

SOCIO-ECONOMIC ASSESSMENT FOR THE
DRAFT SCOPING REPORT OF THE:

Proposed Impofu West Wind Farm

July 2018

Prepared by:



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Requirement	Description
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Legal Requirements

Table 1 indicates the page references for the relevant requirements of the specialist scoping report (socio-economic) per EIA Regulations GN R. 982, as amended (4 Dec 2014).

Table 1: EIA Regulations – Specialist Scoping Reports

Section	Requirement	Page #
(1)	A specialist report prepared in terms of these Regulations must contain-	
(a)	details of-	
(i)	the specialist who prepared the report; and	2
(ii)	the expertise of that specialist to compile a specialist report including a curriculum vitae;	44
(b)	a declaration that the specialist is independent in a form as may be specified by the competent authority;	65
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	8
(cA)	an indication of the quality and age of the base data used for the specialist report;	12
(cB)	a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	30-40
(d)	the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	Not yet undertaken
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process, inclusive of equipment and modelling used;	12; 30
(f)	details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives	9; 29
(g)	an identification of any areas to be avoided, including buffers;	29
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	29
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	11
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity, or activities;	30-40
(k)	any mitigation measures for inclusion in the EMPr;	30-40
(l)	any conditions for inclusion in the environmental authorisation;	30-40
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	30-40
(n)	a reasoned opinion-	
(i)	whether the proposed activity or portions thereof should be authorised; and	40
(iA)	regarding the acceptability of the proposed activity or activities; and	40
(ii)	if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures	40

	that should be included in the EMPr, and where applicable, the closure plan;	
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	11
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	None undertaken or requested at this stage.
(q)	any other information requested by the competent authority.	

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Executive Summary

Red Cap Impofu West (Pty) Ltd is proposing the establishment of the Impofu West Wind Farm, consisting of 41 turbines (depending on the choice of turbine) and associated infrastructure, on a site located approximately 30 km from Humansdorp. The site is comprised of 8 continuous cadastral units.

Urban-Econ Development Economists was appointed by Red Cap Impofu West (Pty) Ltd to undertake a specialist Socio-Economic Impact Assessment as part of the EIA process. This report contains the findings of the initial scoping level socio-economic assessment. The scoping study was based on a review of desktop sources only. These included the development proposal, key policy documents as well as contextual and demographic sources such as the 2011 Census and 2016 Community Survey. The scoping level assessment is also informed by Urban-Econ Development Economist's experience with Socio-Economic Impact Assessments for other wind energy developments in the Eastern Cape.

The selected study area is confined to the Kouga Local Municipality within the larger Sarah Baartman District Municipality. The Impofu West Wind Farm site is located in the rural/agricultural area of the south-western Eastern Cape, approximately 30 km southwest of the town of Humansdorp.

Almost all of the farms in the study area and surrounds are intensive, high production dairy farms with cultivated, kikuyu-based pasture plus additional fodder crops, both under irrigation, as well as non-irrigated. The dairy farms generally include a small percentage of beef cattle.

There are currently four operational wind farms either adjacent to or in close proximity to the proposed Impofu West Wind Farm. These include the: Kouga Wind Farm, Gibson Bay Wind Farm, Tsitsikamma Community Wind Farm and Jeffreys Bay Wind Farm.

The Sarah Baartman District's total population was estimated at 444 735 individuals in 2016 (Stats SA, 2016), of which the Kouga Local Municipality accounts for 21.4% (95 270) of this figure.

From an economic output perspective, the Kouga Local Municipality contributed approximately 27.1% of the district municipality's GDP in 2016 (Quantec, 2016). The largest sectors within the municipality in terms of GDP contribution in 2016 were finance and business services (26.4%), trade (21.3%), general government (16.6%) and manufacturing (11.2%). While only contributing a small proportion of GDP, the agricultural sector in the municipality is an important employer, employing 8 422 or 22.1% of the working age population. The tourism industry within the municipality is well established and characterised by a range of eco-tourism and adventure activities.

The unemployment rate within the Kouga Local Municipality was estimated at 13.7, which was below the district figure (19.0%), while 30.1% of the population is considered to be not economically active. The latter is made of scholars/students, pensioners, and those who could not find work.

The investigation and assessment of the socio-economic impacts during the EIA phase will be informed by Guidelines for specialist SIA input into EIAs adopted by the Department of Environmental Affairs and Development Planning in the Western Cape. These guidelines have been endorsed at a national level. This approach will include:

- Identification of key interested and affected parties
- Meetings and interviews with interested ad affected parties

- Identification and assessment of key socio-economic issues based on feedback from interested and affected parties
- Recommendations regarding mitigation/optimization and management measures to be implemented

The key conclusions of the socio-economic scoping level study are as follows:

- The establishment of the Impofu West Wind Farm is supported at a national and provincial level as evident in policy and planning documents.
- The Impofu West Wind Farm appears to be compatible with the economic development vision of the Sarah Baartman District Municipality and the Kouga Local Municipality.
- The potential positive impacts associated with the construction phase of the proposed wind energy facility relate to GDP growth, local and preferential procurement (BBBEE, women-owned vendors, etc.), enterprise development, the creation of employment and skills development opportunities, all of which are aligned with the Department of Energy's Renewable Energy Independent Power Producer Procurement Programme. The potential negative impacts are linked to the presence of migrant construction workers on the site and in the area. In addition, because of visual impacts, there may be a resultant impact on tourism. An increase in crime levels is also possible without mitigation measures in place.
- The potential positive impacts associated with the operational phase relate to GDP growth, local and preferential procurement (BBBEE, women-owned vendors, etc.), enterprise development, the creation of employment and skills development opportunities and the promotion of clean and renewable energy, all of which are aligned with the Department of Energy's Renewable Energy Independent Power Producer Procurement Programme. The potential negative impacts are linked to the impact on the rural sense of place and scenic integrity of the landscape. In the unlikely event that such negative impacts do occur, the impact is likely to be small given the transformed nature of the landscape and the close proximity of the development to existing turbines. These impacts can, in turn, impact the tourism industry in the area.

Chapter 1 Introduction

Aurecon South Africa (Pty) Ltd, (hereafter referred to as Aurecon) has been appointed by Red Cap Impofu West (Pty) Ltd (hereafter referred to as Red Cap) to undertake the Environmental Impact Assessment (EIA) process for the Impofu West Wind Farm, and the Basic Assessment (BA) process for the associated Grid Connection Project, in the Eastern Cape, South Africa. These services are to ensure compliance with the relevant environmental legislation, and are to include applications to various Competent Authorities for environmental authorisations, licenses and permits.

Urban-Econ Development Economists was appointed by Red Cap Impofu West (Pty) Ltd to undertake a specialist Socio-Economic Impact Assessment as part of the EIA process. The terms of reference for the study include a scoping level assessment to identify potential key social and economic issues that would need to be addressed as part of the EIA. This report contains the findings of the initial scoping level social and economic assessment undertaken as part of the EIA process.

1.1 Terms of Reference

The terms of reference for the scoping report require:

- A focussed and relevant description of all baseline characteristics and conditions of the receiving environment (e.g. site and/or surrounding land uses including urban and agricultural areas as applicable), based on all relevant available data, reports and maps, and information obtained from any field work investigations undertaken to date.
- A detailed evaluation of the predicted impacts of the project on the receiving environment, or of the receiving environment on the project, that uses the criteria of extent, duration and intensity to quantify the significance of the potential impact. The evaluation of impacts should include:
 - An assessment of impacts for all phases of the life-cycle of the project, namely construction, operation, and decommissioning phases, as well as the direct and indirect impacts;
 - An assessment of the probability of each impact occurring, the reversibility of each impact and the level of confidence in each potential impact;
 - An assessment of the significance of each impact before and after mitigation;
 - The identification of any residual risks that will remain after implementation of design and planning mitigation; and
 - An assessment of the No-Go option.
- Consider and evaluate the cumulative impacts in terms of the current and proposed activities in the area.
- Recommendations to avoid negative impacts. Where this will not be possible then provide feasible and practical mitigation, management and/or monitoring options to reduce negative impacts and enhance positive impacts that can be included in the Environmental Management Programme.
- Identify any additional measures to ensure that the project contributes towards sustainability goals or provides a positive contribution to the environment.
- Where relevant, recommendations and instructions regarding any additional authorisation, permitting or licensing procedures, or any other requirements pertaining to legislation and policies relevant to the Specialist's field of interest.
- A description of the approach proposed for assessing the potentially significant issues that will need to be addressed by the Socio-Economic Impact Assessment study during the EIA phase (i.e. plan of study for EIA)

1.2 Project Description, location and surrounding land use

Red Cap is proposing three wind farms on a consolidated site, the Impofu North, the Impofu West and Impofu East Wind Farms respectively. The approximately 3 700 hectares (ha) where the Impofu West Wind Farm is proposed to be developed is located in the Kouga Local Municipality in the broader the Sarah Baartman District Municipality. The site lies approximately 10 km to the north-west of the small coastal village of Oyster Bay. It is bounded by the operational Gibson Bay Wind Farm to the north west and the Tsitsikamma Community Wind Farm to the south west and south west; with the Kouga Wind Farm approximately 10 km to the east. The construction of the approved Oyster Bay Wind Farm on its eastern boundary will most likely commence in 2018.

This area lies on a section of coastal plain in close proximity to the ocean on either side which results in excellent wind conditions and low levels of turbulence, making it one of the best wind resources in the country and ideal for wind farm development.

The proposed wind farm will be named the Impofu West Wind Farm. An estimated 41 turbines are proposed for Impofu West Wind Farm and this will be the basis of the application for Environmental Authorisations. At this point in time the megawatt (MW) size of the turbine to be used has not been finalised, but it is assumed it would be from about 3-5 MW. Given that neither the number of turbines, nor the MW capacity per turbine have been finalised, it is not yet possible to indicate the maximum MW capacity for Impofu West Wind Farm, at this point in the process.

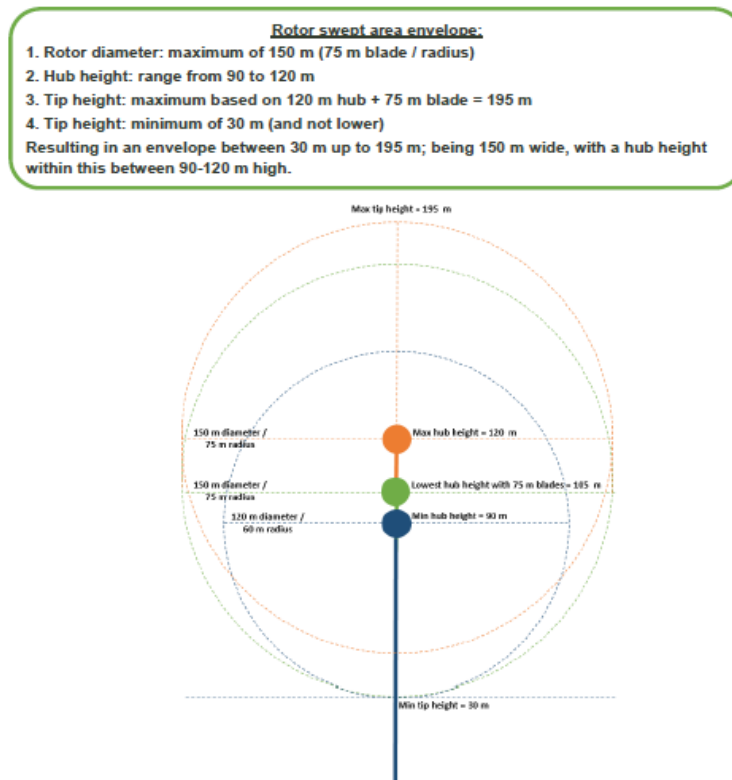
Each of the proposed turbines would have a circular foundation of approximately 20-25 m diameter, a temporary disturbed area including the foundation, the hardstand and construction area of approximately 100 x 50 m for use as a laydown area and to accommodate a crane pad during installation, with a permanent hardstand footprint of approximately 50 x 30 m remaining for maintenance purposes.

Since the turbine technology is continually improving it is not possible at this early stage in the development process to know the exact turbine model and specification. Assumptions have thus been made for assessment purposes regarding the potential worst-case extent of the area to be impacted by the turbine blades (the rotor swept area envelope). These are as follows, and graphically represented in Figure 1.1.

The supporting infrastructure within the site includes roads, underground and overhead medium voltage (MV) power lines (33 kV or lower) and substations (including control, operation, workshop, storage buildings / areas).

The internal gravel roads will be approximately 6 m wide with potential side drains along the side and of a specification to accommodate the abnormal trucks that will deliver the turbine components. Where possible existing roads will be used and upgraded to avoid additional clearance of natural or agricultural land cover. In exceptional circumstances short sections of the roads may be surfaced with bitumen or concrete if they are excessively steep.

Figure 1.1: Rotor swept area and envelope



The wind farm application will include the 33 or lower kV MV lines that would transfer the power generated from the turbines to an on-site substation (with a transformer). These lines would predominantly be in the form of underground cables, but in cases where they have to cross complex terrain such as drainage lines or steep kloofs, they would be short sections of overhead power lines.

The applicable substation is named the Impofu West substation and would have an associated switching station. Since the switching station component will be owned by Eskom, there will be a physical barrier between the two components in the form of a fence. Also included in the development is a short separate 132 kV high voltage (HV) overhead power line that links the Impofu North switching station to a combined central "collector switching station" (Impofu collector switching station) on Impofu West. The role of the collector switching station is to consolidate the three power lines from all of the three proposed wind farms (Impofu North, Impofu West and Impofu East) into one, such that a single line continues from here onwards as the 132 kV HV Grid Connection transmission line.

The total footprint of the substation is approximately 150 x 75 m (11,250 m²) and the adjoining Eskom switching station is of a similar size. The substation area will include all the standard substation electrical equipment such as transformers and bus bars, and the area will also house the control, operation, workshop, storage buildings / areas.

1.3 Assumptions and Limitations

1.3.1 Assumptions

- **Identification of area for the wind energy facility**
 - The identification of the proposed site was informed by technical information relating to the local climatic conditions in the area, specifically wind conditions, local topography, land availability and environmental constraints identified through the development process of three operational wind farms in the immediate vicinity.
- **Strategic importance of the project**

The importance of promoting wind energy and other renewable sources of energy generation are supported and highlighted by a number of national and provincial policies.
- **Technical suitability.**

It is assumed that the development site identified by Red Cap represents a technically suitable site for the establishment of a wind energy facility.
- **Consultation with affected communities**

At this stage in the process there has been limited interaction by the socio-economic consultant with communities and other affected parties within the study area. The estimated number of people that will be directly affected by the proposed wind energy facility has thus not yet been determined. The authors, however, have worked on other wind energy projects within the Eastern Cape (e.g. Spitskop Wind Energy Facility, Inyanda Roodepoort Wind Farm, Plan-8 Infinite Energy Grahamstown Wind Energy Facility). It is assumed that issues identified on those projects are likely to be similar to those for the proposed Impofu West Wind Farm. Detailed consultation will be undertaken during the assessment stage of the EIA.
- **Construction and operational costs**

A detailed costing of the proposed wind farm and associated infrastructure has not yet been undertaken. As such, the potential impacts associated with the construction and operational phases of the wind farm on the local, provincial and national economy cannot be effectively estimated. This phase of the project therefore only considers the potential economic multipliers rather than the full economic impact based on construction and operational costs.
- **Operation of the wind energy facility**

It is assumed that the operational lifespan of the Impofu North Wind Farm will be approximately 20 years, in line with the typical duration of REI4P power purchase agreements. It is further assumed that the developer will not seek to decommission the wind farm after this 20-year period but rather upgrade the facility in order to prolong its lifespan, should a power purchase agreement for an extended period be in place.

1.3.2 Limitations

- **Site layout**

The report is based on a project description taken from preliminary design specifications and site layouts for the proposed wind energy facility. The site layout has not yet been finalised and is likely to undergo a number of iterations and refinements before it can be regarded as

definitive. All potential turbine array alternatives will, however, be contained within the property boundaries of the study area.

- **Statistical Data**

The most recently available demographic statistics published by StatsSA are from the 2016 Community Survey. These statistics however are only available down to a local municipal level. In order to obtain demographic statistics for smaller administrative boundaries (e.g. wards) which more closely align to the boundaries of the proposed wind energy facility site it would be necessary to utilise 2011 Census figures.

Given that the 2011 data is dated, and the corresponding Kouga ward boundaries have changed notably between 2011 and 2016, it is felt that the more recent statistics from the 2016 Community Survey should be utilised. In utilising these statistics however, it is acknowledged that some of their descriptive power will be reduced given the size of the administrative area being considered (i.e. Kouga Local Municipality).

1.4 Methodology and Approach to Study

The approach to the study is based on the Western Cape Department of Environmental Affairs and Development (DEA&DP) Planning Guidelines for Social Impact Assessment. The Guidelines are based on accepted international best practice guidelines, including the Guidelines and Principles for Social Impact Assessment¹. This scoping level study involved:

- A review of demographic data from the 2016 Community Survey and other available sources
- A review of relevant planning and policy frameworks for the Kouga Local Municipality
- A review of information from similar studies (e.g. Spitskop Wind Energy Facility, Inyanda Roodepoort Wind Farm, Plan-8 Infinite Energy Grahamstown Wind Energy Facility)
- A literature review of socio-economic issues associated with wind energy facilities (e.g. Dent & Sims, 2007; Duponts, 2009; CanWeb, 2006; Wasatch Wind, 2011; Hoen et al, 2009; Wolverton & Bottemiller, 2013; EirGrid Plc, 2016)

The identification of potential socio-economic issues associated with the proposed wind energy facility is based on a review of relevant documentation, experience with similar projects, and some familiarity with the study area.

1.5 Report Structure

The report is divided into six chapters, namely:

- Chapter 1: Introduction
- Chapter 2: Policy and Planning Environment
- Chapter 3: Overview of the Study Area
- Chapter 4: Description of the key socio-economic issues that need to be assessed during the EIA phase. This section also includes information that will be required from the developer to facilitate the assessment.
- Chapter 5: Alternatives

¹ Source: INTER-ORGANIZATIONAL COMMITTEE ON GUIDELINES AND PRINCIPLES FOR SOCIAL IMPACT ASSESSMENT, 2003. Principles and guidelines for social impact assessment in the USA. **Impact Assessment and Project Appraisal**. 21,3: 231–250.

- Chapter 6: Methodology for Assessing the Significance of Impacts
- Chapter 7: Plan of Study

Chapter 2 Policy and Planning Environment

The policy and planning environment outlines the key legislation and policies, at both a national, provincial and local level, that are applicable to the proposed wind energy facility development. A review of key planning and policy documents is an integral component of the overall socio-economic impact assessment as it ensures that the proposed development conforms to the relevant spatial principles and guidelines contained in the relevant legislation and planning documents. Failure of the development to comply with these standards means that it would not be supported in its current form.

The following section provides an overview of the most significant policy documents relevant to the proposed Impofu West Wind Farm, namely:

- The White Paper on Renewable Energy (2003)
- The National Energy Act (2008)
- The Integrated Electricity Resource Plan (IRP) 2010 – 2030 (2011)
- National Development Plan (NDP) (2011)
- Eastern Cape Sustainable Energy Strategy (2011)
- Eastern Cape Provincial Economic Strategy (PEDS) (2016)
- Sarah Baartman IDP (2017)
- Sarah Baartman SDF (2013)
- Kouga IDP (2017)
- Kouga SDF (2015)
- Renewable Energy Independent Power Producers Procurement Programme (REI4P)

2.1 National White Paper on Renewable Energy (2003)

This White Paper on Renewable Energy supplements the White paper on Energy Policy (1998), which recognised the significant medium and long-term potential of renewable energy. The 2003 White Paper also sets out Government's vision, policy principles, strategic goals and objectives for promoting an implementing renewable energy in South Africa.

