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05 August 2015

Our Ref: J31314
Your Ref: Email received 07 August 2011

Thyspunt Alliance
St Francis Bay Resident's Association
St Francis Kromme Trust

Dear Mr Thorpe, Thyspunt Alliance and its members, the St Francis Bay Resident's Association and the St Francis Kromme Trust

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

COMMENT ON THE ECONOMIC IMPACT ASSESSMENT REPORT, THYSPUNT

NPS, 2nd Draft EIA Report.

Compiled by E.G.W.Tilders B.Sc B Eng. MBA and submitted on behalf of F.O.S.T.E.R. (Friends of St Francis Nature Areas), a member of the Thyspunt Alliance. FOSTER is a Public Benefit Organisation, registered in terms of section 18A of the income tax act No 58 of 1962.

Comment 1:

In the report below it will be shown that the Economic Impact Assessment forming part of the Draft Environmental Impact Report, as applied to the Thyspunt Nuclear Site:

1) Is not comprehensive, ie important facts are omitted,

2) Includes factual errors,

3) Is biased in favour or what appears to be a pre-determination to favour the Thyspunt site for erecting Nuclear 1.

Response 1:

Your comment is noted. Specific allegations in this regard will be responded to below.

Comment 2:

For easy reference comments below are raised in roughly the same sequence and under the same headings as they appear in the Economic Assessment Report.

A) EXECUTIVE SUMMARY:

The executive summary concludes that “Duinefontein would be far more able to absorb the effects of a Nuclear Power Station….”

This fact is ignored in the rest of the report. This clearly indicates bias in favour of the other sites, in this case Thyspunt.

Response 2:

The Economic Impact Assessment (Appendix E17 of the EIR) comes to the following conclusions regarding the site preference from an economic perspective (from the Executive Summary of this specialist report):

“*The macroeconomic impact analysis gives mixed results for the construction and operational phases at the three sites. Macroeconomic indicators favour the Western Cape sites but household and social indicators favour Thyspunt. The cost-effectiveness analysis indicates that Thyspunt has a very slight edge over Duynefontein and a somewhat larger edge over Bantamsklip … Thus, the order of preference (from most to least preferred) is Thyspunt, Duynefontein and Bantamsklip. However, the differences are slight,and all the sites would have large positive economic impacts both on the local area and the province in which they are situated*.”

The report therefore concludes that Thyspunt is slightly preferred above the other sites, although the differences between the sites are small.

Comment 3:

B) INTRODUCTION – PROJECT DESCRIPTION:
This states that demand in the Western Cape exceeds supply by 3000MW. By the time an NPS would be completed, this figure would have risen to at least 4000MW. This is the complete output of the Nuclear 1 in question. It would make sense to construct the next NPS there. Here again, this fact is not mentioned again in this report, indicating bias, seemingly in favour of the Thyspunt option.

Response 3:

Your comment is noted but excludes other facts mentioned in the Revised Draft EIR. Even though there is an electricity deficit of around 3,000 MW in the Western Cape, there is very little generation capacity in the Eastern Cape. Section 4.3 of the Eskom Grid Planning Report (Appendix E28 of the EIR) provides the current installed capacities of the Eastern Cape and Western Cape. The Eastern Cape has a current installed capacity of 171 MW, compared to 4,300 MW in the Western Cape - a combination of base load (Koeberg) and peaking power stations (pumped storage and gas turbines). The supply deficit is therefore much more acute in the Eastern Cape than in the Western Cape.

Comment 4:

C) ASSUMPTIONS:

The Draft EIA reads: “Another limitation is that detailed information is not yet available on the capacity of the roads and bridges to carry the abnormal loads which will be involved in the transportation of imported equipment for the nuclear power station, as Level 1 assessments have been concluded thus far. Some of these loads might weigh up to 750 tons.” It is glibly assumed that roads and bridges to

the sites of NPS's will be able to carry the required (abnormal) loads. No allowance has been made in the cost model (table 3.24) for construction/alteration/re-inforcing of these. Except for the case of Duynefonteien, this could amount to significant sums that would make a major difference to the costing model. Furthermore there is a major backlog in road construction in the Eastern Cape. Again, as above, this results in a bias in favour of the Thyspunt alternative.

