose within South Africa's energy supply system, namely to supply reliable base-load power, which is something that most renewable technologies cannot deliver.

#### **Comment 6:**

- Upfront costs to the consumer can be much less and controlled with renewable energies as Eskom builds in smaller phases instead of in one go, such as the case with a large Nuclear power plant.

#### **Response 6:**

It is acknowledge that the upfront investment capital costs for nuclear compared to renewables is high, however over the operational life, nuclear is more economical than renewables. In addition, the IRP conclusion, in Section 8, states "*A commitment to the construction of the nuclear fleet is made based*

*on government policy and reduced risk exposure to future fuel and renewable costs". As indicated in the IRP, "This should provide acceptable assurance of security of supply in the event of a peak oil-type increase in fuel prices and ensure that sufficient dispatchable base-load capacity is constructed to meet demand in peak hours each year.*

**Comment 7:**

- The manufacturing of all the equipment will provide work for 1000's of people.

**Response 7:**

This is no different to nuclear technologies. As indicated in the Nuclear-1 Revised Draft EIR, approximately 9,000 and 2000 employment opportunities will be created respectively during construction and operation of Nuclear-1. The Revised Draft EIR recommends that at least 25% of the employment opportunities during construction must be filled by local people. As with nuclear technology, most of the highly technical component manufacture for renewable power generation technologies occurs overseas. The South African government is also investigating all the manufacturing opportunities associated with the implementation of a nuclear fleet. This will be far more diverse when compared with wind due to the range of different components required for a nuclear power station

**Comment 8:**

In conclusion:

I believe Eskom's pursuit of Nuclear energy is short sighted and out of touch with the trends worldwide to invest in renewable energies.

The demand by households at peak times can be controlled and regulated through continued public awareness and educational campaigns. Greater incentives need to be given to households to encourage installation of energy saving devices.

The standby generator capacity in the private sector is more than adequate to make up for any shortfall that may occur on the grid due to peak demand. However, Eskom's phased introductions of renewable energy farms will be a wise approach to steadily increase the capacity of the national grid while implementing a 10 or 20 year financial feasibility plan where the utility will pay for itself.

**Response 8:**

Your opinion is noted. Eskom implements a build programme based on the Integrated Resource Plan which is developed by the South African Government in a consultative process.

Demand-side management does have a critical role to play in meeting South Africa's energy demands. This measure was considered in the Integrated Resource Plan and it was concluded that it could contribute a maximum saving of approximately 3,420 MW by 2017. Thus, additional generation capacity from a variety of sources, including renewables and non-renewables, would be necessary to meet South Africa's demand for approximately 40,000 MW of new generation capacity by 2025.

Your comment regarding the capacity of standby generators in the private sector is noted. However, it is Eskom's mandate as South Africa's electricity supplier to provide a safe and reliable electricity supply. Eskom cannot shift this responsibility of making up a shortfall in electricity supply to private individuals by expecting them to use generators. Use of generator power is in any event a practice that is very expensive in comparison to using grid-based electricity and would result in an unreasonable shifting of responsibility onto private individuals, many of whom are vulnerable and do

not have access to generators and would result in socially unjust conditions. It needs to be considered that Eskom provides power to low-income individuals at a lower rate than to high-capacity consumers. The same sliding scale of electricity costs would not apply to electricity provided by generators as all consumers would pay the same rate for fuel used to generate electricity.

**Comment 9:**

Private sector participation needs to be considered to provide extra capacity, however caution needs to be exercised in balancing return on investment with providing affordable energy. One way can be to pay private investors the same rate as Eskom charges for every Kwh they put onto the grid.

A financial feasibility study needs to be done on this first to see how private interests and public needs are going to be accommodated.

**Response 9:**

The introduction of Independent Power Suppliers (IPPs) and public / private partnerships (PPPs) are regarded as key to creating new generation capacity in South Africa.

Electricity tariffs are set by the National Electricity Regulator of South Africa (NERSA) for both Eskom and IPPs. It is important to note that the return of investment required by IPP's is significantly more than Eskom gets. It is very possible that IPP's will need to charge more for electricity per unit.

**Comment 10:**

Trusting this will obtain serious consideration from all key decision makers involved in the 'Nuclear-1' proposal.

In addition to the objection raised by Stephen, the Table View Ratepayers Association believes that another nuclear power station at Duinefontein would increase the risk to the residents of the area. Currently there insufficient emergency routes out of the area, so further expansion in the area is wholly unacceptable.

**Response 10:**

Your comment is noted.

Your assertion about insufficient emergency routes is unfounded, Every two years the NNR tests preparedness of the various organisations involved in the Koeberg emergency plan and evacuation routes. An emergency calendar is also sent to the area surrounding Koeberg every year. This calendar gives details of the emergency plan for those people living closest to the station

Yours faithfully  
for GIBB (Pty) Ltd