The white paper further develops a framework in which a national renewable energy plan can be established and operate. The purpose of such a plan is to ensure that, in line with the Kyoto Protocol to which the country is a signatory, South Africa reduces its greenhouse gas emissions.

In addition to reducing greenhouse gas emissions, the promoting the use of renewable energy sources, is aimed at ensuring energy security through the diversification of supply as articulated in the National Energy Act.

The long-term goal of the South African government is to create a renewable energy industry, that utilises energy sources that, in the future, will offer a sustainable, non-subsided alternative to fossil fuels.

The 10-year target set out in the White Paper is:

10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro. The renewable energy is to be utilised for power generation and non-electric technologies such as solar water heating and bio-fuels. This is approximately 4% (1 667 MW) of the projected electricity demand for 2013 (41 539 MW).

2.2 National Energy Act (2008)

The National Energy Act was promulgated in 2008. One of the objectives of the Act was to promote diversity in energy supply and its sources. In this regard the objectives of the Act, as stated in the preamble, makes direct reference to facilitating the “increased generation and consumption of renewable resources”.

2.3 Integrated Resource Plan (IRP) 2010 – 2030 (2011)

The 2011 IRP is currently under review and is anticipated to be finalised in 2018. Under the 2011 IRP it is projected that an additional capacity of 56 539 MW will be required to support the country's economic development and ensure adequate reserves over the next 20 years. Under the 2011 assumptions, this required expansion was more than twice the size of the existing capacity of the system.

A significant component of the above-mentioned plan is the expansion of the use of renewable energy sources to reduce carbon emissions involved in generating electricity. Overall, the proposed plan implies a total generating capacity of 9 200 MW from wind by 2030.

2.4 National Development Plan (NDP) (2011)

The National Development Plan was formulated by the National Planning Commission and released in November 2011. The NDP proposes to create 11 million jobs and grow the economy at an average rate of 5.4% per annum by 2030. In respect of renewable energy, the NDP seeks to ensure that half of the new future generation capacity comes from renewable energy sources. It furthermore recognises the importance of the transition to a low carbon economy. As such the NDP suggests the following:

- Supporting carbon budgeting
- Establishing an economy wide price for carbon by 2030 complemented by energy efficiency and demand management interventions
- Setting a target of 5 million solar water heaters by 2030
- Implementing zero emission building standards that promote energy efficacy
- Simplifying regulatory regime to encourage renewable energy, regional hydroelectric initiative and independent power producers (IPPs)

2.5 Eastern Cape Sustainable Energy Strategy (2012)

The Eastern Cape Sustainable Energy Strategy lays out the provinces strategic direction in terms of the renewable energy industry. The focus of the strategy is to encourage sustainable, affordable and environmentally friendly energy production by creating an enabling environment for energy production and sustainable technology, skills and industry development. This is to be achieved through several initiatives including:

- An intensive training programme among relevant decision makers with respect to renewable energy project approvals
- The establishment of an implementation task team to provide potential investors with a one-stop-shop for renewable energy information in the province
- Development of a provincial locational perspective of renewable energy

- Lobbying Eskom to expedite and strengthen the transmission capacity of the former Transkei area
- Lobbying the Department of Energy to set out long-term programme for the procurement of renewable energy generation

Through the pursuit of these initiatives the Eastern Cape Province seeks to become a leading and preferred destination for renewable energy investment in South Africa.

2.6 Eastern Cape Provincial Economic Development Strategy (PEDS) (2017)

The Eastern Cape PEDS seeks to create a clear, long-term vision and strategy for the growth and development of the Eastern Cape by building on the strengths and opportunities of the province, while at the same time addressing its weaknesses and threats.

In pursuit of this goal PEDS identifies six high potential economic sectors that can catalyse growth in the province. These sectors are:

- Agri-industry
- Sustainable Energy
- Ocean Economy
- Automotive
- Light manufacturing
- Tourism

With respect to sustainable energy, PEDS notes that it is imperative that the province aligns all its energy opportunities so as to:

- Create the optimal institutional environment for the location of sustainable energy projects in the Eastern Cape
- Harness the maximum possible value chain, localisation and industrialisation opportunities from sustainable energy projects
- Ensure adequate and aligned skills development
- Link innovation, entrepreneurial and small business opportunities to sustainable energy projects
- Link black industrialist opportunities to sustainable energy projects

2.7 Sarah Baartman SDF (2013)

The Sarah Baartman SDF observes that the district's economy is dependent on the natural resources of the area (Tourism and production). As such, spatial planning initiatives need to support the implementation of the district's Socio-Economic and Enterprise Development Strategy (SEEDS) by:

- Implementing effective spatial planning land use management
- Ensuring that the SDP identifies areas for renewable energy production
- Recognizing that game reserves and farming are playing a greater role in the economy
- Undertaking urban regeneration projects
- Identifying where infrastructure upgrading is required.
- Providing the spatial framework for the district's Area Based Plan (ABP)

The Sarah Baartman SDF further notes that the introduction of alternative energy generation infrastructure and the associated land use change will provide both economic opportunities but may also have a negative impact on the ecotourism of the district. (Potential changes to the visual and cultural landscapes). This is an important consideration as the SDF identifies part of the proposed site as being in N2 development corridor.

2.8 Sarah Baartman IDP (2017)

The Sarah Baartman IDP identifies the green economy (including, but not limited to renewable energy and ecosystem services) as a focal point of economic development in the district, noting that such investments are likely to have significant economic spinoffs for the region. To achieve this, the IDP proposes investing in natural capital so as to create a new generation of green and blue economy jobs rooted in renewable energy.

2.9 Kouga IDP (2017)

The Kouga IDP notes the growing importance of renewable energy to the municipality's economy, particularly wind farms. The Local Economic Development (LED) department within the municipality actively works with operational wind farms on their social economic development projects as well as preparing the youth for careers in this discipline such as facilitating career expo's and exhibitions, advocacy for bursaries for learners and university students. The department also assists in facilitating training for Small, Medium and Micro-sized Enterprises (SMME's) in preparation and anticipation of services needed in wind farm developments.

2.10 Kouga SDF (2015)

The Kouga SDF identifies the proposed wind energy facility site as falling within an intensive agricultural area and within close proximity to the proposed sustainable rural development node of Oyster Bay. This entails retaining the rural character and low density of Oyster Bay and emphasising coastal conservation.

The wind energy facility site however, is designated as a potential location for a wind farm in the SDF. The Kouga SDF sets out several principles that applications for renewable energy and wind farm facilities in the municipality should be governed by to ensure that such applications are in line with the municipality's Land Use Planning Ordinance. The SDF further notes that applications for wind farm facilities should be submitted for the following application types as per the municipality's Land Use Planning Ordinance:

- Rezoning of entire Farm Unit or Units from Agriculture to Special Purposes (Agriculture and Wind Generating Facilities)
- Rezoning of portion or portions of a Farm Unit or Units from Agriculture to Special Purposes (Wind Generating Facility)

2.11 Renewable Energy Independent Power Producers Procurement Programme (REI4P)

The Department of Energy's (DoE) Renewable Energy Independent Power Producers Procurement Programme was established at the end of 2010 as one of the South African government's urgent interventions to enhance South Africa's power generation capacity.

The DoE, national Treasury and the Development Bank of Southern Africa established the Independent Power Producers (IPP) Office for the specific purpose of delivering on the IPP procurement objectives. The primary mandate of this office is to secure electricity from renewable (REI4P) and non-renewable energy sources from the private sector. However, energy policy and supply is not only about technology, but also has a substantial influence on economic growth and socio-economic development. As such the IPP has been designed to go beyond procurement of energy to also contribute to broader national development objectives such as job creation, social upliftment and the broadening of economic ownership.

At a national level the following commitments have been made for bid windows 1, 2, 3, 3.5 and 4 as of December 2017 (DoE, 2018):

- 6 422 MW of electricity had been procured from 112 Renewable Energy IPPs in the seven bid rounds;
- 3 052 MW of electricity generation capacity from 56 IPP projects has been connected to the national grid;
- Investment (equity and debt) to the value of R201.8 billion, of which R48.8 billion (24%) is foreign investment, was attracted;
- Created 31 207 job years² for South African citizens;
- Socio-economic development contributions of R357.4 million to date;
- Enterprise development contributions of R115.2 million to date;
- Carbon emission reductions of 15.4 MtonCO² has been realised by the programme from inception to date.

From an Eastern Cape perspective, the following commitments have been made across the aforementioned bid windows:

- Add 1 509 MW to the national grid from 17 REI4P projects;
- Incur R33.8 billion in project costs increasing the gross domestic product (GDP) of the province;
- Incur R4 489 million in social economic development expenditure;
- Contribute R7 434 million to community trusts established as part of the programme;
- Create 18 137 job years.

2.12 Conclusion

The review of the policy planning environment suggests that utilisation of renewable energy sources in South Africa is considered to be an integral means of reducing the carbon footprint of the country, diversifying the national economy and reducing poverty. Any project contributing to the above-mentioned objectives, such as the Impofu West Wind Farm, can therefore be considered strategically important to South Africa.

² The equivalent of a full-time employment opportunity for one person for one year.

From a provincial and municipal policy perspective the facilitation of renewable energy projects and interventions that related to the broader green economy are seen as a priority. The Eastern Cape Provincial Economy Development Strategy makes particular reference to the need to develop the sustainable energy industry which includes renewable energies. Likewise, both the Sarah Baartman district and Kouga local municipalities have noted the importance of wind energy in their IDPs and SDFs and are actively seeking to promote such developments.

Chapter 3 Overview of the Study Area

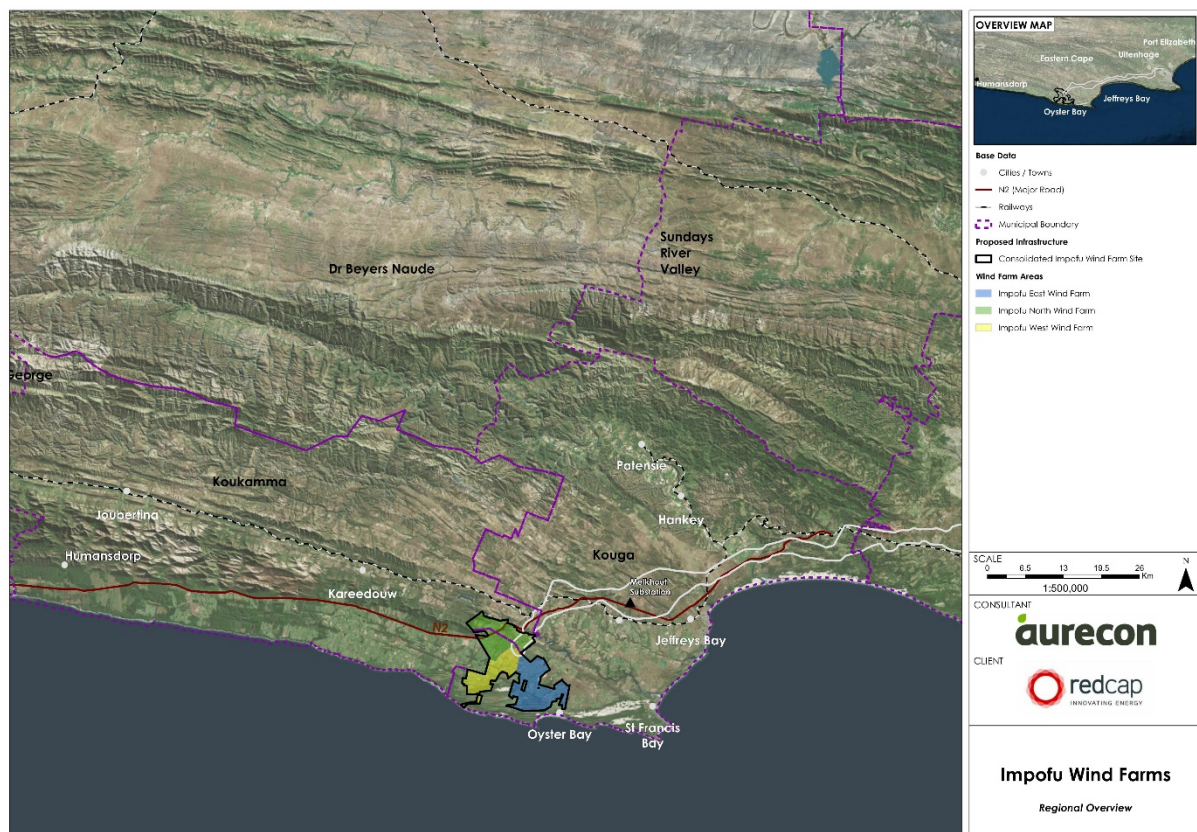
The following section documents various aspects of the study area including: population and household numbers; income levels; and employment. In addition, the section also reviews the economic structure and performance of the study area.

The intention of this review is to provide an overview of the socio-economic context of the area so as to better understand the dynamics of the area and to inform the scoping process.

3.1 Administrative Context for Study Area

The Kouga Local Municipality (EC108) in which the Impofu West Wind Farm is located, is situated on the southern seaboard of the Eastern Cape (see Figure 3.1) and is one of the seven local municipalities within the Sarah Baartman District Municipality (DC10). The municipality includes a coastal zone between the Van Stadens River in the east and the Tsitsikamma River in the west, stretching inland towards the Baviaanskloof Mountains in the north.

Figure 3.1: Major settlements within the Kouga Local Municipality



The Kouga Local Municipality covers an area of roughly 2 670 km². This makes it the second smallest municipality in the district, accounting for only 4.5% of the total surface area of the Sarah Baartman District. The municipality is bordered by the Dr Beyers Naudé and Sundays River Valley Local Municipalities to the north, the Nelson Mandela bay Metro to the east, and the Koukamma Local Municipality to the west.

The largest towns within the Kouga Local Municipality are Humansdorp and Jeffreys Bay, while smaller settlements include: Hankey, Patensie and St Francis Bay. The administrative centre of the municipality is Jeffreys Bay which lies approximately 75 km southwest of the Nelson Mandela Bay Metropolitan Area (Port Elizabeth). The urban areas are typical of the spatial patterns of towns throughout South Africa, namely that they are segregated by economic classes and reside in clusters. The municipality is divided into 15 administrative wards.

3.2 Socio-Economic Profile of the Study Area

3.2.1 Population, Income and Employment Profile

Selected demographic information is presented in Table 3.1. The Kouga Local Municipality falls within the Sarah Baartman District Municipality and accounts for 21.4% of the district's population and 22.9% of its households. This makes it the most populous locality within the entire district. Population growth between 2011 and 2016 was 0.9% year-on-year. This compares favourably with the Sarah Baartman District Municipality. A growing population, in comparison, would likely be indicative of greater economic prosperity in the area.

Table 3.1: Overview of the study areas population and household structure in 2016

Indicator	Sarah Baartman District Municipality	Kouga Local Municipality
Area (km ²)	58 194	2 670
Population	444 735	95 270
Number of Households	122 911	28 173
Population density (km ²)	7.6	35.7
Average household size	3.6	3.4
Population growth rate (2011-2016)	0.4%	0.9%
Average monthly household income (2011, 2016 prices)	R 8 889	R10 598

Source: Quantec Standardised Regional (2016)

The disposable average monthly income of households in the Kouga Local Municipality was R10 598 in 2011 (in current 2016 prices). This was significantly higher than that of the Sarah Baartman District Municipality (R8 889; 2016 prices) during the same period. Despite this high average household income, poverty still remains endemic in the Kouga Local Municipality. According to Stats SA (2016) the poverty headcount³ within the Kouga Local Municipality (5.7%) was higher than the district average (4.5%) but lower than the provincial figure (12.7%). This is evident by the high proportion of households in the Kouga Local Municipality that earn no income (15.3%) – higher than both the district (12.5%) and provincial (15.2%) values.

Table 3.2: Employment profile of the Sarah Baartman and Kouga municipalities, 2016

Indicator	Sarah Baartman District Municipality	Kouga Local Municipality
Working age population	293 910	62 964
Labour force	185 238	44 043

³ Stats SA utilised the South African Multidimensional Poverty Index (SAMPI) to measure the extent of poverty in the country. The SAMPI is an index that is constructed using eleven indicators across four dimensions, namely: health, education, living standards and economic activity. Poverty headcount figures were then determined based on the proportion of households that are considered to be "multidimensional poor" in terms of the index.

Labour force participation rate	63.0%	69.9%
Employed	150 081	37 998
Unemployed	35 157	6 045
Unemployment rate (% of labour force)	19.0%	13.7%

Source: Quantec Standardised Regional (2016)

The review of the employment profile of the Kouga Local Municipality indicates that only 13.7% of the labour force within the municipality is classified as unemployed (see Table 3.2). The unemployment rates and labour force participation rates in the Kouga Local Municipality were also notably better than that of the Sarah Baartman District Municipality (with an unemployment rate of 19.0% and a labour force participation rate of 63.0%).

The relatively low unemployment rate and high labour force participation relative to the district average further suggests that the Kouga Local Municipality is likely subjected to inward migration due to the actual and perceived employment opportunities available within the local municipality.

3.2.2 Economic Profile

The regional Gross Domestic Product per region (GDP-R) for the Kouga Local Municipality was R5.2 billion in 2016 (constant 2010 prices), which accounts for just over 27.0% of the district economy and 2.4% of the Eastern Cape's GDP. Per capita GDP in the municipality was R55 437 in constant 2010 prices, which was 26.4% higher than in the Sarah Baartman District Municipality and 68.0% higher than in the rest of the Eastern Cape (Quantec, 2016). These figures suggest that, although the Kouga Local Municipality's economy is relatively small in terms of absolute GDP values, they perform strongly in terms of economic output per capita.

Table 3.3: GDP-R structure of the Sarah Baartman and Kouga municipalities between 2011 and 2016 in Constant 2010 prices

Sector	Sectoral Share of GDP				Kouga CAGR 2011-2016
	Sarah Baartman District Municipality		Kouga Local Municipality		
	2011	2016	2011	2016	
Primary Sectors	7.0%	6.2%	5.8%	5.3%	0.2%
Agriculture and hunting	6.9%	6.1%	5.7%	5.2%	0.2%
Mining and quarrying	0.1%	0.1%	0.1%	0.1%	-0.1%
Secondary Sectors	18.6%	19.3%	18.9%	18.6%	1.7%
Manufacturing	12.0%	12.9%	11.4%	11.5%	2.3%
Electricity, gas and water	1.7%	1.5%	1.4%	1.3%	1.2%
Construction	4.9%	4.9%	6.1%	5.8%	0.7%
Tertiary Sectors	74.4%	74.5%	75.3%	76.1%	2.2%
Trade	21.4%	21.2%	21.6%	21.3%	1.7%
Transport and communication	6.9%	7.4%	5.4%	5.7%	3.2%
Finance and business services	19.1%	20.1%	26.0%	26.4%	2.3%
General government	19.5%	18.5%	16.1%	16.6%	2.6%
Community services	7.5%	7.2%	6.2%	6.1%	1.6%
Total	100.0%	100.0%	100.0%	100.0%	2.0%

Source: Quantec Standardised Regional (2016)

Over the last five years, the Compounded Annual Growth Rate (CAGR) of the Kouga Local Municipality was 2.0% which meant that it grew faster than both the district (1.7%) and provincial economies (1.3%). This can be attributed to the size and diversity of the municipality relative to the district and the Eastern Cape.

The growth of Kouga Local Municipality over the last few years was largely due to the strong performance of the secondary and tertiary sectors, particularly the transport, storage and communication sector. As indicated in Table 3.3, the transport, storage and communication sector has grown by a strong 3.2%, making it the best performing sector over the last five years. Other sectors that showed the strong growth rates over the period include general government (2.6%), manufacturing (2.3%) and finance and business services (2.3%).

