

**NUCLEAR 1 ENVIRONMENTAL IMPACT
ASSESSMENT AND ENVIRONMENTAL
MANAGEMENT PROGRAMME**

**SPECIALIST STUDY FOR
SCOPING REPORT: SOCIO ECONOMIC
A.B.J.DIPPENAAR: OCTAGONAL**



SPECIALIST STUDY: Social and Economic Impact Assessments

J27035

20 AUGUST 2007

**NUCLEAR 1 ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL
MANAGEMENT PROGRAMME**

SPECIALIST STUDY FOR SCOPING REPORT

SPECIALIST STUDY: Social and Economic Impact Assessments

CONTENTS

Chapter	Description	Page
1	EXECUTIVE SUMMARY	2
2	INTRODUCTION	4
	2.1 Description of Proposed Project	4
	2.2 Terms of Reference	5
3	BACKGROUND	6
	3.1 Legislative Framework	6
	3.2 Assumptions & Limitations	7
4	DESCRIPTION OF THE SITE AND SURROUNDING ENVIRONMENT	7
5	IMPACTS AND MITIGATION MEASURES	8
6	SITE SENSITIVITY ANALYSIS	22
	6.1 Criteria for Site Sensitivity Analysis	
	6.2 Site Sensitivity	
	6.3 Discussion and Recommendations	
7	CONCLUSION	23
	REFERENCES	23

1 EXECUTIVE SUMMARY

During the Scoping Stage the social / economic assessment identify the key social / economic issues that are likely to require more detailed assessment.

The key focus is to assist with identifying potential social / economic issues, respond to those that can be addressed without further assessment and advise on those needing further investigation, help to develop terms of reference of SEIA.

This socio – economic scoping report will focus on a broad range of relevant issues raised during the public participation process. These issues, however, will need more detailed assessment under separate impact assessment studies that include but not limited to:

1. Economic impact assessment;
2. Tourism impact assessment;
3. Agriculture impact assessment;
4. Heritage impact assessment;
5. Health impact assessment.

The “Sustainable Livelihoods” approach provides a very useful approach for identifying and assessing key socio - economic impacts and issues. The approach focuses on the “assets” or “capital” that people have at their disposal to overcome their vulnerability to poverty. In doing so it considers both sustainability and vulnerability.

Sustainable livelihoods are ensured by development that furthers the livelihood security of all citizens, especially those who are most vulnerable to external conditions that could threaten their livelihood security. One way of determining the impact of a project on livelihood sustainability, is to investigate what impact it would have on people’s access to **human, social and productive capital**.

A number of questions have been raised to assess the impact of each variable / indicator under the headings of social, human and productive capital from a literature point of view. In addition to these questions, a number of issues were raised by interested and affected parties related to the proposed development. The key components raised up till 7 August 2007 were summarized were applicable under each of the variables / indicators. It is possible that more issues may be raised during the EIA process that will need detail investigation.

SOCIAL CAPITAL

Population change

In-migration of unemployed work seekers

Change/disruption of power relationships

Disruption of social networks

Relocation or displacement of individuals or families

Disruption in daily living and movement patterns

Dissimilarity in social practices

Alteration in family structure

Increase in division between rich and poor

Exclusivity

Inequality

Conflict

HUMAN CAPITAL

Enhanced/reinforced economic inequities
Change in the commercial/industrial focus of the community
Change in employment equity of vulnerable groups
Change in occupational opportunities
Availability of appropriately qualified workers
Health, noise and visual impacts
Safety and crime impacts
Change in leisure opportunities
Access to environmental resources
Change in sense of place
Implications for social history

PRODUCTIVE CAPITAL

Change in community infrastructure
Change in housing needs/demands
Change in access to resources that sustain livelihoods
Land acquisition and disposal, including cost and availability of land

It is important to fully assess the impact of attitudes to risk. For the purposes of a social and economic impact assessment, risk needs to be seen as a subjective experience that is felt by, and is different for, everyone. Risk can be broadly defined as “the existence of a threat to life and health”.

People on different levels of society e.g. local, regional or national level, may have different views on what make a site sensitive from a human well-being perspective. Different sectors of society may also have different views on factors that contribute to site sensitivity. A variety of indicators can be identified to analyse site sensitivity on output, outcome or composite indicator level. On output level indicators can be linked to the economic contribution of the area to GG. On outcome level indicators can be linked to economic growth in the area and on composite level; indicators can be linked to peace, harmony and sense of place.

The impact assessment on human well-being needs to be a combination of different impact assessments which can complement each other towards cohesive integration. These impact studies include economic, agricultural, tourism, health and heritage. Although there are other impact studies that complement the human well-being assessment, it can be said that the afore-mentioned studies may have a closer relationship than may be the case with other related studies.

In order to ensure that the human well-being impact assessments complement each other, it is recommended that the different specialists related to the studies mentioned, need to co-ordinate their activities. The first step is to agree on the variables / indicators which will be used and which specialist will attend to which variable / indicator. Clarity between the specialists is needed on the methodology and the involvement of role-players in the assessment process.

2 INTRODUCTION

2.1 Description of Proposed Project

Eskom Holdings Limited is considering the planning, erection and operation of a new conventional nuclear power station and related infrastructure.

The activity comprises the Environmental Impact Assessment and Environmental Management Plan (EMP), which fall within certain provisions of the EIA Regulations, for the proposed construction of a conventional Nuclear Power Station and associated infrastructure to be built in the Western/Eastern and/or Northern Cape.

