

RESPONSE TO NUCLEAR 1 DRAFT ENVIRONMENTAL REPORT

THYSPUNT ALLIANCE

30 June 2010

This response relates only to the Thyspunt site and is submitted without prejudice as we are of the opinion that this EIA process is fatally flawed. This is evident in all the submissions that have been submitted by the individual members of the Thyspunt Alliance as listed below.

MEMBER ORGANISATION	REPRESENTATIVE	REPORT COMMENTED ON
St Francis Bay Residents Association	Hilton Thorpe	Full sub-mission
St Francis Bay Residents Association	Joe Oosthuizen	Agricultural
St Francis Kromme Trust	Chris Barratt	Full sub-mission
St Francis Kromme Trust	E. Elton	Transport
St Francis Kromme Trust	T. Daines	Agriculture
St Francis Kromme Trust	G. Potgieter	Flora & other
St Francis Kromme Trust	P. Bosman	Economic
SCOSS	Des Green	General
FOSTER (Environmental NGO)	Prof. Richard Cowling	Biophysical
FOSTER (Environmental NGO)	Helmie Tilders	Economic
Gamtkwa Khoisan Council	Kobus Reichert	Heritage
SASMIA (South African Squid Management Industry Ass.)	Dawson,Edward & Associates	Legal Submission for SASMIA
Cape St Francis Civics Association	Trudi Malan	Review – NSIP
Cape St Francis Civics Association	Renee Royal	Review Chapter 9 & EMP
Cape St Francis Civics Association	Alex Royal	Air Quality
CANE	Mike Kantey	Air Quality
For Thyspunt Alliance	Prof Fred Ellery	Dune Geomorpholgy/Freshwater
For Thyspunt Alliance	Andrea von Holdt	Visual
Supertubes Foundation	Tanya Lategan	General

EXECUTIVE SUMMARY

The Thyspunt Alliance has publicly declared on numerous occasions that the original site selection in the 1980's was flawed. The study was done thirty years ago in a time that there was little concern for people or the environment. One of the main requirements of the original study was that the site was not allowed to be within 100km of the Ciskei or any other homeland. The public was excluded from the selection process and most of the documentation was classed as "Restricted" or Confidential".

It is maintained that if our country wants to invest in something as costly as a Nuclear Power Plant, it is necessary to ensure that we get the basics right. We therefore need to place the generating capacity as close to the area of need as possible where related infrastructure like roads, sub-stations and transmission lines are already in existence and where the area would be able to cope with the social and service requirements of a development of this magnitude.

We furthermore **strongly** object to the following statement in the Draft Environmental Executive Summary:

"The most important argument in favour of Thyspunt with regards to the biophysical impacts is the conservation benefits that would be realised through access control and active management of the site in the event of a nuclear power station being constructed there."

This clearly proves that ESKOM is trying to fit a round peg in a square hole. The Thyspunt site should never have been selected as the sensitivities are clear

Although the consultants acknowledge that: *"the Thyspunt site would experience environmental impacts of higher significance (particularly biophysical impacts) than Duynefontein"* they still maintain that it can be mitigated away.

We would like to contend that the internationally precautionary approach principle as incorporated in South African legislation (NEMA Section2(4)(a)(vii) – *a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.*) should be applied given the uncertainties associated with interfering with very sensitive wetlands and headland bypass dune system at Thyspunt.

It is further noted that the proposed project is massive in scale. According to the Areva Website, the Olkiluoto 3 Pressurised Water Reactor in Finland, which is the first Generation III Nuclear plant in the

world, is Northern Europe's largest ever industrial project. This project was started in 2005 at an estimated cost of €2.5 billion, it was supposed to be completed in 2009. Due to technical problems encountered during construction, the completion date is now estimated in 2012 at more than double the cost.

As a matter of interest it was noted in the New York Times on 29 May 2009 that the cost of a new reactor today (May 2009) would be as much as €6 billion and these costs could escalate if built on geologically unstable sites or on sites threatened by storm surges.

1. ACCESS TO INFORMATION

We have had great difficulty in accessing information and complete documentation during the entire course of this process. Access to vital documentation is blocked by the consultants by hiding behind the Public Access to Information Act.

The distribution of the Draft Environmental Impact Assessment (DEIA) for comment purposes leaves much to be desired. Only one hard copy of the DEIA was provided to the communities of St Francis Bay, Cape St. Francis and Sea Vista at the local municipal office. The copy was incomplete and consisted of only seven volumes. A complete copy arrived at the St. Francis Bay offices of the Kouga Municipality on Wednesday 23 June 2010 (ten days before the end of the comment period.) This copy consisted of 13 volumes.

Minutes of the various public, key stakeholder and specialists' meetings are received very late. Although a two week period is allowed for Interested & Affected Parties (IAP's) to verify that the minutes are a true reflection of the meeting, the late arrival of the minutes does not allow I&AP's to utilize the information contained in these minutes as part of their response documents.