Table 3.4: GDP-R per sector for the Sarah Baartman and Kouga Municipalities in constant 2010 prices (in R' millions)

Sector	Sarah Baartman District Municipality		Kouga Local Municipality	
	2011	2016	2011	2016
Primary Sectors	R1 257	R1 213	R276	R279
Agriculture and hunting	R1 242	R1 199	R273	R276
Mining and quarrying	R15	R14	R3	R3
Secondary Sectors	R3 326	R3 755	R904	R983
Manufacturing	R2 155	R2 524	R544	R608
Electricity, gas and water	R296	R284	R67	R71
Construction	R875	R947	R294	R304
Tertiary Sectors	R13 331	R14 532	R3 603	R4 019
Trade	R3 833	R4 143	R1 035	R1 126
Transport and communication	R1 241	R1 442	R257	R302
Finance & business services	R3 423	R3 924	R1 242	R1 393
General government	R3 495	R3 616	R770	R874
Community services	R1 339	R1 407	R298	R324
TOTAL GDP	R17 914	R19 500	R4 783	R5 282

Source: Quantec Standardised Regional (2016)

The positive growth of the above-mentioned sectors in the Kouga Local Municipality was somewhat offset by the low growth exhibited by the primary sectors specifically the mining and quarry sector. The mining sector, despite being small contributor to the municipality's economy, exhibited a -0.1% year-on-year GDP growth rate between 2011 and 2016. The primary sector has also seen its share of the total municipal economy decline from 5.8% in 2011 to 5.3% by 2016.

As evident by both Table 3.4 and Table 3.5 the agricultural sector, despite featuring a low GDP growth rate, has experienced an increase in both GDP and employment in absolute terms between 2011 and 2016. Over this five-year period the sector added over 2 000 jobs, making it the largest employment creator in the municipality. This growth in employment resulted in the agricultural sector exhibiting an average 6.9% year-on-year growth rate between 2011 and 2016.

Agricultural activities are labour intensive, thus a small decline in the size of the sector would generally lead to greater job losses than, for example in manufacturing or utilities, which tend to be more capital

intensive. The agricultural sector is also frequently one of the largest employers in rural areas and it is for these two reasons that the sector is generally prioritised in development strategies.

Table 3.5: Employment structure of the Sarah Baartman and Kouga Municipalities between 2011 and 2016

Sector	Share of Total Employment				Kouga Absolute Change 2011-2016
	Sarah Baartman District Municipality		Kouga Local Municipality		
	2011	2016	2011	2016	
Primary Sectors	20.4%	23.5%	19.3%	22.2%	2.9%
Agriculture and hunting	20.4%	23.5%	19.3%	22.2%	2.9%
Mining and quarrying	0.0%	0.0%	0.0%	0.0%	0.0%
Secondary Sectors	14.4%	14.2%	16.1%	15.3%	-0.8%
Manufacturing	6.5%	5.8%	5.9%	5.1%	-0.8%
Electricity, gas and water	0.3%	0.3%	0.3%	0.3%	0.0%
Construction	7.7%	8.1%	10.0%	9.9%	-0.1%
Tertiary Sectors	65.1%	62.3%	64.6%	62.5%	-2.0%
Trade	24.5%	23.1%	27.1%	25.9%	-1.2%
Transport and communication	3.5%	3.6%	2.8%	2.9%	0.0%
Finance and business services	8.7%	8.3%	9.4%	8.8%	-0.7%
General government	12.5%	11.1%	10.3%	9.9%	-0.4%
Community services	16.0%	16.2%	14.9%	15.1%	0.2%
TOTAL EMPLOYMENT	125 532	150 081	31 286	37 998	6 712

Source: Quantec Standardised Regional (2016)

Aside from the agricultural sector, secondary sectors such as utilities and construction also experienced positive employment growth between 2011 and 2016. It is probable that the over 670 jobs created by these two sectors over the period can be attributed to, in part, the construction of several wind farms in the municipality. Tertiary sectors, such as trade and community services, also saw strong employment growth with these two sectors each adding over 1 000 jobs over the period.

The strong growth in agricultural employment over the 2011 to 2016 period, has resulted in a gradual change in employment structure across the municipality. This is evident in Table 3.5 which shows that the tertiary and secondary sectors share of total employment has declined by 2.0% and 0.8% respectively over the review period.

3.2 Local Social and Economic Resources

The proposed site for the wind farms is located exclusively on agricultural land. All except one of the farms on which the proposed wind farm is to be situated are intensive, high production dairy farms with cultivated pasture and fodder crops, mostly under irrigation, but including non-irrigated pastures as well. Some of the dairy farms also include a small percentage of beef cattle production.

Only one of the farms on which the proposed development is intended to occur is a beef cattle farm. This landowner also produces fodder crops, all of which are non-irrigated.

While no major tourism attractions are located on the proposed site, the study area is in close proximity to several important tourism attractions including:

- The resort town of Oyster Bay
- Baviaanskloof Wilderness Area
- Tsitsikamma National Park
- Huisclip Nature Reserve

The rural nature of the proposed site means that there are no community facilities (e.g. schools, clinics, etc.). The nearest such facilities are located in Humansdorp and Oyster Bay.

Other than farming enterprises and game farms such as Jumanji and Thaba Manzi, no other businesses were identified in the area based on desktop research.

Chapter 4 Description of Key Socio-Economic Issues

In line with section (1) (vii) of Appendix 2 in the 2014 EIA regulations, the following section provides a description of the socio-economic issues and potential impacts, including cumulative impacts that have been identified for the proposed wind energy facility. A more detail assessment is presented in Chapter 6 and Appendix 3. These potential socio-economic issues are organised under the following headings:

1. Planning and Design Phase
2. Construction Phase
3. Operational Phase
4. Decommissioning Phase

4.1 Planning and Design Phase

The review of key national, provincial and local energy policy documents indicated that the development of energy from renewable sources is strongly supported at all levels.

At a national level the National White Paper on Renewable Energy (2003) notes:

- Renewable resources generally operate from an unlimited base, and as such, can increasingly contribute towards a long-term sustainable energy future;
- The support for renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly solar and wind, and that renewable applications are in fact the least costly energy services in many cases; more so when social and environmental costs are taken into account.

The National White Paper on Renewable Energy (2003) goes on to set a national target of 10 000 Gwh renewable energy contribution to final energy consumption in 2013. This is echoed in the 2011 IRP which implies a total generating capacity of 9 200 MW from wind by 2030.

At a local level the Sarah Baartman identifies the promotion and utilisation of renewable energy as a core initiative that influences its policies, objectives, strategies and projects. As such, the proposed wind energy facility could play an important role in the district realising some of its key IDP objectives. The Kouga Local Municipality's IDP likewise identifies renewable energy, particularly wind, as a key drive of local economic development in the area.

4.2 Construction Phase

Based on a review of desktop sources and experience with other wind energy facilities, the potential socio-economic issues that will need to be considered during the construction phase are as follows:

- Temporary stimulation of the national and local economy through construction related spending, and additional spending by SMMEs involved in the construction of the wind energy facility.
- Temporary increase employment in the national and local economies from those employed during the construction of the wind energy facility as well as those employment opportunities created for SMMEs.
- Contribution to skills development in the country and local economy through skills training programmes undertaken by contractors.

- Temporary increase in household earnings from higher construction workers salaries and wages.
- Temporary increase in government revenue through higher personal income tax, VAT, companies tax etc.
- Potential negative changes to the sense of place due to increased visual disturbance to the natural setting that currently characterises the area.
- Potential impact on the local tourism industry and agricultural sector through changes in the visual environment (tourism) and land use (agriculture).
- Potential temporary increase in social conflicts associated with the influx of people.
- Impact on economic and social infrastructure, through the increased movement of heavy equipment on site and the increased use of local social facilities (e.g. clinics) by construction workers.
- Potential impact on actual and perceived property and land values in the immediately affected area

4.3 Operational Phase

Based on a review of desktop sources and experience with other wind energy facilities, the potential socio-economic issues that will need to be considered during the operational phase are as follows:

- Sustainable increase in production and GDP nationally and locally through ongoing operational spending (i.e. maintenance) by the wind energy facility.
- Creation of sustainable employment positions nationally and locally. This would occur through the provision of security, staff transport, maintenance either by the wind farm or through the procurement of such services from local SMMEs.
- Skills development of permanently employed workers would potentially improve due to skills programmes undertaken as part of the labour recruitment process.
- Improved standards of living for benefiting household through higher incomes generated by those individuals either employed by the wind farm, or who derive economic benefit from it (i.e. SMMEs providing services to the wind energy facility).
- Sustainable increase in national and local government revenue through higher property taxes and wage payments.
- Provision of electricity for future development.
- Potential local economic and social development benefits derived from through the establishment of a community trust that would undertake community upliftment projects.
- Improvement of the livelihoods of the household's dependant on the local agricultural sector through higher household earnings of both farmers and farm workers.
- Potential negative changes to the sense of place (see construction phase).
- Potential impact on the local tourism industry through changes in the visual environment.
- Potential negative impact on the livelihoods of the household's dependant on the local tourism.

4.4 Decommissioning Phase

At the conclusion of the Power Purchase Agreement (PPA) between the developer and Eskom, consideration will be given to the future the wind energy facility. The facility will either be disassembled, kept as it is or upgraded with newer technology. The approach adopted will be at the discretion of the - owner, and subject to the signing of a new PPA between themselves and Eskom.

If the facility is decommissioned, the land will be rehabilitated in order to return it to pre-project conditions. Note however, that roads built as part of the project as well as the wind turbines underground foundations will remain following the decommissioning of the facility. This also means that all impacts whether positive or negative, which take place during the operational phase will cease to exist. At the same time spending on the disassembly of the components and rehabilitation of land will increase the demand for construction services and other industries, thus stimulating economic activity in the local area, albeit over a temporary period.

Socio-economic impacts stimulated during the decommissioning phase are expected to be similar to those that took place during the construction phase. They will also be temporary in nature, but most likely will take a much shorter time than the construction phase.

Chapter 6 Methodology for Assessing the Significance of Impacts

6.1 Overview

In line with the EIA regulations all impacts identified in Chapter 4 (see Tables 4.1 and 4.2) were evaluated in terms of the **intensity of the impact** (size or degree scale), the **type** of impact, being either a positive or negative impact; the **duration** (temporal scale); the **extent** (spatial scale), as well as the **probability** (likelihood). Table 6.1 outlines the various categories for each of the aforementioned aspects.

Table 6.1: Categories for various impact aspects

Aspect	Category	Numerical Rating	Description
Intensity	Negligible	1	Natural and/ or social functions and/ or processes are negligibly altered
	Very low	2	Natural and/ or social functions and/ or processes are slightly altered
	Low	3	Natural and/ or social functions and/ or processes are somewhat altered
	Moderate	4	Natural and/ or social functions and/ or processes are moderately altered
	High	5	Natural and/ or social functions and/ or processes are notably altered
	Very High	6	Natural and/ or social functions and/ or processes are majorly altered
	Extremely High	7	Natural and/ or social functions and/ or processes are severely altered
Duration	Immediate	1	Impact will self-remedy immediately
	Brief	2	Impact will not last longer than 1 year
	Short-term	3	Impact will last between 1 and 5 years
	Medium-term	4	Impact will last between 5 and 10 years
	Long-term	5	Impact will last between 10 and 15 years
	On-going	6	Impact will last between 15 and 20 years
	Permanent	7	Impact may be permanent, or in excess of 20 years
Extent	Very Limited	1	Limited to specific isolated parts of the site
	Limited	2	Limited to the site and its immediate surroundings
	Local	3	Extending across the site and to nearby settlements
	Municipal Area	4	Impacts felt at a municipal level
	Regional	5	Impacts felt at a regional / provincial level
	National	6	Impacts felt at a national level
	International	7	Impacts felt at an international level
Probability	Highly Unlikely/ None	1	Expected never to happen

Rare/ Improbable	2	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Unlikely	3	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur
Probable	4	Has occurred here or elsewhere and could therefore occur
Likely	5	The impact may occur
Almost Certain/ Highly Probable	6	It is most likely that the impact will occur
Certain/Definite	7	There are sound scientific reasons to expect that the impact will definitely occur

When assessing these impacts, broader considerations were also considered. These include the **confidence** with which the assessment of the impact was undertaken, the **reversibility** of the impact and the resource **irreplaceability**.

For each predicted impact, certain criteria are applied to establish the likely **significance** of the impact, firstly in the case of no mitigation being applied and then with the most effective mitigation measure(s) in place.

Before the significance is determined, it is first necessary to calculate the consequence using the following formula:

$$\text{Consequence} = \text{type} \times (\text{intensity} + \text{duration} + \text{extent}).$$

To calculate the significance of an impact, the **probability** (or likelihood) of that impact occurring is applied to the consequence as follows:

$$\text{Significance} = \text{consequence} \times \text{probability}$$

Depending on the numerical result of this formula, the impact would fall into a significance category (see Table 6.2) as negligible, minor, moderate or major, and the type would be either positive or negative

Table 6.2: Application of significance ratings

Significance Rating	Score Range	
Major (-)	-109	-147
Moderate (-)	-73	-108
Minor (-)	-36	-72
Negligible (-)	-1	-35
Neutral	0	
Negligible (+)	1	35
Minor (+)	36	72
Moderate (+)	73	108
Major (+)	109	147

6.2 Impact Evaluation Results

As part of the scoping phase a preliminary impact evaluation was undertaken for both the construction and operational phases of the proposed wind energy facility. The detailed matrix containing individual scoring, mitigation measures and cumulative impacts is attached as an Appendix to this report.

This preliminary impact evaluation is based solely on desktop research and subject to the limitations outlined in Chapter 1. Table 6.3 presents a summary of both the construction and operational impacts that are anticipated to arise from the proposed wind energy facility, before and after mitigation. Should decommissioning occur, the impacts are expected to be similar to those that took place during the construction phase and therefore the same ratings have been applied.

The preliminary impact evaluation of the Impofu West Wind Farm presented in Table 6.3, suggests that the net effect from a socio-economic perspective would be positive. That is the project would generate greater benefits during both the construction and operational phases than the potential losses that could occur as a result of its establishment. Stimulation of production, employment, government revenue, skills development and household income as a result of the investment in the project and its subsequent operations will outweigh possible production, employment and household income losses that could be experienced by local businesses affected by changes in the areas of aesthetic and visual resources.

Table 6.3: Summary of preliminary impact evaluation of the construction and operational phases of the proposed wind farm

Project phase	Impact	Without mitigation						With mitigation					
		Nature	Duration	Extent	Intensity	Probability	Significance	Nature	Duration	Extent	Intensity	Probability	Significance
Construction	Temporary stimulation of the national and local economy	Positive	Short term	National	Very high	Almost certain / Highly probable	Moderate - positive	Positive	Short term	National	Very high	Almost certain / Highly probable	Moderate - positive
Construction	Temporary increase employment in the national and local economies	Positive	Short term	National	High	Almost certain / Highly probable	Moderate - positive	Positive	Short term	National	High	Almost certain / Highly probable	Moderate - positive
Construction	Contribution to skills development in the country and local economy	Positive	Permanent	National	High	Probable	Minor - positive	Positive	Permanent	National	High	Almost certain / Highly probable	Moderate - positive
Construction	Temporary increase in household earnings	Positive	Medium term	National	Moderate	Probable	Minor - positive	Positive	Medium term	National	Moderate	Probable	Minor - positive
Construction	Temporary increase in government revenue	Positive	Short term	National	Low	Almost certain / Highly probable	Minor - positive	Positive	Short term	National	Low	Almost certain / Highly probable	Minor - positive
Construction	Negative changes to the sense of place	Negative	Short term	Limited	High	Almost certain / Highly probable	Minor - negative	Negative	Short term	Limited	Moderate	Almost certain / Highly probable	Minor - negative

Construction	Negative impact on the local tourism industry	Negative	Short term	Limited	Negligible	Unlikely	Negligible - negative	Negative	Short term	Limited	Negligible	Rare / improbable	Negligible - negative
Construction	Temporary increase in social conflicts associated with the influx of people	Negative	Short term	Local	Low	Almost certain / Highly probable	Minor - negative	Negative	Short term	Local	Low	Rare / improbable	Negligible - negative
Construction	Impact on economic and social infrastructure	Negative	Short term	Municipal area	Low	Almost certain / Highly probable	Minor - negative	Negative	Short term	Municipal area	Negligible	Probable	Negligible - negative
Construction	Impact on property and land value in the immediately affected area	Negative	Long term	Local	Moderate	Unlikely	Minor - negative	Negative	Long term	Local	Low	Unlikely	Negligible - negative
Operation	Sustainable increase in production and GDP nationally and locally	Positive	On-going	National	Moderate	Almost certain / Highly probable	Moderate - positive	Positive	On-going	National	Moderate	Almost certain / Highly probable	Moderate - positive
Operation	Creation of sustainable employment positions nationally and locally	Positive	On-going	National	Moderate	Almost certain / Highly probable	Moderate - positive	Positive	On-going	National	Moderate	Almost certain / Highly probable	Moderate - positive

Operation	Skills development of permanently employed workers	Positive	Permanent	Municipal area	Moderate	Almost certain / Highly probable	Moderate - positive	Positive	Permanent	Municipal area	Moderate	Certain / definite	Moderate - positive
Operation	Improved standards of living for benefiting households	Positive	On-going	National	Moderate	Probable	Minor - positive	Positive	On-going	National	Moderate	Probable	Minor - positive
Operation	Sustainable increase in national and local government revenue	Positive	On-going	National	Low	Almost certain / Highly probable	Moderate - positive	Positive	On-going	National	Low	Almost certain / Highly probable	Moderate - positive
Operation	Provision of electricity for future development	Positive	On-going	National	Moderate	Almost certain / Highly probable	Moderate - positive	Positive	On-going	National	Moderate	Almost certain / Highly probable	Moderate - positive
Operation	Local economic and social development benefits derived from the project's operations	Positive	On-going	Municipal area	High	Almost certain / Highly probable	Moderate - positive	Positive	On-going	Municipal area	High	Certain / definite	Moderate - positive
Operation	Improvement of the livelihoods of the household's dependant on the local agricultural sector	Positive	On-going	Local	High	Almost certain / Highly probable	Moderate - positive	Positive	On-going	Local	High	Almost certain / Highly probable	Moderate - positive

Operation	Negative changes to the sense of place	Negative	On-going	Local	Negligible	Unlikely	Negligible - negative	Negative	On-going	Local	Negligible	Rare / improbable	Negligible - negative
Operation	Negative impact on the local tourism industry	Negative	On-going	Local	Moderate	Unlikely	Minor - negative	Negative	On-going	Local	Moderate	Rare / improbable	Negligible - negative
Operation	Potential negative impact on the livelihoods of the household's dependant on the local tourism	Negative	On-going	Local	Moderate	Probable	Minor - negative	Negative	On-going	Local	Low	Rare / improbable	Negligible - negative

6.3 Assessment of Cumulative Impacts

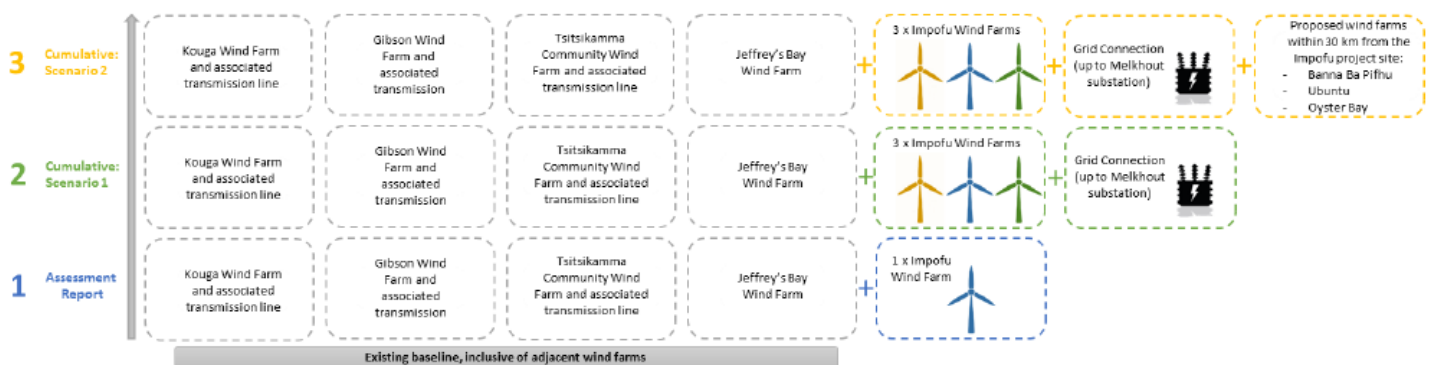
The cumulative impacts of the Impofu West Wind Farm are an important consideration for the project given the context of the existing ‘renewable energy landscape’. The assessment of cumulative effects have been considered for all renewable energy developments with a valid Environmental Authorisation within a 30km radius of the proposed Impofu West Wind Farm site. These wind farms and associated transmission lines are outlined in Table 6.4.