Scoping Stage

During the Scoping Stage the social / economic assessment identify the key social / economic issues that are likely to require more detailed assessment. It is also important to note that the public participation which is undertaken as part of the Scoping Stage differs significantly from the consultation undertaken as part of the SEIA (Socio-economic impact assessment). The aim of the public consultation process undertaken during the Scoping Phase is to inform the interested and affected parties of the proposed development and provide them with an opportunity to identify key issues and concerns that need to be assessed by the EIA. The typical format for this interaction includes public meetings, advertisements in local newspapers, workshops and open houses. The focus of the consultation process that takes place as part of the SEIA process is on social / economic issues. This requires in-depth one-on-one interviews with the affected stakeholders, focus group meetings, questionnaire surveys etc.

Assist with identifying potential social / economic issues, respond to those that can be addressed without further assessment and advise on those needing further investigation, help to develop terms of reference of SEIA.

This socio – economic scoping report will focus on a broad range of relevant issues raised during the public participation process. These issues, however, will need more detailed assessment under separate impact assessment studies that include but not limited to:

6. Economic impact assessment;
7. Tourism impact assessment;
8. Agriculture impact assessment;
9. Heritage impact assessment;
10. Health impact assessment.

These different categories for impact assessments can be clustered under the broad heading of **human well-being**. Although they can be assessed separately, they must be considered to be inter-related.

Well-being can be described as a good quality of life. Well-being and ill-being differ from wealth and poverty. Unlike wealth, well-being is open to the whole range of human experience, social, mental, spiritual as well as material. The report also aims to indicate at a conceptual level, what measures could be taken to mitigate potential impacts of the proposed development on social sustainability and well-being.

Livelihood security is basic to well-being. Livelihood security refers to secure rights and reliable access to resources that support well-being. Well-being is supported by equity, and the provision of equal opportunities should be a qualifying factor for all development. Development also needs to be socially sustainable, that is, it should be based on policies and actions with sustainable well-being and sustainable livelihoods as objectives for present and future generations (Chambers 1997)

Sustainable livelihoods are ensured by development that furthers the livelihood security of all citizens, especially those who are most vulnerable to external conditions that could threaten their livelihood security. One way of determining the impact of a project on livelihood sustainability, is to investigate what impact it would have on people's access to **human, social and productive capital**.

SITE SELECTION

The identification of the proposed Conventional Nuclear Power Station sites included the following important considerations:

Stable geology.

- Acceptable population density.
- Abundant water supply.
- Proximity to demand centres.
- Sensitivity of the physical and biotic environments.
- Cultural and historic issues.
- Nuclear safety, protection of human health and of the environment.

Based on the above-mentioned criteria the following sites have been identified for further investigation in the EIA:

- Bantamsklip (Western Cape located 10 km south-east of Pearly Beach).
- Brazil (Northern Cape located in Kleinsee/Port Nolloth area).
- Duynefontein (Western Cape located adjacent to the existing Koeberg Power Station, Cape Town).
- Schulpfontein (Northern Cape located in Hondeklipbaai/Kleinsee area).
- Thyspunt (Eastern Cape located West of Port Elizabeth near Cape St Francis).

The size of the proposed sites are around 2500 – 3000 hectares with the footprint of the actual power station expected around 31 hectares.

2.2 Terms of Reference

This Report relates to the **first phase** (Scoping Report - template provided by e-mail on 2 May 2007) of the Environmental Impact Assessment for the project “**EIA and EMP for the Proposed Eskom Conventional Nuclear Power Station and Associated Infrastructure**”.

This study will be undertaken from the premise that: “A socio-economic impact assessment examines how this proposed development will change the lives of current and future residents of the surrounding and broader community (locality).” As part of the Scoping Report, this Report will focus on the identification of variables / indicators that need further assessment in the EIA process against the background of socio-economic assessments.

3 BACKGROUND

3.1 Legislative Framework

The envisaged project is of national, provincial and local relevance and importance. Therefore it is imperative to take policies, guidelines and regulations from all of these spheres into consideration in the screening, scoping and assessment phases of this specialist study.

National context

The **need for social / economic assessment** is implicit in most of the environmental, planning and development policy and legislation developed since 1994 (see Scott, Oelofse and Weaver, 2001, p.8). Three major pieces of legislation that make reference to social and economic issues are the Constitution of the Republic of South Africa, the National Environmental Management Act and the National Water Act. Each of the acts contains rights, principles and objectives that require attention to be given to addressing social rights and issues.

At a national level there is no single unified economic development or planning policy relevant to economic inputs to EIA processes. In a very broad sense one can say that the key economic priority is poverty alleviation through job creation, following a free market system and targeted government intervention. This priority is reflected in the Reconstruction and Development Programme (RDP) and the Growth, Employment and Redistribution (GEAR) Strategy and also by the newly developed ASGISA strategy. It is also shared by inter-governmental bodies such as the New Partnership for Africa's Development (NEPAD) secretariat and a number of government departments within their own policies. These include the policies of departments that are more narrowly focused on supporting economic development through the initiation, support and regulation of projects on the ground. The economist's role is to highlight areas of conflict so that these can be considered during the decision-making process.