We have objected to the fact that the consultant, Arcus Gibb, is using the minutes as an issues and response document. We have no problem if they include the minutes in the DEIR as an "Issues and Response" document, but we need the minutes of any meeting to be released to I&AP's as soon as possible after a meeting. Minutes are supposed to be a true and accurate reflection of proceedings at a meeting. We maintain that the minutes as presented to us is not a true and accurate reflection of the meetings.

Minutes of meetings held on 15 & 16 April 2010 was only received on 25 May 2010.

Minutes of the Specialist Meeting held at St. Francis Bay on 25 May 2010 was only received on 23 June 1020.

From the outset of this process we have complained that a large part of the I&AP's are at a disadvantage due to the fact that they cannot access the information in their mother tongue. The project leader from Arcus Gibb, Jaana-Maria Ball stated at the Key Stakeholder Meeting held in Cape St. Francis on 16 April 2010 that she consulted with the Department of Environmental Affairs and that they informed her that the consultants do not have to supply documents in any language other than English. This statement was conveniently edited out of the minutes. Repeated requests for the audio recordings of these meetings have been ignored

2. FRAGMENTATION OF ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

We refer to the separate Environmental Impact Assessments for the transmission lines as well as the construction village (the DEIA states that studies will only commence on the construction village once sites have been identified). We are greatly concerned about this separation. We fail to be convinced of the assumption that the various "related" EIA's will have no influence on each other and we believe that the separation of the EIA's creates confusion amongst the public. I&AP's currently have to register for three EIA's directly related to this site.

If ESKOM wants to persist with this fragmentation and separation policy we demand that a chapter be added to this DEIA where the likely impacts of the transmission lines and proposed construction village are listed and the impacts explained. The exclusion of the transmission line impacts from this EIA makes for a flawed report. For example the servitudes and loss of agricultural land related to the transmission lines have a direct bearing on the final conclusions of the Agricultural Report.

A further confusing issue is the fact that the NNR process does not run concurrently with the DEIA process. ESKOM very glibly states that should the NNR find any material evidence that the NPS will have a negative effect on people, property or the environment they will not receive a license and they will have to start the site selection from scratch. We cannot foresee that any business would be willing to risk these kinds of financial expenses (R70 million for the current study) and not be sure about the outcome. The unfortunate conclusion would be that it is a foregone conclusion that the NNR will license the site and that the mandatory public participation process about the safety of the NSP will be no more than window dressing.

3. CONFUSING STATEMENTS

The entire process has been confusing to the public.

- First the application and scoping was for one site out of **five**.
- The two sites (Northern Cape Sites) were scoped out for technical and not environmental reasons. This raised objections from a large number of I&AP's
- Then it was for authorisation on one of three sites
- Next it was changed to authorization for all three sites
- Now we are back to square one, with ESKOM seeking authorisation for one site only.

To add to the confusion, ESKOM announced in December 2008 that they are foregoing the plans to build a NSP station because of the cost associated with such a plan.

The DEIA is riddled with confusing statements. In the Executive Summary of the DEIA the project description states that ESKOM **favours** a NPS of standard Generation III design. It does not however make a clear statement about the use of Generation III.

The statement: *“The enveloping criteria have been developed to ensure that they represent the most conservative parameters associated with the **various plant alternatives** within the PWR technologies.”*

This clearly implies that they may revert to Generation II technology.

The DEIA constantly refers to EUR zones. It should be stated in the report that EUR is the acronym for European Utility Requirements. These requirements are formulated by role players in the nuclear industry and not by an independent regulator. ESKOM will try to convince the NNR to adopt the European Utility requirements as regulations but these requirements are less stringent and differ from those regulations enforced by governmental nuclear regulators. The EUR zones are not accepted by the International Atomic Energy Association.

4. LACK OF PROJECT DETAIL

There is not enough project detail presented in the DEIA. The constant use of the phrase “an envelope” is not acceptable for an EIA of this magnitude. It is thus necessary for detailed site specific project information to be made available to the key stakeholders, I&AP's and specialist consultants. This should include a detailed layout, cross sections of excavations, positions of stock piles, intake and outfall tunnels, desalination plants, visual impression in the landscape, details of associated

infrastructure, roads, transmission lines, the placement of the construction village for employees and labour etc.

Even some of the specialists found it difficult to comment without more detailed information and they record this as one of the limitations. We therefore maintain that unless more information is provided about the exact design and footprint of the proposed NPS – we cannot be expected to comment.

Furthermore we would again like to point out that the most glaring example of omission of material information is the failure to indentify the specific PWR technology to be used. Eskom justifies this in terms of an “envelope of criteria”. What this fails to acknowledge is that the EIA is premised on the use of Generation III technology, which government has indicated is “not affordable”. Eskom spokesman, Tony Stott, has confirmed verbally that departure from Generation III would nullify the entire EIA.

