

Our Ref: J27035



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Hermanus Ratepayers Association
Attention: Ms Janine Blignaut

Johannesburg

14 Eglin Road
Sunninghill 2191
PO Box 2700
Sunninghill 2128

Tel: +27 11 519 4600
Fax: +27 11 807 5670
Web: www.gibb.co.za

Dear Ms Blignaut

ESKOM ENVIRONMENTAL IMPACT ASSESSMENT (EIA: 12/12/20/944) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE: COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Arcus GIBB acknowledges receipt of the submission received from your organisation, Hermanus Ratepayers Association, discussing the above report. We thank you for your valuable comments and your participation in the Eskom Nuclear Power Station (NPS) Environmental Impact Assessment (EIA) process to date. Your questions and comments concerning the Nuclear-1 have been noted.

YOUR COMMENT (1)

The following comments are based on a mandate granted unanimously by the members of the Hermanus Ratepayers Association at their Annual General Meeting on the 24 March 2010. Our comments, therefore, will be largely based but not limited to on our concerns with regard to eco-tourism, agricultural production, marine harvesting and environmental conservation.

The Overberg District Municipality which encompasses the L'Agulhas and Overstrand regions, is of major importance to tourism in the Western Cape. It thus forms part and parcel of the wider attractions of the Wine Routes, the Garden Route and South Africa as a tourist destination as a whole. The natural assets of the Overstrand-Agulhas region are its single biggest tourism and eco-tourist draw-card and are responsible for sustaining the economy and for generating and sustaining employment.

In the Tourism speech for the department of economic development and Tourism's budget vote speech 2008/2009, delivered by Ms Lynne Brown, Provincial Minister of Finance and Tourism, Western Cape Legislature, 28 May 2008

<http://www.whalecoast.info/news.php?section=view&id=10>

She said: *"I would like to briefly reflect on NEW research commissioned by Cape Town Routes Unlimited (CTRU) which was completed by the Cape Peninsula University of Technology.*

- *The research findings show that the tourism sector of the Western Cape contributed 14.08% to the Gross Geographic Product (GPP) to the Province in 2005.*
- *AND in fact that 29 tourists are required to create one direct job in the industry while 20 tourists create one indirect job.*
- *That the Demand generated by tourism in other sectors is valued at:*
- *R2.5-billion for Manufacturing;*
- *R2-billion for Transport, Storage & Communication; and*
- *R1.5-billion for Wholesale/Retail Trade, Hotel & Restaurant.*
- *That the total impact of Travel and Tourism consumption (this means travel and tourism industry supply) on the Western Cape economy in 2005 was R25, 2-billion. It can only be concluded that the true impact of tourism extend far beyond the core of the tourism industry and that the current tourism statistics understate the real contribution of tourism to the Western Cape economy."*

The above informative speech dramatically defines the scope and connectedness of potential areas impacted by the ripple effect of the disruption of tourism attraction and should give pause for thought. *Rapport*, announced South Africa's Whale Capital Hermanus as its Town of the Year (2009) in an SMS competition. Routes Unlimited, the tourism destination marketing organisation for Cape Town and the Western Cape supports this competition. A previous winner was Struisbaai in 2007.

"Hermanus is one of the towns which epitomises the Western Cape tourism experience. It has that one defining, unforgettable feature - the best land-based whale watching spot in the world – while at the same time offering the visitor a distinct mix of tourism options such as glorious beaches, its Hemel-en-Aarde wine route, adventure sport, and restaurant and accommodation choices to suit every taste and pocket. Winning this title will definitely assist the town even further in growing into a top-of-mind domestic tourism destination," says Calvyn Gilfellan, Chief Executive of Cape Town Routes Unlimited.

RESPONSE

The Tourism Impact Assessment investigated the status quo in the area and found that the general tourism product is relatively underdeveloped, and tourist support services, facilities and industries are few in number and still developing. Tourism in the area is dominated by the whale-watching and shark-cage diving industries. This marine asset draws the majority of visitors and is largely responsible for driving the local tourism economy and associated industry.

YOUR COMMENT (2)

Extract from the Executive summary of the Draft Environmental Impact Report

- 1. Perceptions regarding a nuclear power station are frequently based on lack of scientific information about perceived impacts*
- 2. Public concern is also relatively low at Bantamsklip*
- 3. In general the business sector around all three sites see opportunities arising from the establishment of a nuclear power station, quite apart from the importance of stabilising the electricity supply*
- 4. The two most sensitive industries in terms of their perceptions about the impacts of Nuclear 1 on their activities are fishing and tourism. However the analysis shows that any negative impacts are likely to be slight and that in fact there would be overall positive impacts on tourism.*

Ignoring, for the moment the blatant bias implicit in the wording of the above remarks, we declare that these statements are only made possible by scoping out the economic powerhouse of Hermanus with a population over 100 000 (speech by Mayor Theo Bylefeld, Overstrand Municipality, IDP meeting, 2010).

Hermanus is the eco-tourism centre of the Overberg District Municipality). Although, this important resort town lies within the 50km radius designated internationally as an emergency-evacuation zone in the case of a nuclear accident, it is nevertheless presumed in the Draft Environmental Impact Report to lie beyond the biophysical, social, and economic impact zone. This is both illogical and nonsensical in the extreme. This viewpoint holds good for Stanford, Gaansbaai, Stuisbaai, and all the many smaller towns within the 50 km radius.