Response 4:

The initial assessment of the Kromme River Bridge and the Sand River culvert indicates:

> Several route options were investigated in the *Eskom Nuclear 1 Project: Thyspunt Site Abnormal Load Haul Route Investigation* and the recommended route for the transportation of abnormal loads from Port Elizabeth to Thyspunt are shown in Figure 9.26. The main section of the abnormal vehicle route will be from Port Elizabeth Harbour, via the N2, interchange east of Jeffrey's Bay, along the R102 to proposed Eastern Bypass Alternative A onto Park Street, and continue down the R330 (MR381), passes St. Francis Bay and access at the Eastern Access of the Thyspunt site. The recommended route is considered the most economical and will require the least amount of road improvement.
>
> A number of obstacles and difficulties would, however, still be present along the route and their proposed mitigation measures are as follows:
>
> - Overhead bridges – Transport vehicles could make use of the on / off ramps at interchanges to avoid overhead bridges. Temporary ramps or detour routes would need to be constructed should there be no existing on / off ramps.
>
> - Under bridges – Propping would be required at most under bridges to ensure stability during the transportation. Strengthening and bracing would be required at the Van Staden's gorge arch bridge.
>
> - Turning intersections / roundabouts – Temporary upgrades would be required at the roundabouts and intersections where turning of the abnormal vehicles is involved. Examples of upgrades are upgrading of bell-mouths, removal of street furniture and road widening.
>
> - Overhead cables – Overhead cables would be lifted or temporarily removed along the route should it interfere with the abnormal loads.
>
> Furthermore, it is recommended that the section of the R330 south of Kromme River to Thyspunt be upgraded to a Class 2 road with passing lanes and surfaced shoulders. The section of road will also be used by general light traffic going to the Nuclear-1 site, therefore the upgrade will benefit both operations. It is also recommended that a large berm be constructed between the section of R330 and St. Francis Bay to act as a sound and vehicle headlight barrier to the area. As discussed in Chapter 9.2.3, a pedestrian crossing is currently located along the section of R330 south of St. Francis Bay, which indicates pedestrian activity is present at the location. It would, however, not be affected by the abnormal loads as the transportation will only take place during the night and on weekends.
>
> Details of the assessment and recommendations can be obtained from the *Eskom Nuclear 1 Project: Thyspunt Site Abnormal Load Haul Route Investigation* Report undertaken by Christopher Roberts in March 2011.

The Economic Report has also taken into consideration the capital costs for the road upgrades that will be required.

Comment 5:

D) 2. DESCRIPTION OF AFFECTED ENVIRONMENT

2.1.4.FISHING.

It appears that Eskom has advised that the exclusion zone will be the length of the site by 1km in size, and that certain fishing boats may at times be allowed inside this area.

This is not a decision for Eskom to make, and is based on “Eskom successfully applying for access to be granted….” The decision to allow fishing inside the exclusion zone would fall under National Security or under the National Nuclear Regulator.

Response 5:

As indicated by Section 3.20.3 of the Revised Draft EIR, the size of the marine exclusion zone would be dependent on a decision by the National Intelligence Agency. The NNR has jurisdiction over the Emergency Planning zones, which only apply inland of the power station.

Comment 6:

2.1.4 Continued….Squid Fishing.

The report glibly states that only an area the length of the site x 1km exclusion zone will be affected and that this will reduce squid catches by 1,8%.

The report takes no notice of the fact that 2 underground pipelines will be constructed and that warmed, chlorinated water will be discharged, and the effect of this on squid catches.

The most important omission of this, Second Draft EIA report is the fact that it takes no notice of the fact that 6,37 million cu meters of sand/spoil will be discharged into the sea, probably at a depth of 50 - 80m and a distance of 1-5 km offshore. This is, despite the matter being discussed at length at meetings and highlighted in comments on the First Draft EIA. South African Squid Management Industrial Association (SASMIA) in fact drew attention to this major omission repeatedly since publication of the first Draft EIA.

It should be noted that 6,37 million cu meters of banked sand/spoil becomes 7,3 million cu meters of loose sand/spoil when removed. This second figure is the actual volume we are dealing with. Due to inshore ocean currents flowing from West to East (predominant) and also currents flowing from East to West (certain times of the year) this will spread about some 10 - 12 km in both directions. This would cover an area 2 - 3km wide, stretching from East of Cape St Francis to West of Oyster Bay. It is highly likely that this spread of spoil will destroy the squid breeding grounds of the area mentioned above. Currently, according to SASMIA figures, around 33 -38% of squid caught by boats operating in the area are caught in this location. (between Cape St Francis and Oyster Bay, up to 5km offshore). The above is the subject of a separate SASMIA study and report, and was discussed at length in a meeting of specialists recently held in Cape Town.

According to figures published in this Economic Impact Assessment Report, an average of 7000 tons of squid are caught in the Eastern Cape per annum. This is sold at an average price of about Euro 7-00. At current exchange rates this amounts to R480 million per year. A loss of 33% would amount to some R160 million per year. At the key focus group meeting held at St Francis Bay on 25th May, it was stated by the Marine “expert” that, should the squid leave this area or stop breeding there for the duration of the construction period, they are quite likely to take at least another 10 years to return, if at all. The above breeding ground would thus be barren for a MINIMUM of 20 years.

