

Appendix E (9): Socio-economic Impact Assessment





HCVAfrica

HIGH CONSERVATION VALUE

**SCOPING PHASE INPUTS
FOR THE PROPOSED BOTTERBLOM WIND ENERGY FACILITY**

MAY 2021



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LIST OF ACRONYMS

Acronym	Meaning
BA	Basic Assessment
EIA	Environmental Impact Assessment
FEIAR	Final Environmental Impact Assessment Report
GVA	Gross Value Added
HLM	Hantam Local Municipality
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
IPPs	Independent Power Producers
km	kilometres
MTS	Helios Main Transmission Substation
MW	Megawatt
NDM	Namaqua District Municipality
NDP	National Development Plan
NEMA	National Environmental Management Act
REIPPPP	Renewable Energy Independent Power Producer Programme
SIA	Social Impact Assessment
SKA	Square Kilometre Array
ToR	Terms of Reference
WEF	Wind Energy Facility



1. INTRODUCTION

Enviro-Insight have appointed Steve Horak of HCV Africa to undertake a Social Impact Assessment (SIA) for the proposed Botterblom Wind Energy Facility (WEF) and associated infrastructure on the remainder extent of the farm Sous 226, Near Loeriesfontein in the Northern Cape province of South Africa.

This report provides input for the Scoping Report which will be submitted to the Department of Environmental Affairs for approval before undertaking the Environmental Impact Assessment (EIA). This scoping report will be updated to form the SIA report for inclusion in the EIA.

2. PROJECT DESCRIPTION

FE Botterblom (Pty) Ltd (hereafter referred to as the Applicant) is proposing the development of a WEF and associated infrastructure on a site located approximately 53 kilometres (km) north of Loeriesfontein in the Northern Cape province of South Africa. The proposed development, to be known as Botterblom WEF, will generate electricity which will feed into the National Grid. Enviro-Insight CC (hereafter Enviro-Insight) has been appointed to undertake the requisite environmental impact assessment (EIA) process for the WEF as required in terms of the National Environmental Management Act (No. 107 of 1998) (NEMA), as amended on behalf of the Applicant.

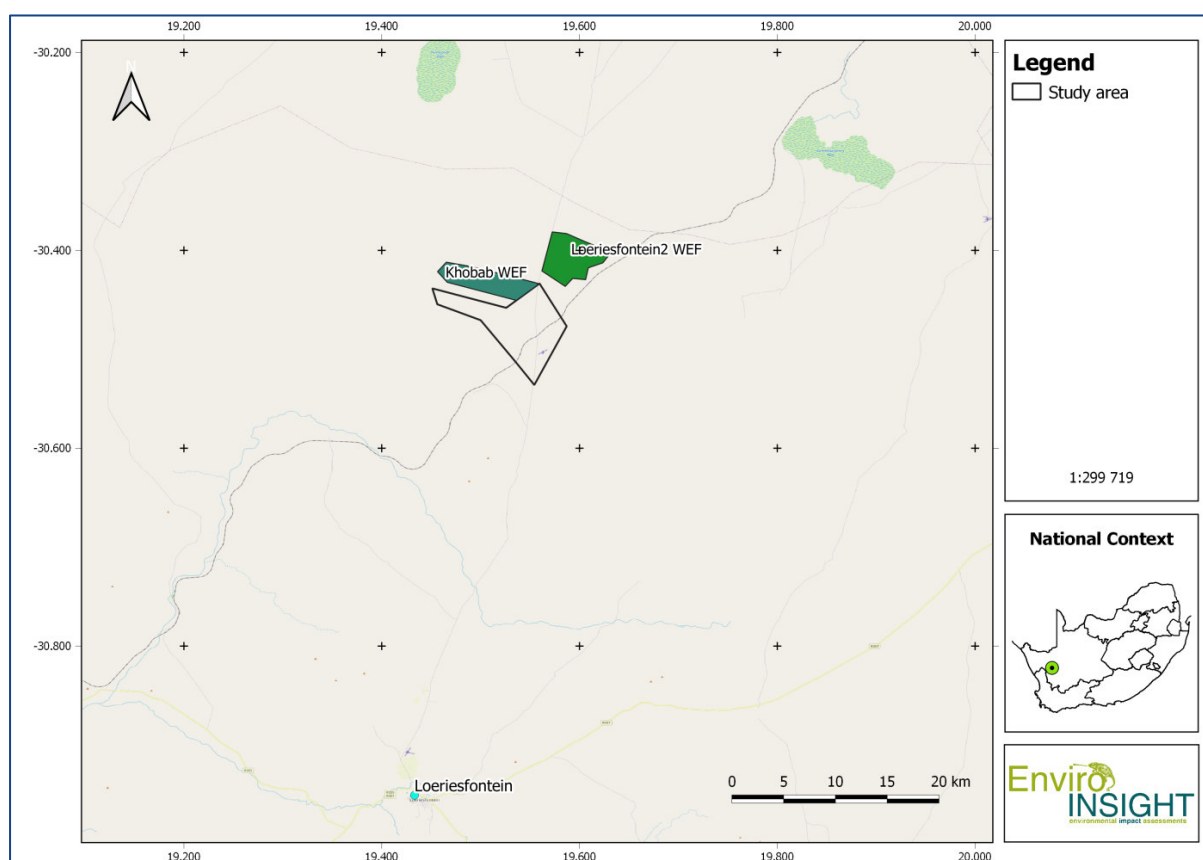


Figure 1 - Locality map of the proposed Botterblom WEF.