Such businesses that are included in the artificially truncated 'impact zones', moreover, would tend to count short term improvements during construction and would therefore think more in terms of these short-term gains rather than the overall, and negative, long term regional economic impacts. The specialist studies are silent on this.

If the overall, long-term impacts on eco-tourism and all other terrestrial and marine commerce were properly researched, however, using the whole life-cycle of the proposed nuclear power station at Bantamsklip, a completely different picture would undoubtedly emerge.

RESPONSE (1)

Your comments are noted. However, these quotations are not directly from the EIR, but are from the Economic Impact Assessment (Appendix E17 of the Draft EIR). Hermanus was not included since it falls outside the stipulated 20km sphere of impacted tourism asset, this approach was taken for allto facilitate a direct comparison of the impacts between all three alternative sites.

For calculation and comparison of tourism value and size, the basis on which the calculations have been approached must be the same at all sites. A 20 km radius was therefore consistently applied at all three alternative sites. If this approach were not followed, as an extreme example one could argue that Cape Town supplies tourists to Gansbaai, so why are they not included? By the same token, one could question Port Elizabeth's inclusion in the Thyspunt bed-night figure, not to mention the inclusion of the entire Cape Peninsula when addressing the Duynfontein site. Thus, to ensure the accuracy and comparability of the tourism figures, only the markets identified within a 20km radius of each site were considered.

This is not to say that Hermanus and its tourism market are ignored in the report, but that for calculation and comparison of tourism value and size, each site must be consistent in its calculation.

The Tourism Impact Assessment has assessed both short-term and long-terms impacts and is clear on the fact that, although there may be short-term negative impacts on tourism (e.g. at the Thyspunt site), the long-term impact on tourism (especially business related tourism) is likely to be positive. This is based on the experience at Koeberg Nuclear Power Station, as well as experience with the construction of the Medupi Power Station near Lephalale in Limpopo Province.

YOUR COMMENT (2)

Assessment of impacts on tourism

With reference to the Tourism Specialist Study, bed nights are a ludicrously inadequate tool to account for the overall income from tourism, while the sum of R340 per bed-night is grossly understated. This observation also implies that all visitors to the Overberg visit for the sole purpose of sleeping and fasting, which is obviously also nonsense.

The choice of two of the "most sensitive" industries given as "fishing and tourism", while excluding all other agriculture, viticulture, indigenous plant products, aquaculture and commerce generally in the broader context, ignores their inter-relatedness. Even the real estate and construction industries are glossed over, when we avoid scoping out the heart of the Overberg by limiting the impact zone to 20 km for a huge nuclear-industrial complex with a lifespan stated as lasting 60 years. To then make the claim – "that in fact there would be overall positive impacts on tourism" – beggars belief.

In the almost total absence of current well researched, reliable and focused data on the value of Tourism in the Overstrand-L'Agulhas region it is impossible to make accurate statements as to the value of this primary economic driver. Here is one example of the differing opinions of the value of shark-cage and whale-watching tourism industries between the specialists of ESKOM and a conservation group:

Tourism Impact Assessment Study: Table 4.4 Approximate Annual Value of Shark-cage and whale-watching tourism industries in the Greater Gansbaai area

Approximate value of shark and whale tourism industry per annum *R 56,400.000*

Weekend Argus Saturday 1 May 2010 Helen Bamford

Lesley Rochat, director of the AfriOceans Conservation Alliance said that:

Great white shark cage diving in Gansbaai alone generates per annum *R289, 000,000*

RESPONSE (2)

Your comment is noted. Bed-nights are an internationally accepted measure of tourism activity, and are the only way of comparing the three sites. In addition to bed-nights, the Tourism Assessment took into account expenditure on other tourism activities such as whale-watching and shark-cage-diving (see response 3).

The data and occupancy rates were obtained from available tourism data, the relevant tourism bureaux and a public stakeholder meeting, and verified in tourism service provider and operator sampling. It is an international standard practice in tourism research to refer to and utilize the data gathered by tourism bureaux and offices. These data are unanimously recognised and employed by tourism industry authorities, academic and research institutions and government, and form a quantitative pillar of this study.

YOUR COMMENT (3)

Tourism Impact Assessment Study: 4.1 Assessments of Impacts on Tourism

“For all three sites there are no “no-go” areas and no preferred siting of the facility from a tourism point of view”

The insertion of a vast nuclear facility into a pristine ecological terrestrial and marine biodiversity “hot spot” of international importance makes no sense from any logical point of view. With regard to the socio-economic impact on the Overberg District Municipality, and the Overstrand-L'Agulhas region in particular, the magnitude of impact that such a nuclear industrial complex might impose on the region is downplayed, given that up to three or four reactors might be required to produce the planned 4 000 MW output required from each of the three sites.

The consistent success of tourism/eco-tourism and the overall growth of the whole of the Overstrand economy have remained dependent on, and inseparable from, the broader terrestrial and marine ecology and bio-diversity of the region.

This is why logically the concept of any major industrial development which disrupts the natural fabric of the Overstrand-L'Agulhas region is of deep concern to the Hermanus Ratepayers and all persons in the Overstrand economy.

Eco-tourism has been identified in the Integrated Development Plan of the Overstrand Municipal Authority as the mainstay of the economic and social development strategy for the area with growth calculated at over 6 percent per annum over the last 10 years (Long term traffic counts R43). A wide range of tourism-based recreational activities and facilities have been developed over the last decades and these multi-million rand investments have served to drive the economy, which in turn, have in turn led to rapid wealth and job-creation.