Table 6.4: Adjacent proposed wind farms considered in the assessment of cumulative impacts

Wind Farms	Turbines and MW	Status
Oyster Bay Wind Energy Facility and associated (4.3 km) transmission line	41 (3.6 MW) 140 MW (contracted capacity)	EA; Construction to commence in 2018
Ubuntu Wind Energy Project	31 – 50 (100 MW)	EA
Banna Ba Pifhu Windfarm Project	9 – 17 (30.6 MW)	EA

The cumulative impacts for the project are considered for any renewable energy developments in addition to the assessment taken against the Impofu West Wind Farm. The scenarios for the assessment of cumulative impacts for the project are shown in Figure 6.1.

Figure 6.1: Concept for assessing cumulative impacts



In undertaking the assessment of the cumulative impacts, this socio-economic report considers the following:

- The findings of the impact studies undertaken for the approved wind farms listed in Table 6.4
- Pre-construction monitoring data associated with the approved wind farms listed in Table 6.4

As outlined in Section 6.2 the net effect of the proposed development from a socio-economic perspective during both the construction and operational phases would be positive. Under both Scenario 1 and Scenario 2 the same type of impacts identified in Section 6.2 will arise.

Accordingly, the cumulative impact, under both Scenario 1 and Scenario 2 would also be positive. The significance of the positive impact however would differ between Scenario 1 and Scenario 2. This is due to the scale of the investment during both the construction and operational phases of Scenario's 1 and 2 differing.

Under Scenario 1, the significance of the net positive socio-economic impact would exceed that of the Impofu North Wind Farm, but would be lower than that of Scenario 2. The significance of the net positive

socio-economic impact under Scenario 2 would exceed that of both the Impofu West Wind Farm and Scenario 1. Under both scenarios the nature of the impact would remain positive.

Section 6.3.1 and 6.3.2 present the cumulative impacts identified for both Scenarios 1 and 2 for the Impofu North Wind Farm.

6.3.1 Construction/Decommissioning Phase

Temporary stimulation of the national and local economy

- Given the number of operational and potential wind energy facilities in the area, it is highly likely that the demand for goods and services required for the construction of similar facilities would grow. The presence of such wind facilities, both within the local area and the greater Eastern Cape area, has resulted in the establishment of new industries in the country. The further development of wind farms in the area could potentially promote new businesses particularly those that provide supporting services to construction companies.

Contribution to skills development in the country and local economy

- Improved labour productivity and employability of construction workers for similar projects.
- Possible development of local skills and expertise in R&D and manufacturing industries related to wind technology through partnerships with Nelson Mandela University (NMU) and surrounding Technical and Vocational Education and Training Colleges (TVET).
- Promotes South Africa's human capital development.

Temporary increase in household earnings

- Improved standard of living of the affected households.
- Possible increase of households' savings.

Temporary increase in government revenue

- Lower government debt servicing costs.
- Increased government revenue for social programmes.

Negative changes to the sense of place

- Potential change in perception of the area as "out-of-the-way/peaceful/natural" due to the construction of other wind turbines in the surrounding area albeit temporarily.
- Potential altered characteristics of the environment through the introduction of new built elements.

Potential change in the perception of tourists of the local environment as "out-of-the-way/peaceful/natural".

Negative impact on the local tourism industry

- Potential reduction in the number of tourists visiting the area due to the construction of other wind turbine developments in the surrounding area albeit temporarily.
- Perceptions of tourists regarding the area's representation as "eco-orientated" could potentially change due to the development as well as similar developments proposed.

Negative Impact on economic and social infrastructure

- Increased pressure on public healthcare facilities.
- Increased wear and tear on road network and other economic infrastructure.

Impact on property and land value in the immediately affected area

- None foreseen.

6.3.2 Operational Phase

Sustainable increase in production and GDP nationally and locally

- Sufficient economies of scale could be created to establish new businesses in the local economies. These businesses could then supply the goods and services required for the operation and maintenance of the facility than cannot currently be procured in the area. This would contribute to the local economies' growth and development.

Creation of sustainable employment positions nationally and locally

- Increased number of permanent operational positions created as a direct result of the wind farm development, as well as from the indirect and induced effect associated with them.
- Improved living standards of the directly and indirectly affected households.
- Experience in operating and maintaining a wind energy facility.

Skills development of permanently employed workers

- Development of new skills and expertise in the area to support the development of the wind energy industry.
- Human capital development of the affected workers.

Improved standards of living for benefiting household

- Improved productivity of workers.
- Improved health and living conditions of the affected households.

Sustainable increase in national and local government revenue

- Possible improvement in service delivery and increased social expenditure.

Provision of electricity for future development

- Increase volume and certainty of the energy supply.

Local economic and social development benefits derived from the project's operations

- Declining levels of poverty in both the Kouga and Koukamma Local Municipalities.
- Improved standards of living of the members of the Community Trust and households that benefit from the trusts programmes.
- Possible improvements in access to services and status of local infrastructure.

Improvement of the livelihoods of the household's dependant on the local agricultural sector

- Increased investment in farms on which turbines are sited resulting in increased productivity.
- Improvement in the livelihoods farmers and farm workers through higher incomes.

Potential Negative changes to the sense of place

- Reduction in the number of tourists visiting the area due to the construction of other wind turbine developments in the surrounding area albeit temporarily.
- Perceptions of tourists regarding the area's representation as "eco-orientated" could change due to the development as well as similar developments proposed.

Potential Negative impact on the local tourism

- Perceptions of tourists regarding the area's representation as "eco-orientated" could change due to the development as well as similar developments proposed.

Potential negative impact on the livelihoods of the household's dependant on the local tourism

- Worsening of the unemployment situation in the area.
- Possible increase in local poverty levels.
- Stronger alienation towards future developments in the area.

6.4 Assessment of the No-Go Option

Under the No-Go option the Impofu West Wind Farm would not be developed. As such, all the proposed impacts outlined in Table 6.3 would be “neutral” i.e. should the development not occur none of the negative or positive impacts identified during the construction, operational and decommissioning phases would arise.

Furthermore, should the Impofu West Wind Farm not be developed, the potential job opportunities, and associated improvement in livelihoods, that could be created are forgone. Improvements in energy supply would likewise also be foregone.

6.5 Summary and Conclusion

Based on the desktop assessment undertaken in this chapter, the following potential positive impacts of the proposed wind energy facility relate to:

- GDP growth;
- Local and preferential procurement (BBBEE, women-owned vendors etc.);
- Enterprise development;
- The creation of employment and skills development opportunities; and
- The promotion of clean and renewable energy.

These are all aspects that have been realised through construction and operation of the projects procured in the first three rounds of the REI4P

Potential negative impacts that could arise (but which can largely be mitigated) include:

- The impact on the rural sense of place and scenic integrity of the landscape. In the unlikely event that such negative impacts do occur, the impact is likely to be small given the transformed nature of the landscape and the close proximity of the development to existing turbines. These impacts can, in turn, impact the tourism industry in the area.

No fatal flaws were identified as part of the socio-economic assessment for the draft scoping report.

This preliminary information suggests that, from a socio-economic perspective, that proposed development is acceptable and will have a predominately positive impact on the socio-economic environment. As such there are no socio-economic reasons for the development not to proceed to the EIA phase.

Chapter 7 Plan of Study for EIA

It is important to note that the assessment undertaken in Section 6.2 is preliminary based on desktop research and the specialist's knowledge and experience in the field. This preliminary information suggests that, from a socio-economic perspective, that proposed development is acceptable and will have a predominately positive impact on the socio-economic environment and should proceed to the EIA phase.

The major task remaining going into the EIA phase is to conduct interviews with I&APs (i.e. effected and adjacent landowners; municipal LED officers; local tourism organisation representatives etc.). These interviews will form the basis of a more detailed assessment, which will include an economic impact assessment of project costs, and will assist with accurately validating and quantifying the preliminary information. Thereafter, the impact ratings will be revisited where necessary.

The EIA phase will further unpack each of the key socio-economic issues identified in Chapter 4 in greater detail. This will include quantifying the estimated effect that the proposed wind farm development will have on GDP, production, employment and individual income in a more narrative format. The EIA phase will also build on, and expand, the preliminary baseline data gathered during the scoping phase, seeking to quantify the effect that the proposed development will have on the livelihoods of farmers and farm workers.

During the EIA phase, the cumulative impacts outlined in Section 6.3 will also be reviewed and updated if necessary. This review process will be informed, in part, by stakeholder engagements and will seek to quantify the cumulative impacts in greater detail.

The following list indicates information that will be gathered in the next phase of the project, and which was not available at the time of the assessment undertaken in Section 6.2:

- Comments received from I&APs during the public participation process associated with the scoping report
- Duration of the construction and operational phases
- Number of people that are likely to be employed during the construction and operational phases
- Breakdown of number of people employed in terms of low skilled, semi-skilled and skilled during the construction and operational phases
- Estimate of the total wage bill for the construction and operational phases and a percentage breakdown per skills category
- Estimated total capital expenditure for the construction phase
- Estimated annual operational expenditure once the wind energy facility has been established
- Indication of where construction workers will be housed (on-site or in nearest town)
- Opportunities for on-site skills development and training both during construction and in the operational phase of the facility
- Typical lifespan of a wind energy facility
- Description of the typical activities associated with the construction phase, specifically on-site activities. This includes a description of how the large components associated with a wind energy facility will be transported to the site and assembled on site
- The size of the vehicles needed to transport components and the route that will be used to transport the large components to the site; and an estimate of the number of vehicle trips required and duration of each trim

- Information on the nature of the agreements with the affected landowners, specifically with regard to compensation for damage to land, infrastructure etc.
- Information on the lease/rental agreements with local landowners and or communities, specifically with regard to issues relating to compensation. This information is required so as to indicate how local landowners and communities stand to benefit from the project.

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Annexure 1: Specialist's Curriculum Vitae

Elena Broughton

Date of Birth: 11 September 1980
 Designation: Unit Manager: Innovation & Sustainable Development
 Profession: Senior Development Economist
 Specialisation: Sustainable Development Specialist
 Years within Firm: 13 Years
 Nationality: Russian
 Years of Experience: 13 Years
 HDI Status: White Female



Education:

University of Pretoria - 2011	MSc (Technology Management)
University of Pretoria - 2007	BScHons (Technology Management)
Parkland College, USA - 2004	Computer Integrated Accounting
Parkland College, USA - 2004	Independent Business
Parkland College, USA - 2003	Intermediate Accounting
Parkland College, USA - 2003	Records Management
Parkland College, USA - 2003	Financial Accounting
Parkland College, USA - 2003	Managerial Accounting
Nizhny Novgorod University, Russia - 2002	BComHons (Economics)

Professional Membership:

SAPOA Urban-Econ Development Economists (Pty) Ltd

Language Proficiency:	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Russian	Excellent	Excellent	Excellent

Work Experience:

2004 - Current	Urban-Econ Development Economists (Pty) Ltd
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Key Qualification:

Elena Broughton completed her BComHons in Economics in Russia, at Nizhny Novgorod State University in 2002 specialising in regional economics. At the same time, she completed an additional degree as Translator/Interpreter in Professional Orientated Communication. After completion of her Honours degree in Economics, Elena moved to the USA and stayed there for 1.5 years. During her stay in the USA, she completed a number of Accounting and Business courses at Parkland College, Illinois. In 2007, she obtained her BScHons in Technology Management (Cum Laude) at the University of Pretoria and later received her MSc in Technology Management (2011) from the same university.

Elena Broughton is a senior professional at Urban-Econ and has an extensive knowledge in various fields of economic development, including impact assessments, investment strategy formulation, strategic decision analysis, and monitoring and evaluation. She is experienced in developing input-output and SAM-based models, as well as development and application of other econometric techniques. Elena has a special interest in project evaluation and decision-making framework, with the latter being the focus of her Master's dissertation. Over the past few years, she was able to extend her experience in these fields working on projects for both government and the private sector. Elena is managing the Innovation & Sustainable Development Unit and has successfully completed various energy and innovation projects in this capacity.

Experience Record:

Project:	The Localisation Potential of Photovoltaics (PV) and a Strategy to support large scale roll-out in South Africa
Year:	June 2012 – March 2013

<p>Location: Client: Project Features: Activities Performed:</p>	<p>National WWF S, South African Photovoltaic Industry Association (SAPVIA), and the Department of Trade and Industry, RSA</p> <ul style="list-style-type: none"> ▪ Describing of the global PV industry and its trends ▪ Profiling of the local PV industry ▪ Analysing of the local PV value chain considering three market segments, i.e. rooftop, commercial and utilities ▪ Analysing of financial dynamics of the market and standardisation requirements ▪ Determining the potential for localisation in the country ▪ Developing a strategy for the future roll-out <p>Policy environment review, market segments analysis, demand analysis, value chain analysis, pricing of components, local content analysis, potential for localisation assessment, strategy formulation</p> <p>The goal of the study was to describe the global and local PV industry trends and dynamics, and to develop localisation scenarios for the purposes of providing recommendations with respect to the future roll-out of the industry.</p>
<p>Project: Year: Location: Client: Project Features: Activities Performed:</p>	<p>Feasibility study into establishing CSP component manufacturing facilities in South Africa November 2012 – February 2013 National The Industrial Development Corporation, RSA</p> <ul style="list-style-type: none"> ▪ The identification of various CSP technologies and systems that are promoted internationally ▪ And various designs and configuration of each technology. ▪ An overview of the international and local CSP market, the major materials and components of CSP with a view of establishing a local manufacturing base of CSP systems and components ▪ The identification of key technical and technology partner in the development of the manufacturing facility ▪ Engagement with the potential technical partner to determine whether the IDC can capacitate the supplier to manufacture components and systems locally ▪ Identification of a suitable location for the new facility or expansion of existing local CSP component manufacturing facilities in South Africa ▪ The amount of potential jobs that will be created from expansion or creation of a new facility, preliminary financial model and CAPEX budget. <p>Global CSP industry analysis, value chain analysis, local industrial capabilities assessment, demand analysis, job creation potential analysis</p>
<p>Project: Year: Location: Client: Project Features: Activities Performed:</p>	<p>Northern Cape Renewable Energy Strategy November 2012 – June 2013 National The Northern Cape Department of Economic Development and Tourism, RSA</p> <ul style="list-style-type: none"> ▪ Description of the status and potential of the local renewable energy sector ▪ Investigation of the potential to establish clean and green sustainable development projects in the Province in line with the optimal mix identified. ▪ Identification of income generation opportunities for the purpose of revitalising rural communities ▪ Assessment of the institutional capacity and capability ▪ Strategy and implementation plan formulation <p>Policy environment analysis, renewable energy industry profiling, desired state of industry analysis, market segmentation and demand analysis, stakeholder analysis and institutional structures review, strategy formulation</p>
<p>Project: Year: Location: Client: Project Features:</p>	<p>A study of the factors contributing to successful technology commercialization March 2015-September 2015 National The dti</p> <ul style="list-style-type: none"> • Current context and framework for technology commercialisation in South Africa • Identification of critical factors and resources required for successful commercialisation

Activities Performed:	<ul style="list-style-type: none"> • On-line survey • Interviews with numerous stakeholders (universities, businesses, government organisations) • Case study analysis of policies and interventions in other countries • Profiling of the current policy environment, funding mechanisms and stakeholders • Identification of mechanisms and interventions to assist in commercialisation of technologies • Formulation of a guide for commercialisation <p>Project management and quality control, presentation of study findings</p>
Project: Year: Location: Client: Project Features:	<p>Assessment of policy to enable the implementation of energy efficiency in the building sector</p> <p>December 2014-April 2015</p> <p>National</p> <p>SANEDI/Department of Energy</p> <ul style="list-style-type: none"> • Assessment of existing national and local government policy frameworks (legislations, standards, policy, building codes etc.) with respect to constraints and opportunities created for implementation of energy efficiency in the building sector • Interview various stakeholders • Review of interventions and support mechanisms • Undertake case studies • Provide policy recommendations
Position held: Activities Performed:	<p>Project manager</p> <p>Project management and quality control, presentation of study finding</p>
Project: Year: Location: Client: Project Features:	<p>A Study of the Economic Impact of load shedding on the City of Johannesburg with or without Kelvin Power Station</p> <p>January 2015 – June 2015</p> <p>City of Johannesburg</p> <p>City of Johannesburg Metro</p> <ul style="list-style-type: none"> • Developing a model of electricity usage by various economic sectors based on information supplied by City Power • Profiling economic structure of Coty of Joburg regions • Modelling of the potential economic impact on the City with and without Kelvin Power Station, in the short-term and the impact of outages on the City as a whole over the medium-term; • Interview large electricity users in the City • Interpreting economic effects of load shedding derived from the modelling exercise in the context of the CoJ economy, and specifically its implications on the production, Gross Domestic Product per region (GDP-R), and employment
Position held: Activities Performed:	<p>Senior Economist</p> <p>Economic modelling, report quality control, presentation of findings</p>
Project: Year: Location: Client: Project Features:	<p>Global Energy Efficiency options: Energy efficient technologies, policy and institutional requirements for adoption in South Africa</p> <p>July 2015 – February 2016</p> <p>National</p> <p>The dti/the Industrial Development Corporation</p> <ul style="list-style-type: none"> • Profiling of full range of Energy Efficiency options currently being utilised globally in the building and industrial/mining sectors • Assessment of technologies favoured by countries that have successfully implemented EE measures • Explore policy initiatives and incentives that contribute to both the greening of industries and the establishment of new green industries • Developing a cost and savings potential model to evaluate technologies
Position held: Activities Performed:	<p>Project Manager</p> <p>Project management and quality control, presentation of study findings, costing and saving model development</p>
Project:	Feasibility study of high temperature applications for South Africa

Year:	October 2014 – February 2015
Location:	National
Client:	CSIR/the Department of Science and Technology
Project Features:	<ul style="list-style-type: none"> • Profile HTA technologies • Assess South Africa’s readiness and need for HTA • Assess the current and projected future requirements for HTA • Evaluating the prospects (technical and economic) of HTA in South Africa • Determine RDI opportunities for the country • Formulate and action plan and providing recommendations appropriate for the implementation programme
Position held:	Project Manager
Activities Performed:	Project management and quality control, engagement with industry stakeholders

Other Projects:

- Sustainable Energy Consumption and Production (SECP) in agriculture and integrated waste management - research and training: Sustainable Energy Consumption and Production (SECP) is a programme designed and implemented by the Renewable Energy and Energy Efficiency Partnership (REEEP). REEEP partnered with SANEDI to implement the initiative in South Africa, in order to assist the local business communities and entrepreneurs in the agricultural and waste management sectors to implement Sustainable Consumption and Production (SCP) practices within their respective industries. Urban-Econ was appointed to undertake a study into agriculture and integrated waste management with a specific emphasis on SECP practices employed in these two sectors and opportunities that exists for SECP deployment. The study reviewed the value chains within three agricultural sub-sectors, the energy intensity of different agricultural activities and waste generated by these. It identified the opportunities for energy efficient and renewable energy technologies and practices deployment, reviewed 23 case studies, and provided information on financial-and non-financial support that South African farmers could access to assist them in taking up the identified energy efficient and renewable energy technologies and solutions. A training manual was developed and a number of workshops were conducted in three provinces, i.e. Gauteng, Western Cape, and Free State
- Feasibility study on biogas feedstock availability and characterisation: The CSIR main campus is envisaged to become energy autonomous in five to eight years. A number of alternative energy solutions are considered, one of which is a biogas project. The energy Centre at the CSIR appointed Urban Econ to undertake the assessment of the potential organic waste feedstock that could be gathered within 50km radius from the site. They study included analysis of the biomass availability, review of environmental benefits, and recommendations for the most cost-efficient sources of organic waste feedstock that could be explored.
- Go-to-Market Strategy for a PV/Panel Manufacturer: Urban-Econ together with EScience Associates and Tracy Stewart Consulting was appointed by the CEF to undertake a Go-to-Market Strategy for a PV panel manufacturing facility. The project consisted of two major parts. The first component included the analysis of the market and opportunities presented in the market, as well as identification of the needs, affordability levels and requirements by all groups of stakeholders in the industry’s value chain. The second part of the study included the formulation of the strategic plan that outlined various target markets to be pursued, value proposition to be offered, market channels to be considered for entering the market and activities to be implemented during the product pre-launch, launch and post-launch phases.
- High-tech bio-sciences incubator feasibility study: The study focused on the assessment of the feasibility of establishing a physical high-tech bio-sciences incubator at the Innovation Hub in Gauteng, South Africa. It involved the investigation into the most feasible location, market viability, service offerings, operational requirements, and seed funding requirements.
- High-tech chemical sector incubator feasibility study: The study focused on the assessment of the feasibility of establishing a high-tech chemical sector incubator in Gauteng, South Africa. It involved

the investigation into the most feasible location, market viability, service offerings, operational requirements, and seed funding requirements.