Provincial context

The Department of Economic Development and Tourism is the primary provincial government body in the Western Cape tasked with economic development issues. The mandate of the Department calls for, among other things, "stimulating significant economic growth; reducing unemployment; increasing participation in the 'first economy' by those consigned by historical circumstances to the province's 'second' economy; developing and enhancing micro, small and medium enterprises and co-operatives; promoting broad-based economic empowerment for black people, women, those living with disabilities, workers, those living in rural areas; ensuring that the benefits of a growing economy are spread equally across the province; defending, building, transforming and growing selected sectors of the economy, with a significant emphasis on the tourism sector; positioning the province to retain and enhance its positive position in the global economy" (PGWC, 2004).

The Department's strategic plan mentions that ideally the work of the Department should flow from an all-embracing micro-economic strategy which, in turn, should flow from a comprehensive and fully **integrated socio-economic development plan for the Province**. The Department of Environmental Affairs and Development Planning (DEA&DP) in the provincial government is also significantly involved with development on the ground, particularly through its formulation of the Provincial Spatial Development Framework (PSDF).

The Western Cape provincial government supports the bioregional planning concept at a provincial and local level and the Bioregional Planning Framework states that, "To promote sustainable development in the Western Cape, it will be necessary to institute planning and management systems that would facilitate a balanced integration of conservation and development interests in land-use and settlement planning.

Local context

Local and regional municipalities are the primary government body tasked with local economic and social development issues. In terms of the Municipal Systems Act, (Act No. 32 of 2000) it is compulsory for all municipalities to go through an Integrated Development Planning process to prepare a five-year strategic development plan for the area under their control. In addition, the White Paper on Spatial Planning and Land Use Management (Department of Agriculture and Land Affairs, 2001) states that, "Apart from the plan-making role of government, municipalities will also be charged with the responsibility of taking decisions on land development applications made to them.

Local government is the sphere of government at the coalface of land development. It is therefore important that this sphere of government be charged with the responsibility for making decisions regarding land development." The duty of municipal officials to prevent pollution and ecological degradation, to promote conservation and secure ecologically sustainable development and use of natural resources, originates from the Constitution and NEMA and has again been confirmed in the Local Government: Municipal Systems Act (Act No. 32 of 2000).

3.2 Assumptions and Limitations

This Report is based on information gained from site visits and inputs made by stakeholders, interested and affected parties during the general public participation process, combined with relevant knowledge from literature and own experience.

The list of issues/ potential impacts must not be seen as complete, but a first attempt to identify the most important key and critical issues that need further analysis and investigation during the EIA process.

4 DESCRIPTION OF THE SITE AND SURROUNDING ENVIRONMENT

The location of the 5 sites is as follows:

Name	Location	Status
Thyspunt	West of Cape St. Francis, Eastern Cape	Greenfields site, undisturbed, Conservation area
Bantamsklip	West of Cape Agulhas, Western Cape	Greenfields site, undisturbed, Conservation area
Koeberg	Cape Town (Atlantis), Western Cape	Next to existing power station
Schulfontein	Hondeklipbaai/Kleinsee area, Northern Cape	Mining land (Alexcor)
Brazil	Kleinsee/Port Nolloth area, Northern Cape	Mining land (Alexcor)

5. IMPACTS AND MITIGATION MEASURES

Although this Report focus on the Scoping Phase, which feeds into the Scoping Report, it is important to understand the key concepts regarding socio-economic impact assessments relevant to the EIA process. This background will contribute and enable better understanding for the issues identified during the scoping phase.

Social Impact Assessment in Perspective

Social impacts can be defined as “The consequences to human populations of any public or private actions (these include policies, programmes, plans and/or projects) that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally live and cope as members of society. These impacts are felt at various levels, including individual level, family or household level, community, organisation or society level. Some social impacts are felt by the body as a physical reality, while other social impacts are perceptual or emotional.” (Vanclay, 2002).

However, the issue of social impacts is complicated by the way in which different people from different cultural, ethnic, religious, gender, and educational backgrounds etc view the world. This is referred to as the “social construct of reality”. The social construct of reality informs people’s worldview and the way in which they react to changes. As a process, SEIA must enable and allow affected individuals and a community to identify what they feel constitutes social and economic impacts. This is likely to vary from individual to individual and likewise between different communities.

Social Impact Assessment is the process of analyzing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programmes, plans and projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment (Vanclay, 2002).

There is no distinction made in the SEIA literature between the **social change processes** and the **social impacts** that are experienced. Therefore, in order to identify and assess social impacts associated with a propose intervention one has to identify and understand how the social change process operate and the potential social implications. The core social change processes that will be covered in the EIA study are as follows:

- **Demographic processes** (changes in the number and composition of people);
- **Economic processes** (Relating to the way in which people make a living and the economic activities in the society);
- **Geographical processes** (Changes in land- use patterns)
- **Institutional and legal processes** (Changes in the role, efficiency and operation of governments and other organizations);
- **Empowerment processes** (Changes in the ability of people of get involved in and influence decision making processes)
- **Socio-cultural processes** (Changes that affect the culture of a society)

Based on the core values and principles the SIA process should seek to:

- Identify and assess the factors that contribute to the overall quality of life (social well-being) of people, not just their standard of living;
- Identify and assess the needs of vulnerable, at risk, groups and/or ethnic minorities or indigenous peoples;
- Identify and assess impact equity. Social assessments should seek to clearly identify which individuals, groups, organisations and communities stand to benefit from the proposed intervention and those that stand to be negatively affected. In so doing the assessment must identify and emphasize vulnerability and underrepresented groups;
- Identify and assess the gender aspects of impacts;
- Identify and assess the fit of the proposed development in terms of key legislative, policy and planning requirements;
- Acknowledge and value the existence of spiritual worldviews and the existence of sacred places;
- Acknowledge and value cultural diversity and differing value systems between and within cultures;
- Recognise that social, economic and biophysical systems and impacts are inextricably interconnected. Social assessments therefore, need to identify and understand the impact pathways that are created when changes in one domain trigger impacts across other domains;
- Acknowledge and incorporate local knowledge and experience into the assessment process;
- Identify and assess developmental opportunities and not merely the mitigation of negative or unintended outcomes;
- Address poverty reduction and seek to improve the position of the worst-off members in society;
- Identify and assess second and higher order impacts and cumulative impacts;
- Form an integral part of the development and planning process and inform all stages of the process, from Scoping to decommissioning and closure; and
- Identify and assess alternatives.

In essence, and for the purpose of this study, **social impacts** can be defined as impacts on:

- **People's way of life** – that is, how they live, work, play and relate to other people everyday
- **Their culture** – that is, their shared beliefs, customs, values and language. These impacts relate to changes in cultural values, violation of culture, the experience of being culturally marginalized, commercial exploitation of culture, loss or marginalization of local language and loss of natural and cultural heritage etc.
- **Their community** – its cohesion, stability, character, services and facilities
- **Their quality of living environment** – the quality of the air and water people use; the availability and quality of the food they eat and the level of hazard or risk they face etc;
- **Their health and social well being** – health is a state of complete physical, mental, social and spiritual well being and not merely the absence of disease or infirmity;
- **Their personal and property rights** – particularly whether people are economically affected, or experience personal disadvantage, which may include a violation of their civil liberties;
- **Their economic material well-being** - Impacts on economic and material well-being are linked to changes in workload, standards of living, economic prosperity and resilience, income; property values, employment, replacement cost of environmental functions and economic dependency etc.
- **Their fears and aspirations** – their perceptions about their safety, their fears about the future of their community, and their hopes for their future and the future of their children.

- **Institutional, legal, political and equity** - Institutional, legal, political and equity impacts relate to the capacity of government agencies to handle workload generated by a project, the impact on the integrity of government agencies and absence of corruption and competence of agency, impact on legal and human rights and social justice, the impact on participation in decision making and access to legal advice and impact on fairness of distribution of impacts across the community.
- **Gender relations** - Impacts on gender relations relate to impacts on women's physical integrity and the ability to make decisions about their own bodies, impacts on the personal autonomy of women, the gendered division of labour and access to resources and facilities and the political emancipation of women.

Impacts have the potential to jeopardise social sustainability if:

- They impact on or remove access to key resources required for subsistence and maintaining livelihoods;
- They threaten vulnerable groups;
- They threaten the health and safety of individuals, households and/or communities;
- They threaten cultural or heritage sites (historical, archaeological, palaeontological, burial, ceremonial, etc).
- They threaten lifestyles, traditions, and values;
- They threaten political stability and power relationships;
- They violate legislation or peoples' rights;
- They are inconsistent with accepted policies, plans, conventions or other international agreements;
- Impacts are unknown or uncertain and there is inadequate knowledge or information to predict them with confidence;
- They lead to substantial negative cumulative impacts; and,
- There is irreversible commitment of productive land for unproductive purposes.

Impacts would be inconsistent with equity and environmental justice principles if:

- There is unfair distribution of costs and benefits – vulnerable or disadvantage communities or groups worse off;
- Vulnerable or disadvantaged persons are unfairly discriminated against in the distribution of adverse impacts;
 - There is substantial diversion of resources to the detriment of the natural and/or human environment;
 - Inadequate attention is paid to compensation, trade-offs and substitutes;
- The gap in living standards between different income groups is increased rather than narrowed;

Economic Impact Assessment in Perspective

Economic impact refers to the effect on the level of economic activity in a given area as a result of some form of external intervention in the economy.

The goal with any economic impact assessments is to arrive at an estimate of the incremental impact that the investment may have on the local economy. In other words, those changes that will not have occurred in the economy in the absence of the planned investment.

The following impacts can usually be quantified:

- ◆ Direct impact: The direct impact is calculated from macro-economic aggregates occurring as a direct result of the project. The initial impact on GDP for example is taken from the financial information and equals the value added generated by a specific scenario.
- ◆ Indirect impact: Indirect impacts are calculated from the activities of suppliers. For purposes of this study, indirect suppliers include those industries who deliver goods and services to the activity under discussion (first round suppliers) including suppliers who on their part deliver goods and services to the first mentioned indirect suppliers.
- ◆ Induced impacts: The impacts are the impacts on goods and services demanded due at the project. Examples include the income of employees and shareholders of the project as well as the income arising through the backward linkages of this spending in the economy. The impact is sometimes confused with the forward linkages of a project.

The impact of any investment involves two phases, namely the initial construction phase, followed by the operation of the investment. The first phase involves the inflow of new capital into the economy, and the impact is a mainly a “once-off” event. The duration depends on the size of the investment and can vary from a few months, in the case of small to medium sized projects, to a few years, in the case of large and mega sized projects, like the one that is proposed in this document. The second phase is ongoing and involves the additional or new production and spending in the economy as a result of the investment. The extent to which the local economy actually benefits from such an investment (first and second phase), depends on its ability to “absorb” the investment and create a multiplier effect.