The loss to the industry and economy of the area could thus amount to some R3,2 billion, over 20 years. If calculated to a Present Value at 8%, this would amount to R1,6 billion. Nowhere in the IAR is this mentioned, nor is this allowed for in the PV cost matrix, (see table 3.24). The squid industry employs some 4000 people. A loss of 33% of squid income would probably result in the laying off of some 1300 people. The vast majority of job losses would occur in the Kouga/ St Francis/Humansdorp area. No mention is made of this in any of the specialist reports, including the social impact report. It is unbelievable that a report dealing with the effect of building the NPS at Thyspunt can simply ignore the effect of 6,3m cubic meters of spoil pumped into the premier squid breeding ground of South Africa and the huge effect this would have on the local squid industry. This is despite the fact that the consultants' attention were repeatedly drawn to this fact since publication of the first Draft EIA Report. This is a major omission.

Furthermore, under the above scenario, squid operators would be forced to work furtherafield. (further away from their base at Port St Francis). This would necessitate a change to larger boats. The size of boats that can use Port St Francis is limited by harbour size and (especially) the depth of the harbour entrance. A tendency towards bigger boats would result in squid boats operating out of Port Elizabeth or even Mossel Bay. This would result in a complete and permanent collapse of the local/Port St Francis based squid industry. It is estimated that the local industry employs some 2000 people in all and produces a revenue of close to R250 million per annum. This would amount R12,5 billion over the construction period and life of the NPS. If an 8% Present Value factor is applied, this would amount to R3,05billion. This would be the loss to the local squid industry and would result in some 2000 unemployed in the area. Here again the Second Draft EIA report makes no mention of this likelihood…..another major omission of the report.

SOUTH AFRICAN SQUID is one of the more sought after varieties of squid in the world, in a very competitive market. Should our squid be caught in the vicinity of a NPS, this fact is likely to be used by competitors against our product. Marketing very much depends on perception. Even though completely unjustified, our squid industry may suffer as a result of this. The report states in this connection that negative market perceptions appear to be mitigable with production and distribution of scientific evidence and advertising. Firstly, who is to pay for such advertising campaigns? We do not notice an undertaking from Eskom in this regard, nor a summary of budgeted costs. The report totally underestimates market perception, especially since the Fukishima disaster and the German halting construction of new, and decommissioning of old nuclear power stations. Here again we have bias towards an outcome seemingly preferred by Eskom.

As per the above, the report identifies the exclusion zone and negative perceptions regarding squid caught near an NPS as the MAJOR concerns in the squid industry. This is completely wrong! The major concern is in fact the effect of pumping 6,3million cubic meters of spoil into the squid breeding ground, and this is not covered in the report. A MAJOR OMISSION.

Response 6:

The Marine Ecology Assessment and the related Oceanographic Assessment (respectively Appendices E15 and E16 of the EIR) investigate the potential impacts of marine organisms in detail, taking all potential sources of impact into consideration, including temperature changes, marine release of spoil, release of brine from the desalination plant, the impacts of the marine exclusion zone on fishing, etc.

The claim of a complete disregard for the marine disposal of spoil is noted. The impacts of spoil release are extensively discussed in the Marine Ecology Assessment (see the Executive Summary and Sections 3.1.1, 3.2.1, 3.3.1, 4.1.1, 4.2.1 and 4.3.1) and in the corresponding Chapter 10 of the Revised Draft EIR Version 2.

The claims regarding the spread of spoil in the marine environment are noted. Figures 9-19 and 9-20 of the Oceanographic Assessment (Appendix E16 of the EIR) provide a visual indication of the spread of sediment respectively from a shallow disposal site and a deep disposal site. The illustrations in these figures, based on extensive and detailed modeling of the movements of marine currents accurately depicts the movement of spoil.

SASMIA's claimed figures of 33-38% of squid being caught by boats operating in the area are noted. Extensive consultations have been held between the Nuclear-1 marine ecology specialists and the Squid Working Group (SWG) of the Department of Agriculture Forestry and Fisheries (DAFF). SASMIA attended these meetings. SASMIA's claims are not supported by independent figures provided by the SWG and DAFF. The 30% figure quoted by SASMIA appears to have been calculated using only four selected vessels – a gross under-representation of the chokka squid fleet. Data for the same area provided by DAFF (i.e. the commercial database) shows that 14.7% of total catches are taken in the wider area (two quarter degree squares of approximately 22 x 27 km each) around the Thyspunt site – itself a much larger area what will in fact be impacted. In this regard, it must also be noted that the total area affected by a temperature increase of 3ºC or more will be less than 1km^2. In the current revision of the Marine Ecology Report the area potentially lost to the fishery (based on the commercial info provided by DAFF) is presented. While still under review, this figure ranges from 2.86% (worst-case scenario) to 2.53% (least-case scenario) to the fishery in the local area under question, and between 0.42% and 0.37% for the fishery as a whole.