The proposed study area for the WEF development is located approximately 53km north of Loeriesfontein, 87 km west of Brandvlei and 146 km south of Pofadder in the Northern Cape. The site can be reached via the gravel road Granaatboskolk / Zout Dwaggas Road, which branches off the R357. The Botterblom WEF footprint is approximately 5 736 hectares (ha) and will be located on a Portion of the Remainder of the Farm Sous 226 Figure 1. The existing Khobab WEF is located directly north while Loeriesfontein2 WEF is located north-east of the study area.

The Botterblom WEF will consist of up to 54 wind turbines, with a generation capacity of up to 6.5 MW per turbine. Each turbine will have a hub height of up to 150m and a rotor diameter of up to 175m. The final turbine model to be utilised will only be determined closer to the time of construction, depending on the technology available at the time. This assessment has considered a range of possible turbine dimensions from a lower tip height of 62.5m up to a maximum tip height of 237.5m.. Additional ancillary infrastructure to the WEF would include underground and above-ground cabling between project components, onsite substation/s, foundations to support turbine towers, internal/ access roads (up to 10 m in width) linking the wind turbines and other infrastructure on the site, and permanent workshop area and office for control, maintenance and storage. As far as possible, existing roads will be utilised and upgraded (where needed) with the relevant stormwater infrastructure and gates constructed as required. The perimeter of the proposed WEF may be enclosed with suitable fencing. A formal laydown area for the construction period containing a temporary maintenance and storage building along with a guard cabin will also be established.

Additionally, the Applicant is proposing to construct an on-site substation and power lines, both with a capacity of up to 132kV. These will feed into the existing national electricity grid at the Helios Main Transmission Substation (MTS) located within the property itself. This associated electrical infrastructure will require a separate Environmental Authorisation and is being conducted as a part of a separate Basic Assessment (BA) process. More details will be provided in the EIA report.

3. APPROACH

A Social Impact Assessment (SIA) is undertaken to determine the impacts of a proposed project on the social environment and to assist the applicant and the authorising authority to make informed decisions regarding the development of the project. It is anticipated that the project will have impacts both positive and negative on the local population and economy of the area and further impacts on the district, province and nationally. These impacts will be discussed in brief for the scoping report and in detail in the final SIA.

4. LIMITATIONS AND ASSUMPTIONS

At drafting this report, the project had not been announced to the public and no consultation with Interested and Affect Parties (I&APs) had taken place. Thus, the report is based entirely on existing desktop information.

Demographic and population statistics are taken from the Statistics South Africa (Stats SA 2011) census and 2017 Community Survey. Data is not captured at local level in the stats SA 2017 Community Survey, thus information for Loeriesfontein is old as it is dated 2011, however the information can still be used to infer trends and provide general information for the local place. Data



analysis at the local municipal level exists for the 2011 census and 2017 Community survey, thus most of the interpretation and analysis is given at the local municipality level.

5. METHODOLOGY

For the inputs into the scoping study a review of the following documents was made:

- National, provincial and local planning documents;
- Census data 2011 and Community Survey data 2017;
- Municipal planning documents Hantam Local Municipality (HLM) Integrated Development Plan (IDP), Namakwa District Municipality (NDM) IDP;
- Spatial development framework for the Northern Cape;
- Renewable energy policy documents; and
- Review of EIA documents for similar wind farm projects in the local area including the following projects (Figure 2):
 - Khobab Wind Farm – operational
 - Loeriesfontein 2 Wind Farm – operational
 - Kokerboom 1 Wind Farm – environmental authorisation approved.
 - Kokerboom 2 Wind Farm – environmental authorisation approved.
 - Kokerboom 3 Wind Farm – environmental authorisation approved.
 - Dwarsrug Wind Farm – environmental authorisation approved.