- Promotion of Decent work in Southern African Ports (phase ii): The study focused on the independent assessment of progress to date of the project across all the outcomes; assessing performance as per the foreseen targets and indicators of achievement at output level, strategies and implementation modalities chosen, partnership arrangements, constraints and opportunities in both Mozambique and South Africa. It provided strategic and operational recommendations as well as highlighted lessons to improve performance and delivery of project results. to port workers.
- A feasibility study and a business plan for downstream beneficiation of fly ash in the Nkangala District Municipality: Large volumes of coal fly ash (CFA) are being produced at power stations in Mpumalanga. CFA is already used as a cement extender by local cement factories; however, CFA has numerous other applicants that are not properly explored. The study therefore aimed at investigating all possible opportunities that could be derived from CFA beneficiation and identification of those that could be realised in Nkangala.
- Matjhabeng Solar Park: Socio Economic needs analysis and plan formulation: The study focused on the community of Matjhabeng, the Free State Province. It involved the identification of the socio-economic needs and priorities for the local communities, creating an inventory of social facilities and small enterprises, and running a skills registrar. Aside from the secondary data review, 100 households were surveyed, 35 social facilities were profiled, and 30 businesses were audited. a skills development, a social facilities, and enterprise development investment plans for the project developer were formulated.
- Examining the possibility of attracting corporate social investment (CSI) into water research and development: The study aimed at obtaining feedback from a sample of corporate representing a variety of industries with regard to the possibility and appetite to invest CSI funds in deploying water and sanitation related solutions in communities targeted by them.
- Go-to-Market Strategy for a PV/Panel Manufacturer: Urban-Econ together with EScience Associates and Tracy Stewart Consulting was appointed by the CEF to undertake a Go-to-Market Strategy for a PV panel manufacturing facility. The project consisted of two major parts. The first component included the analysis of the market and opportunities presented in the market, as well as identification of the needs, affordability levels and requirements by all groups of stakeholders in the industry's value chain. The second part of the study included the formulation of the strategic plan that outlined various target markets to be pursued, value proposition to be offered, market channels to be considered for entering the market and activities to be implemented during the product pre-launch, launch and post-launch phases.
- SunCorp Socio-Economic and Enterprise Development Plan Formulation: Urban-Econ was appointed by SunCorp to develop a Socio-Economic Development and Enterprise Development Plan for a Solar PV project in the Free State. The plans were devised in line with the DOE requirements outlined for the bidding phase.
- Savanna Cookware Manufacturing Facility Pre-Feasibility Study: Urban-Econ undertook a pre-feasibility study for a manufacturing facility planned to produce luxurious stainless-steel cookware in South Africa. The pre-feasibility study focused on determining the need and desirability for the proposed manufacturing facility considering the defined primary and secondary markets, the key prerequisites for the viability of the proposed venture and the most optimal location for the proposed manufacturing facility.
- An Opportunity Cost Assessment for the proposed Labonte 5 Mining Project: The purpose of the study was to investigate the opportunity cost of the proposed sand mining project to determine the implications on the local economy dynamics and the impact on the major infrastructure projects implemented in the Lephalale area if the proposed project is not approved.
- Saldanha Bay Separation Plant Economic Impact Assessment: The project involved undertaking an Economic Impact Assessment study for the proposed construction and operation of a Rare Earth Elements (REE) Separation Plant on Portion 6 of the Farm Langeberg 188 in Saldanha, in the Western

Cape Province. The study formed part of the Environmental Impact Assessment process as prescribed in the National Environmental Management Act (NEMA) of 1998 and its subsequent amendments.

- Zandkopsdrift Rare Earth Elements (REE) Project Economic Impact Assessment: The project involved undertaking a Socio-Economic Impact Assessment study for the proposed the Zandkopsdrift Rare Earth Elements (REEs) Project near Garies in the Northern Cape Province of South Africa. The study formed part of the Environmental Impact Assessment process as prescribed in the National Environmental Management Act (NEMA) of 1998 and its subsequent amendments.
- Balmoral EIA: The study involved undertaking a Socio-Economic Impact Assessment as an input into a Basic Impact Assessment Study for the proposed Balmoral X5 Township Development in the Ekurhuleni Metropolitan Municipality (EMM).
- Green Building Market Entry Study: The Embassy of the Kingdom of the Netherlands in Pretoria appointed Urban-Econ to undertake a market entry study for the Green Building Industry of South Africa. The document was compiled for the purpose of guiding the existing or prospective Dutch companies in expanding or involving themselves in the South African Green Building Industry. The report contained information on the policy and regulatory environment that drives the development of this sector in the country and the broad overview of the status of the construction industry with the focus on the green building industry. The document also encompassed information on the state of development and industry maturity of selected green building sub-sectors that are aligned with the expertise of the Dutch companies. Information on doing business in South Africa as far as procurement and tendering practices, business funding and other support offered by South Africa and Netherlands, was also provided.
- Royal Bafokeng Mining Procurement Study: The study identified business opportunities that can be established in the area leading to the localisation of mining inputs. It was based on a comprehensive assessment of the selected mine's contract-based procurement practices.
- Ventersburg Business Development Concept: The study focused on the identification of business development opportunities that could be pursued in the town of Ventersburg based on the traffic derived in the area from the N1 highway and other regional roads. The study involved a comprehensive assessment of the target markets induced by traffic, economic base of the area, current business offerings and derived opportunities. It concluded with a presentation of business development concept scenarios and associated socio-economic benefits.
- Eskom CSP (Solar 1) Macroeconomic Impact Assessment: The study involved the identification of potential localisation opportunities for various components of the project and modelling of the socio-economic impact.
- Proposed Exxaro IPP Coal-Powered Power Station - Lephalale Scoping Inputs: Urban-Econ was appointed to undertake a Socio-Economic Scoping Study and Land-Use Impact Study for the proposed Exxaro Coal-Powered Power Station near the town of Lephalale, Limpopo Province.
- Mafube Nooitgedacht and Wildfontein EIA/EMP Sustainable Development Investigation Study: Urban-Econ was appointed to undertake an investigation into sustainable development options associated with the proposed project. The results of this study aimed at informing the decision makers of socio-economic trade-offs related to each option analysed and the preferred alternative.
- Thaba Metsi Sustainable Development Investigation Study: The objective of the Thaba Metsi Project is to mine coal via opencast and underground mining methods for supply to the Independent Power Producer (IPP) coal-fired power station, to be developed by Exxaro, north of the proposed Thaba Metsi project. Urban-Econ provided a specialist input into the sustainable development Investigation aimed at quantifying and assessing various options associated with the development and post-mining land uses that formed part of an input into the EIA report.
- Eskom Sere Wind (WEF1) Macro-Economic Impact Assessment: The project entailed the strategic assessment of the proposed facility on the macro-economic situation with respect to the impact on the balance of payments, supply of energy, demand for water, and achievement of strategic government objectives. It also entailed the assessment of the proposed project on the regional and local economies.
- Evaluation of Energy-Related Proposals for the Department of Science and Technology: Urban-Econ was appointed to undertake an evaluation of six energy-related proposals submitted to the DST SBS.

The objective of the evaluation is to advise the Department on whether the projects described in the proposals should be funded or not. The assessment takes into account operational and financial feasibility of projects, alignment thereof with government objectives, economic benefits derived from the project, ability of the organisations to implement the projects successfully and a risk assessment. The project also involved the development of a decision framework based on a Multi-Criteria Decision Method to be used to compare proposals and determine suitability for funding and prioritisation.

- Independent Evaluation of the Wireless Mesh Network in Government Broadband: Urban-Econ was appointed to undertake an independent evaluation of the Community Wireless Mesh Networks in the Government Broadband project. Urban-Econ's responsibility was to evaluate the progress of the project and provide recommendations that can be implemented to improve its design and execution.
- Eskom Ariadne-Eros Power Lines Economic & Agricultural Impact Assessment: Urban-Econ was appointed to undertake an Agricultural Potential and Economic Impact Assessment for the proposed Ariadne-Eros Transmission Power Line and expansion and upgrade of the related substations in KwaZulu-Natal.
- Eskom Ingula Pumped Storage Scheme Regional Economic Impact Assessment: The purpose of the study was to present an assessment of socio-economic impact of the Ingula Pumped Storage Scheme on the national and regional economies.
- Gauteng Infrastructure Renewal and Investment Plan (GIRIP): The study involved the formulation of an Infrastructure and Renewal Plan up to 2025 that would transform Gauteng into a competitive Global City-Region. As part of the study a regional model with necessary demographic and economic projects was developed that assisted in identifying future infrastructural needs in the Province.
- De Hoop Dam Economic Impact Monitoring Framework: Urban-Econ was approached to develop and set up an integrated and coherent monitoring and evaluation reporting system which will primarily be based on a regional impact assessment model framework to monitor and evaluate the regional socio-economic impacts due to the development of the De Hoop Dam.
- North West Cluster Performance Analyses: Urban-Econ was appointed by the North West Office of the Premier to undertake the analysis of statistics tables for six clusters (Human Resource Development, Physical Assets, Resource Base, Governance and Protection, Economic and Social), identify areas that require interventions and propose possible solutions to address the key challenges.
- Mopani Investment Strategy: Urban-Econ was appointed by the Mopani District Municipality to formulate an investment strategy for the region with a focus of promoting integrated and sustainable development in the local economy.
- Socio-Economic Impact Assessment - Proposed Route Operator Business in Mpumalanga: The project entailed assisting with the preparation of the response to the Request for Applications in respect of Limited Pay-out Machine Licences in the Mpumalanga Province. The study encompassed a macro-level socio-economic analysis of the proposed route operator business in Mpumalanga with a focus on: (a) benefits to the economy in terms of gross geographical product ("GGP"), employment creation, increased household income, skills development and small, medium, micro enterprise ("SMME") development and (b) potential social impact of gaming in the Province.
- N3 Highway Economic Impact Assessment: Urban-Econ was appointed to determine the Socio-Economic Impact of the proposed re-routing of the N3 highway around Harrismith and the current link with the N5 Route towards Lesotho and Mangaung.
- The Mandela Bay Precinct Economic Impact Assessment: The study entailed conducting an economic-impact assessment of the proposed Mandela Bay Precinct Development in Port Elizabeth. The proposed project was a mixed-use development with the main component being a Regional Shopping Centre that will be surrounded by high density residential property, filling stations, light industrial space, a hospital, and a hotel and office space.
- The City of Windhoek Draft SME Policy: Urban-Econ was appointed by the City of Windhoek (COW) Local Authority to develop a Draft SME Development Policy Directive to guide future SME promotion and development in the City of Windhoek

- **Harrismith Logistics Hub Impact Assessment:** Urban-Econ Development Economists was appointed to undertake a rapid economic impact assessment study of the proposed Harrismith Freight Logistics Hub ("HLH"). The aim of the study was to determine potential benefits that could be created by the HLH in terms of unlocking the latent development of the area. This technical memorandum presents the results of the study.
- **Megamall Economic Impact Assessment:** Urban-Econ was requested to undertake an economic impact study for the Megamall project to be developed in the Mogale City Local Municipality. The aim of the study was to determine the potential economic impacts emanating from the proposed development. This study involved assessment of socio-economic impacts the proposed project could have on the local economy which could be used in application for funding from commercial banks and government.
- **Coega Ridge Economic and Social Impact Assessments:** Urban-Econ was appointed to undertake an economic and social impact assessment of the proposed Coega Ridge development. The aim of the development was to create a unique and sustainable residential enclave encompassing a "live, work, play and shop" environment including components such as affordable housing, shopping centre, office park, industrial park, community and social facilities, bulk service infrastructure, and public open space.
- **Amanzi Economic & Social Impact Assessment:** Urban-Econ was requested to undertake an economic and social impact study for the proposed Amanzi Estate that included the original homestead of Sir Percy Fitzpatrick, author of Jock of the Bushveld.
- **Limpopo Industrial Parks Resuscitation Assessment:** Urban-Econ was appointed to assess the feasibility of resuscitation of the selected industrial parks in the Limpopo Province. The study included analysis of the economic potential of the selected areas, development of scenarios and formulation of recommendations. Urban-Econ managed the team of sub-consultants.
- **North West PGDS Monitor:** The study encompasses a comprehensive analysis and projections of the achievement of the PGDS targets, reviewing the performance of the Working Groups and providing recommendations regarding actions needed to be taken to address the shortfalls.
- **Sedibelo Economic Impact Assessment:** The study involved conducting an economic-impact assessment of the proposed development utilising, an Input/output model.
- **Hanglip Sustainability Model:** Urban-Econ was appointed to develop a model that could assist decision makers in identifying the most preferred alternative/s for the Hanglip Development. The model was based on the Multi-Criteria Decision-making process.
- **Emalahleni Investment Incentive Package:** Urban-Econ was appointed by the Emalahleni Local Municipality to update the Investment Incentive Package for the Emalahleni Local Municipality.
- **Eastern Cape Industrial Sector Study:** Urban-Econ was appointed by the Eastern Cape Socio-Economic Consultative Council (ECSECC) to undertake an industrial sector study for the Eastern Cape Province. The study provided inputs to the Provincial Industrial Strategy. The focus of the strategy was on provision of support to sectors with the potential for job creation in the Province. In this context, this study aims at identifying the sectors that have the highest potential for uplifting the second economy in the Province and highlighting their growth barriers.
- **Socio-Economic Impact Assessment of the Proposed New Eskom Power Stations in the Witbank Area and Northern Free State:** The study involved conducting a socio-economic impact assessment of the proposed developments utilising an Input/Output model.
- **Sedibeng Investment Incentive Package:** The study encompasses a formulation of an incentive package that would enhance development and investment in the area, as well as promote economic growth. A comprehensive socio-economic analysis of the Sedibeng DM and its Local Municipalities, including growth potential was performed.
- **North West Sustainable Development Indicators Pilot Project:** After completing the North West Sustainable Development Indicators, Urban-Econ was appointed to execute of the pilot project of population the framework. Urban-Econ has been appointed by the North-West Province's Office of the Premier to formulate a Sustainable Development Indicator Framework for the North West Provincial Administration. The purpose of the framework is to assist the provincial government

authority in the monitoring and evaluation of their progress towards achieving sustainable growth and development.

- Polokwane Trade Hub: Urban-Econ assisted by Nyeleti Consulting Engineering, was appointed by Polokwane Municipality to undertake a Polokwane Trade Hub Feasibility study. The feasibility study included investigation of the potential of Polokwane to develop into a regional trade hub, implications associated with its development and the initiatives, including programs and projects that need to be implemented to realise the vision of Polokwane as a regional trade hub.
- Mpumalanga Job Creation Budget: The project involved an assessment of the provincial budget with respect to its impact on job creation and identification of opportunities to enhance sustainable job creation in the Province.
- Joburg BPO Zone: Urban-Econ was appointed to provide an urban-economic rationale and motivation for the selection of a BPO Precinct in the Joburg Inner City.
- Bekkersdal Skills and Entrepreneurship Development Strategy: The Bekkersdal Skills and Entrepreneurship Development Strategy provides the reader with thorough data on the existing pool of enterprises and entrepreneurs, services and products and existing skills in Bekkersdal, which can be utilised by public and private entities. The document includes Skills Audit and Business Audit Databases in Access format.
- Baralink Economic and Market Study: Urban-Econ has been appointed by Urban Dynamics to undertake an economic and market study of four areas, namely, Baralink, JP's Town, Orange Farm, and Kwadzudza and provide the feedback on potential economic activities that can be introduced to the area in regard to promotion of sustainable livelihoods. This study forms a part of a comprehensive analysis of the abovementioned areas, the purpose of which is to compile a strategy for sustainable housing development, according to the new housing policy, in different regions of Johannesburg Metropolitan area.
- Business Improvement District Strategy for Bekkersdal: Due to the low levels of consumer and business confidence in the Bekkersdal CBD, this project required the formulation of a strategy for the establishment and implementation of a BID for the CBD area of Bekkersdal.
- Expansion of Holcim Cement Plant- Economic Impact Assessment: Urban-Econ has been appointed to assess economic impact of the expansion of Holcim Cement plant in Roodepoort.
- Madiba Bay Leisure Park Regional Mall Market Study: Urban-Econ was commissioned by East Cape Showcase (Ltd.) to conduct empirical market research and compile a specialist market study for the proposed regional retail mall within the North Gate precinct of the Madiba Bay Leisure Park project.
- Social and Labour Plan for Brandbach Mine, Cullinan: In order to insure sustainable development of the industry in the future along with the implementation of national visions on skills development, poverty alleviation, BEE and employment creation, the government has introduced a Skills and Labor Plan, preparation of which became a prerequisite for every mine in the country. Urban-Econ has been appointed to develop such plan for the Brandbach Mine in Cullinan.
- NIPS for POPS Economic Impact: Urban-Econ has been appointed as part of a specialist team to undertake the economic impact assessment of Infrastructure related to Persistent Organic Pollutants (POPS) in South Africa. The focus of the assessment is to formulate clear strategic guidelines related to the impacts of POPS and or their removal/eradication for the Development of National Implementation Plans (NIPS) of the Stockholm Convention on POPS.
- Other Socio-Economic and Economic Impact Assessment Studies for Renewable Energy Projects conducted as part of the Environmental Impact Assessment Processes
- Arriesfontein Solar Energy Park: near Danielskuil in the Northern Cape (100 MW CSP-Tower facility and 225 MW PV solar facility)
- Humansrus Solar Energy Facility: near Postmasburg in the Northern Cape (100 MW CSP-Tower facility)
- Rooipunt Solar Energy Park: near Upington in the Northern Cape (100 MW CSP-Tower facility and 215 MW PV solar facility)
- Farm 198 PV Solar Energy Facility: north of Kimberley in the Northern Cape (210 MW PV solar facility)
- Wag'nbiokiespan PV Solar Energy Facility: near Boshof, the Free State Province (75 MW PV solar facility)