Tourism Impact Assessment Study: 4.5 Assessment

The claim that there has been "*rapid growth of the tourism sector in the area near Koeberg...*a similar state of affairs should obtain around Bantamsklip" is not based on any cohesive scientific basis at all.

RESPONSE (3)

Section 2.2 of the Tourism Impact Assessment discussed the current tourism activities in the area and mentions a number of large-scale tourism development plans. The assessment further maintains that the impact on tourism as a result of the construction of the Nuclear Power Station will be small scale over the short-term and will have a long-term positive discernible impact on tourism.

YOUR COMMENT (4)

General

It is our contention that such scientific information that has been made available throughout the specialist reports and in the summary are largely incomplete, often times biased, misleading and generally inaccurate.

RESPONSE (4)

Your comment is noted.

YOUR COMMENT (5)

Our focus on the tourism sector particularly should not be construed as acceptance of all or any of the information or conclusions drawn in any of the specialist studies in the balance of the draft report.

RESPONSE (5)

Your comment is noted.

YOUR COMMENT (6)

The type, specification and number of reactors intended have not been made known and have illogically been separated of the impact of the power lines. As each cannot function without the other, sensible, informed consideration of neither can be made.

This fact alone constitutes a fatal flaw and makes the exercise of our constitutional right to informed public participation impossible.

RESPONSE (6)

Whilst it might be ideal to consider the potential impacts of the power station and all three transmission corridors in a single document, this is not practically possible and would result in an unmanageable process and in all likelihood a set of documentation that would make understanding of the key issues impossible.

The impact of the transmission lines has been taken into consideration during this EIA process and contributed partially to the recommendation of Bantamsklip not being the preferred site.

YOUR COMMENT (7)

We are also particularly concerned that the most compelling and important issues appear to have been deliberately scoped out of the report.

1. Routine operational releases of radioactive isotopes by gaseous emissions and liquid effluents have not been adequately addressed but rather deferred to an “envelope” of nebulous quantities, the regulation of which has been deferred to the licensing process of the National Nuclear Regulator (NNR).
2. Since the two most vital isotopes – carcinogenic Strontium-90 and Cesium-137 – have which half-lives exceeding 25 years, means they tend to accumulate over many decades, and so add to the burden of disease. These important substances and their potential radiobiological impacts have been equally deferred to the NNR.
3. The routine release of the above-mentioned isotopes also logically leads to the contamination of both terrestrial and marine food resources, a scientifically testable fact that has also been deferred to the NNR. <http://www.care2.com/greenliving/radioactive-fish-found-in-vermont.html>
4. The further negative impact on human health through ingestion of contaminated foodstuff and the direct threat to marine harvesting and agriculture is further glossed over in the report. <http://timeforchange.org/nuclear-power-station-causing-cancer-leukemia>
5. The radio-toxic legacy of the nuclear process from uranium mining through to spent fuel – its storage, containment and the concomitant risks including transportation, security risks – has also been scoped out. <http://www.greenpeace.org/international/en/news/features/AREVAS-dirty-little-secrets060510/>

RESPONSE (7)

1. Operational atmospheric releases of radioactive substances is assessed in the Air Quality Assessment (Appendix E10 of the Draft EIR). Releases of radionuclides during the operation phase are dealt with in Section 3.3.2 of that report.
2. A total of 98 different radionuclides were included in the assessment. Emissions for these radionuclides were given together to calculate the dose. This dose is the sum of doses due to each isotope through inhalation, cloud shine and ground shine. To look only at the emissions and air activities of specific radionuclides in isolation does not provide a meaningful and complete impact assessment. Nonetheless, these activities have been included in the report. Tritium is responsible for 98% of the total dose from Koeberg. Strontium-90, Iodine-131 and Cesium-137 combined contribute 1% of the total dose.
3. The Marine Biology Assessment (Appendix E15 of the Draft EIR) has investigated the potential contamination of the marine environment by radioactivity. Please refer to Section 3.1.5 of this report. This indicates that routine environmental monitoring designed to detect radioactive releases into the marine environment from Koeberg Nuclear Power Station, West Coast rock lobster, sediment and seawater samples have been found to be free of non-naturally occurring radionuclides. Importantly, as equivalent levels of radioactivity have previously been recorded in these species under natural conditions, these findings are not considered indicative of any significant effect on the surrounding marine environment.
4. The Agricultural Impact Assessment (Appendix E21 of the Draft EIR) extensively deal with the potential contamination of the food chain in the event of an accidental release of radioactivity.

5. This is a project specific EIA for a power station and the impacts of uranium mining are therefore excluded. The EIA is not a life cycle assessment into the entire life cycle of power generation, from the extraction of resources to nuclear waste disposal. A Nuclear Waste Management Assessment has been included as an Appendix to the Revised Draft EIR.

The agreement between the DEA and the NNR indicates that the DEA would not “make a pronouncement on the acceptability” of radiological safety issues, and that this issue falls firmly within the ambit on the NNR licensing process. However, at the DEA’s request, information relevant to radiological safety issues has been included in the Draft EIR.

Apart from the environmental authorisation, there are more than 30 different other authorisations that need to be obtained before construction of the nuclear power station can be considered. Although it may be ideal for information relevant to all these processes to be considered in parallel, clearly this is not practical.