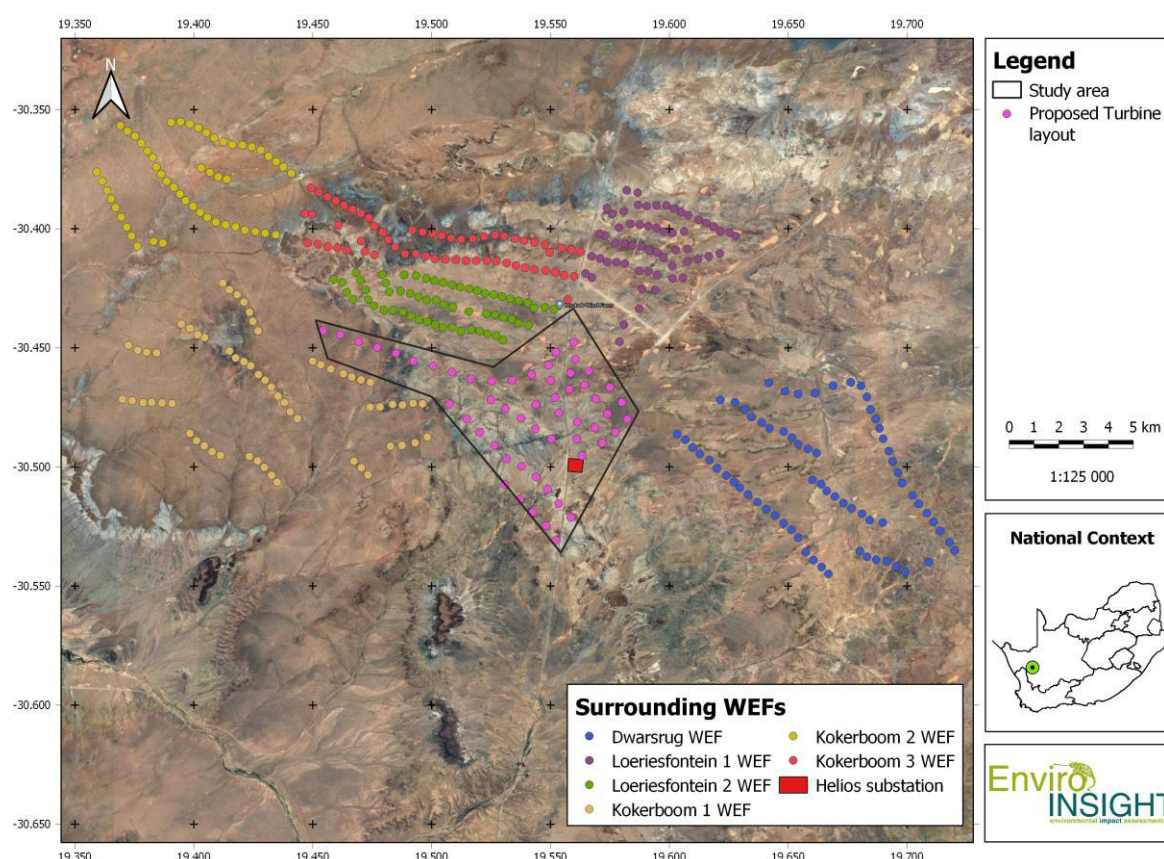


Figure 2 – Wind Farms surrounding the Project Area. Map provided by Enviro-Insight.



6. POLICY FRAMEWORK

The development of any renewable energy project, in this case wind energy, needs to be guided by policy frameworks at the national, provincial and local levels.

6.1. National policies and development plans

6.1.1. National Energy Act (Act No. 34 of 2008)

The Act aims to strengthen energy planning in Electricity Regulation Act (Act No. 4 of 2006), Second Amendment (2011). The Act gives power to the Minister of Energy to determine new generation capacity and to approve the generation and procurement of electricity. A licence for generation capacity is subject to ministerial approval. This establishes an enabling environment for independent power producers (IPPs) to enter the market, the bid programme rules and guidelines as well as procurement of new generation capacity. An amendment to the Electricity Regulations on new generation capacity was made in 2015 this amendment provides for renewable energy power generation including wind generation.

6.1.2. National Development Plan (NDP)

The NDP was developed in 2010 and states that there is a need to develop the green economy. The plan sets the goal for moving away from fossil fuel coal-based energy production to renewables. A key focus of the NDP is the country's ability to return to a state of continued and uninterrupted electricity supply. This was to be achieved by increasing the electricity generation reserve margin from 1% (2014) to 19% in 2019, which would require the development of 10GW of additional electricity capacity by 2019 against the 2010 baseline of 44GW. Five of the 10 GW were to be sourced from renewable energy sources, with an additional 2GW to be operational by 2020.

6.1.3. New growth Path framework

The New growth Path framework sets out the framework for economic policy and the drivers for creating jobs in the South African economy. The NGP targeted 5 million new jobs by 2020. It also aimed for 300,000 additional direct jobs by 2020 to green the economy. The framework identifies investments in five key areas namely: energy, transport, communication, water and housing. Sustaining high levels of public investment in these areas will create jobs in construction, operation and maintenance of infrastructure. The New Growth Path identifies five other priority areas as part of the programme to create jobs through a series of partnerships between the State and the private sector. The Green economy will include expansions in construction and the production of technologies for solar, wind and biofuels as supported by the draft Energy on Integrated Resource Plan. There is potential for renewable energy generation to provide for some of these 300 000 jobs and to provide green power to the economy to generate additional jobs (State of Renewable energy in South Africa, 2015).

6.1.4. Industrial Policy Action Plan (IPAP)

The IPAP is driven by the Department of Trade and Industry. The IPAP is an annually updated, three-year rolling plan for industrial policy implementation; since 2011 it has specifically identified the energy sector (solar and wind energy); as a priority for the country's industrial sector in (2014). In its review report the following was reported in terms of progress made in the green economy specifically reporting on the Renewable Energy Independent Power Producer Programme (REIPPPP) programme stating that this has proved an extraordinarily successful green economy project, attracting investment to the value of R201.8 billion, contributing 3,162 MW of electricity generation capacity and mandating South African entity participation of 40% (Industrial Policy Action Plan 2018/19-2020/21).



6.1.5. Renewable Energy Independent Power Producer Programme (REIPPPP)

In 2010, the South African government developed the REIPPPP to contract with private power producers to supply energy to the national grid. This was done to enhance electricity supply at a time of shortages, to encourage generation from renewable sources and to provide a stimulus for manufacturing through the procurement of capital goods for the new plants. Many of the major inputs for renewable generation are designated for local procurement. The proposed Botterblom WEF is to be an Independent Power Producer (IPP).

6.1.6. Integrated Resource Plan (IRP) 2019

The Integrated Resource Plan (IRP) is an electricity infrastructure development plan based on least-cost electricity supply and demand balance, considering security of supply and the environment namely to minimize negative emissions and water usage. The first plan was promulgated in March 2011, the plan is a living plan and was last updated in 2019.