Countries of Work Experience:

- South Africa
- Russia
- Zambia

References:

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Matthew Keeley

Date of Birth: 25 February 1985
 Designation: Director/Manager -Eastern Cape
 Profession: Senior Development Economist
 Specialisation: Economic Impact Assessment, Property Market Analysis
 Years within Firm: 10 Years
 Nationality: RSA
 Years of Experience: 10 Years
 HDI Status: White Male



Education:

Rhodes University – 2004 to 2006	Bachelor Degree in Geography and Economics
Rhodes University & University West (Sweden) 2007	Post Graduate Honours Degree in Economic Geography

Professional Membership:

SAPOA Urban-Econ Development Economists (Pty) Ltd			
Society of South African Geographers - Membership # 05/15			
Language Proficiency:	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Fair	Fair	Fair

Work Experience:

2008 - Current	Urban-Econ Development Economists
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Key Qualification:

Matthew Keeley is the Eastern Cape Regional Branch Manager of Urban-Econ Development Economists and oversees all of the company's provincial research projects. Matthew obtained his Bachelor's degree majoring in Geography and Economics from Rhodes University; this was followed by an Honours degree in Economic Geography (Spatial Development), part of which was studied at University West, Sweden. Matthew's fields of professional interest include Economic Property Market Analysis and Socio-Economic Impact Assessments. Matthew's professional experience has involved the project management of a number of high-profile economic planning projects as well as undertaking a variety of economic market analysis projects. Areas of Matthew's project experience are listed below:

- Project Management
- Economic Property Market and Trend Analysis
- Strategic Economic Development Potential Analysis
- Geographic Information Systems (GIS)
- Socio-Economic Economic Impact Analysis
- Local Economic Development Planning
- Business Plan Development
- Socio-Economic Research and Statistical Profiling

Experience Record:

Project:	Coega Infrastructure and Investor Economic Impact Assessment
Year:	2008-2009
Location:	Nelson Mandela Bay, Eastern Cape
Client:	Coega Development Corporation
Project Features:	Urban-Econ Eastern Cape were appointed by the Coega Development Corporation (CDC) to assist in conducting an Economic Impact Assessment for the Coega IDZ. The main objectives for the project included the quantifying of the economic impact of infrastructure and investors within the Coega IDZ to date. It also included a component of developing the capacity of the CDC to assess impacts of potential investors and

Position held: Activities Performed:	providing the CDC with guidelines on how to improve positive impacts associated with investments in future. Project Manager / Project Economist Project management; Economic Impact Assessment; Training and capacity building; report writing.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	MBDA Stadium Precinct Development Plan 2011 Nelson Mandela Bay, Eastern Cape Mandela Bay Development Agency (MBDA) Urban-Econ project managed a multi-disciplinary team which investigated the viability of establishing additional commercial and leisure property/activities in the immediate surrounds of the new Nelson Mandela Bay Stadium in Port Elizabeth. Investigated the viability of establishing additional commercial and leisure property/activities. Project Manager Project management; client and stakeholder liaison; economic profiling; analysis of multi-disciplinary team inputs; Property Market Research; Opportunity analysis; Project packaging
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Lesotho Renewable Energy Master Plan 2010 – 2011 Kingdom of Lesotho Lesotho Electricity Company Urban-Econ was appointed to undertake detailed economic analysis of potential power generation plants identified throughout Lesotho culminating in a comprehensive prioritisation analysis of various projects and their potential contributions to the Kingdom's economy. Project Economist Detailed economic analysis of potential power generation plants; Country Analysis; RE Sector Analysis.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	EPWP Phase 2 Economic and Social Impact Assessment 2014 Eastern Cape Department of Public Works Urban-Econ was appointed to undertake an Impact Assessment on the Implementation of the Expanded Public Works Programme Phase 2 (2009-2014) in the Province of the Eastern Cape. The EPWP is a nationwide programme covering all spheres of government and state-owned enterprises. Project Manager Project management; Client liaison; Economic profiling.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Eastern Cape Tourism Database and Geospatial Profile 2013 Eastern Cape Department of Economic Affairs The project involved the collation, consolidation and spatial representation of tourism product information for the Eastern Cape using GIS as an analysis tool. The project was hailed as the first provincial database of its kind in RSA and will be soon integrated as a web-based platform. Project Manager Project management; Client liaison; Database development; Tourism primary research.

Other Projects:

- Industrial Implementation Plan for the Eastern Cape (EC PIDS): Urban-Econ was commissioned as part of a consortium of industrial specialists; to project manage and develop an Industrial Implementation Plan for the Eastern Cape, on behalf of the Eastern Cape Department of Economic Development and Environmental Affairs (DEDAET). The aim of the study was to provide an action-orientated implementation plan to implement the existing Eastern Cape Industrial Strategy; as well as to fill information gaps with regards to key sectors in the Eastern Cape. Thus, a team of sector specialists in agro-processing, petro-chemicals, automotive, green energy, tourism and capital goods was

assembled. Urban-Econ's role was in the overall project management, implementation action framework development and workshop facilitation. The study included the development of a situation analysis for the province, sector potential analysis, opportunity assessment and clustering identification. The outcome of the strategy was an Implementation Framework and Capital Investment Framework.

- ECPTA Reserves as Products: Urban-Econ Development Economists was appointed by the Eastern Cape Parks and Tourism Agency (ECPTA) to investigate ECPTA Reserves as Tourism products. The purpose of the assignment being to provide a business case on profiling the ECPTA nature reserve clusters in terms of their natural endowment and associated product offerings within the dual mandate of managing biodiversity conservation and destination tourism. A full socio-economic benefit analysis was required to support decision making to achieve the most efficient and effective balance and co-existence of the dual mandate as well as compliance with all applicable legislation.
- Sterkspruit Urban Regeneration Plan: Urban-Econ was appointed by the Senqu Local Municipality to undertake an innovative Economic Development Concept for the town of Sterkspruit within the Senqu Local Municipality. The objective was to have a development plan that informs planning, economic and social infrastructure as well as expected economic spin-offs for the area.
- uBuntu Wool Washing Business Plan: Urban-Econ Development Economists in partnership with A.I.M was appointed by the Department of Agriculture, Land Reform and Rural Development in conjunction with the Ubuntu Local Municipality to undertake a comprehensive feasibility study for the proposed development of a Wool Washing Facility in the town of Loxton in the Northern Cape Province.
- Ludeke Dam Feasibility Study: Urban-Econ formed part of a consortium undertaking a feasibility assessment of the potential around the Ludeke Dam for tourism applications. Aspects of the project included an assessment of the market feasibility of establishing tourism accommodation and facilities at the Ludeke Dam. Consideration of supply and demand factors in quantifying the potential viability of a tourism development. Taking into account best practise and lessons learnt from similar developments in SA. Formulation of an optimum development concept to inform the project technical team to take forward towards design. Providing Alfred Nzo District with specific implementation guidelines to take forward the project towards development. Identifying key stakeholders and potential role-players critical to the success of the research and implementation process.
- Ntenetyana Dam Feasibility Study: Urban-Econ formed part of a consortium undertaking a feasibility assessment of the potential around the Ntenetyana Dam for tourism applications. Aspects of the project included an assessment of the market feasibility of establishing tourism accommodation and facilities at the Ntenetyana Dam. Consideration was made of supply and demand factors in quantifying the potential viability of a tourism development. Taking into account best practise and lessons learnt from similar developments in SA. Formulation of an optimum development concept to inform the project technical team to take forward towards design. Providing Alfred Nzo District with specific implementation guidelines to take forward the project towards development. Identifying key stakeholders and potential role-players critical to the success of the research and implementation process.
- Provincial Rural Development Plans: Urban-Econ formed part of the Urban-Dynamics team which was appointed to the panel of service providers to assist the Department of Rural Development and Land Reform to develop Spatial Plans, Rural Development plans and related tools to implement the Spatial Planning and Land Use Management Act, Act no.16 of 2013.
- Coffee Bay Town Promulgation Plan: Urban-Econ was appointed as lead consultants to investigate the legal and institutional processes necessary to set up a new municipal town in the areas of Coffee Bay and Hole in the Wall on the Eastern Cape Wild Coast. This study is seen as a pilot project which will serve as a blue-print for future town establishments in the region going forward. The study was commissioned by ECSECC in partnership with the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). Throughout the process Urban-Econ, through ECSECC and DEDEAT reported to the National Minister of Rural Development and Land Reform, Mr Gugile Ernest Nkwinti for approval. The final outcome of the process was seen to provide ECSECC and the Provincial Government via DEDEAT with a set of implementable programmes for the promulgation of the new town. Once implemented the project will be the first formalisation of a new town since the onset of democracy in South Africa in 1994.
- NMBM Integrated Public Transport System (IPTS) SMME Strategy: Urban-Econ was appointed by Nelson Mandela Bay Municipality to undertake an SMME Strategy as part of the city's Integrated Public

Transport System. The SMME Strategy seeks to identify areas for the development of small businesses. The study involved the identification of case studies, business opportunity analysis, identifying SMME support services and business packaging.

- DEDEAT Sustainable Energy and Greenhouse Gas Mitigation Initiatives Database: Urban-Econ Development Economists is providing economic and research inputs to a team of service providers updating the provincial Renewable Energy Database on behalf of the Department of Environmental Affairs, Economic Development and Tourism. The project aims to give a consolidated platform for recording and documenting sustainable energy and greenhouse gas mitigation initiatives in the province.
- Mount Fletcher Property Feasibility Study: Urban-Econ Development Economists was appointed by the Elundini Local Municipality to undertake a market research assessment coupled with engineering, town planning, environmental, financial aspects to give guidance in terms of the implementation and roll-out of future property developments in the town of Mount Fletcher.
- Elundini Local Municipality Local Business Enabling Environment: The objective of the study was to examine the Elundini Local Municipality business experience to date and identify models of enabling environment that support business development. Urban-Econ Development Economists was appointed to undertake the study and provide recommendations to improve business investment and retention in the area.
- Regional Economic Profiling for OR Tambo and Joe Gqabi DM: The Eastern Cape Development Corporation (ECDC) commissioned Urban-Econ to undertake a regional economic profiling and socio-economic impact analysis of ECDC Projects. This project comprises two separate studies with different objectives and outcomes. The project is thus approached as two separate studies with their own unique objectives, methodologies and outcomes. The two components were a Regional Economic Profiling Analysis of Specific Sectors in the Eastern Cape, with a particular focus on the O.R. Tambo and Joe Gqabi District Municipalities. An assessment of aquaculture in these districts was undertaken. A Socio-Economic Impact Analysis of Selected ECDC Projects in the O.R. Tambo and Alfred Nzo District Municipalities.
- ECDC Regional Profiles Alfred Nzo and Chris Hani District Municipalities: Urban-Econ Development Economists embarked on a regional economic profiling analysis of the Agriculture and Forestry, Agro-Processing, Aquaculture, Tourism, Automotive, Green Industry, Mining, Information Communication Technology, Business Processing and Outsourcing/ Business Process Services (Services sector) and Petro-Chemical sectors in the Eastern Cape, with a specific look at the identified Districts.
- ECDC PG Bison Investment Impact Assessment: Urban-Econ was appointed by the ECDC to conduct an Economic Impact Analysis of the PG Bison investment in the Ugie/Maclear area. The project modelled the impacts of the infrastructure investments made by the Elundini Local Municipality since 2008 in support of the PG Bison development as well as the Economic Impact of the PG Bison development itself in this same period.
- Eastern Cape Assessment of Potential Limited Payment Machine (LPM) Gross Gambling Revenue (GGR): Urban-Econ was approached to conduct a desktop study to provide a simulation of the potential Gross Gambling Revenue (GGR) for the roll out of Limited Pay-out Machines (LPMs) throughout the Eastern Cape. A model was developed based on secondary data available and assumptions provided through published research into the LPM market.
- iDutywa Precinct Development: Urban-Econ assessed the high-level economic feasibility of various CBD upgrade and precinct development intervention concepts for the town of iDutywa. Urban-Econ then conceptualised business plans for interventions, each considering costing, capital expenditure, income and cash flow projections, as well as financial, economic and social impacts.
- Mthatha Casino Development: Urban-Econ was appointed by African Pioneer (Pty) Ltd who sought to establish a casino in Mthatha. Urban-Econ was required to estimate the Gross Gaming Revenue (GGR) that this casino would generate. As part of this assessment the GGR of the KSD Local Municipality as well as the surrounding areas was estimated. In addition, economic forecasting was conducted to estimate the potential GGR up to 2015
- Alicedale Social Housing Impact Analysis: Urban-Econ was appointed to provide inputs for Public Process Consultants as to the impact of the development of social housing in the town of Alicedale in the Eastern Cape. This involved economic and socio-economic profiling, indicator identification and impact evaluation and reporting

- Impact Assessment of LED Projects within the Amathole District Municipality: Urban-Econ was appointed to undertake a socio-economic impact evaluation for 15 projects in the Amathole District Municipality. This involved the evaluation and rating of projects based on agreed upon economic and socio-economic criteria. Site visits to the project were undertaken to assess the projects and to meet with project co-ordinators. The result of the project is a report to guide the selection, implementation and monitoring of future LED activities in the district
- Tsolo and Qumbu Urban Development Framework: The aim of this project is to provide a comprehensive study of the Tsolo and Qumbu urban nodes in order to develop an Urban Development Framework. The study will include an economic, infrastructural, traffic and transportation, environmental management analyses as well as spatial and land use management. The objective is to provide plans for implementation that will stimulate investment and improve business growth in these towns
- Eastern Cape Government Planning and Capacity Assessment: Urban-Econ was appointed alongside Fort Hare University to undertake a detailed and comprehensive interaction and participation exercise to determine the potential of restructuring the Eastern Cape's provincial planning processes with the idea of creating a centralised planning body. Urban-Econ's role was three fold: 1) a series of engagement sessions were held with high ranking managers and directors within various provincial departments in the Province to gain their input on the existing planning environment in the Province 2) undertake a series of departmental survey's with selected staff members in various departments to assess their opinions with regards to the creation and formation of a new planning body 3) undertake a national and international benchmarking study to better understand centralised provincial planning departments that are operational within other regions/provinces of South Africa and around the world.
- Spitzkop Wind Energy Project Economic Impact Assessment: Urban-Econ was contracted to undertake an economic impact assessment and a community needs analysis for a proposed wind energy project in Makana Local Municipality. This project formed part of the official Environmental Impact Assessment process.
- Caba Cultural Village Feasibility Study: Urban-Econ was appointed by the Mhlonlo Local Municipality to develop a Business Plan for a Cultural Village in Caba. The project involves the development of a feasibility assessment which provides a status quo of the area as well as an analysis of the tourism market. This project is still in its beginning stages, but the objective is to develop a business plan for the implementation of a cultural village that is focussed on job creation, skills development, community empowerment and tourism.
- Chatty Conservation Development Framework: Urban-Econ was commissioned by NMBM to undertake a detailed market research assessment to inform the design of a Conservation Development Framework for the greater Chatty and van der Kemp's Kloof areas in NMBM. The task at hand involved the identification of suitable economic land uses that could be incorporated on the study site and in turn generate suitable income that could be used to achieve the conservation objectives in the area. The market research assessment informed a detailed financial analysis of the carried out for the CDF.
- Eastern Cape Community Residential Units Feasibility Study: Urban-Econ was appointed as part of a project team lead by Bigen Africa by the Eastern Cape Department of Human Settlements to conduct a feasibility study for the development of Community Residential Units (CRU) within eight pilot local municipalities in the Eastern Cape. Urban-Econ's role in the project was to establish the overall demand for CRU housing units within each of the identified municipalities. As part of this process, Urban-Econ was responsible for convening public meetings with identified beneficiaries within each local municipality so as to assist establishing CRU housing demand. Extensive household surveys were also undertaken in each of the pilot municipalities.
- MBDA Economic Impact Assessment: Urban-Econ was appointed by the Mandela Bay Development Agency to conduct Economic Impact Assessments for each of the agency's projects completed to date. The agency wishes to quantify the economic impacts associated with both its infrastructure improvement projects and service orientated projects within its mandate area. As a final deliverable, Urban-Econ EC will provide the MBDA with an Economic Barometer which the agency can use as an information management system for ongoing and future projects. As a result of the project, the agency will be in a position to market itself by publicly quantifying its successes in Nelson Mandela Bay area.
- Eastern Cape Academy of Sports: Urban-Econ was appointed alongside a large team of specialist consultants to develop a provincial sports model for Long Term Athlete development in the Eastern Cape. The outcome of the task involved the design and upgrade of the main provincial academy along

with the various district and regional feeder centres. Urban-Econ's role was that of institutional and operational planning.

- OR Tambo District Municipality Regional Industrial Roadmap: Urban-Econ was part of the Urban-Econ group of companies, which was appointed to conduct the Local Economic Development Capacity Building Programme initiated by the Department of Trade and Industry. The objective is to assist 16 districts across the country to develop credible LED Strategies and capacitate LED Structures. The focus of the project in ORTDM is on providing assistance with an Investors Conference and providing recommendations regarding LED institutional structures in the District.
- Umzimvubu Investment Plan: The project was prepared in response to a request by the Umzimvubu Local Municipality to undertake the development of an Investment Plan to guide implementation of the stimulation, attraction and management of the local economy. It involved analyses of natural resource endowments and a review of the level and quality of available infrastructure and services which form an enabling environment for investment success.
- Strand Street: Environmental Upgrading: A consortium of consultants was appointed by the Mandela Bay Development Agency to propose an environmental upgrading concept for Strand Street in the Nelson Mandela Bay CBD. Urban-Econ EC's role was to conduct research into the status quo of the area and engage with relevant parties to add value to the concept design as well as determine the demand for such an upgrade. The project forms part of the MBDA's inner city regeneration drive.
- Lower Baakens River Valley Re-development: Urban-Econ along with a consortium of consultants was appointed by the Mandela Bay Development Agency to determine the potential for re-development of the Lower Baakens River Valley. Urban-Econ EC's role was to conduct market research to determine the demand for such a re-development and establish what forms of land-use would be best suited to the area. The project forms part of the MBDA's inner city regeneration drive.