Addressing direct, indirect and cumulative impacts of socio-economic assessment

The socio - economic assessment should identify and assess the potential direct, indirect and cumulative impacts of a proposed activity. This requires the following:

- Conceptualisation of possible cause and effect pathways resulting from the proposed development;
- An understanding of the current socio-economic environment and future policies, plans, projects and activities in the area;
- An awareness of other threats or trends that could impact on individuals and communities in the area affected by the proposed development;
- An understanding of the likely resilience and status of affected communities and natural systems in the area affected by the proposed development;
- An understanding of broader strategic goals or targets for the area that would be affected by the proposed project;
- An understanding of peoples livelihood strategies and the linkages between the economic, ecological and social systems that operate in area that would be affected by the proposed project; and,
- An awareness of a range of potential economic, institutional, political and environmental scenarios that may impact on the social environment in the area.

The level of detail to which these should be considered will be influenced by the nature of the proposed project and the issues raised both during Scoping process and by the affected communities interviewed during the SIA.

5.1 Project Impacts and Mitigation Measures

Sustainable Livelihoods approach to socio-economic impact assessment

The “Sustainable Livelihoods” approach provides a very useful approach for identifying and assessing key socio - economic impacts and issues. The approach focuses on the “assets” or “capital” that people have at their disposal to overcome their vulnerability to poverty. In doing so it considers both sustainability and vulnerability.

The sustainability livelihoods approach has five categories of capital or assets, namely:

- Natural capital. This refers to the natural resources stocks from which resource flows and services that are used for sustaining livelihoods are derived. For typical rural communities these would include land, water, forests, water, marine resources, etc;
- Human capital. This represents the skills, knowledge and health that enable people to sustain their livelihoods. At the household level human capital relates to the amount and quality of the labour available. This will vary from household to household depending on household size, skill levels, gender, age, education, health status, etc;
- Social capital. Social capital refers to the social resources that people utilize to sustain their livelihoods. These include community and family networks, membership of informal and formal groups and organisations etc. In poor areas these networks provide a very important safety net for the poor;
- Physical capital. This consists of the basic infrastructure and equipment required to sustain livelihoods. Physical capital would include shelter, buildings, roads, communication networks, etc;
- Financial capital. These are the financial resources that people use to sustain their livelihoods. There are two main sources of financial capital: available stocks in the form of cash, bank deposits, etc, or assets such as livestock. In rural and traditional societies livestock and other assets form the most important source of financial capital.

The five categories of “capital” or “assets” provide a useful guide or checklist for identifying and assessing socio - economic impacts, especially for interventions set in a rural environment. However, they are also relevant in urban environments. The five categories of capital or assets used in the sustainable livelihoods approach also lend themselves to identifying and assessing the social change processes and causal links between the proposed development and the affected communities’ well-being.

Dr S Malan has developed SIA assessment variables / indicators for the sustainable livelihood categories of Social, Human and Productive Capital (Combination of a Natural, Physical and Financial Capital) that have specific relevance to the South African social environment.

The variables / indicators provide a general guideline, but should not be seen as an exhaustive description of possible social and economic impacts.

SOSIO – ECONOMIC IMPACT ISSUES

For the purpose of this Report as part of the Scoping Report toward the EIA, the following indicators / variables need further attention in the Social and Economic assessment process as they impact from the side of the project on the human environment or they impact from the side of the human environment on the project. At this stage, no thorough analysis and unpacking of the issues took place and therefore no mitigation measures are offered. Before any mitigation measures can be offered, much better understanding of these issues is needed and their potential impacts.

A number of questions have been raised to assess the impact of each variable / indicator under the headings of social, human and productive capital from a literature point of view. In addition to these questions, a number of issues were raised by interested and affected parties related to the proposed development. The key components raised up till 7 August 2007 were summarized were applicable under each of the variables / indicators. It is possible that more issues may be raised during the EIA process that will need detail investigation.

The various variables / indicators will be discussed in generic terms due to the fact that most of them have bearing on all 5 proposed sites. The intensity and the relative value of each variable will differ from site to site, but cannot be disregarded for any of the sites. Tourism activities as example are relevant to all 5 sites. The development however will impact differently on tourism activities at a local and regional level for each of the sites, and may have higher value at one site relative to other variables calculated at the same site.

SOCIAL CAPITAL

Population change

- Will the development lead to an increase in numbers of a certain section of the population, e.g. upper income classes?
- What would the impact of such a change be on the existing social environment?

This indicator assesses the number of new permanent residents or seasonal residents associated with the development, the density and the distribution changes in the composition of the population. Population impacts referring to acute or transient changes in the demographic composition (age, gender, racial/ethnic composition) of the population. From inputs received through the public participation process two specific aspects were considered namely potential changes commensurate with the introduction of people dissimilar in demographic profile in the first instance and the inflow of temporary workers in the second instance.

Issues raised during the public participation process include concerns about:

- The impact on people not living permanently in the area and how they will be involved in the consultation / assessment process;
- The correctness of current population figures and the extent to which provision is made for the rapid population growth in specific areas;
- Analysis of population density and number of people living within set restriction zones;
- Impact of temporary and permanent workers, in-migration on population numbers and the impact if families would join the workers

In-migration of unemployed work seekers

- Will the development intentionally or unintentionally contribute to the in-migration of work seekers into the area?
- What would the impact of this change be on the existing social environment?