5. STRUCTURE OF THE DRAFT ENVIRONMENTAL IMPACT ASSESSMENT

The structure and layout of the DEIA report makes it extremely difficult to study, read and comment on. We would like to recommend that in the next draft EIA document the three sites be published in separate volumes and that all related specialist studies are published under the name of the site. The Executive Summaries of the various reports can be used in all three volumes.

Furthermore, reports should not contain sentences like: “the potential threats and impacts of the (select any pertinent infrastructure item) are described as part of the Duynefontein site and remain the same for the Thyspunt site.” Modern technology allows for cutting and pasting & specialists should ensure ease of use of their report. It is daunting enough for the laymen to read and comment on these reports and a more user-friendly document will go a long way in allowing for effective public participation.

6. RELATED INFRASTRUCTURE

It is of great concern that the term “related infrastructure” is used to describe projects that would under normal circumstances require a full EIA under the NEMA regulations. It would be acceptable if the “related infrastructure” was at least discussed in some detail and if plans and diagrams were supplied and all impacts discussed. This is however not the case. We recommend that a full chapter with descriptions, detailed maps and all possible impacts of all related infrastructure be included in the next draft EIA.

Related infrastructure referred to includes:

- Three proposed new roads – With the proposed eastern access road planned to cross a water-saturated shifting dune system
- Intake and outfall tunnels – no engineering drawings available. Specialists' reports seem to differ in the size, depth & length of these structures. One study indicates a submarine tunnel extending to a depth of -29CD approximately 1000 meters offshore for the intake and an outfall structure comprising of six 3m diameter pipes buried below the seabed in a 27.5 m wide trench, discharging 250 m offshore.
- Gas Turbines
- 2 Desalination Units with a combined capacity of 4000m³/per day
- Aviation Fuel Storage Facility
- Sewerage and waste water plant

7. CUMULATIVE IMPACTS

Although Chapter 9 of the DEIA presents the IA&P's with some information as to cumulative impacts it does not address all the elements. We therefore request that a full chapter be added where all the cumulative impacts are addressed. We do not find any reference to the cumulative impacts on the basic services of an already overburdened local authority. Although the commission of a Strategic Environmental Assessment (SEA) is not the responsibility of the EIA consultants, we feel that for a project of this scale with the potential to have a tremendous impact on an already overburdened system a SEA should form part of the study.

8. SPECIALIST REPORTS

8.1 General

This submission shows that there are serious shortcomings in the specialist reports commissioned in terms of this EIA. At a meeting held on 25 May 2010 in St. Francis Bay, where seven specialists presented their reports, it was clear that five of the reports would require revision. The reports are generic and have failed to incorporate site specific and local knowledge.

We find it disturbing that mistakes, omissions and shortcomings pointed out during the scoping phase and at the various meetings, were ignored and these mistakes, omissions and shortcomings are still present in the DEIA. Recommendations and valid suggestion by I&AP's were also largely ignored. The

two most glaring omissions are the complete lack of information about the impacts on the squid industry and the ignorance towards the complex nature of the headland bypass dune system.

Despite the assurance of the project consultant that the reports were reviewed, there are still images, figures and tables missing from a number of the reports. If these documents were reviewed, the responsible people should have noticed these omissions.

8.2 Biophysical

It appears evident that the applicant, Eskom, is manipulating the process and the outcomes recommended in these reports.

In most of the reports it is noted as a verbatim conclusion that:

“ due to the extreme sensitivity of the site that should the Nuclear Power Station not go ahead that Eskom could sell the site and there could be unforeseen negative impacts on the sites created by other developments as the stringent controls implemented for a nuclear site may not materialise for any other development.”

This was quoted in the reports dealing with:

- Fresh Water Supply,
- Geo-Hydrology,
- Terrestrial Invertebrate Fauna,
- Terrestrial Vertebrate Fauna,
- Wetlands and
- Floral Assessment.

We found this statement irresponsible and bordering on blackmail. It is like saying: “If you do not allow this project to continue far worse things will happen.” The authors fail to recognise the National Environmental Management Act, the Integrated Coastal Management Act, the Biodiversity Act and several other acts and papers. Any new development will have to abide by the same laws and will have to comply with all the relevant NEMA regulations.

They automatically make the assumption that the no-go alternative indicates that ESKOM will sell the properties to other developers and that may cause even more damage than a NPS. This assumption is

untrue, not only because of the reasons listed above but also because the opportunity exists to maintain these sites with an even higher conservation rating as was proposed in the early 1980's.