The reference to a separate SASMIA study and report refers. It is important to note that in spite of several indications from SASMIA over the length of the Nucelar-1 EIA process, no report has been forthcoming from SASMIA to challenge the data provided in the Marine Ecology Assessment. SASMIA has provided written representations (which have been addressed), but no report.

The comments on the economic impacts refer. The statement of a 33 % loss is unsupported by commercial data provided by the SWG and the DAFF. The recommendation provided by the Marine Ecology Assessment in the Revised Draft EIR Version 2, proposes that spoil must be disposed of at a deep site (deeper than the 50 m depth up to which chokka squid spawn) and at a medium discharge rate to limit turbidity. Given these recommendations, the likelihood of a 20 year disruption in breeding is not supported.

The comments regarding the squid fleet having to change to larger boats and having to work further afield is noted. It is acknowledged in the Marine Ecology Assessment that fishing boats would have to avoid the impacted area at the Thyspunt site. However, due to the small size of the affected area (as indicated above approximately 2.86% of the local fishing area – worst case scenario), the claim that this would result in inordinately large expenses to the fishing industry is also unsupported.

The comment about a negative perception of the squid caught in the vicinity of the proposed power station is noted. This is not borne out by the experience with fishing in the Western Cape in close proximity to Koeberg Nuclear Power Station (KNPS), where there are successful organically certified wine farms operating in close proximity to the KNPS.

Comment 7:

E) 3. IMPACT IDENTIFICATION AND ASSESSMENT

3.2.1.2.11 ACCESS ROADS.

The report reads: "In the case of Thyspunt an additional feeder road for heavy vehicles via Cape St Francis was included at a later stage and is now incorporated in the model. " The estimated cost to upgrade road is R539,39 m". This figure underestimates the costs of building and maintaining roads

through moving dune fields and wetlands, which are, at the time of writing are largely flooded. Furthermore the figure does not seem to allow for removal and re-building of flyover bridges to allow very big loads through. A route through Humansdorp has been identified for use, being Saffery Road. This is totally unacceptable for various reasons…..a new bypass road will have to be built, bypassing Humansdorp. We believe the road and access costs have been underestimated by at least R800m. We believe this constitutes a major factual error in this report. Pipelines for intake, outlet of warm/chlorinated water, spoil dispersement during construction period, and associated tunneling.

We are told by the consultants that the above pipelines may now stretch up to 5km offshore in order to reduce environmental impact, and not limited to 1 or 2 km, as previously stated. Yet this is not allowed for in the report. Laying of these undersea (and underground, below ocean floor) pipelines should be the matter for a complete feasibility and costing study, as well as an EIA. This matter is completely ignored in the report. While costing estimates cannot be made without in depth studies we believe a cost of at least R1 billion at PV prices should be allowed. According to a study instigated by the Thyspunt Alliance, the cooling water intake pipeline and associated tunnelling would cost some R477 million. (The study can be made available on request). The proposed pipeline for disposal of spoil is apparently going to be much longer and end up in deeper water. It will also involve a number of pumping stations along the way, since pumping spoil over a 5km distance from one pumping station would be impossible. We believe that the above figure of R1 billion in additional costs to be conservative – it could be much higher. This is another omission in the report.

Response 7:

The comments regarding the traffic impact are noted. The traffic impact assessment has been substantively revised, such that heavy construction traffic will completely bypass St. Francis and Humansdorp. Bypass routes to the east and west of Humansdorp is proposed to be constructed to reduce the traffic impact on central Humansdorp. The R330 is proposed to be used for only passenger vehicle traffic and abnormal load transport. The Oyster Bay bypass (in conjunction with the western access road) will be used for staff and heavy vehicle traffic. Details of this traffic proposal is included in the Draft EIR Version 2, Appendix E25.

The comments regarding the cost of the spoil pipelines are noted.

The project amount is estimated and will be confirmed upon design evaluations. However, Eskom will ensure that the envisaged project costs are not exceeded by ensuring that the specifications and designs are robust.

Comment 8:

3.2.1.2.13 TOURISM IMPACT.

GENERAL TOURISM

The impact of the Eastern access road and use of the R330 road from Humansdorp to Cape St Francis on tourism has not been assessed, since this access road was conceived of and added at a later stage. It is estimated that this road will have a major negative impact on tourism in the area. Table 3.13 shows a negative impact on tourism of 7.86% for years 1-6 only. Firstly, what happens after year 6 assuming a 10 year construction period? Secondly, how can anyone calculate with certainty the effect of a NPS on tourism to within two decimal points of a percent. This seems to be a ridiculous figure.