The 2019 report indicates that a total 6 422 MW under the REIPPPP has been procured, with 3 876 MW operational and made available to the grid. Current base from wind is 1 980 MW in 2018 by 2030 this will be 17 742 MW which is the highest of all renewable energy sources. The next closest is PV Solar 8 288 but coal will still dominate with in 2030 with 333 64 MW. See Table 1.



Table 1 - Draft IRP 2019.

	Coal	Coal (Decommissioning)	Nuclear	Hydro	Storage	PV	Wind	CSP	Gas & Diesel	Other (Distributed Generation, CoGen, Biomass, Landfill)
Current Base	37 149		1 860	2 100	2 912	1 474	1 980	300	3 830	499
2019	2 155	-2 373					244	300		Allocation to the extent of the short term capacity and energy gap.
2020	1 433	-557				114	300			
2021	1 433	-1 403				300	818			
2022	711	-844			513	400	1 000	1 600		
2023	750	-558				1 000	1 600		500	
2024			1 860				1 600	1 000	500	
2025						1 000	1 600		500	
2026		-1 219					1 600		500	
2027	750	-847					1 600	2 000	500	
2028		-475				1 000	1 600		500	
2029		-1 684			1 575	1 000	1 600		500	
2030		-1 150		2 500		1 000	1 600		500	
TOTAL INSTALLED CAPACITY by 2030 (MW)		33364	1860	4600	5000	8288	17742	600	6380	
% Total Installed Capacity (% of MW)		43	2.36	5.84	6.35	10.52	22.53	0.76	8.1	
% Annual Energy Contribution (% of MWh)		58.8	4.5	8.4	1.2*	6.3	17.8	0.6	1.3	

- Installed Capacity
- Committed / Already Contracted Capacity
- Capacity Decommissioned
- New Additional Capacity
- Extension of Koeberg Plant Design Life
- Includes Distributed Generation Capacity for own use

However, the 2019 report also states that build limits on renewables (wind and solar) will remain in place until the next review, however imposing annual build limits on renewables for the period up to 2030 does not affect the capacity from wind or solar PV in any significant way. Provincial policies

6.1.7. Northern Cape Provincial Growth and Development Strategy

The Northern Cape Provincial Growth and Development Strategy was developed in 2008 and sets out the development strategy for the Northern Cape. The strategy indicates that there are opportunities to develop the RE sector, but this should not be at the expense of the natural beauty resources of the Northern Cape which are a tourist attraction.

6.1.8. Northern Cape Spatial Development Framework, 2018

The interior parts of the Province and the Namaqualand coast have been identified as having potential for renewable energy production and targets have been put in place for 25% of the Provinces' energy generation capacity to be acquired from renewable energy projects such as wind, solar, thermal, biomass and hydroelectricity by the year 2020.

6.2. Local policies

6.2.1. Northern Cape Municipal Local Economic Development Framework

The framework indicates that there are opportunities to further develop the renewable energy sector and that the Northern Cape and municipalities should accommodate this growth.



6.2.2. Hantam Local Economic Development Strategy,2011

The strategy identifies renewable energy including wind energy as an opportunity for development of the economy of Hantam both in terms of the development of wind energy facilities and the related jobs these will create.

6.2.3. Namakwa District municipality Integrated Development Plan (IDP)

The 2020/2021 IDP indicates that it aligns with the 17 United Nations development goals, ranging from alleviating poverty and reducing inequality through job creation and economic growth, as well as ensuring access to affordable, reliable, sustainable and modern energy for all. The IDP states that local economic development will include the construction of renewable energy projects in the area.

6.2.4. Hantam Local Municipality Integrated Development Plan (IDP) 2020/2021

The IDP indicates that the Square Kilometre Array (SKA) megaproject and renewable energy generation are large-scale private sector driven projects which should further develop the economy of the municipality. In terms of the district Spatial Development Framework (SDF) the promotion of renewable energy projects is provided as an objective of the SDF.

In summary the proposed Botterblom WEF is in congruence with national provincial and local policies and frameworks and is supported by policy.

7. DESCRIPTION OF THE BASLINE SOCIAL AND ECONOMIC ENVIRONMENT

The following section describes the baseline socio-economic environment in which the project is to be established. The potential impacts of the project are briefly assessed against this baseline and will be assessed in more detail in the SIA undertaken for the EIA.

7.1. Administrative Context

The proposed WEF is situated approximately 53km north of the town of Loeriesfontein which is the closest town and falls within the Hantam Local Municipality in the Namakwa District of the Northern Cape province in the Republic of South Africa. Loeriesfontein is approximately 460km from Cape Town, 260 km from Springbok and 370km from Upington (Google Maps, 2021). The HLM is bordered in the South and South-West by The Western Cape Province (Municipalities, 2021).

7.2. History of Loeriesfontein

Loeriesfontein is a small rural service centre town that lies within a basin surrounded by the Hantam mountains and is situated to the north-west of the town of Calvinia. The town grew around a general store established in 1894 by a travelling Bible salesman, named Fredrick Turner, the son of the sister of the theologian Charles Spurgeon. Fredrick Turner came from Norwich, England. The general store still exists. It is currently owned by Victor Haupt, the grandson of Fredrick Turner. The shop is currently called Turner & Haupt SPAR and has been in the family for 113 years (Wikipedia , 2021).