The Freshwater Ecology report maintains that the site forms part of a **globally unique ecosystem** with **irreplaceable freshwater biodiversity**. The Dune Geomorphology report similarly emphasizes the **unique features of the mobile dune systems**. Both these reports, as well as the Vertebrate and Invertebrate Faunal Assessment report state that impacts on these ecosystems by establishing infrastructure **cannot be adequately predicted at present**. Thus, the establishment of a nuclear facility on the site flies in the face of South Africa's commitment to international conventions regarding biodiversity and wetlands, as well as local legislation (Biodiversity Act of NEMA) which requires that critical support areas such as the dune fields and wetlands should be safeguarded.

The prevailing and powerful paradigm in natural resource use is the notion that natural ecosystems provide services of great value (monetary or otherwise) to humankind. Yet none of the reports attempted to quantify the value of the site's ecosystem services and build this into a comprehensive benefit-cost analysis. In today's world, where we are beginning to appreciate the folly of the wholesale replacement of natural capital by man-made capital, this is simply unacceptable

Ecosystem services provided by the site include provisioning services such as water and the dune field comprises a discrete catchment with an excellent supply of potable water which could be sustainably used to supplement the region's water supply from the Kromme dams. Other services ignored include the existence value of an incredible archaeological record comprising evidence of human occupation from Early Stone Age (1.5 My) to the post-industrial age (few places in the world can boast this). Eco- and cultural tourism are other services that have been ignored. It may well be that the value to humankind of safeguarding the bypass dunes and associated wetlands may be greater than the benefits of establishing the facility on this site. The analysis needs to be done by a competent consultant.

Given the biological uniqueness of the site, the quality and quantity of ecosystem services that it provides, and its dynamic and unpredictable physical characteristics, it is recommended that the site and adjacent areas of the bypass dune landscape are proclaimed a conservation area and managed accordingly

8.3 Dune Dynamics

The dynamics of the dune field and associated wetlands are not sufficiently well understood to mitigate against catastrophic events. Specialist reports APP E 12 (Freshwater Ecology), APP E 2 (Dune Geomorphology) and APP E 7 (Geohydrology) agree that the dynamics of the system are imperfectly understood. (See also the report by Prof Fred Ellery of Rhodes University).

Moreover, specialists have failed to consider rigorously the likely impacts of climate change on the dynamics of the system. Rising sea levels and increasing wind and wave regimes are likely to re-supply re-energize the by-pass dune field. Moreover, a higher frequency of flooding events, as predicted by climate change models, will undoubtedly exacerbate the catastrophic dynamics described in Prof Ellery's report.

In summary, the specialist reports fail to provide an adequate assessment of the risks to both infrastructure and to nature of locating potentially lethal facility in a soft landscapes characterized by complex dynamics of wind, sand and water. **This is a fatal flaw.** The facility must be located in a less risk-prone environment.

We demand that these reports be revised and that a No-Go recommendation be submitted with the option that the site be recognised as a RAMSAR site forming part of the coastal cluster of the Baviaanskloof Mega-reserve.

8.4 Marine

We consider the Marine Ecology Study as nothing more than a desktop report that made use of various publications to form conclusions about an area that the specialists have very little knowledge about. We fail to understand why the Project Consultant did not make use of local specialists that have a better understanding of the environment as was requested in the scoping phase.

Constant reference is made to the large body of knowledge that has been gathered following the establishment of Koeberg Nuclear Power Station. The conditions at Koeberg and at Thyspunt cannot be compared and therefore the knowledge gained at Koeberg has got very little value for the situation at Thyspunt. Not only is the marine environment completely different but the design of the proposed

new NSP is different. (i.e. Koeberg has a coffer dam whereas a trench (1.5 km X 25 m) to hold the outlet pipes is proposed for Thyspunt).

The Marine Ecology Report fails to adequately address the possible negative impacts on the squid industry, marine teleosts, chondrichthyans and marine mammals. In actual fact the report relies heavily on previous publications of which the most recent one used is dated 1994. This in spite of the fact that there is a Squid Scientific Working Group that can provide more recent details on the behaviour and distribution of the species. This group was never consulted or approached for information.

The most important omission in this report is therefore the complete lack of information on the possible impacts on the squid industry, marine teleosts, chondrichthyans and marine mammals. At the minimum a survey of the reef environment between Seal Point and Oyster Bay is required. It is our understanding that a detailed geological survey was completed; therefore the reef areas from the subtidal zone to a few km offshore should be available. This can be used as a basis for a reef related study. The report takes very little notice of the fact that a discharge of 6,37 million cu meters of sand/spoil into the sea, probably at a depth of 50m and a distance of 1-2 km offshore will, according to all indications, destroy the squid breeding grounds of the area. Currently, according to SASMIA figures, around 33 -38% of squid caught by boats operating in the area are caught between Cape St Francis and Oyster Bay, up to 2km offshore

The Marine Ecology Report furthermore quotes details from the Nuclear Site Investigation Programme (Eastern Cape 1988) to describe the benthic environment. Even in these early studies a detailed baseline study & subsequent monitoring programme is suggested, this it would seem has still not materialised. In a letter dated 19 January 2010, The Department of Environmental Affairs (DEA) accepted the final Plan of Study as presented by Arcus Gibb and provided details of the conditions associated with the acceptance. Condition 1.8 states: "Specialist studies must be undertaken with a strong element of ground-truthing and must be done in the appropriate season." We hold that the Marine Ecology Study does not comply with this condition in relation to Thyspunt.