Table 3.20 shows 0% tourism impact on Thyspunt for years 7 – 20.

We shall assume a negative effect on tourism of 30% over a 10 year construction period until presented with clear evidence to the contrary. Using the figure of R77,45 million pa as per table 3.13, and applying a loss of 30%, the amount of R23m would be lost annually. This is roughly R17mil pa higher than the figure of R6,11m shown in figure 3.13. This amounts to R170m over the construction period. If a PV @ 8% is applied, this amounts to R114m over 10 years of construction period. The loss of tourism will be the death knell to many establishments in the St Francis Bay and Cape St Francis areas, with resulting job losses etc. This does not include SURF TOURISM, which is dealt with below.

Response 8:

Your comments are noted. With regards to the impact of the use of the R330 on tourism, please refer to Response 7.

Year 6 is the peak of construction and it is therefore assumed that the greatest impact would be experienced at that point during construction. Environmental impact assessment is a predictive science and no absolutely accurate calculations can therefore be expected. However, the calculations of tourism impact in the Tourism Impact Assessment (Appendix E22 of the Revised Draft EIR) are based on bed nights in the study area. Application of a percentage decrease in the number of bed nights could therefore (as is the case in this instance) lead to fractional amounts in the percentages of impact.

The assumption regarding a 30% decrease in tourism is noted. Kindly provide substantiation for this figure. The Tourism Impact Assessment uses a scientific approach in the calculation of the predicted impact.

Your comment regarding the impact on surf tourism is noted. As indicated by the Surf Breaks Addendum report to the Revised Draft EIR (Appendix I of Appendix E16 of the Revised Draft EIR), there will be no impact on surf breaks at Jeffreys Bay.

Comment 9:

SURFING – PERMANENT RESIDENTS, HOLIDAY HOMES, SURF INDUSTRY AND TOURISM:

The area from Cape St Francis to Jeffrey's Bay is considered the "Mecca" of African surfing. Cape St Francis is popular as a family surfing destination. "Bruce's", the surf break at St Francis Bay is considered to be the surf break that put the Kouga area on the world surfing map in the 1960's. "Supers" at Jeffrey's Bay is considered the best right hand point break in the world. These surf breaks bring thousands of surfers and surfing holiday home owners to the Kouga area every year. Furthermore surfing is counter cyclical in tourism terms…..it draws surfers in the winter months, when normal tourism is slow. Surfing has spawned many local businesses, including some 40 surf shops, surf related clothing shops and surfboard manufacturers, and one major factory/distributor (Billabong), as well as many B+B establishments. Yet the draft EIA report merely states that the surf break at Cap St Francis "may be affected". Reference is made here to the fact that 6,37million cubic meters (7,3million loose cu meters) of sand/spoil is to be deposited in the sea, and may be transported to the surf breaks by ocean currents. The oceanographic specialist report should have made a specific study of the impact of sand /spoil on the surf breaks, as should the economic specialist report. As far as we are aware, no in depth study including any form of modelling was conducted. This is a major omission.

A further omission is the fact that no attention is paid to the possible cancellation of the annual Billabong/ Association of surfing professionals surf contest held. This contest is held at Jeffrey's Bay every year in July and is one of the big 11 contests on the world surfing calendar. It attracts some 10.000 persons per day, for an average 10 days, giving a major boost to the local economy. The media value of this event is estimated to be worth R20m each year. Money spent in the area over the 10 day period is estimated at some R30m, which can be doubled due to the "knock on effect. A total of

R60m. This amounts to R600m over the 10 year construction period. Using a PV factor of 8%, this amounts to a present value of R400m. Should the surf break be affected by the spoil pumped into the sea at the NPS building site, this will be lost. Contestants and organisers of the event have signed a number of petitions to stop the construction of the NPS at Thyspunt. They have also indicated that, should the construction go ahead, they would boycott Jeffrey's Bay and move the event elsewhere, outside of South Africa. This would be a huge loss for local businesses, yet no mention of this fact is made in the report. In a survey conducted by the Thyspunt Alliance, a number of managers stated that without the annual Billabong contest, they would "close shop". This includes the Billabong distribution and factory center, employing some 270 people.

This is another major omission. The total loss to tourism as a result of construction the NPS at Thyspunt could thus amount to some R514 m in present value terms. This is very different from the figure of R6,11 m pa referred to in table 3.13 of the report.

Response 9:

Your comments on the impacts on surf breaks are noted. As indicated in Response 8, the Surf Breaks Addendum to the Oceanographic Assessment (Appendix E16 of the Revised Draft EIR) specifically considers the impact on surf breaks due to the marine disposal of spoil. The detailed oceanographic modeling of sand movement after disposal is considered in this Addendum.