Issues raised during the public participation process include:

- Possible negative social behaviour i.e. drugs, alcohol misuse, HIV/AIDS etc;
- Informal settlements after construction of workers who decided to stay after completion of construction phase;
- Impact of work seekers who do not manage to get employment and decided to stay in the area.

Change/disruption of power relationships

- Will the development impact on the levels of power, opportunity and access of individuals or sections of the community?
- Is the development being used for the political gain of a section of the community, and what are the implications for the larger social environment?

Although no specific issues were raised, analysis will be done on the impact on power relationships.

Disruption of social networks

- Will the development impact on existing social networks? This could be due to the presence of outsiders in communities with a high degree of homogeneity and cohesion: the introduction by outsiders of other social practices, such as increase in shebeens, gangsterism and prostitution: changes in the social ethos of the community due to the presence of outsiders: competition for scarce resources and employment opportunities.

Social integration can mean different things to different people, and depending on the context in which the term is used. For the purpose of this discussion social integration refers to promoting harmonious interaction and unity amongst all groups within a society. When promoting social integration one must be careful to insure that cultural diversity is respected and also recognise the social fabric of groups that fall outside of the modern mainstream.(e.g. poor population)

Relocation or displacement of individuals or families

- Will the development at this or future stages lead to the relocation of residents?
- What will the implications be for their livelihood sustainability?

Issues raised during the public participation process included:

- Impact and future of people living within restriction zones that may have to move.
- Impact on area if people decided to relocate due to the fact that they do not want to live near a Nuclear Power Station.

Disruption in daily living and movement patterns

- Will the development change the lifestyle of residents?
- Will the development impact on access to facilities and resources, such as schools, hospitals, fields, forests, etc?
- Will it impact on movement patterns, such as pedestrians crossing roads?
- Will it divide communities physically (e.g. through the building of a highway)?

Issues raised during the public participation process included:

- Access issues related to sea, beaches, roads, etc
- Impact on large number of people, especially during construction phase on the general lifestyle of communities either from the point of construction village or the accommodation of workforce in existing residential nodes. Where the workforce will live will impact on lifestyles.
- Impact on basic service delivery regarding water, sewerage, electricity etc
- Impact on other services such as the ability of hospitals and fire departments to cope with large number of people during construction as well as coping with disasters or emergencies.

Dissimilarity in social practices

- Do new residents have dissimilar social practices to current residents?
- Do the new residents have different values, religious practices, social standard, etc?

Issues raised during the public participation process included:

- Implications for current cultural practices of communities.

Alteration in family structure

- Could the development threaten family cohesiveness?
- Could it impact on immediate or extended family networks?
- Could it impact on the traditional roles played by members of the family?

Issues raised during the public participation process included:

- Impact on the workforce if they are not allowed, or no provision is made for the families.
- Impact on communities if large numbers of single persons are introduced to the area.

Increase in division between rich and poor

- Will the development exacerbate class equalities?

Exclusivity

- Will the development contribute to the culture of exclusivity?

Inequality

- Will the development increase unequal access to opportunities or resources?

Issues raised during the public participation process included:

- The extent to which local people will be able to utilize employment opportunities.
- Possible entrepreneurship opportunities and Black Economic Empowerment.

Conflict

- Will the development lead to conflict between sectors of the social environment?
- Is there conflict between the developer and the public?
- Is this conflict being addressed?

Issues raised during the public participation process included:

- Impact on current economic activities.
- Conflict amongst members within communities due to the fact of pro and against the development, sentiments.

HUMAN CAPITAL

Enhanced/reinforced economic inequities

- Will the development enhance or enforce class inequality?
- Will the development deny or enhance economic opportunities for vulnerable communities?
- What levels of economic opportunity will the development create?
- How sustainable are the employment opportunities created by the development?

Issues raised during the public participation process included:

- To what extent will emerging contractors be used in the construction phase.
- Impact on existing businesses.

Change in the commercial/industrial focus of the community

- Will the development change the income generating focus of the community?
- Do residents have the required skills, life experience and contextual understanding to benefit from the proposed development?
- Will a change in economic focus associated with the development have repercussions for social cohesion?

Issues raised during the public participation process included:

- Impact on the demand side of tourism industry – the extent to which less tourists will visit the area or to which extent it will hamper growth in number of tourists visiting the area.
- Impact on current economic activities in the area including the supply side of the tourism industry.

Change in employment equity of vulnerable groups

- Are vulnerable groups able to take advantage of changed employment opportunities associated with the development?
- Will vulnerable groups have to compete with more appropriately qualified applicants from elsewhere?

The proposed development would require considerable labour during construction. The scale of the development suggests that current labour patterns would be altered. This may include:

- Additional stress on the current labour pool;
- The immigration of potential job seekers from elsewhere, and
- Labour security.

Change in occupational opportunities

- Will the development lead to an increase or decrease in employment opportunities?
- What levels and types of employment will the development create?
- What types of skills will the development require?

Issues raised during the public participation process include:

- Impact on local businesses if employees prefer to utilize new employment opportunities created by the development of a nuclear power station.
- To what extent can the local community provide the required skills and can a well designed skills development strategy develop the required skills in order for local community members to benefit.
- To what extent can temporary workers be absorbed into the economy after the construction phase if they prefer to stay in the area?