Condition 2.1 states that the DEA will accept the scope of work based on the understanding that all issues raised during the scoping will be comprehensively addressed by the environmental assessment practitioner. Arcus Gibb responded: "Gibb confirms in a letter dated 15 February 2010, that all issues raised during the scoping will be comprehensively addressed by the EAP.

In a document commenting on the Draft Scoping Report and submitted in 2008, the then Ajubatus Marine & Wildlife, now Penguins- Eastern Cape made the following request and included the name and contact details of Prof Warwick Sauer, an expert on the species *Loligo reynaudii*.

“Although the terms of reference include the possible impacts on marine species, in the Thyspunt area very specific attention should be given to any possible impacts on the squid population, as this industry is one of the main industries in the area”

From the above it is clear that all issues raised during the scoping phase have not been comprehensively addressed.

It was also requested that a detailed study be conducted on the effects of entrainment. The Marine Ecology Report holds that: “No species of commercial value are likely to be affected by entrainment.” Does this mean that species without commercial value do not count? The report is of the opinion that there will be no real effects on the environment due to the entrainment of organisms. We find this strange in the light of the fact that the State of California has just recently adopted new rules that will require power plants to reduce their impact on aquatic wildlife. The new rules require power plants that withdraw and return marine water for cooling to stop the practice and install equipment to reduce their impact on marine life. These new rules are based on years of research. The scientific document that was published after these studies were concluded was provided to Arcus Gibb, but it was also seemingly ignored.

Point 1.2.1 the report assumes that the chlorination regime applied to abstracted cooling water will consist of sodium hypochlorite produced by electrolysis of inlet seawater to produce an estimated 2 mg/kg of chlorine on a continuous basis. No mention is made of the 3 times per day 15 minute shock treatment at a rate of 4mg/kg.

In point 3.3.2 of the study it is stated that the higher ambient water temperatures than those occurring at Koeberg are expected to increase the toxicity of chlorination. The report then makes the startling and completely unscientific statement that long term climate change induced decreases in sea-surface temperatures indicated for this area may reduce this effect. On page 9 of the Oceanographic Impact Assessment, Table 1.2 (Adopted parameters for climate change to year 2100) an increase of +3°C is indicated. The impacts of the possible toxicity of the chlorination should have been discussed in far greater detail.

We cannot accept the findings of this report as credible as we do not believe that any real form of ground-truthing was done. We believe that the dumping of 6.3 million cubes of spoil in the Marine Environment constitutes a **FATAL FLAW** as no studies are available to prove that mitigation will be effective.

The Marine Ecology report clearly states: *“Disruption due to discharge of spoil: This impact will negatively affect the environment. Acting with high intensity, the discarding of spoil will have long term effects resulting in this impact being rated as having high consequence and high significance.”*

8.5 Heritage

It is again noted with concern that a local specialist with intimate knowledge of this area was not appointed to conduct this assessment. We believe that the information provided about the archaeology of the area is accurate, and substantiates the fact that the KhoiSan community does have a vested interest and rights with regard to the majority of the cultural heritage situated within the study area.

We do not regard mitigation as a viable option for an area with the unique non – renewable resources as specified in the Heritage Impact Assessment (HIA). Mitigation will have no benefits for the cultural group affected by the "rescue operation", especially if the majority of the archaeological sites will be destroyed as a result. The Khoikhoi and San heritage of this area will only have benefits for the research community if it is removed, and in our view it should be preserved in context for future generations as part of a National Cultural Heritage Site. Our view is supported by the HIA results and the author confirms that:

"Mitigation can be achieved through scientific recording, sampling or excavation - however these are also destructive processes. In general, full rectification of heritage impacts is not normally possible in the case of archaeology unless the archaeological sites can be conserved in their entirety."

The consultants have indicated that even mitigation is destructive, and since Thyspunt is regarded as the most sensitive of the sites it should have been scoped out of the process on its cultural heritage value alone. The fact that it has not been done shows that they do not understand that the issues that should be considered are far more complex than merely providing power to the country.