This Addendum concludes that disposal at a deep site (the recommended alternative) would result in a column of sand between 0.005 m (5 mm) and 0.010m (10mm) thick extending towards Seal Point, with another small portion of spoil settling in the bay (at approximately 10m depth) between Seal Point and Cape St Francis 5 years after the disposal has taken place. This may affect the manner in which the wave breaks, however to a far less extent than the spoil discharged at the shallow disposal site. However, the extent of the change in the breaking of the wave would be negligible.

Your comment on the staging of the Billabong surfing content is noted. As stated above, the Surf Breaks Addendum concludes that numerical modeling indicates that the sediment will not reach Jeffrey's Bay (situated 20km northeast of Cape St Francis).

Comment 10:

3.2.1.3.8 AGRICULTURE IMPACT

Table 3.21 shows a POSITIVE impact of R19m.

The Agricultural impact Specialist report of the Draft EIA incorporates a GAIN of "10 to 15%" in agricultural output due to a larger market created by the influx of people into the area (construction workers and families). This was re-iterated at the key stakeholders meeting held at St Francis Bay on 25th May 2010, and again, at a later meeting. This is, however incorrect. With the exception of one small dairy farm, all milk produced in the area is sold to national distribution/processing companies. Dairy farms are running to full capacity. According to local farmers questioned, local market growth will have no positive impact on production or sales. Diversifying into alternative crops/farming product is not possible due to climatic and soil conditions. This has been confirmed by a number of leading farmers in the area. Apparently no proper on the spot research was undertaken by the party drawing up the Agricultural specialist report. This is a major omission and is a major flaw in the 2nd draft EIA report.

A FURTHER MAJOR FLAW in the Agricultural Impact Assessment is the fact that it does not incorporate the impact assessment of transmission lines. This has been done as a separate study and is not incorporated in this Draft EIR, agriculture section. It is felt that farming land lost to transmission lines will be a major factor.

Table 3.21 shows an annual turnover of R927m and an impact of 12.5%. We believe that a NEGATIVE impact of 12,5% should be applied to an area of 30km radius, resulting in a loss of R115m per annum. This figure would allow for the effect of transmission lines, which have not been allowed for in this report. Over a 10 year construction period this would amount to R1,15 billion. Taken over the construction period as well as over the operational period and brought to Present Value at 8% say, this loss would be some R1,42 billion. While the above figures are not accurate due to lack of information they provide "ball park" estimates which show that the positive impact of R19m (or R18,7m as per text) pa, in figure 3.21 is very far off the mark. We are again dealing with more errors, resulting in a bias towards the Thyspunt site.

Response 10:

Your comment regarding the agricultural impacts of transmission lines is noted. The EIAs for the power station and the transmission lines are run separately, in accordance with the requirements of the Department of Environment Affairs (DEA). Whilst it is not the function of the Nuclear-1 EIA process to comment on the findings of the transmission line EIA or public perceptions of these studies, it is to be noted that transmission lines will not result in the total loss of affected servitudes to grazing or cultivation. There are no restrictions, apart from the construction of buildings and growing of tall trees i.e. forestry or orchards), that apply to power line servitudes. The complete loss of agricultural production to transmission lines would, therefore, be small.

With reference to the estimate of the financial value of the agricultural impact, the following rough calculation has been made for an area of 30 km radius. Based on northern and southern transmission line corridors of 165 and 110 m wide respectively[1], the transmission line servitudes would cover an area of roughly 8.25 km^2 (assuming they move in a straight line from the power station to the edge of the 30 km radius). Allowing for changes in the direction in the lines, an area 1.5 times this area is assumed i.e. 12.375 km^2. The total affected area within the 30 km radius (excluding the marine area – assuming the marine area accounts for half of a circle of 30 km radius from the power station) would be roughly 1,400 km^2. Thus, approximately 0.88 % of the total area (12.375 / 1,400.00) within a 30 km radius could be affected by the transmission line servitudes. To justify this affected percentage of 0.88 %, it would further need to be assumed that all areas within the servitudes are productive agricultural areas (i.e. that no subtractions need to be made for mountainous regions or other areas unsuitable for agriculture) and that the entire servitudes (i.e. not only the pylons bases) would be rendered unsuitable for agriculture. These are extremely generous assumptions, still leading to the conclusion that only approximately 0.88 % of the area potentially suitable for agriculture would be impacted. Although this calculation may be simplistic, and does not take consider that there are areas of varying agricultural productivity, the large discrepancy in percentages it brings into doubt the claim of a 12.5 % negative impact on agriculture.

The Agricultural Specialist's response to Comment 2 applies here.