Countries of Work Experience:

- South Africa
- Lesotho

References:

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Thomas Searle Parsons

Date of Birth: 04 July 1985
 Profession: Senior Development Economist
 Specialisation: Local Economic Development (LED) Planning, Strategy Development, Impact Assessments
 Years within Firm: 9 Years
 Nationality: RSA
 Years of Experience: 9 Years
 HDI Status: White Male



Education:			
Nelson Mandela Metropolitan University (NMMU) - 2004	Bachelor of Commerce (Rationum) majoring in Chartered Accounting and Economics		
Nelson Mandela Metropolitan University (NMMU) - 2008	Bachelor of Commerce (Honours) majoring in Economics		
Professional Membership:			
SAPOA Urban-Econ Development Economists (Pty) Ltd			
Language Proficiency:	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Good

Work Experience:

2009 - Current	Urban-Econ Development Economists
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Key Qualification:

Thomas Parsons obtained his B.com Rationum majoring in Chartered Accounting and Economics from the Nelson Mandela Metropolitan University. He went on to obtain his Economics Honours degree with subjects in Micro and Macroeconomics, Public Sector Economics, Development Economics and Investment Analysis. His research thesis was on the effectiveness of inflation targeting. Thomas has developed a variety of business skills, including:

- Economic analysis techniques
- Survey design
- Report writing
- Presentation skills
- Workshop Facilitation
- Local Economic Development Training
- E-Views
- Microsoft Office (Advanced)
- ArcGIS Standard (Elementary user)

Thomas' experience at Urban-Econ includes:

- Conducting socio-economic studies
- Developing of LED Strategies and Plans
- Conducting of Economic Impact Assessments
- Developing and facilitating a training and capacity building programme on Local Economic Development Experience in survey design and implementation
- Development of maps using ArcGIS Standard
- Experience in research

Experience Record:	
Project:	Knysna Integrated Strategic Development Plan (ISDF)
Year:	2013/2014
Location:	Knysna

<p>Client: Project Features:</p> <p>Position held: Activities Performed:</p>	<p>Knysna Local Municipality</p> <p>Urban-Econ Development Economists was part of the successful consortium of Chris Mulder and Associates which were awarded the project to develop an Integrated Strategic Development Plan for the Greater Knysna Municipality. This project entailed the development of a long term development strategy for the municipality which integrated environmental, spatial, economic, housing, infrastructure and town planning elements. Urban-Econ Development Economist's role in the project was the development of an Economic Development Strategy for the Knysna Local Municipality – a specific deliverable for the greater ISDF process.</p> <p>Project Economist</p> <p>Economic Profiling; Local Economic Development Analysis; Economic forecasting and planning; Public Participation; Strategic Planning.</p>
<p>Project: Year: Location: Client: Project Features:</p> <p>Position held: Activities Performed:</p>	<p>Mandela Bay Development Agency (MBDA) Economic Barometer</p> <p>2009 – 2011; 2013 – 2015</p> <p>Nelson Mandela Bay Metro</p> <p>MBDA</p> <p>Urban-Econ Development Economists was appointed by the Mandela Bay Development Agency (MBDA) to conduct Economic Impact Assessments for each of the agency's strategic upgrades in the CBD and Central areas of Port Elizabeth. The agency wishes to quantify the economic impacts associated with both its infrastructure improvement projects and service orientated projects within its mandate area. As a final deliverable, Urban-Econ Development Economists provided the MBDA with an Economic Barometer, which the agency can use as an information management system for ongoing and future projects. This was developed by means of a survey that will be conducted annually over the three years of the project. As a result of the project, the agency will be in a position market itself by publicly quantifying its successes in Nelson Mandela Bay area.</p> <p>Project Manager</p> <p>Economic Profiling; primary Research; Perception surveying; Economic Modelling; Index building; Database development.</p>
<p>Project: Year: Location: Client: Project Features:</p> <p>Position held: Activities Performed:</p>	<p>Provincial Industrial Development Strategy (PIDS) Implementation Plan</p> <p>2011</p> <p>Eastern Cape</p> <p>Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)</p> <p>Urban-Econ Development Economists was commissioned as part of a consortium of industrial specialists; to project manage and develop an Industrial Implementation Plan for the Eastern Cape, on behalf of the Eastern Cape Department of Economic Development and Environmental Affairs. The aim of the study was to provide an action-orientated implementation plan to implement the existing Eastern Cape Industrial Strategy; as well as to fill information gaps with regards to key sectors in the Eastern Cape. Thus a team of sector specialists in agro-processing, petrochemicals, automotive, green energy, tourism and capital goods was assembled. Urban-Econ's role was in the overall project management, implementation action framework development and workshop facilitation. The study included the development of a situation analysis for the province, sector potential analysis, opportunity assessment and clustering identification. The outcome of the strategy was an Implementation Framework and Capital Investment Framework.</p> <p>Project Economist</p> <p>Economic Profiling; Sector Study Research; Strategic Planning; Implementation planning; Monitoring and Evaluation</p>
<p>Project: Year: Location: Client: Project Features:</p>	<p>Social and Sustainability Due Diligence of Aspire Projects</p> <p>2014</p> <p>Amathole District Municipality</p> <p>ASPIRE</p> <p>Urban-Econ Development Economists was appointed by ASPIRE to establish how successful five of their supported/funded projects were at meeting the agency's mandate. The assessment of these five projects focused on determining how sustainable the projects were in terms of value for money, employment creation and</p>

Position held: Activities Performed:	value addition. Consideration was also give to the broader economic impact that these projects had as well as their value chain linkages. Project Economist Economic Profiling; Economic and socio-economic impact assessment; Project profiling.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Thina Sinako Gariep Competitiveness Study 2010 Gariep Local Municipality Gariep Local Municipality Urban-Econ Development Economists partnered with the Gariep Municipality and Umnga Framers Training Association to develop a comprehensive competitive advantage assessment of the Gariep Local Municipality. The aim of the project was to stimulate sustainable economic growth and job creation by identifying and exploiting local competitive and comparative advantage in the Gariep Local Municipality. The project involved a training session in LED processes and competitiveness, an analysis of the local economy in which latent and potential competitive and comparative advantages were identified, the identification of priority sectors for competitive interventions (agriculture including agro-processing and tourism), the profiling of these sectors by means of a value chain assessment, and finally the development of detailed action plans for priority projects that once initiated would enhance the competitiveness of the municipality. Project Economist LED; Economic profiling; Competitiveness assessment; Value chain mapping; Tourism Sector Analysis; Agricultural Sector Analysis; Strategic Planning.

Other Projects:

- The Eastern Cape Socio-Economic Review and Outlook, 2015: The Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) in collaboration with the Eastern Cape Provincial Treasury appointed Urban-Econ Development Economists to undertake the compilation of a Provincial Socio-Economic Profile and Outlook for 2015. The annual reports provides timeous, reliable information on the socio-economic outlook of the Eastern Cape providing an overview of the past performance of the economy, within the wider context of the performance of the South African economy.
- ECDC Amathole and Cacadu profiling: Urban-Econ was appointed by the Eastern Cape Development Corporation (ECDC) to undertake economic profiling of the Amathole and Sarah Baartman District Municipalities. The economic profiling entails analysing the potential of economic sectors in both district municipalities, the performance of these sectors in the past year and their importance to the economy of the district municipalities. The economic profiling is vital in seeing in which direction the district municipalities should be heading to ensure economic growth.
- Amathole District Municipality Impact Assessment: Urban-Econ Development Economists was appointed to undertake a socio-economic impact evaluation for 15 projects in the Amathole District Municipality. This involved the evaluation and rating of projects based on agreed upon economic and socio-economic criteria. Site visits to the project were undertaken to assess the projects and to meet with project co-ordinators. The result of the project is a report to guide the selection, implementation and monitoring of future LED activities in the district.
- Amathole District Municipality – Local Municipalities Capacity Building Programme for LED: The Amathole District Municipality (ADM) local municipalities Capacity Building Programme entailed the development of a training manual on LED processes and concepts including economic assessments, strategic planning and partnerships, implementing LED and monitoring and evaluation of LED.
- Regional Economic Profiling for OR Tambo and Joe Gqabi District Municipalities: The Eastern Cape Development Corporation (ECDC) commissioned Urban-Econ Development Economists to undertake a regional economic profiling and socio-economic impact analysis of ECDC Projects. This project comprises two separate studies with different objectives and outcomes. The project is thus approached

as two separate studies with their own unique objectives, methodologies and outcomes. The two components were a Regional Economic Profiling Analysis of Specific Sectors in the Eastern Cape, with a particular focus on the O.R. Tambo and Joe Gqabi District Municipalities. An assessment of aquaculture in these districts was undertaken, a Socio-Economic Impact Analysis of Selected ECDC Projects in the O.R. Tambo and Alfred Nzo District Municipalities.

- Bloukrans Filling Station: Urban-Econ Development Economists was appointed to undertake a specialist economic study to assess the capacity of the market to sustain a new filling station on the N2 near Bloukrans Bridge, Eastern Cape. It is understood that the need for market research is required to inform investment decisions and provide guidelines in terms of the demand for petrol and diesel as well as the auxiliary uses that will support the filling station.
- Butterworth Hospital study: Urban-Econ Development Economists was appointed by Ditlou Consulting Engineers to provide market research to inform a hospital development in Butterworth, Eastern Cape. The research was aimed at providing information to substantiate the demand for a hospital facility.
- Socio-Economic Impact of selected ECDC Projects in the Amathole District: Urban-Econ Development Economists was commissioned by the ECDC to undertake a socio-economic impact assessment of three ECDC supported projects in order to establish how successful these development projects were at meeting the ECDC mandate. Included in this assessment was a broad spectrum analysis of the Eastern Cape priority industrial sectors in order to contextualise the ECDC project interventions.
- Spitskop Wind Energy Facility: Urban-Econ Development Economists was contracted to undertake an economic impact assessment and a community needs analysis for a proposed Wind energy project in Makana and Blue Crane Route Local Municipalities. This project formed part of the official Environmental Impact Assessment process. This report was updated in 2014 to include the economic impact of several transmission line routes.
- Senqu Tourism Plan: Urban-Econ Development Economists undertook the development of a Responsible Tourism Plan for the Senqu Municipality on behalf of the local municipality. The plan was aligned to previous detailed plans of tourism positioning within an alpine region and considered the institutional arrangements for the implementation of Tourism in the Municipality. The objective of the Responsible Tourism Plan was to identify exiting potential and identify appropriate interventions to promote and develop the tourism industry in the Senqu Local Municipality.
- Mthatha Casino Development: Urban-Econ Development Economists was appointed by African Pioneer (Pty) Ltd who sought to establish a casino in Mthatha. Urban-Econ Development Economists was required to estimate the Gross Gaming Revenue (GGR) that this casino would generate. As part of this assessment the GGR of the King Sabata Dalindyebo Local Municipality as well as the surrounding areas was estimated. In addition, economic forecasting was conducted to estimate the potential GGR up to 2015.
- Zwide Retail Assessment: Urban-Econ Development Economists has been appointed to undertake a desktop Retail Market Research Study to assess the capacity of the Nelson Mandela Bay Metro (NMBM) to sustain a new shopping centre in Zwide, with a Shoprite store as the anchor tenant. The purpose of this study is to determine the extent and nature of the demand for retail space in the area, based on the prevailing demographic and economic conditions of the study area. The aim of this report was to provide an objective assessment of the retail market potential within the study area as well as the impact of growth and the influence it will have on future demand for a retail facility.
- Joe Gqabi LED Strategy: Urban-Econ Development Economists Cape was appointed by the Eastern Cape Provincial Department of Local Government and Traditional Affairs to develop a Local Economic Development Strategy for the Joe Gqabi District. The project outcomes include conducting LED training with LED officials and local stakeholders and developing an updated situation analysis profile. The process of developing the LED strategy concentrates on public participation and an inclusive approach to develop the economic vision of the region. The strategy was also aligned to existing

strategies such as the GDS agreement and the Sustainable Development Strategy that concentrated on the economic development of the region whilst protecting the integrity of the natural resources.

- Gariep LED Plan: The development of the Gariep LED Plan involved the development of a situation analysis report which provided a status quo of the Gariep Local Municipality located in the Joe Gqabi District Municipality. The other output of the project was an implementation framework which proposed specific catalytic projects, that if implemented would promote the achievement of Gariep's economic objectives. The project also entailed two economic indabas where inputs were obtained from a diverse range of stakeholder.
- Feasibility Studies for CRU Projects: Urban-Econ Development Economists was appointed by Bigen Africa to undertake an assessment for the demand for CRU Housing units within selected local municipalities in the Eastern Cape. This entailed desktop research as well as site visits to the affected local municipalities.
- Cacadu Investment Information Portal: The development of the Cacadu Investment Information Portal focused on the packaging of information relating to investment opportunities within the strategic focus areas of the Cacadu District Municipality. These strategic focus areas are agriculture, manufacturing (predominantly linked to agro-processing opportunities), tourism, and SMME development. The packaged investment opportunities will allow the Economic Development Department of the Cacadu District to populate the Trade and Investment Information Portal located on their website.
- Strategic Competitive Advantage Action Plan for the Gariep Local Municipality: The aim of the project is to stimulate sustainable economic growth and job creation by identifying and exploiting local competitive and comparative advantage in the Gariep Local Municipality. The project involved a training session in LED processes and competitiveness. The project also entailed the development of value chains for priority sectors in Gariep including: agriculture (particularly agro-processing), tourism, and government services.
- Flamingo Estate - Residential Market Research: Urban-Econ Development Economists was appointed by the Newco Consortium to conduct residential market research and compile a specialist market study for the Flamingo Estate residential development, a proposed sustainable integrated housing project, near Redhouse in the Nelson Mandela Bay Municipality (NMBM). The project also entailed modelling the potential housing demand in the NMBM.

Countries of Work Experience:

- South Africa

References:

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- Cell Phone: +27 83 253 8168

Annexure 2: Declaration of Independence



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

PROJECT TITLE

IMPOFU WEST WIND FARM – SCOPING REPORT

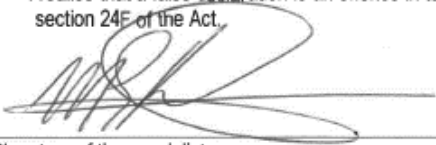
Specialist:	Socio-Economic		
Contact person:	Mr Matthew Keeley		
Postal address:	127 Cape Road; Mount Croix		
Postal code:	6001	Cell:	
Telephone:	041 585 6640	Fax:	
E-mail:	ec@urban-econ.com		
Professional affiliation(s) (if any)	-		

Project Consultant:	Aurecon South Africa (Pty) Ltd		
Contact person:	Ms Mieke Barry		
Postal address:	PO Box 494, Cape Town		
Postal code:	8000	Cell:	-
Telephone:	021 526 6025	Fax:	-
E-mail:	Mieke.barry@aurecongroup.com		

4.2 The specialist appointed in terms of the Regulations_

I, Matthew Keelan declare that -- General declaration:

I act as the independent specialist in this application;
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
I declare that there are no circumstances that may compromise my objectivity in performing such work;
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
I will comply with the Act, Regulations and all other applicable legislation;
I have no, and will not engage in, conflicting interests in the undertaking of the activity;
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
all the particulars furnished by me in this form are true and correct; and
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.


Signature of the specialist:

Urban - Econ Development Economists

Name of company (if applicable):

22/03/2018

Date:

Annexure 3: Detailed Impact Tables

Project phase	Construction			
Impact	Temporary stimulation of the national and local economy			
Description of impact	Temporary stimulation of the national and local economy through construction related spending, and additional spending by SMMEs involved in the construction of the wind energy facility. This will lead to an increase in GDP at a national, provincial and local level.			
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts		
Potential mitigation	<p>The developer should encourage the EPC contractor to increase the local procurement practices and promote the employment of people from local communities, as far as feasible, to maximise the benefits to the local economies. The developer should engage with local authorities and business organisations to investigate the possibility of procuring construction materials, goods and products from local suppliers where feasible.</p>			
Assessment	Without mitigation		With mitigation	
Nature	Positive		Positive	
Duration	Short term	Impact will last between 1 and 5 years	Short term	Impact will last between 1 and 5 years
Extent	National	Impacts felt at a national level	National	Impacts felt at a national level
Intensity	Very high	Natural and/ or social functions and/ or processes are majorly altered	Very high	Natural and/ or social functions and/ or processes are majorly altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive	
Comment on significance	Benefit is terminated with the end of construction.			
Cumulative impacts	Given the number of operational and potential wind energy facilities in the area, it is highly likely that the demand for goods and services required for the construction of similar facilities would grow. The presence of such wind facilities, both within the local area and the greater Eastern Cape area, has resulted in the establishment of new industries in the country. The further development of wind farms in the area could potentially promote new businesses particularly those that provide supporting services to construction companies.			

Ref:	2			
Project phase	Construction			
Impact	Temporary increase employment in the national and local economies			
Description of impact	Temporary increase employment in the national and local economies from those employed during the construction of the wind energy facility as well as those employment opportunities created for SMMEs.			
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts		
Potential mitigation	<p>Organise local community meetings to advise the local labour force about the project that is planned to be established and the jobs that can potentially be applied for.</p> <p>Establish a local skills desk (in Humansdorp) to determine the potential skills that could be sourced in the area.</p> <p>Recruit local labour as far as feasible.</p> <p>Employment of labour-intensive methods in construction where feasible.</p> <p>Sub-contract to local construction companies particularly SMME's and BBBEE compliant enterprises where possible.</p> <p>Use local suppliers where feasible and arrange with the local SMME's to provide transport, catering and other services to the construction crews.</p>			
Assessment	Without mitigation		With mitigation	
Nature	Positive		Positive	
Duration	Short term	Impact will last between 1 and 5 years	Short term	Impact will last between 1 and 5 years
Extent	National	Impacts felt at a national level	National	Impacts felt at a national level
Intensity	High	Natural and/ or social functions and/ or processes are notably altered	High	Natural and/ or social functions and/ or processes are notably altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive	
Comment on significance	Benefit is terminated with the end of construction			
Cumulative impacts	None foreseen given the nature of employment.			

Ref:		3		
Project phase	Construction			
Impact	Contribution to skills development in the country and local economy			
Description of impact	Contribution to skills development in the country and local economy through skills training programmes undertaken by contractors.			
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts		
Potential mitigation	Facilitate knowledge and skills transfer between foreign technical experts and South African professionals during the pre-establishment and construction phases. Set up apprenticeship programmes to build onto existing skill levels or develop new skills amongst construction workers especially those from local communities			
Assessment	Without mitigation		With mitigation	
Nature	Positive		Positive	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years
Extent	National	Impacts felt at a national level	National	Impacts felt at a national level
Intensity	High	Natural and/ or social functions and/ or processes are notably altered	High	Natural and/ or social functions and/ or processes are notably altered
Probability	Probable	The impact has occurred here or elsewhere and could therefore occur	Almost certain / Highly probable	It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Minor - positive		Moderate - positive	
Comment on significance	Benefit will continue to accrue following the end of construction.			
Cumulative impacts	Improved labour productivity and employability of construction workers for similar projects. Possible development of local skills and expertise in R&D and manufacturing industries related to wind technology through partnerships with Nelson Mandela University (NMU) and surrounding Technical and Vocational Education and Training Colleges (TVET). Promotes South Africa's human capital development.			

Ref:		4	
Project phase	Construction		
Impact	Temporary increase in household earnings		
Description of impact	Temporary increase in household earnings from higher construction workers salaries and wages		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	<p>Recruit local labour as far as feasible to increase the benefits to the local households.</p> <p>Employ labour intensive methods in construction where feasible.</p> <p>Sub-contract to local construction companies where possible.</p> <p>Use local suppliers where feasible and arrange with local SMME's and BBEE compliant enterprises to provide transport, catering and other services to the construction crews.</p>		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	Medium term	Impact will last between 5 and 10 years	Medium term Impact will last between 5 and 10 years
Extent	National	Impacts felt at a national level	National Impacts felt at a national level
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate Natural and/ or social functions and/ or processes are moderately altered
Probability	Probable	The impact has occurred here or elsewhere and could therefore occur	Probable The impact has occurred here or elsewhere and could therefore occur
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Minor - positive		Minor - positive
Comment on significance	Benefit is terminated with the end of construction		
Cumulative impacts	Improved standard of living of the affected households. Possible increase of households' saving accounts.		

Ref:		5	
Project phase	Construction		
Impact	Temporary increase in government revenue		
Description of impact	Temporary increase in government revenue through higher personal income tax, VAT, companies tax etc.		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	None suggested		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	Short term	Impact will last between 1 and 5 years	Short term Impact will last between 1 and 5 years
Extent	National	Impacts felt at a national level	National Impacts felt at a national level
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Low Natural and/ or social functions and/ or processes are somewhat altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable It is most likely that the impact will occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium Determination is based on common sense and general knowledge
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Minor - positive		Minor - positive
Comment on significance	None		
Cumulative impacts	Lower government debt servicing costs. Increased government revenue for social programmes.		

