

# **ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED BOULDERS WIND FARM NEAR VREDENBURG IN THE WESTERN CAPE**

## **Property Values, Tourism and Economic Issues Assessment Report**

*Prepared to inform the Socio-Economic Impact Assessment Study*

**November 2018**

**Prepared by:**



Urban-Econ Development Economists

1088 Pretorius Street, Hatfield

Tel: 012 342 8686

Fax: 012 342 8688

E-mail: [elena@urban-econ.com](mailto:elena@urban-econ.com)

# TABLE OF CONTENT

<b>SPECIALISTS DETAILS</b> .....	<b>3</b>
<b>SPECIALISTS DECLARATION</b> .....	<b>4</b>
<b>ACRONYMS AND ABBREVIATIONS</b> .....	<b>6</b>
<b>1. INTRODUCTION</b> .....	<b>7</b>
1.1 BRIEF DESCRIPTION OF THE PROJECT .....	7
1.2 SCOPE AND PURPOSE OF THE STUDY .....	8
1.3 DELINEATION OF THE ZONE OF INFLUENCE .....	9
1.4 METHODOLOGICAL APPROACH .....	11
1.5 ASSUMPTIONS AND LIMITATIONS.....	14
<b>2. AN ASSESSMENT OF POTENTIAL WIND FARM EFFECTS ON TOURISM</b> .....	<b>16</b>
2.1 TOURISM INDUSTRY OVERVIEW IN THE ZONE OF INFLUENCE.....	16
2.2 EFFECTS OF THE WEST COAST ONE WIND FARM ON TOURISM.....	22
2.3 POTENTIAL EFFECT OF THE PROPOSED BOULDERS WIND FARM ON TOURISM IN THE AREA .....	23
<b>3 AN ASSESSMENT OF POTENTIAL WIND FARM EFFECTS ON PROPERTY VALUES</b> .....	<b>25</b>
3.1 PROPERTY VALUE VERSUS PROPERTY PRICES.....	25
3.2 HISTORICAL TRENDS AND ASSESSMENT .....	26
3.3 POTENTIAL EFFECT OF THE BOULDERS WIND FARM ON PROPERTY PRICES .....	36
<b>4 ASSESSMENT OF ECONOMIC IMPACTS</b> .....	<b>39</b>
4.1 EFFECT ON PRODUCTION AND GDP .....	39
4.2 EFFECT ON EMPLOYMENT .....	44
4.3 EFFECT OF HOUSEHOLD INCOME .....	49
4.4 EFFECT OF GOVERNMENT EARNINGS.....	51
<b>5 CHANGES TO THE PROPOSED WEF LAYOUT AND IMPLICATIONS ON PROPERTY, TOURISM, AND ECONOMIC IMPACT ASSESSMENT RESULTS</b> .....	<b>54</b>
<b>6 IMPACT STATEMENT</b> .....	<b>55</b>
A) WITH REGARD TO THE EFFECT ON TOURISM.....	55
B) WITH REGARD TO THE EFFECT ON PROPERTY VALUES .....	56
C) WITH REGARD TO THE EFFECT ON ECONOMY .....	57
<b>REFERENCES</b> .....	<b>58</b>
<b>APPNDIX A: IMPACT RATING METHODOLOGY</b> .....	<b>59</b>

## **SPECIALISTS DETAILS**

### **ELENA BROUGHTON**

Cell: 082 463 2325

E-mail: [elena@urban-econ.com](mailto:elena@urban-econ.com)

Position: Manager/Senior Economist

Qualifications: MSc Technology Management, BSC (Hon) Technology Management, BCom (Hon) Economics

Experience: 14 years

Brief profile: Elena Broughton is a senior professional and the manager of the Innovation & Sustainable Development Unit at Urban-Econ. She has extensive knowledge in various fields of economic development that includes 14 years of experience in undertaking socio-economic impact assessment studies for a variety of private clients spanning the mining, manufacturing, energy, infrastructure, and retail sectors. She also acted as a peer reviewer in several socio-economic impact assessment studies and completed a few strategic socio-economic impact assessments. Her involvement in the field allowed her to develop a sound understanding of the South African environmental legislation and developmental policies and equipped her with a widespread knowledge of socio-economic implications and benefits of various new developments.

### **NDIVHUWO MALEMAGOBA**

Cell: 073 565 2239

E-mail: [ndivhuwo@urban-econ.com](mailto:ndivhuwo@urban-econ.com)

Position: Development Economist

Qualifications: MSc Development Planning, BSc (Hons) Urban and Regional Planning *with distinction*, BSc Urban and Regional Planning

Experience: 2 years

Brief Profile: Ndivhuwo Malemagoba is a Development Economist in the Sustainable Development and Innovation Unit at Urban-Econ. She holds a Master of Science in Development Planning from the University of the Witwatersrand. During her postgraduate years, she focused on economic development and its spatial implications and manifestations. This has equipped her with sufficient background knowledge to conduct economic impact assessments for various development projects. Further to this, her work experience has been inclusive of project management, land use management and qualitative and quantitative research. Her application of all knowledge and skills gained thus far sharpen her ability to make a prominent contribution to current and future development projects.