The Khoi and San people regard all archaeological material and sites linked to their culture as of spiritual significance and sacred. These heritage resources are equally deserving of protection similar to the protection offered to other religious minorities in the country (See the Supreme Court of Appeal decision in : Oudekraal Estates (Pty) Ltd v. City of Cape Town and others)

The HIA results show that a project of this nature will not only have an impact on the resources of a local KhoiSan community, but that the cost to the national estate may be high. It is therefore also a national issue, requiring consultations with national Khoi and San structures as specified above. The fact that this has not been done to date constitutes a serious flaw in the public participation process.

We believe that the Thyspunt study area should be declared as a National Heritage Site as well as afforded the environmental protection due to such a sensitive site. The value and spiritual significance of this site for the First Nations of South Africa should not be ignored

8.6 Social

In respect of the Social Impact Assessment, it is noted that it is purely theoretical, and is based on minimal factual basis. The Social Impact of a NPS at Thyspunt is regarded as one of many serious issues raised by this proposal. This applies especially, but is not limited, to the construction phase. Any shortcomings in the Assessment are therefore taken seriously by the community, in that they could lead the responsible authority into an ROD based on inadequate factual information or poor judgment by the specialist.

The potential social impact of huge volumes of traffic, uncontrolled influx of unemployed job-seekers and accompanying illegal informal settlements, probable industrialisation of the area and total change of sense of place cannot, either jointly or severally be described in terms of medium impact as it bears no relation to the reality on the ground.

The construction of an NPS at Thyspunt will almost inevitably lead to the growth of service industries to supply the plant, as happened at Mossel Bay with the arrival of Mosgas. This has changed forever the whole character of Mossel Bay, which is now an industrial town, and the same will happen to the Greater St Francis area altering its 'Sense of Place' irreversibly. Unbelievably, this is not even discussed in the Social Impact Assessment.

In light of the above, the Social Impact Assessment should be rejected in its entirety on the grounds that:

- The study does not reflect the Revised terms of Reference;
- The study does not include material required by the Revised Terms of Reference (ToR), such as accurate holiday population figures for the Greater St Francis area, or any other specific statistics on which such a report must be based; the International Atomic Energy Association (IAEA) states clearly that in the absence of reliable data, a special study shall be carried out. The specialist based his studies on the findings of the 2001 Census. These figures indicate that there are no children between the ages of 0 – 9 in Cape St. Francis and only 5 people between the ages of 40 – 44. It is therefore clear that the figures used are unreliable.
- The study is purely theoretical, and draws conclusions based on no factual evidence;
- The assessments of cumulative impacts and impact on sense of place are completely inadequate,
- The study proposes inadequate mitigation measures.

The “specialist” is clearly not competent to make the required value judgments, based on the factual evidence. It is therefore requested that the Social Impact Assessment be re-done in its entirety, by a person with proven practical competence, and based on full factual and local information, rather than on theory and speculation.

8.7 Economic

The Economic Report was reviewed and it concludes that the Report, as applied to the Thyspunt Nuclear Site:

- Is not comprehensive, i.e. important areas are not covered,
- Includes factual errors,
- Is biased in favour of what appears to be a pre-determination to favour the Thyspunt site for erecting Nuclear 1 and is clearly not impartial

According to figures published in this Economic Report, an average of 7000 tons of squid are caught in the Eastern Cape per annum, and sold at an average price of €7-00 per kilo. At current exchange rates this amounts to R480 million per year. A loss of 33% (around 33 -38% of squid are caught by boats operating in the area between Cape St Francis and Oyster Bay, up to 2km offshore) 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 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 economic 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. No mention is made of this in any of the specialist reports, including the social impact report.

Furthermore, under the above scenario, squid operators would be forced to work further afield. (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 more 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. As mentioned above, this industry employs some 4000 people and produces a revenue of close to R500 million per annum. This would amount R25billion over the construction period and life of the NPS. If an 8% Present Value factor is applied, over 50 years this would amount to R6,1billion.

The harbor based at Port St Francis is financially dependent on the squid industry and will become unviable to operate as the income generated from recreational moorings will be insufficient to cover the harbor’s expenses. This will result in further job losses which can be directly linked to the Thyspunt development. The potential demise of the harbor will have a further serious economic knock-on impact on the value of Port St Francis and its dependent Villages which is estimated to be R500 million by the Kouga Municipality

The review of this Economic Report Concludes that the Present Value Matrix in figure 3.24 must therefore be altered to incorporate the following losses for the area and additional costs for the Thyspunt NPS:

COST ITEM	VALUE
Roads and Bridges additional cost	R500m
Squid Fishing loss	R1,6 billion to R6,1billion
Tourism loss	R114m
Agriculture loss	R2,1 billion
TOTAL	R4,3 billion to R8,8 billion.

By including 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. These would amount to between R4,3 billion and R8,8 billion at Present Values and 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.