YOUR COMMENT (8)

From a macro-economic perspective, however, it is our considered opinion that the pursuit of a nuclear energy path would serve to bankrupt the fiscus and would not be in the best interests of the ecology or country as a whole. This has been borne out by cost overruns and opportunity costs in Finland where costs have run on from USD 3 billion to USD 6.66 billion and it’s not yet complete. <http://www.reuters.com/article/idUSLS56745220080828>

We rather perceive the potential for a massive transfer of wealth from the South Africa people to the G8 countries and possibly China and the concomitant opportunities for large-scale corruption and the abuse of Parastatal and State power. If, for example, the construction of football stadiums might be perceived as an opportunity cost with regard to proper expenditure on basic services and combating crime, how much more so would be the enormous cost – in excess of R1.3 trillion to pursue a nuclear power industry in South Africa?

Please read following related articles: **How Much Will New Nuclear Power Plants Cost**
<http://scitizen.com/future-energies/how-much-will-new-nuclear-power-plants-cost- a-14-2287.html>

Business Risks and Costs of New Nuclear Power
<http://climateprogress.org/wp-content/uploads/2009/01/nuclear-costs-2009.pdf>

Also see Annexure A appended hereto.

RESPONSE (8)

The Draft Integrated Resource Plan (IRP) released in November 2010 by the Department of Energy (DOE) has completed a study on the cost of different technologies including nuclear. This study was completed by EPRI and can be found on the DOE website. The cost of other base load options such as coal and combined cycle gas turbines are also exposed to high cost in the future from fuel costs and carbon taxes. The cost of adding a large percentage of renewable technologies has a far more significant impact on the cost of electricity compared with the balanced plan proposed as the preferred option in the Draft IRP.

On the discussion regarding the economics of Nuclear energy, it is worth noting that in virtually all the countries where Nuclear Power has been deployed were seen to have long term commercial value. In Europe, for example, there have been no nuclear reactors shut down for economic reasons and countries with large nuclear component in their energy mix (France, Finland, Spain, Germany and

Sweden for example) tend to have lower electricity tariffs than countries with little or no nuclear plant (Denmark, Italy Ireland and Portugal). In the case of Parastatal Eskom's existing nuclear power station (Koeberg) it has demonstrated over the last 25 years to be a cost effective solution to meet the electricity needs of the Western Cape.

We agree that there are cost overruns at the plants mentioned above; however it must be borne in mind that the Finland site was the first site that the new EPR unit was constructed. The French site was the second and a considerable amount of lessons learned at Finland site was implemented at the French site (Flamenville) – hence the much reduced delay times. The Chinese plants used these lessons learned and are on time and within cost. Eskom never intended to build a first of a kind plant type which obviously will reduce the risk of overruns and the subsequent excessive cost mentioned above.

YOUR COMMENT (9)

Nuclear 1 Draft EIA Part 3: 9.23.5 Conclusion P9- 220

If the real endeavour is, in fact, to balance the paradox quoted: *“This paradox begs for a need to attempt to balance the interests and welfare of neighbouring communities with the national interests of a secure electricity network. To this end, it is important to select a suitable site and to find compromises to maintain the sense of place of the affected area or at least ensure that the potential impacts on the sense of place are effectively mitigated to the lowest possible level”*.

Then it is anathema that renewable energy production systems, which are being rolled out effectively across the planet, here in South Africa are currently restricted to 8.75 MW until 2013. http://africa.com/read_article.php?NID=1885

Cape Times, 25 January 2010, Wind is cheapest by Ingi Salgado. Quote : *“Eddie O'Connor, the chief executive of Mainsream Renewable Energy that is planning to invest R9.1 billion in wind farms in South Africa has taken on Eskom executive and said that Eskom's record in exploiting wind or any other renewable energy source are amongst the worse in the world”*.

It cannot be seen as good news that Brain Dames has been installed as head of Eskom, he said in the same Cape Times article: *“renewable are expensive, we all know that.” O'Connor said: “I suspect the ‘we’ refer to people at Eskom because those of us not included in the ‘we’ know the opposite.” “Doug Kuni, MD of SA independent power producers association said Dames (ESKOM) was not comparing apples with apples, if you look at the life of (nuclear) plant a renewable energy project output over time is cheaper because there are no primary fuel costs and carbon taxes”. O'Connor also said: “There is no price risk with wind what you see on day is the cost you see at day 1000... or day 1 million.”*

South Africa's wind energy potential alone has been estimated at more than 50 000 MW and its solar energy capacity lies at well over 500 000 MW.

The potential of concentrating solar power in SA by Thomas P. Fluri
<http://www.crses.sun.ac.za/UNEP/Additional%20TP%20Fluri%20The%20potential%20o%20fconcentrating%20solar%20power%20in%20South%20Africa.pdf>

The potential contribution of renewable energy in South Africa: Draft Update Report (includes cost information) prepared by Douglas Banks and Jason Schäffler February 2006
<http://www.earthlife.org.za/wordpress/wp-content/uploads/2009/04/potential-of-re-in-sa-feb06.pdf>

As can be seen we have unequalled opportunity in terms of our natural assets, our access to free sources of natural energy, especially solar and wind energy, in this country. It is also a well-known fact

that many Independent Power Producers are beating down the doors to make renewable energy available, but are hamstrung by the lack of enthusiasm on the part of Eskom. Clearly, the State-Owned Enterprise desires to maintain their hegemony at all costs, including political.