It is agreed that the impact of the transmission lines should be included in this report as they can have a significant impact especially in a dairy production area. The specialist raised the issue that many of the comments relate to detailed technical and economic operational issues of the specific farms. The scope of the study focused on doing a farm survey (type of farm) within a 16km radius of the site and a farm infrastructure audit on a 20 km radius of the site. On the economic side a general regional economic model was required to give a regional economic impact. A detailed analysis of the specific farms affected is required including a detailed soil survey and financial analysis of the farms. Once there is a preferred site then a more detailed agricultural assessment (and a more detailed market assessment) of the farms in that area should be undertaken.

Comment 11:

[1] According to Section 2.2 of the Revised Draft EIR for the Thyspunt Transmission Lines Integration Project – Northern Corridor

F) 3.2.2 COMPARISON OF THE THREE SITES.

Using the figures shown in Table 3.24, the following should be added to the Thyspunt figures, as per the various headings above:

C: ASSUMPTIONS

ROADS AND BRIDGES:

In the Case of Thyspunt a further allowance of R800m. should be made. If the Van Stadens Pass bridge has to be re-inforced, this figure could be much higher. The figure for Duynefontein will be negligible by comparison. We cannot comment on the figure for Bantamsklip without in depth studies.

Response 11:

Your comment is noted. As indicated in other responses, the Transportation Assessment (Appendix E25 of the Revised Draft EIR Version 2) has found no reason to indicate that Van Staden's River Bridge would need to be significantly upgraded to cater for the heavy loads required for Nuclear-1. Please note that the Economic Assessment does take into account the cost of upgrading of roads.

Comment 12:

PIPELINES/TUNNELLING

As per the above, at least a further allowance of R1 billion should be made.

Response 12:

Please refer to Response 7.

Comment 13:

D) FISHING

SQUID:

The negative impact on the squid industry in the Thyspunt area, at Present Values could be anywhere between R1,6 and R3,05 billion. This would depend on the level of destruction of this industry and to some extent on negative market perceptions. This would not apply to either Duynefontein or Bantamsklip.

Response 13:

Your comment on the economic impact on fishing is noted. Kindly refer to our Response 6 above, which indicates a maximum, that (as a worst case scenario) 2.86 % of the current fishing area around the Thyspunt site could be affected.

Comment 14:

E) TOURISM

The impact would amount to at least R514 million (At Present Value, calculated at 8%) over the construction period. Tourism would not be impacted at Duynefontein and positive at Bantamsklip (according to this report).

Response 14:

Your comment is noted.

Comment 15:

E)(continued) AGRICULTURE

The impact could be much more severe than shown in the Draft EIA report, more than likely around R2,1billion (Present Value at 8%) over the life of the NPS.

The Present Value Matrix in figure 3.24 does not show a true reflection. One cannot combine costs of construction and adverse economic effects (expressed purely in monetary terms) on surrounding areas in one matrix. Effects on surroundings invariably have major social and other implications, knock on effects etc.

We believe that the THYSPUNT NPS project costs have been underestimated by at least the following in Present Value figures:

Roads and Bridges additional cost.……R800m
Pipeline/Tunnelling Costs……R1,0 billion
TOTAL…….....R1,8 billion
We believe that effects on the economic environment have been underestimated by at least the following in Present Value figures:

Squid Fishing loss…….……R1,6 billion to R3,05billion
Tourism loss…….……....R514m
Agriculture loss…….……R1,42 billion.
TOTAL……..……R3,53 billion to 4,984 billion
TOTAL…….SAY……R3,5 billion to R5,0 billion

CONCLUSION FROM COST COMPARISON MATRIX:

Adding the above figures the conclusion is that the NPS would result in extra costs and severe economic/income losses in the Thyspunt/Kouga area. These are unaccounted for in the Economic Impact assessment Report of the Draft EIA study.

As a result the Thyspunt NPS does not compare favourably with the Duynefontein option and would be on a par, cost/loss wise with the Bantamsklip option.

Due to the probable complete destruction of the Squid industry as well as other factors mentioned above, (and the huge sociological impact thereof) the Thyspunt NPS option should not be pursued.

Response 15:

Your comment is noted. As indicated by Response 10, your claim of a 12.5 % negative impact on agriculture is not supported by an analysis of the areas that would be affected by the transmission lines.

Comment 16:

FURTHER FACTORS TO BE TAKEN INTO ACCOUNT:

The scoring system in the report is severely flawed.

Transmission lines are subject to a separate report, but are included in the scoring process. They are then AGAIN included in the Economic report, thereby being considered twice. The 4-3-2 weighting applied is highly questionable and should have been replaced by a more appropriate weighting, possibly 3-2-1.