7.3. Census and community survey information at glance

Table 2 presents information for Loeriesfontein, the HLM and the NDM over the period of the 2011 census and the 2016 community survey. As indicated in limitations the 2016 community survey does not collect data at the local level so the information for Loeriesfontein is only presented for the period 2011. The information presented here is discussed in more detail in the sections to follow.



Table 2 Information in brief

Characteristics	Loeriesfontein Census 2011	HLM Census 2011	HLM Community Survey 2016	NDM Community Survey 2016
Total population	2744	21 684	21 540	115 488
Young (0-14)	26%	27.4%	24.2%	22.5%
Working Age (15-64)	64,2%	64.3%	66.9%	68.0%
Elderly (65+)	9.7%			9.5%
Dependency ratio Per 100 (15-64)	55.7	55.5	49.6	47.1
Sex ratio Males per 100 females	98	100.4	101.9	101.5
Education				
No schooling aged 20+	16.8%	13.9%	9.9%	4.4%
Higher education aged 20+	7.1%	7.7%	8.0%	8.0%
Matric aged 20+	17.1%	18.2%	24.7%	24.2%
Households				
Number of households	807	6 392	6 894	37 669
Average household size	3,2	3.2	3.1	3.1
Female headed households	57.7%	33.4%	34.1%	37.6%
Housing				
Formal dwellings	96.3%	96.9%	94.8%	95.2%
Housing owned/paying off	69.5%	53.8%	67.6%	72.6%
Services				
Flush toilet connected to sewerage	4.2%	53.4%	78.3%	67.9%
Weekly refuse removal	96.9%	72.0%	76.2%	81.7%
Piped water inside dwelling	51.3%	59.8%	65.7%	70.5%
Electricity for lighting	92.3%	76.3%	80.9%	88.4%

Sources: 2011 Census, 2016 Community Survey

7.4. Demographics

7.4.1. Population

Based on census data 2011 the population of Loeriesfontein is estimated at 2 744 people distributed over 34.5 km² which translates to a population density 80 persons/km². This is considerably denser than the population density of the Northern Cape at 3 persons/km².

The population of Loeriesfontein is young - 26% are between 0-14 years, 64.2% are of working age and 9.7% are elderly giving a dependency ratio of 55.7. Dependency ratio indicates the proportion of the population not in the workforce who are 'dependent' on those of working-age, it is a calculation which groups those aged under 15 with those over 65 years as the dependants and classifying those aged 15-64 years as the working-age population. A ratio of 55.7 is significantly higher than the district ratio of 47.1 indicating that there is high dependency on those of working age in Loeriesfontein.



7.4.2. Ethnicity and Language

Of the 2,744 households in Loeriesfontein 86% are Coloured followed by White (11%) Black African (2.0%) and Indian/Asian (0.1%). 98 % of the people living in Loeriesfontein speak Afrikaans as a first language.

7.4.3. Culture

As reflected in the demographical profile above, 86% of the people living in Loeriesfontein are identified as Coloured people. The term Coloured (also known as Bruinmense, Kleurlinge or Bruin Afrikaners) refers to the ethnic group of mixed race people in South Africa who possess some sub-Saharan African ancestry, but not enough to be considered Black African. Apart from ancestry in sub-Saharan Africa, coloureds also have substantial ancestry from Europe, Indonesia, Madagascar, Malaya, Mozambique, Mauritius, St Helena and Southern Africa. Genetic history studies suggest that this group has the highest levels of mixed ancestry in the world.

Coloured people generally observe two main religions, namely Christianity and Islam, however in the Northern Cape most coloured people follow the Christian religion as reported in the 2016 Stats SA community survey. Only 0.7% of people in the Northern Cape follow the Muslim faith and 95% of Coloured people self-reported as being Christian. In the Western Cape 5.6% of people follow the Muslim faith. These faiths usually result in a conservative outlook on life, people are generally family orientated and community is important.

7.4.4. Vulnerable Households

According to the Hantam IDP there are 2 978 indigent households in the local municipality, this refers to households earning a combined income of less than R3 200 per month. Another measure of vulnerability is female-headed households in the HLM, 57.7% of households are headed by woman, this is considerably higher than in the NDM of 37.6%. The sex ratio is also higher for woman in Loeriesfontein at 102 women per 100 men, but this is not significant. Reported persons living with disabilities in the community survey 2016 is 9.8% which is lower than the provincial average of 10.7%.

Loeriesfontein also has a Soup Kitchen project which was established in 2007. This project is funded by the Department of Social Development. The project currently provides soup to 80 people daily with a nutritional meal and 130 households are supported monthly. The presence of soup kitchens is an indication of poverty in communities.

7.4.5. Housing

96.3% of people living in Loeriesfontein live in formal housing and a high percentage of people own their homes (69.5%) indicating a stable population. This is also higher than the district with 53.8% of people owning their houses in 2011. The average household size is 3,2 which is similar for the HLM and the NDM.

7.4.6. Crime

Table 3 shows the crime statistics for 2018 in comparison with crimes committed in 2017 for the HLM.