Cape Times 15 January 2010, Cosatu calls for end to nuke power by Melanie Gosling.

Quote: COSATU has said the nuclear option must be taken out of South Africa's future energy mix and instead of building more coal-fired power station there was an urgent need for more renewable energy. They also said that Eskom must scrap the nuclear option because "there were still a lot of question marks around nuclear plant safety, radioactive waste disposal and possible usage of uranium for weapons". COSATU also said "... renewable sources of energy will be relatively expensive at first but cheaper in the long term. Up scaling investment in renewable energy will not only address the challenge of climate change but will create all-important jobs".

At the same time, the Department of Energy and of Eskom continue to pay mere lip service to the value, development and accommodation of renewable energy sources. No account is apparently taken of the obvious benefits of decentralization that could be achieved by producing different types of power as is appropriate where it is needed most thus saving the massive line losses inherent in the National Grid.

RESPONSE (9)

The Draft Integrated Resource Plan has independently considered various different energy mix options and the costs associated with these.

It is important to distinguish between base load power and other forms of power generation. Wind power is not an alternative to base-load power such as nuclear and therefore needs to be pursued in parallel to nuclear power. This EIA process, being a project-specific environmental management tool, is not designed to assess the relative contributions of various generation alternatives. That is the function of the Integrated Resource Plan.

YOUR COMMENT (10)

Nuclear 1 Draft EIA part 3: P9-220

"The most controversial potential impact relates to the perceived risks associated with nuclear incidents. From a social point of view, risk is a "subjective experience" which is felt by, and is different, for everyone. Perceived risks could lead to a change in attitude which, in turn, could change behaviour. It is therefore important to ensure a reliable flow of relevant and correct information in order for communities to differentiate between perceived and real risks."

How nicely put. Perhaps the "subjective experience" of risk of those in the ivory towers at Eskom would change if they took off their rose-colored nuclear glasses, and took real cognizance of balanced scientific and financial information pertaining to the inherent short and long-term risk/benefit profile of nuclear energy. They should also recognise the fallacy, in particular, of the supposed inability of renewable energy to provide for so called "base-load" energy needs.

South Africans would all be better off.

RESPONSE (10)

Your comment is noted. However, In terms of alternatives to meeting the present energy demand, given the state of present technology, renewable energy sources are not yet in a position to replace

base-load power stations. Thus, as far as power generation technologies are concerned, nuclear generation and coal-fired power generation are the only proven base-load technologies.

Apart from these factors, the IRP 2010 process assesses the energy mix for South Africa in terms of Climate Change considerations. South Africa must make increasing use of nuclear power generation in future to reduce its greenhouse gas emissions in order to comply with its commitments made at the Copenhagen Climate Change Summit in December 2009. The life cycle contribution of nuclear electricity generation to greenhouse gas emissions is small compared to coal-fired electricity generation. This points to Nuclear generated electricity being a necessary part of South Africa's strategy to generate an additional 40 000 MW of electricity by 2025.

It must further be noted that there are, unfortunately a number of fallacies that still hold sway in the way the public is regarding nuclear power generation. Some of these are that there is no radioactivity besides that produced by human activity (i.e. that there is no natural background radioactivity) and that ANY radioactivity released into the environment due to human activity (irrespective of the dose) is therefore a health risk. It is also a common fallacy that a nuclear power station can explode. The risk of being killed in a nuclear accident is statistically probably lower than being killed in a vehicle collision. However, in common public perception the risks of being killed in a vehicle collision are gladly accepted on a daily basis, whilst the remote risk associated with a nuclear power station is not accepted. GIBB therefore stands by the statement of perception of risks,

YOUR COMMENT (11)

Executive summary of the Draft Environmental Impact Report: 1.1 Project Background:

"identified renewable forms of energy, for example, solar, cannot supply base load power stations"

The above quote also applies to all the specialists who are not immune to perceptions, they select and wittingly regurgitate information and falsehoods that support what their employer wants to hear, manipulating information in an endeavour to change the attitudes and behaviour of the public at large.

We could instead make real progress as a country, using long-term thinking, if we focused on becoming global leaders in the field of renewable power the so called 'base-load' generation and place ourselves at the forefront of these increasingly competitive technologies, thereby creating an export industry, attracting fresh Foreign Direct Investment capital, and creating widespread employment opportunities, for the good of all our people. There is a concomitant advantage of spreading generating infrastructure and thus creating employment countrywide. <http://www.apf.gov.au/library/pubs/rp/2008-09/09rp09.htm#power>

RESPONSE (11)

Please see our comment on base-load and alternative energy sources in response 9 & 10. The specialists appointed in terms of the Nuclear-1 application are individuals who are acknowledged and respected as specialists in their fields. They have proven track-records of integrity and independence in terms of their research and report compilation. .

YOUR COMMENT (12)

Nuclear 1 Draft EIA part 3: P9-246 Impact significance for the three alternative sites:

- **Technical factors** (geological and geotechnical suitability and seismological risk);
- **Water-related factors** (fresh water supply, geo-hydrology and surface water hydrology);

- **Social factors** (*traffic and transportation, noise, social impacts, economic impact, agriculture, tourism, human health risk, emergency response and site control, and safety and visual impact*); and
- **Biophysical factors** (*heritage and / archaeology, air quality, freshwater ecology, vertebrate fauna, invertebrate fauna, oceanography, marine biology, botanical and dune geomorphology*).