If the Eskom participants attending the scoring workshop also voted or had any input, the integrity of this whole EIA process is compromised. We herewith demand confirmation, in writing, from the consultants to the effect that the EIA process has not been compromised in this fashion.

The local Kouga Municipality is stretched beyond its limits of effective operation.

Roads are badly maintained. Sewage spills are frequent. Current rubbish dumps are operated unhygenically and illegally. There has been a severe water shortage and water restrictions have been in force since December 2009. These are likely to continue. The Kouga municipality would not be able to cope with the influx of staff and their dependents during the construction phase. (In the vicinity of 25.000 people in all, if families and dependents are included).

The report mentions, in table 3.30, the "positive impact of the NPS".

This states that, with the additional taxes flowing from the NPS, the following can be paid for:

Additional number of educators…2842
Additional number of hospital beds…..612
Additional number of doctors……64
Additional construction of 2968 houses.

These are wonderful theoretical figures when confronted with a municipality that can barely cope. Who is going to establish schools to house the 2842 educators? Where do they come from, given that the area has a severe shortage of teachers? The same applies to the 612 extra hospital beds and 64 doctors. (What about nurses, without whom hospitals cannot operate?) There is a huge backlog of hospitals, beds and doctors in the Eastern Cape as it is. People queue for days to be attended at the Livingstone hospital in Port Elizabeth. Yet magically the NPS will provide the above? Are we to assume that Eskom will construct and establish schools and hospitals? If so, there is no sign of a cost allowance made for these hospitals and schools and training of teachers etc. in any of the cost matrixes. This section of the report seems to have been includes as a sales gimmick to convince the local municipality to support Eskom's plans for the NPS at Thyspunt.

These figures have no relevance insurance: Home insurance policies in South Africa specifically exclude nuclear accidents/disasters. Who will insure residents in the Kouga area against a nuclear disaster? Will Eskom do so? Nowhere in this report is this fact mentioned.

The above clearly demonstrates that the economic report is badly flawed with factual errors, omissions, and arguable conclusions. The report is not un-biased, given that it is based on figures largely supplied by the contractor, Eskom. The objectivity of this report must be queried.

Response 16:

Your comments are noted. The strategic positioning of the power station in the National Grid relative to areas of demand ("transmission integration") is considered as one of the major decision factors. The length and costs of the transmission lines and the ease of obtaining servitudes along the transmission

corridors are only some of the factors considered in the overall transmission integration considerations.

Eskom played no part in the determining the weighting criteria for decision factors in the Nuclear-1 EIA process. Guidelines on the assessment methodology and significance ratings are provided by NEMA and have been adhered to throughout the process.

Your comment in the inability of Kouga Municipality to deal with the expected influx of people into the Kouga municipal area is noted. It is also acknowledged in the Revised Draft EIR there are severe service provision backlogs and that the Kouga Municipality does not have sufficient funds of its own for the necessary upgrades. Thus, the following is recommended in Chapter 11, Section 11.3.1 of the revised Draft EIR Version 2:
"Eskom must enter into negotiations with local authorities and other relevant authorities well before the start of construction to identify how it can be ensured that municipal services are capable of providing sufficient capacity for the expected influx of people into the affected area. Agreement must be reached between Eskom and these bodies on the apportionment of financial responsibility for infrastructure upgrades."

Eskom cannot, however, be expected to be solely responsible for infrastructure upgrades, as current infrastructure backlogs are the responsibility of the municipality. It is for this reason that it has been recommended that agreement must be reached between Eskom and the other role players regarding apportionment of responsibility.

Your comment regarding lack of health and educational services refers. This comment may also be applied to most other geographical areas in South Africa (with the exception of a few very well developed areas in South Africa). Even in the regions of South Africa that have concentrations of high quality services, most of the good quality services remain out of reach to the majority of the low-income population, since they rely on relatively poorly run government services. Thus, application of that argument that poor services should disqualify an area from consideration would effectively mean that the majority of South Africa would, from a service provision perspective, be unsuitable for development of any large scale infrastructure project. Effectively, it would also mean that any large scale economic development that would bring the potential for jobs to poorer area of the country should by definition be excluded from consideration and that only the more affluent, well-resourced regions should be considered for further economic development.

The issue of insurance has repeatedly been dealt with in public meetings and in Issues and Response Reports. Eskom is required by the NNR Act to make financial provision through insurance obtained from international nuclear insurance pools. Eskom makes the financial provision through insurance obtained from the international nuclear insurance pools, which is in dollar denomination, resulting in a financial provision in excess of R3 billion for Koeberg Nuclear Power Station. Every year Eskom has to provide proof that the financial provision (insurance) has been obtained.

Yours faithfully

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For GIBB (Pty) Ltd
The Nuclear-1 EIA Team