Table 3 Crime stats

Nature of Crimes	Hantam Local Municipality	Namaqua District Municipality
Serious crimes	994 2018 was 964 in 2017	4983: was 5264 in 2017
Driving under the influence	19: was 15 in 2017	98: was 88 in 2017
Drug-related crime	331: was 328 in 2017	1355: was 1224 in 2017



Murders	7: was 5 in 2017	24: was 28 in 2017
Sexual offences	22: was 15 in 2017	133: was 163 in 2017

Overall the crime rates have increased between 2017 and 2018 and drug related crimes are particularly high for the district.

7.5. Services

7.5.1. Education

Loeriesfontein has a high percentage of people aged 20+ who have no schooling (16.8%) which is much higher than the NDM at 4.4%. Only 7.1% of people have a higher education aged 20+ and 17.1% have Matric at aged 20+. In terms of school facilities there is both a primary school and a high school.

7.5.2. Waste management

96.9% of households in Loeriesfontein have weekly waste collection, the highest in the district and the town also has its own landfill site.

7.5.3. Electricity

92.3% of households in Loeriesfontein have electricity for lighting, this is higher than for the district of 76.3% of households in 2011.

7.5.4. Health

Loeriesfontein has a clinic and hospital, the nearest large hospital is situated at Calvinia.

7.5.5. Safety and security

Loeriesfontein has its own police station.

7.5.6. Transport infrastructure

Using the R55 gravel road, the distance between Calvinia and Loeriesfontein is 86km, whilst travelling from Calvinia to Brandvlei requires the utilisation of the R27 tar surface road for a journey of approximately 2.5 hours. There is also a train station in Loeriesfontein.

7.5.7. Social and Recreational Infrastructure

The Hantam LM has the following social and recreational infrastructure available:

- Three libraries in Calvinia, Loeriesfontein and Nieuwoudtville
- Seven sport facilities in Calvinia and Loeriesfontein
- Nine religious centres in Loeriesfontein

7.5.8. Nature reserves

The Akkerendam Nature Reserve is situated next to Calvinia and is a popular recreation facility for residents. The reserve has hiking trails in the Hantam Mountains with routes of varying difficulty. The municipality and the Department of Environmental Affairs are in talks regarding the management and further development of this nature reserve. The project is currently unfunded in the NDM IDP. Nieuwoudtville has a flower bulb reserve managed by the Municipality that is very popular during the peak flower season. There is also a waterfall on the road between Nieuwoudtville and Loeriesfontein which can be considered a tourist attraction (NDM IDP, 2020/2021).

7.6. Economy

7.6.1. Provincial economy

According to StatsSA (March 2019) the provincial economy grew at 2.84% (2017), an improvement from -1.24% experienced in 2016. Noteworthy, is the fact that the provincial growth of 2.8% in 2017,



was above South African GDP growth average of 1.4% for the same period. The GDP of the Province is R 96 billion, of which the mining sector contributes an estimated R19 billion, agriculture contributes R6.8 billion while construction provides R2.6 billion. (NDM IDP, 2020-2021). It is of interest that power generation is not reported despite several largescale renewable energy projects in the Northern Cape.

7.6.2. Hantam Local Municipality Economy

The Hantam Municipality is a relatively small economy, making up about 13% of 2017 Gross Value Added (GVA) in the Namakwa district – up from 12% in 2016. These contributions in growth are negligible proportions (for both years at 1.6%) of the provincial economy and are like the respective contributions in 2011.

The percentage share contribution by the tertiary sector in 2017 to the total GVA generated in the Hantam municipal area is about 69% or R1012 million compared to 70% or R928 million in 2016. The primary sector contributed 23.5% or R344 million and the secondary sector 7.5% or R111 million in 2017 – increased contributions from the year before.

Between 2000 and 2015, every economic sector in the municipal area grew positively in terms of GVA contribution but manufacturing showed negative growth in recent years. Note that the subsectors do not have high levels of volatility that are typical for, specifically the primary sector.

The table below provides a summary by subsector of the municipality's GDP in 5-year increments from 1995. Included are figures for 2016 and 2017, as well as growth rates between 2016 and 2017. (Hantam IDP, 2020/2021).

Table 4 GDP of the municipality - Hantam IDP (2020/2021).

Industry	1995	2000	2005	2010	2015	% change (2000 to 2015)	2016	2017	% change (2016 to 2017)
Primary Sector	64	34	114	201	261	-	290	344	-
Agriculture, forestry and fishing	32	62	110	193	250	306%	278	332	19.2%
Mining (and quarrying)	3	2	4	8	11	372%	11	12	1.8%
Secondary Sector	12	15	22	60	102	-	110	111	-
Manufacturing	4	4	8	14	24	448%	27	25	
Electricity, gas and water	3	3	4	15	34	937%	38.3	38.5	0.4%
Construction	6	7	10	31	44	538%	45	47	5.5%
Tertiary sector	123	207	332	553	875	-	928	1012	-
Wholesale and retail trade, catering and accommodation	34	53	77	131	170	223%	181	189	5.0%
Transport, storage and communication	19	25	52	91	190	651%	202	215	6.4%
Finance, insurance, real estate and business services	19	33	55	100	141	330%	141	157	11.5%
General government	28	55	80	171	279	411%	304	341	12.0%



Electricity, gas and Water secondary sector of the local economy grew by 937% between 2000 and 2015 and at 0.4 % during 2015 and 2016 making this the largest growing sector in the municipality and showing the most growth. However, the Agricultural Primary sector showed the most growth between 2015 and 2016 at 19.2 % (Hantam IDP, 2020/2021).