In spite of their numbers, diverse specialties and the obvious differences between the significance of the impacts at the 3 alternative sites, all specialists agreed that there are no fatal flaws at any of the sites (provided appropriate mitigation is implemented) and that all three alternative sites are suitable for development of a nuclear power station, given sufficient mitigation of impacts.

Notwithstanding the hugely controversial nature of the nuclear debate Eskom is able to locate and employ a large number of specialists in many diverse fields who are universally ad idem on this subject.

RESPONSE (12)

Your comment is noted. The specialists are independent and were in no way influenced to produce an outcome favourable to the Applicant.

YOUR COMMENT (13)

Executive summary of the Draft Environmental Impact Report p11

Quote: *“all specialists agreed there are no fatal flaws at any of the sites (provided appropriate mitigation is implemented)”*

We take issue with the above statement, in that, we understand from the text that among the large number of specialist studies fatal flaws were indeed found that required “mitigation”, and yet nowhere are these fatal flaws listed or drawn attention to. Mitigation is the panacea of all evils, we are led to believe.

Since all the specialists are paid by Eskom (through the agency of Arcus Gibb), it is not at all surprising that the above statement could be made. **He who pays the piper calls the tune.**

Government and appointed officials in concert with the pro-nuclear lobby, who are out to sell us goods we don't want at prices we cannot afford are attempting to thwart the very real and concerted opposition to the ill-considered and poorly researched concept to impose a nuclear power station at Bantamsklip.

Examples of poor research would be the invisibility on maps or elsewhere of the 300 strong Koi San community at Buffeljags within 4 km of the site or for that matter Tesselaarsdal in the path of the power lines.

These are the same officials who are thwarting the positive roll-out of alternative renewable energy resources, and are instead repeating the fallacy that Concentrated Solar Power, Geothermal, solar, wind wave energy and others can't do it.

RESPONSE (13)

Your comment is noted. Please see our response regarding the independence of specialists above. GIBB cannot comment on the impacts of the power lines as this does not fall within the scope of the Nuclear-1 application. Lastly the KhoiSan community will not be impacted by the nuclear power

station in terms of the exclusion zones imposed by the nuclear power or their land use rights. The largest of the two exclusion zones, the Urgent Protective Zone (UPZ) extends to a 3km radius from the site. It is Eskom's preference (i.e. it is not a legal requirement) to own land within a 2km radius of the power station to ensure control over the area around the power station, The KhoiSan community is being directly engaged to ensure all of their concerns are considered.

YOUR COMMENT (14)

Mitigation Measures

Nuclear 1 Draft EIA part 1: 5.1 Introduction

Quote: *"the minority, nevertheless are often vociferous and sometimes militant, which has serious implications for development as they frequently engage in litigation"*

We could say that the majority are distant, uninvolved, disinterested, apathetic and or uneducated, and thus "favour" nuclear power in a study by the Nuclear Energy Institute.

We could say that the minority were educated, informed, critical, involved, exercised judgment and were concerned about the health of the future generations, their fellow beings, their environment and their planet to the point of litigation, their refuge of last resort.

RESPONSE (14)

Your comment is noted. The quote is from the Tourism Assessment and not from the Draft EIR.

YOUR COMMENT (15)

Nuclear 1 Draft EIA part 1: 5.2.1 Community Public Information Campaign

Quote: *" the lack of information and overwhelming amount of misinformation regarding nuclear power as a whole, and specifically Nuclear-1 plans, has generated all manner of popular myth, and worse-case scenarios, skepticism, and particularly doubt regarding the intentions and trustworthiness of Eskom."...*

"Specifically the impacts of nuclear power generation on the sea, the immediate environment and the sense of place."

"The above myths will be mitigated by "an aggressive community-orientated and comprehensive public information campaign".

Although the above impacts specifically mentioned are very important even more so is the following list of facts:

It is a fact the NPS is no answer to global warming.

It is a fact that it is not clean.

It is a fact that it is not cheaper than renewable energy.

It is a fact that it is negative to human health.

It is a fact that there is no solution to nuclear waste.

It is a fact that it is vulnerable and open to attack.

It is a fact that the industry feeds weapon proliferation.

It is a fact that every aspect requires high levels of security.

It is a fact that radioactive materials are dangerous.

It is a fact that nuclear sites contaminate their surroundings.

It is a fact that uranium mining sites contaminate their surroundings.

It is a fact that in the nuclear fuel processing cycle is costly.
It is a fact that nuclear fuel and nuclear waste requires major transporting.
It is a fact that humans are irradiated in these cycles.
It is a fact that the nuclear industry increases the burden of disease in humans.

Links supporting these points can be found attached hereto: Annexure A

RESPONSE (15)

Your opinions in this regard are noted.

YOUR COMMENT (16)

The Hermanus Ratepayers Association Exco have read and considered the following submissions and identify fully with their contents. We support the opinions and concerns expressed and include these comments as if they were our own *mutatis mutandis*.