In addition, 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 un-hygienically and illegally. There is a severe water shortage and water restrictions have been in force since December 2009. These are likely to continue well into 2011. The Kouga Municipality would not be able to cope with the influx of staff and their dependents during the construction phase which is in the vicinity of 25.000 people in all, if families and dependents are included.

Further regarding the cost of transmission lines, in calculations in the Draft EIA report, 400kV transmission lines for Thyspunt are said to cost R10,6m per km. The figure for the same 400kV transmission lines for Duynefontein are said to be R26,8m per km. How can identical transmission lines cost 2,5 times more for the Duynefontein option? These figures appear to be skewed in favour of the Thyspunt option.

The above clearly demonstrates that the economic report is badly flawed with factual errors, omissions, and incomprehensible conclusions and the integrity of this report must be queried.

8.8 Agricultural

The Agricultural report fails to include any table or research that illustrates exactly how the authors arrived at one of the key assumptions of the Assessment namely with the advent of the construction of the nuclear power plant, Thyspunt farmers gross value of production would increase by 10 to 15%, Bantamsklip by <5% and that at Duynefontein there would be no significant impact. We regard this as a fatal flaw in the impact assessment.

We contend that it appears inconceivable that the area with the most agricultural potential be allowed to be exposed to inappropriate industrial development in the area. The influx of workers and their families will necessitate urban and infrastructure development

It is very significant that this study is excluded from addressing and fails to emphasize that two major transmission lines will cut through prime dairy pastures which have the highest agricultural potential of any of the other sites being evaluated. Not only is this a security risk as a servitude would have to be awarded to Eskom but it would also pose an infection risk should there be an outbreak of any bovine disease

It is reckless that the study does not address the issue of stock theft where a farm with 6500 sheep on it falls within the Thyspunt area. Over and above this numerous other substantial sheep farms occur within a 30 km radius. Surely this should be listed as a potential negative impact?

After consultation with the biggest dairy producers in the study area we fail to understand how the authors came to the conclusion made in the executive summary that Thyspunt farmers gross value of production would increase by 10 to 15%. Dairy production will not increase at all because of natural constraints such as the availability of land and irrigation water. One of the problems with dairy farming in the Tsitsikamma is that the stock numbers are too high which results in the industry being vulnerable to droughts etc. With the exception of one small dairy farm, all milk produced in the area is sold to national distribution and processing companies. Dairy farms are running to full capacity. The local market growth would thus have no positive impact on production or sales.

Finally it is not possible to understand how the authors came to the conclusions reached in their final summary. The quantum leap taken to assign positive impacts on the various sites are not documented, major risks such as stock theft are not dealt with nor is the impact of human settlement in the area fully spelt out. **It is thus extremely important that the Agricultural Impact Assessment is weighted correctly when a site selection is made.**

9. CONCLUSION

As indicated above, most of the specialist reports are factually incorrect and require further detailed investigations. These shortcomings have been transferred to the EMP as “mitigations” and are listed as further detailed investigations that should be done prior to construction. It is not appropriate to forward these unresolved items into the EMP with the assumption that an Authorisation will be granted for an EIA.

In addition, there is extreme dissatisfaction with the fact that no information has been forthcoming on the Integration Workshops / plenary meeting of specialists at which the weightings of specific areas was determined, or of the criteria used to determine these as this will have a material influence on the recommendation to DEA.

It is clear from the DEIA that the seismology of the site carries a large weighting in site selection. While we fully understand that Nuclear Power Stations and earthquakes do not go together we fail to understand why other environmental factors that can have the same risk for a NPS are not discussed in more detail.

The study fails to provide an adequate assessment of the risks to both infrastructure and to the environment of locating a potentially lethal facility in a soft landscape characterized by complex dynamics of wind, sand and water. This failure to describe the recurring debris flows in the study area and to explain their occurrence is a very concerning omission from this report.

The mitigation suggested by the specialist at the meeting on 25 May 2010 (vehicles should not be allowed to travel when it rains) to prevent possible disaster of a vehicle carrying nuclear waste from being buried by an unexpected debris, would be comical if the matter were not so serious.

We consider the placement of a NPS in a risk prone environment as a fatal flaw. The facility must be located in a less risk-prone environment.

In the light of the above and the various submissions by the Thyspunt Alliance member organisations, it is our view that the entire EIA process should be discontinued pending reinvestigation of the following:

- More rigorous site investigations beyond the three pre-determined Eskom owned sites currently under consideration,
- Further investigation in respect of sustainability in view of international precedent which points to the financial and technical challenges and subsequent time delays associated with the Generation III PWR,
- Further investigation into the international trend for the provision of base loads through renewable energy and smart grids as SA has abundant solar and wind power,

In addition, it is our contention that the NNR process should run in parallel with the EIA process, and not be divorced from it, since critical aspects are inter-related