The significant increase in the subsector contribution of 'electricity, gas and water' since 2010, is due to the establishment of renewable energy generation facilities in the municipal area. Note that the contribution in this subsector as well as the 'transport' subsector, more than doubled between 2010 and 2015 while the contribution in the 'construction' subsector increased substantially between 2015 and 2017, i.e. as an economic activity with strong linkages to the establishment of the renewable energy generation facilities and the Square Kilometre Array (SKA) megaproject. It is reported that SKA has created more than 1000 jobs through infrastructure upgrades and construction on and around the SKA SA site 8. Between 2015 and 2017 the 'general government' sector has also shown high growth. The municipality also recognises that the renewable energy sector will continue to make a positive contribution to the economy going forward (Hantam IDP, 2020/2021).

7.6.3. Loeriesfontein economy

The Loeriesfontein economy is still dominated by the Agriculture sector and general trade, the hospitality sector has also benefited from accommodating workers during the construction of the two existing WEFs in the area. Although the mining industry currently has a low contribution to the economy, 80% of the world's gypsum reserves lie just outside Loeriesfontein town, thus an opportunity exists for salt and gypsum mining in the region.

7.6.3.1. Tourism in Loeriesfontein

The most significant tourist attraction is the floral display which happens August to September when wildflowers bloom in the veld surrounding the town. The town also boasts a windmill museum which is reported to be the second largest in the world. Quiver Tree Forest located on Gannabos outside of Loeriesfontein is the largest and southernmost colony for this member of the aloe family. Gannabos also offers a B&B, cottage and farmhouse for those wanting to stay a little longer. This is a coveted location for photographers and botanists, and a favourite stop-off for visitors from all over the world who annually visit this region to experience its legendary spring flower extravaganza.

7.6.3.2. Wind Energy Facilities in the area

The Northern Cape has the highest volume of renewable energy utility power plants in the country. Loeriesfontein WEF and the Khobab WEF commenced their 20-year commercial operations in December 2017. With a generation capacity of 140 megawatts each, these two neighbouring WEF combined make up the largest single expanse of wind turbines in the country. Together they comprise a total of 122 wind turbine generators, spanning 6 653 hectares. Collectively the wind farms will power approximately 240 000 South African households, positively impacting the country's economy and its people. The WEFs have a combined value of approximately ZAR 7 Billion and are owned by a consortium led by Lekela Power. The majority of the 99m turbine towers were locally manufactured at the Gestamp Wind Turbine Tower Factory in the Western Cape (Khobabwind, 2021).

7.6.3.3. The projects contribution to the local economy

The project will contribute to sustainable community growth through financial and non-financial community development initiatives. This will be done by giving back a percentage of total revenue earned to the community; through Socio-Economic Development (SED) and Enterprise Development (ED). This is a requirement for all wind farms.



7.6.4. Local farm economy

As the project has not been announced it is difficult to develop a baseline for local farm economy where the project will be established. However, the area is mostly suitable for sheep farming and the farms do not offer many jobs since sheep farming is not labour intensive. At the same time agriculture makes a significant contribution to the economy and Loeriesfontein is classified as a rural service centre serving the surrounding farms. A more detailed assessment will be undertaken when the SIA is conducted as part of the EIA specialist studies.

7.6.5. Employment

Employment and unemployment rates are important as these give an indicator of socio-economic well-being, as employment is how most households generate income to supply their basic needs. Hantam and Loeriesfontein have the lowest unemployment rates as shown in the table below. The data is for 2011 and this situation may look vastly different after the construction of the WEFs have taken place since 2017 in the area, the rates may be even lower.

In the Hantam municipal area, 5 165 (or 38.2%) of the working age population was formally employed in 2017, compared to 5 224 (or 39.3%) in 2016 and 5 614 (or 37.4%) in 2001, i.e. a relative improvement in overall formal employment since 2001 but worsening in recent years. These figures also represent a worsening trend if measured in number of persons employed. The number of unemployed persons (802) in the municipal area in 2017 was more or less the same as in 2016 (746) and in 2001 (779). These trends must be seen in the light of the general depopulation of the municipality, i.e. a smaller working age population and the high percentage of persons not economically active. (Hantam, IDP)

8. POTENTIAL IMPACTS

The preliminary identification of potential impacts is made based on the desktop information gathered and the review of documentation including EIAs for similar projects in the area, and from experience gained from undertaking similar assessments. A full assessment of the potential impacts will be made in the EIA phase of the project once the project has been announced and field work is complete.

8.1. Construction Phase Impacts

The following construction phase impacts can be expected for the project:

Potential positive impacts:

- Creation of employment;
- Business opportunities;
- Opportunity for skills development; and
- On-site training.

Potential negative impacts

- Impacts associated with the presence of construction workers on site and in the area;
- Influx of job seekers to the area;
- Impacts on farmers;
 - risk of stock theft;
 - damage to farm infrastructure associated with construction workers;



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- increased risk of fires.
 - Impact of construction vehicles, including:
 - damage to roads,
 - safety and
 - dust.
 - Impact on farming activities.
 - Additional pressure on services offered by the local municipality;
 - Loss of sense of place;
 - Noise, dust and visual impacts

8.2. Operational Phase Impacts

Based on the findings from of SIAs for other wind energy projects the key social issues affecting the operation phase are likely to include:

Potential positive impacts

- The establishment of renewable energy infrastructure and generation of clean, renewable energy;
- Creation of employment and business opportunities;
- Opportunities for skills development and training; and
- Generation of income for landowner.