- Submission on Appendix E10: Air Quality Report - Mike Kantey, Watercourse cc
- Comment on Draft EIA for Nuclear 1: Nuclear reactor planned for Thyspunt, Bantamsklip, or Duynfontein. Ingela Richardson
- Environmental Impact Assessment for the Proposed Nuclear Power Station ("Nuclear-1): A comment on the Economic Impact Assessment Report - Rod Gurzynski
- Eskom- Environmental impact assessment (EIA: 12/12/20/944) for a proposed nuclear Power station and associated infrastructure. - *Strandveld Tourism & Conservation Association*
- Assessment of the potential impacts on human health environmental impact report. – Janda Macdonald

RESPONSE (16)

Your comment is noted. Kindly refer to our responses to these submissions.

YOUR COMMENT (17)

Conclusions and Recommendations

It will take more than promises of mitigation, reduction and compensation to convince the people of the L'Agulhas/Overburg region to surrender the Bantamsklip World Heritage Site for the purpose of the construction of any Nuclear Power Stations.

Threats of "aggressive" Propaganda campaigns, will do no better, as it is resolved that we will oppose this concept on behalf of our ratepayers and the population as a whole with all the means at our disposal.

We hope and trust that the broad coalition of justifiably concerned citizens allied with political pressure from alliance partners and the broad church will persuade those in authority to take nuclear off the agenda and out of Africa. The Pebble Bed Modular Reactor (PMBR) program has already been shut down after costing the South African taxpayers almost 10 billion and counting with some 2.7 billion apparently unaccounted for. Perhaps they finally noticed that none of the "smart money" is backing nuclear. This debacle has wasted 10 years that could have been profitably spent on renewable energy initiatives. By now we could be using green power.

<http://www.timeslive.co.za/business/article513806.ece/PBMR-on-the-rocks-retrenches-800>

<http://www.engineeringnews.co.za/article/pbmr-company-could-shed-75-of-its-staff-after-sa-slashes-its-budget-2010-02-18>

Our recommendation would be, put simply, to concentrate and focus our considerable financial, scientific and natural resources as a country on the emerging renewable energy industry. Fast track the selection, licensing and accommodation of independent power producers and connect them to the grid. Treat electricity as the expensive scarce resource that it is and avoid giving it away to our neighbours and to attract the wrong investment. "Charity begins at home." Redefine our efforts and statutes to reduce consumption and the waste of electricity, while educating our population in the conservation and care of all our scarce ecological resources. Continue with the roll-out of solar water heaters and energy saving luminaries. Make energy saving mandatory for all new construction and encourage retro fitting through tax breaks of existing structures. Set up and fund decentralized infrastructure to support and monitor all of the above.

Given 10 years and 10 Billion Rands we feel sure that we will be able to look back on a success story for a country that has taken bold steps to secure our energy future, our environment and that of generations to follow. We will hold our heads high in the knowledge that we can lead instead of just following the nuclear proponents on the road to ruin.

RESPONSE (17)

Your comment is noted. To our knowledge Bantamsklip is registered as a Natural Heritage site and not a World Heritage site. Kindly refer to our responses above regarding the use of renewable power generation as an alternative to nuclear power. We are not in disagreement with your opinion regarding the acceleration of the development of renewable power generation. We are also in agreement with the concept of more judicious use of resources and improved awareness about using electricity more efficiently. However, the facts put before us point renewable energy not being an alternative to base load energy supply, and that all relevant forms of power generation needs to be used in parallel. The Draft IRP released during 2010 has already taken account of the potential savings in energy use that can be achieved through improved Demand Side Management. Even with the savings from this, there still remains a very large gap between the current electricity supply and what South Africa will require in the foreseeable future.

Should you have any queries with respect to the above please do not hesitate to contact Arcus GIBB.

Yours faithfully

For Arcus GIBB (Pty) Ltd



Jaana-Maria Ball
Nuclear-1 EIA Manager

Annexure A

Business Risks and Costs of New Nuclear Power

Craig A. Severance

<http://climateprogress.org/wp-content/uploads/2009/01/nuclear-costs-2009.pdf>

"Several U.S. utilities are now advancing proposals for a new generation of nuclear power plants. Though massive cost overruns and construction delays in the 1970's and 1980's caused U.S. utilities to cancel over 130 nuclear plant orders, the nuclear industry is now hoping to ride a wave of concern over global warming. Can new nuclear power help the U.S. electric power industry cut greenhouse gas emissions, at a reasonable cost?

EXECUTIVE SUMMARY

It has been an entire generation since nuclear power was seriously considered as an energy option in the U.S. It seems to have been forgotten that the reason U.S. utilities stopped ordering nuclear power plants was their conclusion that nuclear power's business risks and costs proved excessive.

With global warming concerns now taking traditional coal plants off the table, U.S. utilities are risk averse to rely solely on natural gas for new generation. Many U.S. utilities are diversifying through a combination of aggressive load reduction incentives to customers, better grid management, and a mixture of renewable energy sources supplying zero-fuel-cost kWh's, backed by the KW capacity of natural gas turbines where needed. Some U.S. utilities, primarily in the South, often have less aggressive load reduction programs, and view their region as deficient in renewable energy resources. These utilities are now exploring new nuclear power.

Estimates for new nuclear power place these facilities among the costliest private projects ever undertaken. Utilities promoting new nuclear power assert it is their least costly option. However, independent studies have concluded new nuclear power is not economically competitive. Given this discrepancy, nuclear's history of cost overruns, and the fact new generation designs have never been constructed anywhere, there is a major business risk nuclear power will be more costly than projected. Recent construction cost estimates imply capital costs/kWh (not counting operation or fuel costs) from 17-22 cents/kWh when the nuclear facilities come on-line. Another major business risk is nuclear's history of construction delays. Delays would run costs higher, risking funding shortfalls. The strain on cash flow is expected to degrade credit ratings.