Availability of appropriately qualified workers

- Does the existing social environment have appropriately -qualified workers?
- Are appropriate plans in place for skills development and acquisition?
- Will skilled workers need to be imported?

Capacity building, skills development and education ask the question how the skills and educational levels of individuals will be affected as a result of the development. The indicator addresses issues such as whether the development will:

- increase the capacity and the skills of individuals in the proposed development area;
- introduce any capacity- building programmes that will render a social benefit to the community;
- address education levels.

The important issue to address relates to what extent skills development during construction would be linked to local labour and sub-contractors employed on site and be limited to the duration of construction, commitment to train and support local entrepreneurs as sub-contractors, with emphasis on promoting Black Economic Empowerment. Targeted skills and training development need to be developed that will benefit labour and promote entrepreneurship.

Health, noise and visual impacts

- These are specialist areas which can have significant social implications.

The indicator assesses the various health impacts associated with the development i.e. how the population will be affected by possible changes in health resulting from the implementation of development. The impact of all three of these indicators will be assessed in separate studies. These studies will complement the social and economic impact assessments.

Safety and crime impacts

- How will the development impact on existing crime and safety patterns?

The issue related to the potential for increases in crime due to the development and how this may be mitigated need further assessment.

Issues raised during the public participation process include:

- Potential increase in crime and crime related activities.
- Ability to respond to emergency situations.
- Perceptions related to perceived risks.

Change in leisure opportunities

- How will the development impact on access to existing leisure opportunities, such as hiking, walking and swimming?

Issues raised during the public participation process include:

- A number of leisure opportunities were raised on which a nuclear power station may impact.
- Impact of perceived risk and fear on utilization of leisure opportunities.

Access to environmental resources

- Will the development impact on people's access to environmental resources, such as water, wood, medicinal plants etc?

Issues raised during the public participation process include:

- Impact on resources and access to resources such as water, fish, wild flowers etc

Change in sense of place

- Will the development impact on people's "sense of place", e.g. through the large-scale development of a rural community?
- How will the change "in sense of place" impact on people's relationship to the environment?

Issues raised during the public participation process include:

- Impact on current communities and visitors to the area feeling of peace, space, unspoiled or limited spoiled nature etc.
- People's feeling of anxiety, fear and stress related to a nuclear power station.

Implications for social history

- What are the implications of the development for the social history of affected communities?
- Will the development further marginalise communities that have been relocated during?
- Will the development affect processes, structures or patterns that are valued as part of the social history of an area?

Cultural and historical impact assesses social changes with regards to changes in:

- Customs, traditions and value systems;
- Historical and cultural artefacts;
- Structures and environmental features with religious or ritual significance.

Cultural and historical indicators aim to address questions such as how the customs and traditions of people will change as a result of the development.

Issues rose during the public participation process included:

- Key issues related to practices such as fishing; bait collection etc over long periods of time.
- Issues related to heritage values and conservation recognition.

PRODUCTIVE CAPITAL

Change in community infrastructure

- Will the development change any aspect of community infrastructure, such as crèches, clinics, schools, churches, formal or informal sports fields, open areas, dumping grounds etc?
- Will the development create increased demand for basic services, e.g. water, electricity, sewerage, roads?
- Will the existing access of the community to basic services be impacted by the development?

This indicator aims to determine the quality and variety of anticipated infrastructure, amenities and social services. The indicator addresses questions such as how will the current service level change as a result of the development.

Change in housing needs/demands

- Will the development create a housing need, e.g. due to the in-migration of construction workers?
- Has the need for more housing been addressed by the development and or the authorities?

The impact on the need for housing as well as possible impact on property values must be assessed. Assessment must also include due consideration of the impacts on local rates and taxes.

Change in access to resources that sustain livelihoods

- Will the development impact on people's (legal or illegal, formal or informal) access to environmental resources that help to sustain their livelihoods, e.g.
 - Grazing land for their cattle;
 - Fishermen's access to lagoons/lakes/the ocean;
 - Wood for heat/ cooking/ selling;
 - Rubbish dumps (for rubbish picking communities).

Issues raised during the public participation process included:

- Key issues related to coastal livelihoods e.g. fishing, the agricultural sector milk, cattle and sheep.

Land acquisition and disposal, including cost and availability of land

- Will the development contribute to or directly impact on the ability of local residents to keep or acquire property / land?
- Will the development lead to a significant increase in the cost of land/property in the area?
- Will the development set a precedent for change in land use in the area?
- Will the development result in an increase of land/property prices?
- Will the increase in land/property prices exacerbate class and race inequity?
- Are there any potential land-claims for the area?
- How would the development affect the claims process?

Issues raised during the public participation process included:

- Key issue related to property values and willingness for future investment.
- Impact on and insurance in event of evacuation.

ATTITUDES TO RISK

The public participation and key stakeholder workshops, as part of the scoping phase, has been characterized by high levels of mobilization that appears to have been based on a strong anti-nuclear sentiment. In addition high levels of fear and “dread” regarding perceptions about the potential risk attached to storage and management of high level wastes and pollution as well as the potential impact on health. Perceptions influence attitudes that can impact positively or negatively on behaviour patterns of individuals and communities. It is therefore of paramount importance to have a clear understanding of the origin of these perceptions and how they will impact on the development with clear management and mitigation measures. The purpose of this report is not to discuss the origin or impact of any perception that individuals of communities may have, but to strengthen the importance of calculating the impact and understanding the impact of perception.