Potential negative impacts

- The visual impacts and associated impact on sense of place;
- Impact on property values;
- Potential impact on tourism;
- Noise; and
- Visual impacts.

8.3. Decommissioning Phase Impacts

These impacts are likely to occur in 20 years time and new technology might exist to lengthen the lifespan of the project indefinitely. However, should the site be decommissioned there will be both negative and positive impacts.

Negative Impacts

- Loss of jobs and associated income; and
- Negative impacts on households which will have become dependent on income generated from the project.

Positive Impacts

- Short term positive impacts for the deconstruction of the infrastructure;
- Short term employment opportunities for deconstruction; and
- Restoration of sense of place due to reduction of noise and visual impacts .



8.4. Cumulative Impacts

Establishment of a WEF on the areas rural sense of place and character of the landscape. The number of renewable energy facilities in the area has the potential to place pressure on local services, specifically medical, education and accommodation. This will be during the construction phase only as a limited number of people are employed during the operational phase. The establishment of a number of renewable energy facilities in the region will create employment, skills development and training opportunities, and creation of downstream business opportunities.

8.5. No development Impacts

The no-development option would result in a lost opportunity for South Africa to supplement its current energy needs with clean, renewable energy and a lost opportunity for the district, HLM and Loeriesfontein.

9. SOCIO-ECONOMIC IMPACT ASSESSMENT SCOPE OF WORK

The aim of the socio-economic impact assessment (SIA) will be to provide an accurate representation of the social, cultural and economic conditions of the people surrounding the proposed project, to assess the impact on these conditions and provide mitigation measures for any identified impacts.

9.1. Scope of Work

Following the approval of the Terms of Reference (ToR), field work will be undertaken to collect socio- economic data on affected communities. This study will employ a predominantly qualitative approach (i.e. interviews and focus group discussions) to gather data, this is dependent on whether in person consultations are permitted under the COVID 19 government regulations.

Data collection will be done by the following means:

Household interviews for those affected by the proposed project to develop a social profile. The following variables will be considered during the design of the interview framework:

- Access to services;
- Agricultural practices and land use;
- Livelihoods; and
- Perceptions and attitudes towards the proposed Project.

The methodology for the impact assessment phase will be finalised when the social environment has been more clearly defined. The quantitative data will be gathered through interaction with affected communities and local key people will be used to compile a detailed report describing the socio-economic environment for the area affected by the proposed WEF.

10. CONCLUSION

Based on the review of key planning documents the development of renewable energy, including WEF, are supported nationally, provincially and at the local government levels. At the local government level this should not be at the expense of the natural beauty of the area..



The development of the proposed WEF will create employment, training and business opportunities during both the construction and operation phases of the project. The potential negative impacts associated with the construction phase can be mitigated if mitigation measures are implemented. Detailed mitigation measures will be outlined in the Social Impact Assessment Report.

The proposed development will also represent an investment in clean, renewable energy infrastructure for the country which will go some way to offset the negative environmental and socio-economic impacts associated with a coal-based fossil fuel energy generation. Renewable energy, including WEF, also addresses climate change and assists the country in meeting climate change reduction goals.

The potential visual, noise and dust impacts will be assessed from these specialist studies to be undertaken as part of the EIA. The cumulative impacts on the area's sense of place and assessment of significance of impacts will be informed by the findings of these assessments undertaken for the proposed WEF as part of the EIA.

11. BIBLIOGRAPHY

Dennis Moss Partnership. (2012). Northern Cape Spatial Development Framework.

Department Planning monitoring and Evaluation (2019). Draft National Spatial Development Framework.

Department of Economic Development. (2010). New Growth Path: Framework .

Department of Energy. (2019). Integrated Resource Plan.

Department of Energy (2015). State of Renewable Energy in South Africa.

Department of Trade and Industry. (2015). Industrial Policy Action Plan.

Electricity Regulation Act (Act No. 4 of 2006). revised 2011.

Hantam IDP (2020). Approved by Council May 2020.

Industrial Policy Action Plan (2018). reporting period 19/20/21

National Planning Commission. (2011). National Development Plan: Vision for 2030.

Northern Cape Government. (2008). Northern Cape Provincial Growth and Development Strategy.

Northern Cape Province. (2011). Northern Cape Municipal Local Economic Development Framework

Namaqua Integrated Development Plan 2020-2021.

SiVEST (2012). Environmental Impact Assessment Report Proposed Construction of Wind Farms near Loeriesfontein, Northern Cape Province, South Africa

Tony Barbour and Schalk van der Merwe (2017). Social Impact Assessment for Kokerboom 1 Wind Energy Facility Northern Cape Province Prepared for AURECON

Tony Barbour and Schalk van der Merwe (2017). Social Impact Assessment for Kokerboom 2 Wind Energy Facility Northern Cape Province Prepared for AURECON



<https://municipalities.co.za/overview/1167/hantam-local-municipality> accessed 31/03/2021

<https://www.google.com/maps/place/Loeriesfontein> Accessed 31/03/2021

<https://www.discovermagazine.com/mind/who-are-the-cape-coloureds-of-south-africa> accessed 02/04/2021

<https://khobabwind.co.za/khobab-wind-farm/overview/> accessed 02/04/2021

https://en.wikipedia.org/wiki/Loeriesfontein#The_town assessed 01/04/2021