Generation costs/kWh for new nuclear (including fuel & O&M but not distribution to customers) are likely to be from 25 - 30 cents/kWh. This high cost may destroy the very demand the plant was built to serve. High electric rates may seriously impact utility customers and make nuclear utilities' service areas non competitive with other regions of the U.S. which are developing lower-cost electricity.

Craig A. Severance, CPA is co-author of

The Economics of Nuclear and Coal Power (Praeger 1976)"

<http://www.greenpeace.org/international/en/news/features/AREVAS-dirty-little-secrets060510/>

<http://climateprogress.org/2009/03/08/ponzi-scheme-madoff-friedman-natural-capital-renewable-resources/>

<http://timeforchange.org/nuclear-power-station-causing-cancer-leukemia>

<http://www.globalresearch.ca/index.php?context=va&aid=13825>

<http://www.countercurrents.org/cc-green110405.htm>

<http://www.scientificamerican.com/article.cfm?id=nuclear-cannot-solve-climate-change>

<http://www.greenpeace.org/international/en/news/features/activists-raid-south-african-p/>

<http://www.fin24.com/Economy/Eskom-fingered-in-Koerber-report-20060813>

<http://www.energyscience.org.au/BP16%20BaseLoad.pdf>

<http://www.aph.gov.au/library/pubs/rp/2008-09/09rp09.htm>

<http://repairyourworld.blogspot.com/2008/12/nuclear-vs-renewables-debate-in-south.html>

<http://timeforchange.org/nuclear-power-station-causing-cancer-leukemia>

Moody's Nuclear sector investment analysis

<http://www.greens-efa.org/cms/topics/dokbin/206/206749.pdf>

"October 2007 "Special Comment" the capital market service company Moody's delivers a stunning U.S. nuclear sector analysis:

"Moody's does not believe the sector will bring more than one or two new nuclear plants on line by 2015, a date cited by a majority of the companies currently highlighting their nuclear ambitions. The complexity associated with the permitting process as well as the execution risks associated with construction projects of this nature should not be underestimated. (...) Moody's believes that many of the current expectations regarding new nuclear generation are overly ambitious. In fact, the timing associated with commencing construction and making the next nuclear unit commercially available could be well beyond 2015 and the costs associated with the next generation of nuclear build could be significantly higher than the approximately \$3,500/kW estimates cited by many industry participants."²⁶ "nuclear competence alliance" between the four major research centres with links to academic institutions, utilities and the industry has been established in 2000 but, so far, has not been able to stop the erosion of well educated young people able to replace the rapidly aging current workforce. As Lothar Hahn, managing director of the German company GRS (Society for Reactor Safety), points out, the consequences could be extremely serious: "First studies indicate that deficiencies in maintaining knowledge at state-of-the-art levels and a subsequent degradation in education and training of operating personnel may endanger the safe operation of nuclear installations. Furthermore, knowledge deficits at authorities and expert organisations due to a lack of qualified successors to retired experts have been depicted as an imminent threat to the qualified supervision of reactor plants and thereby to safe plant operation."⁴¹

Former NRC Commissioner Peter Bradford, who was involved in the licensing of some 25 nuclear reactors, comes to a severe judgement on the prospects of nuclear power: "Those who tell you things like "It could save the earth"⁵⁴ or "Clean, green atomic energy can stop global warming" ⁵⁵ or "Nuclear energy just may be the energy source that can save our planet from catastrophic climate change"⁵⁶ are inviting you into a dangerous la-la land in which nuclear power will be over subsidised and under-scrutinized while other more promising and more rapid responses to climate change are neglected and the greenhouse gases that they could have averted continue to pollute the skies at dangerous rates."⁵⁷ Former NRC Commissioner Peter Bradford, who was involved in the licensing of some 25 nuclear reactors, comes to a severe judgement on the prospects of nuclear power: "Those who tell you things like "It could save the earth"⁵⁴ or "Clean, green atomic energy can stop global warming" ⁵⁵ or "Nuclear energy just may be the energy source that can save our planet from catastrophic climate change"⁵⁶ are inviting you into a dangerous la-la land in which nuclear power will be over-subsidised and under-scrutinised while other more promising and more rapid responses to climate change are neglected and the greenhouse gases that they could have averted continue to pollute the skies at dangerous rates."⁵⁷

"Those suffering from nuclear amnesia have forgotten why nuclear power faded from the energy scene in the first place, how many times it has failed to deliver, how often it has disappointed its most determined advocates, how extravagantly it has squandered unparalleled, unstinting support from taxpayers around the world, leaving them with burdens that may last for millennia."⁵⁸ In June 2005, the trade journal Nuclear Engineering International published the analysis of the 2004 Edition of the World Nuclear Industry Status Report under *their* headline. "On the way out - In sharp contrast to multiple reporting of a potential 'nuclear revival', the atomic age is in the dusk rather than in the dawn". At the end of 2007, we have nothing to add"

Sen. McCain keeps saying, "If France can produce 80 percent of its electricity with nuclear power, why can't we?" Wrong question, Senator. The right question is: Why would we? Energy efficiency and renewables are the key to affordable, carbon-free electricity. They should be a focus of national energy and climate policy. Not nukes.