Ref:		6	
Project phase	Construction		
Impact	Negative changes to the sense of place		
Description of impact	Potential negative changes to the sense of place due to increased visual and noise disturbance to the natural setting that currently characterises the area.		
Mitigatability	Medium	Mitigation exists and will notably reduce significance of impacts	
Potential mitigation	The mitigation measures proposed by the visual and noise specialists should be adhered to. Natural areas that are not affected by the footprint should remain as such. Efforts should also be made to avoid disturbing such sites during construction.		
Assessment	Without mitigation		With mitigation
Nature	Negative		Negative
Duration	Short term	Impact will last between 1 and 5 years	Short term Impact will last between 1 and 5 years
Extent	Limited	Limited to the site and its immediate surroundings	Limited Limited to the site and its immediate surroundings
Intensity	High	Natural and/ or social functions and/ or processes are notably altered	Moderate Natural and/ or social functions and/ or processes are moderately altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable It is most likely that the impact will occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium Determination is based on common sense and general knowledge
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Minor - negative		Minor - negative
Comment on significance	While reversibility is noted as High, such reversibility can only occur if the site is decommissioned.		
Cumulative impacts	Potential change in perception of the area as "out-of-the-way/peaceful/natural" due to the construction of other wind turbines in the surrounding area albeit temporarily. Potential altered characteristics of the environment through the introduction of new built elements. Potential change in the perception of tourists of the local environment as "out-of-the-way/peaceful/natural".		

Ref:		7	
Project phase	Construction		
Impact	Negative impact on the local tourism industry		
Description of impact	Potential impact on the local tourism industry and agricultural sector through changes in the visual environment (tourism)		
Mitigatability	Medium	Mitigation exists and will notably reduce significance of impacts	
Potential mitigation	<p>Mitigation proposed by the visual specialists should be implemented during the beginning of the construction period to screen off visual disturbances as soon into the development phase as feasible.</p> <p>Heavy vehicles travelling on secondary roads should adhere to low speed limits to minimise noise and dust pollution.</p> <p>Effective dust pollution mitigation measures must be implemented.</p> <p>Where feasible, no construction activities should be carried out during weekends and outside day time working hours.</p>		
Assessment	Without mitigation		With mitigation
Nature	Negative		Negative
Duration	Short term	Impact will last between 1 and 5 years	Short term Impact will last between 1 and 5 years
Extent	Limited	Limited to the site and its immediate surroundings	Limited Limited to the site and its immediate surroundings
Intensity	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	Negligible Natural and/ or social functions and/ or processes are negligibly altered
Probability	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur	Rare / improbable Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Negligible - negative		Negligible - negative
Comment on significance	Visual impacts cannot be eliminated due to the height of the turbines thus the local industry could still experience some losses, although research suggests that this is highly improbable. Furthermore, if such impacts do occur, they have likely already arisen as a result of surrounding wind farm developments.		
Cumulative impacts	Potential reduction in the number of tourists visiting the area due to the construction of other wind turbine developments in the surrounding area albeit temporarily Perceptions of tourists regarding the area's representation as "eco-orientated" could potentially change due to the development as well as similar developments proposed		

Ref:		8		
Project phase	Construction			
Impact	Temporary increase in social conflicts associated with the influx of people			
Description of impact	Potential temporary increase in social conflicts associated with the influx of people such as crime, litter etc.			
Mitigatability	High	Mitigation exists and will considerably reduce the significance of impacts		
Potential mitigation	<p>Ensure a community liaison office is active in the nearby towns and ensure adherence to strict labour recruitment practices that would reduce the desire of potential job seekers to loiter around the properties in the hope of finding temporary employment.</p> <p>Control the movement of workers between the site and areas of residence to minimise loitering around the facility. This should be achieved through the provision of scheduled transportation services between the construction site and area of residence.</p> <p>Employ locals as far as feasible through the creation of a local skills database. Establish a management forum comprising key stakeholders to monitor and identify potential problems that may arise due to the influx of job seekers to the area. Ensure that any damages or losses to nearby affected farms that can be linked to the conduct of construction workers are adequately reimbursed. Assign a dedicated person to deal with complaints and concerns of affected parties.</p>			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Negative	
Duration	Short term	Impact will last between 1 and 5 years	Short term	Impact will last between 1 and 5 years
Extent	Local	Extending across the site and to nearby settlements	Local	Extending across the site and to nearby settlements
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Low	Natural and/ or social functions and/ or processes are somewhat altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Minor - negative		Negligible - negative	
Comment on significance	It is possible that social conflicts in the area by construction workers and job seekers could continue to occur after construction if these individuals decide to remain in the area and are unable to find a sustainable income.			
Cumulative impacts	None foreseen			

Ref:		9		
Project phase	Construction			
Impact	Impact on economic and social infrastructure			
Description of impact	Impact on economic and social infrastructure, through the increased movement of heavy equipment on site and the increased use of local social facilities (e.g. clinics) by construction workers			
Mitigatability	High	Mitigation exists and will considerably reduce the significance of impacts		
Potential mitigation	<p>Provide adequate signage along routes to warn the motorists of the construction activities taking place on the site.</p> <p>Engage with relevant local authorities (and provincial if necessary) and inform them of the development as well as discuss with them their ability to meet the additional demands on social and basic services created by the in migration of workers.</p> <p>Where feasible, assist the municipality in ensuring that the quality of the local social and economic infrastructure does not deteriorate through the use of social responsibility allocations.</p>			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Negative	
Duration	Short term	Impact will last between 1 and 5 years	Short term	Impact will last between 1 and 5 years
Extent	Municipal area	Impacts felt at a municipal level	Municipal area	Impacts felt at a municipal level
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Negligible	Natural and/ or social functions and/ or processes are negligibly altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Probable	The impact has occurred here or elsewhere and could therefore occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Minor - negative		Negligible - negative	
Comment on significance	None			
Cumulative impacts	Increased pressure on public healthcare facilities Increased wear and tear on road network and other economic infrastructure			

Ref:		10	
Project phase	Construction		
Impact	Impact on property and land value in the immediately affected area		
Description of impact	Potential impact on actual and perceived property and land values in the immediately affected area		
Mitigatability	Medium	Mitigation exists and will notably reduce significance of impacts	
Potential mitigation	Implementation of mitigation measures outline in Impact Table 6.		
Assessment	Without mitigation		With mitigation
Nature	Negative		Negative
Duration	Long term	Impact will last between 10 and 15 years	Long term Impact will last between 10 and 15 years
Extent	Local	Extending across the site and to nearby settlements	Local Extending across the site and to nearby settlements
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Low Natural and/ or social functions and/ or processes are somewhat altered
Probability	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur	Unlikely Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Low The affected environment will not be able to recover from the impact - permanently modified
Resource irreplaceability	Medium	The resource is damaged irreparably but is represented elsewhere	Medium The resource is damaged irreparably but is represented elsewhere
Significance	Minor - negative		Negligible - negative
Comment on significance	The available evidence is inclusive of the impact of wind farms on property and land values. Several studies have shown a positive impact, while others have found a negative impact. Given that there are already three operational wind farms in close proximity to the site it is highly likely that any potential negative impact has already occurred.		
Cumulative impacts	None foreseen given the existence of other operational wind farms in the area. Perceptions associated with the effect of industrial type developments on aesthetics and landscape of the natural environment cannot be entirely eliminated, thus some potential buyers might still refrain from buying a property in the area.		

Ref:		11	
Project phase	Operation		
Impact	Sustainable increase in production and GDP nationally and locally		
Description of impact	Sustainable increase in production and GDP nationally and locally through ongoing operational spending (i.e. maintenance) by the wind energy facility		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	The operator of the wind energy facility should be encouraged to, as far as possible, procure materials, goods and products required for the operation of the facility from local suppliers to increase the positive impact in the local economy		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	National	Impacts felt at a national level	National Impacts felt at a national level
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate Natural and/ or social functions and/ or processes are moderately altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive
Comment on significance	None		
Cumulative impacts	Sufficient economies of scale could be created to establish new businesses in the local economies. These businesses could then supply the goods and services required for the operation and maintenance of the facility than cannot currently be procured in the area. This would contribute to the local economies' growth and development.		

Ref:		12	
Project phase	Operation		
Impact	Creation of sustainable employment positions nationally and locally		
Description of impact	Creation of sustainable employment positions nationally and locally. This would occur through the provision of security, staff transport, maintenance either by the wind farm or through the procurement of such services from local SMMEs.		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	<p>Where possible, local labour should be considered for employment so as to increase the positive impact on the local economy.</p> <p>As far as possible, local small and medium enterprises should be approached to investigate the opportunities for supply inputs required for the maintenance and operation of the facility.</p>		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	National	Impacts felt at a national level	National Impacts felt at a national level
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate Natural and/ or social functions and/ or processes are moderately altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive
Comment on significance	None		
Cumulative impacts	<p>Larger number of permanent operational positions created</p> <p>Improved living standards of the directly and indirectly affected households</p> <p>Experience in operating and maintaining a wind energy facility</p>		

Ref:		13		
Project phase	Operation			
Impact	Skills development of permanently employed workers			
Description of impact	Skills development of permanently employed workers would potentially improve due to skills programmes undertaken as part of the labour recruitment process.			
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts		
Potential mitigation	The wind farm owner should consider establishing vocational training programmes and/or bursary schemes for the local labour force to promote the development of skills required by the wind energy facility and thus provide for the opportunities for these people to be employed in other similar facilities elsewhere			
Assessment	Without mitigation		With mitigation	
Nature	Positive		Positive	
Duration	Permanent	Impact may be permanent, or in excess of 20 years	Permanent	Impact may be permanent, or in excess of 20 years
Extent	Municipal area	Impacts felt at a municipal level	Municipal area	Impacts felt at a municipal level
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate	Natural and/ or social functions and/ or processes are moderately altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Certain / definite	There are sound scientific reasons to expect that the impact will definitely occur
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive	
Comment on significance	None			
Cumulative impacts	Development of new skills and expertise in the area to support the development of the wind energy industry. Human capital development of the affected workers.			

Ref:		14		
Project phase	Operation			
Impact	Improved standards of living for benefiting households			
Description of impact	Improved standards of living for benefiting households through higher incomes generated by those individuals either employed by the wind farm, or who derive economic benefit from it (i.e. SMMEs providing services to the wind energy facility)			
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts		
Potential mitigation	Where possible, the local labour supply should be considered for employment opportunities to increase the positive impact on the area's economy As far as feasible, local small and medium enterprises should be approached to investigate the opportunities for supply inputs required for the maintenance and operation of the facility			
Assessment	Without mitigation		With mitigation	
Nature	Positive		Positive	
Duration	On-going	Impact will last between 15 and 20 years	On-going	Impact will last between 15 and 20 years
Extent	National	Impacts felt at a national level	National	Impacts felt at a national level
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate	Natural and/ or social functions and/ or processes are moderately altered
Probability	Probable	The impact has occurred here or elsewhere and could therefore occur	Probable	The impact has occurred here or elsewhere and could therefore occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	High	The affected environmental will be able to recover from the impact	High	The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Minor - positive		Minor - positive	
Comment on significance	None			
Cumulative impacts	Additional households benefiting from increased income due to working on multiple projects Improved productivity of workers. Improved health and living conditions of the affected households.			

Ref:		15	
Project phase	Operation		
Impact	Sustainable increase in national and local government revenue		
Description of impact	Sustainable increase in national and local government revenue through higher property taxes and wage payments		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	None suggested		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	National	Impacts felt at a national level	National Impacts felt at a national level
Intensity	Low	Natural and/ or social functions and/ or processes are somewhat altered	Low Natural and/ or social functions and/ or processes are somewhat altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable It is most likely that the impact will occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium Determination is based on common sense and general knowledge
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive
Comment on significance	None		
Cumulative impacts	Higher government revenue Increased social expenditure from additional revenue generated from wind farms Possible improved service delivery due to higher government revenue		

Ref:		16	
Project phase	Operation		
Impact	Provision of electricity for future development		
Description of impact	Increasing the energy supply will benefit both residents and business owners, in that the reliability of the current supply will be increased and residences and businesses who do not currently have access to electricity may obtain access in the future.		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	None suggested		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	National	Impacts felt at a national level	National Impacts felt at a national level
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate Natural and/ or social functions and/ or processes are moderately altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable It is most likely that the impact will occur
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive
Comment on significance	None		
Cumulative impacts	Increase volume and certainty of the energy supply.		

Ref:		17	
Project phase	Operation		
Impact	Local economic and social development benefits derived from the project's operations		
Description of impact	Potential local economic and social development benefits derived from through the establishment of a community trust that would undertake community upliftment projects		
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts	
Potential mitigation	<p>Enterprise Development and Socio-economic Development initiatives outlined in the REI4P bid must be effectively implemented.</p> <p>These plans should be reviewed on an annual basis and, where necessary, updated.</p> <p>When identifying enterprise development initiatives, the focus should be on creating sustainable and self-sufficient enterprises.</p> <p>In devising the programmes to be implemented through the Community Trust allocations, the developer should take into account the local IDPs.</p>		
Assessment	Without mitigation		With mitigation
Nature	Positive		Positive
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	Municipal area	Impacts felt at a municipal level	Municipal area Impacts felt at a municipal level
Intensity	High	Natural and/ or social functions and/ or processes are notably altered	High Natural and/ or social functions and/ or processes are notably altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Certain / definite There are sound scientific reasons to expect that the impact will definitely occur
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	High	The affected environmental will be able to recover from the impact	High The affected environmental will be able to recover from the impact
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive
Comment on significance	None		
Cumulative impacts	<p>Declining levels of poverty in both the Kouga and Koukamma Local Municipalities.</p> <p>Improved standards of living of the members of the Community Trust and households that benefit from the trusts programmes.</p> <p>Possible improvements in access to services and status of local infrastructure.</p>		

Ref:		18		
Project phase	Operation			
Impact	Improvement of the livelihoods of the household's dependant on the local agricultural sector			
Description of impact	Income earned by farmers from the turbines on their land could improve the individual farmers revenue streams. This will place them in a better position to further invest in their farms. Such additional investment could motivate farmers to expand their operations and thus employ additional workers and/or increase their salary/wage bill. These increases would in turn, improve the livelihoods of both farm workers and farmers.			
Mitigatability	Low	Mitigation does not exist; or mitigation will slightly reduce the significance of impacts		
Potential mitigation	None			
Assessment	Without mitigation		With mitigation	
Nature	Positive		Positive	
Duration	On-going	Impact will last between 15 and 20 years	On-going	Impact will last between 15 and 20 years
Extent	Local	Extending across the site and to nearby settlements	Local	Extending across the site and to nearby settlements
Intensity	High	Natural and/ or social functions and/ or processes are notably altered	High	Natural and/ or social functions and/ or processes are notably altered
Probability	Almost certain / Highly probable	It is most likely that the impact will occur	Almost certain / Highly probable	It is most likely that the impact will occur
Confidence	Medium	Determination is based on common sense and general knowledge	Medium	Determination is based on common sense and general knowledge
Reversibility	Low	The affected environment will not be able to recover from the impact - permanently modified	Low	The affected environment will not be able to recover from the impact - permanently modified
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Moderate - positive		Moderate - positive	
Comment on significance	None			
Cumulative impacts	Same significance as individual impacts			

Ref:		19	
Project phase	Operation		
Impact	Negative changes to the sense of place		
Description of impact	Potential negative changes to the sense of place due to increased visual disturbance to the natural setting that currently characterises the area.		
Mitigatability	Medium	Mitigation exists and will notably reduce significance of impacts	
Potential mitigation	<p>Mitigation proposed by the visual specialists should be implemented during the beginning of the construction period to screen off visual disturbances as soon into the development phase as feasible.</p> <p>Heavy vehicles travelling on secondary roads should adhere to low speed limits to minimise noise and dust pollution.</p> <p>If feasible, no maintenance activities should be carried out during weekends and outside day time working hours.</p>		
Assessment	Without mitigation		With mitigation
Nature	Negative		Negative
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	Local	Extending across the site and to nearby settlements	Local Extending across the site and to nearby settlements
Intensity	Negligible	Natural and/ or social functions and/ or processes are negligibly altered	Negligible Natural and/ or social functions and/ or processes are negligibly altered
Probability	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur	Rare / improbable Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low The resource is not damaged irreparably or is not scarce
Significance	Negligible - negative		Negligible - negative
Comment on significance	The effects on the community's sense of place will initially be felt during the construction period and will continue into the operational phase.		
Cumulative impacts	Reduction in the number of tourists visiting the area due to the construction of other wind turbine developments in the surrounding area albeit temporarily. Perceptions of tourists regarding the area's representation as "eco-orientated" could change due to the development as well as similar developments proposed.		

Ref:		20	
Project phase	Operation		
Impact	Negative impact on the local tourism industry		
Description of impact	Potential impact on the local tourism industry through changes in the visual environment		
Mitigatability	Medium	Mitigation exists and will notably reduce significance of impacts	
Potential mitigation	<p>It is advisable to consult owners of the game farms during the design and construction process to take into account their requests with respect to mitigation of long term visual disturbances and come up with practical solutions that would be acceptable to both parties.</p> <p>The mitigation measures proposed by the visual specialists should be adhered to. The mitigation measures proposed by the noise specialists should be adhered to. Effective dust suppression must be implemented in appropriate areas.</p>		
Assessment	Without mitigation		With mitigation
Nature	Negative		Negative
Duration	On-going	Impact will last between 15 and 20 years	On-going Impact will last between 15 and 20 years
Extent	Local	Extending across the site and to nearby settlements	Local Extending across the site and to nearby settlements
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Moderate Natural and/ or social functions and/ or processes are moderately altered
Probability	Unlikely	Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur	Rare / improbable Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Medium	The resource is damaged irreparably but is represented elsewhere	Low The resource is not damaged irreparably or is not scarce
Significance	Minor - negative		Negligible - negative
Comment on significance	Visual impacts cannot be entirely eliminated, thus the local tourism industry could still experience some losses.		
Cumulative impacts	Perceptions of tourists regarding the area's representation as "eco-orientated" could change due to the development as well as similar developments proposed (applicable for both scenario 1 and 2).		

Ref:		21		
Project phase	Operation			
Impact	Potential negative impact on the livelihoods of the households dependant on the local tourism			
Description of impact	The potential decline in the number of tourists visiting local tourism sites is likely to reduce the revenue of these businesses. This in turn could have a negative impact on the likelihoods of the households that are directly or indirectly dependent on the tourism and game industry in the visually affected area			
Mitigatability	Medium	Mitigation exists and will notably reduce significance of impacts		
Potential mitigation	Implement all measures suggested to mitigate the impact on the sense of place.			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Negative	
Duration	On-going	Impact will last between 15 and 20 years	On-going	Impact will last between 15 and 20 years
Extent	Local	Extending across the site and to nearby settlements	Local	Extending across the site and to nearby settlements
Intensity	Moderate	Natural and/ or social functions and/ or processes are moderately altered	Low	Natural and/ or social functions and/ or processes are somewhat altered
Probability	Probable	The impact has occurred here or elsewhere and could therefore occur	Rare / improbable	Conceivable, but only in extreme circumstances, and/or might occur for this project although this has rarely been known to result elsewhere
Confidence	High	Substantive supportive data exists to verify the assessment	High	Substantive supportive data exists to verify the assessment
Reversibility	Medium	The affected environment will only recover from the impact with significant intervention	Medium	The affected environment will only recover from the impact with significant intervention
Resource irreplaceability	Low	The resource is not damaged irreparably or is not scarce	Low	The resource is not damaged irreparably or is not scarce
Significance	Minor - negative		Negligible - negative	
Comment on significance	Possible income losses for the tourism product owners could potentially occur			
Cumulative impacts	Worsening of the unemployment situation in the area Possible increase in local poverty levels Stronger alienation towards future developments in the area			