Some of the perceptions raised regarding the proposed development include:

- A strong anti- nuclear bias.
- Mistrust of the institutions involved in the nuclear industry.
- Fears that quality of life will be affected negatively.
- High levels of perceived risk and fear, mostly as a result of health and safety concerns.
- Perception that the current emergency and evacuation response systems are dated and/or inefficient.
- Regard for the historic safe track record of nuclear activities in South Africa.
- Emphasis on the duty of care.
- Concerns about issues such as global warming.

Against this background it is important to fully assess the impact of attitudes to risk. For the purposes of a social and economic impact assessment, risk needs to be seen as a subjective experience that is felt by, and is different for, everyone. Risk can be broadly defined as “the existence of a threat to life and health”.

Given this definition, a social and economic impact assessment needs to relate social and economic effects to people’s attitude towards risk. It is important to understand the relationship between public attitudes and social and economic effects of projects which are seen by the public as imposing a risk to their health, safety or personal security.

People’s attitudes towards risk can be an important variable in determining the nature and significance of real, observable and measurable effects, regardless of whether the calculated risks are above a prescribed regulatory standard or are deemed to be improbable. To this end, SEIA is not an assessment of risk, but rather the next step in the process, that is, understanding and measuring the human consequences or responses to risky or threatening situations. The potential for stress and stigma to occur as a result of a project is an important consideration in SEIA. Research related to above have hypothesized that social and economic effects would occur if people in the community were likely to change their behaviour because of a specific project. Some of the effects include:

- Decreased population resulting from resident out-migration.
- Reduced business activity at businesses linked to environmental quality.
- Reduced property values as a result of changes in demand and reduced attractiveness of community to prospective homebuyers.
- Reduced use and enjoyment of community and recreational facilities and amenities; and
- Changed community cohesion.

6. SITE SENSITIVITY ANALYSIS

People on different levels of society e.g. local, regional or national level, may have different views on what make a site sensitive from a human well-being perspective. Different sectors of society may also have different views on factors that contribute to site sensitivity. A variety of indicators can be identified to analyse site sensitivity on output, outcome or composite indicator level. On output level indicators can be linked to the economic contribution of the area to GG. On outcome level indicators can be linked to economic growth in the area and on composite level; indicators can be linked to peace, harmony and sense of place.

6.1 Criteria for Site Sensitivity Analysis

- Potential for alternative land uses in combination with potential growth in business activities and contribution towards GGP.
- People access to beaches, open space, etc linked to peace, harmony and sense of place
- People's attitude towards risk, real or perceived, linked to changes in behaviour.
- Population density linked to standard of living as well as quality of life.

[Important to note that a study done by UCT indicate that the Komaggas community claims that Brazil and Skulpfontein belonged to the community, could not be verified. The findings indicate that there is no legal impediment to Eskom purchasing the land. (August 1993)]

6.2 Site Sensitivity

Purely based on a preliminary assessment of the 5 proposed sites, it is clear that applying above set of criteria, the Western and Eastern Cape sites are far more sensitive for the proposed development than the Northern Cape sites. More detailed analyses of these criteria will be required during the EIA process to calculate the relative value and truth and to give substance to any conclusion drawn from the findings.

6.3 Discussion and Recommendations

It is clear from the scoping process, based on inputs from various interested and affected parties and relevant literature, that different people and communities apply different sets of criteria/ indicators / variables when they assess the social and economic impact of the proposed development on their area. Different value systems, principles and current realities influence the way people relate to the proposed development in a positive or negative way. Perceptions, right or wrong do influence attitudes and further down the line people's behaviour.

The sustainable livelihood model provides a basis for the assessment of possible impacts of the development on the human environment and how the human environment can impact on the development. For each of the sites a set of indicators / variables is needed that can be used to assess possible impacts and the relative nature of these impact, as well as the relative value of the impact in comparison to other variables / indicators.

The impact assessment on human well-being needs to be a combination of different impact assessments which can complement each other towards cohesive integration. These impact studies include economic, agricultural, tourism, health and heritage. Although there are other impact studies that complement the human well-being assessment, it can be said that the afore-mentioned studies may have a closer relationship than may be the case with other related studies.

7 CONCLUSION

In order to ensure that the human well-being impact assessments complement each other, it is recommended that the different specialists related to the studies mentioned, need to co-ordinate their activities. The first step is to agree on the variables / indicators which will be used and which specialist will attend to which variable / indicator. Clarity between the specialists is needed on the methodology and the involvement of role-players in the assessment process.

Role-players must have a clear understanding of the variables / indicators which will be used and the methodology to assess the impacts of the variables / indicators relative to each other but also relative to each site.

20 August 2007

REFERENCES

1. GUIDELINE FOR INVOLVING SOCIAL ASSESSMENT SPECIALISTS IN EIA PROCESSES. Prepared for DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING, WESTERN CAPE PROVINCE FEBRUARY 2007 Prepared by Tony Barbour
2. GUIDELINE FOR INVOLVING ECONOMISTS IN EIA PROCESSES. WESTERN CAPE GOVERNMENT JUNE 2005
3. ATTITUDES TO RISK. T WLODARCZYK AND J TENNYSON SEPT 2003.
4. PUBLIC PARTICIPATION ISSUE REPORT. ACER. 7 AUGUST 2007.