We maintain that the current EIA process is being informed by a site selection programme that was conducted during the 1980's and therefore based on outdated information. We hold that this is in itself a **fatal flaw**. With the advent of democracy and a new constitution, environmental considerations have been much more clearly defined. New legislation includes:

- The Environmental Conservation Act ,1989 (Act No. 73 of 1989) (“ECA”) and the
- The National Environmental Management Act, 1998 (Act No. 107 of 1998) (“NEMA”)
- Other specific Environmental Management Acts include the National Environmental Management Biodiversity Act, 1998 (Act No. 10 of 2004)
- The Integrated Coastal Management Act (Act no.24 of 2008)
- Marine Living Resources Act No 18 Of 1998

We therefore hold that the original ESKOM brief to exclude sites purely due to their proximity to the old homelands is unconstitutional. ESKOM should have been pro-active, the Nuclear Site Investigation Programme should have been updated and revised to take new regulations and changing factors into account.

ESKOM have now had 15 years to re-investigate sites that would not only be far better from an environmental perspective but also be closer to areas where the relevant infrastructure is more developed and where the electricity is actually required. The proximity to already developed infrastructure and power lines would also ensure cost savings.

We therefore conclude that ESKOM should reopen the Nuclear Site Investigation Programme with immediate effect.

In final conclusion, we state that we are committed South Africans that do not want to jeopardise the development of our country. However, we do not believe that this development should be at the expense of our environment. This region is not a priority for the government and has therefore never enjoyed massive support or development from national, provincial or local government. Most of the development that has occurred and continues to occur is through the efforts of the local community. The majority of employment created in this area is through the squid and tourism industries. Our

concern is that the development could negatively impact this already vulnerable economy and environment and it is our opinion that this globally unique ecosystem be recognised as a RAMSAR site forming part of the coastal cluster of the Baviaanskloof Mega-reserve.

We suggest the formation of the Coastal Cradle of Humankind National Park. This National Park will not only ensure the protection of the heritage of the First Nations but also the sensitive environment with a wonderful opportunity to generate income through a wide variety of tourism activities.

Trudi Malan

On behalf of the Thyspunt Alliance

The Thyspunt Alliance is a group formed to represent the interests of the various civic, resident, sporting and environmental associations in the Kouga Municipality. The Alliance consists of the groups listed below:

PHOTOGRAPHIC OVERVIEW – PAGE 23

- 1 & 2. The Oyster Bay headland bypass dune, looking west from the edge of Links Golf Estate. This massive system is unique in South Africa. It is also highly dynamic in a way that is not fully understood by specialists.
3. Dune slack wetlands in the Oyster Bay dune field. The Thyspunt site includes seven Wetlands, including several of utmost conservation significance. The Freshwater Ecology Report (APP E 12) states that the impacts of establishment of the proposed facility on the site's wetlands would be of "very high negative significance" without "implementation of mitigation measures". However, these measures will be difficult to implement and costly. Furthermore, several reports acknowledge that the dune-freshwater system is not sufficiently well understood and requires further investigation.
4. From the site looking towards Cape St. Francis
5. Wetlands looking towards the site
6. *Satyrium Hallackii Sub. Hallackii*
- 7 & 9. Langefontein Wetland
- 10 & 11 Damage caused by debris flow

ORGANISATION	REPRESENTATIVE	E-MAIL OR CELL NUMBER
St. Francis Residents Association	Hilton Thorpe Joe Oosthuizen Mike Simms	hbthorpe@telkomsa.net joe@chemdry.co.za msimms@yebo.co.za
St. Francis Kromme Trust	Chris Barratt	lunit@icon.co.za
SASMIA South African Squid Management Industry Association	Greg Christy	gregchristy@intekom.co.za
Port St Francis Harbour Assoc.	Mark Rowe Coris Meyer	mark@balobi.com atlanticfishing@webmail.co.za
FOSTER Environmental NGO	Richard Cowling Shirley Cowling Helmie Tilders	rmc@kingsley.co.za scowling@kingsley.co.za helmie@intekom.co.za
Cape St Francis Civic Association	Trudi Malan Renee Royal	dolphin@intekom.co.za reneroyal@mweb.co.za
Supertubes Foundation	Tanya Lategan Cheron Kraak Allison Kuhl	wvjbay@mweb.co.za cheron@countryfeeling.co.za kuhljaz@intekom.co.za
FAST For A Safe Tomorrow	Ryan Donnelly	ryan@stfancisbay.co.za
Gamtkwa Khoisan Council	Kobus Reichert	kobusreichert@yahoo.com
Seavista Forum	Thobeka Petze Petrus Leen Alwyn Malgas	079 989 7886 072 769 5052
St. Francis Conservancy	Elisabeth Rautenbach	rautenbach@grasmereostriches.com
Ryszard & Tess Sterzelecki Private Landowners	Tess Sterzelecki	pupkis@sandalsquesthouse.co.za