**SPECIALISTS DECLARATION**

I, Elena Broughton declare that--:

- » 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):

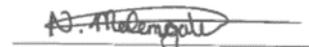
27-06-2018

---

Date:

I, Ndivhuwo Malemagoba declare that--:

- » 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):

27-06-2018

---

Date:

## **ACRONYMS AND ABBREVIATIONS**

CAGR	Compounded Average Growth Rate
DM	District Municipality
DoE	Department of Energy
EIA	Environmental Impact Assessment
GDP	Gross Domestic Product
I&AP	Interested and Affected Parties
LM	Local Municipality
MW	Mega Watt
NEA	Not Economically Active
NT	National Treasury
SAM	Social Accounting Matrix
SMME	Small Medium and Micro Enterprise
St	Saint
VAT	Value Added Tax

## **1. INTRODUCTION**

This document is prepared by **Urban-Econ Development Economists** (Urban-Econ) in response to a request by **Savannah Environmental (Pty) Ltd** (Savannah Environmental) to undertake a **property values, tourism, and economic issues assessment study** to inform the socio-economic impact assessment undertaken by Tony Barbour for the proposed Boulders Wind Farm. The report sought to focus on the issues raised by interested and affected parties (I&APs) with regard to property values and tourism. Moreover, an analysis of potential economic benefits to be created by the project during construction and operation is undertaken.

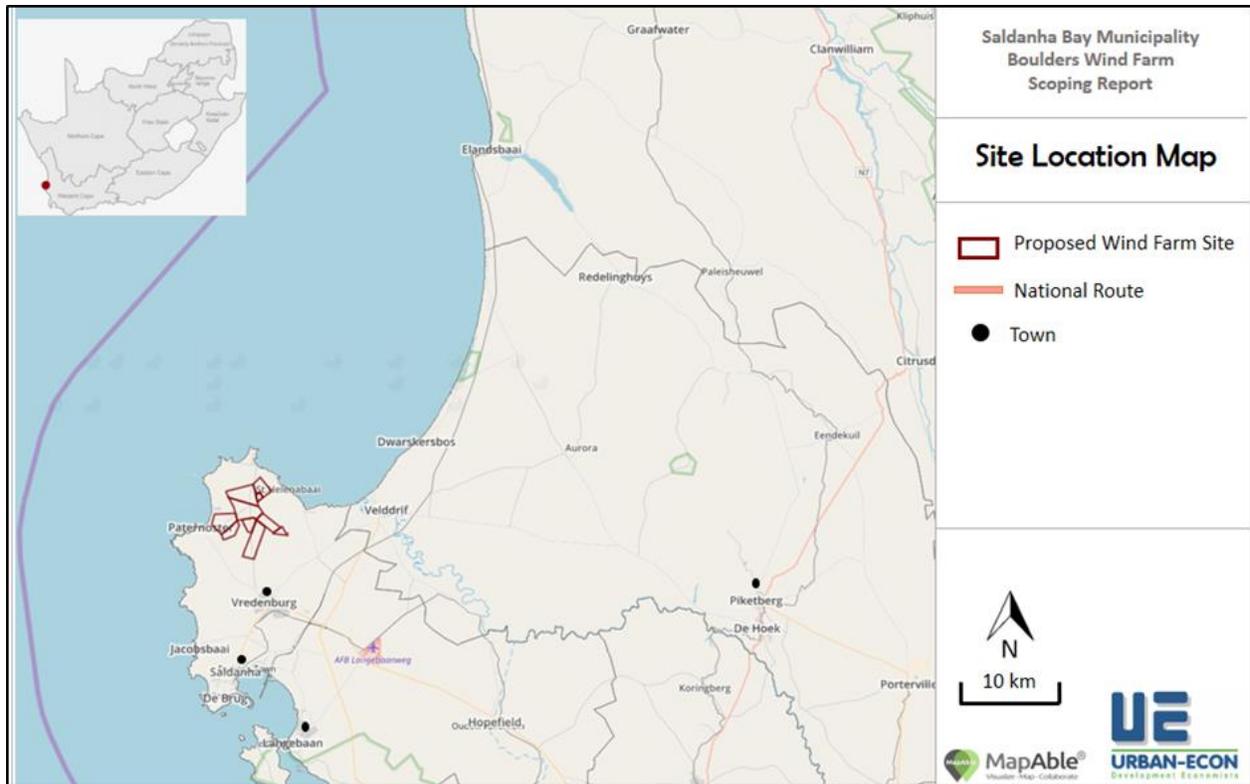
**NB: Following the changes in the Environmental Assessment Practitioner's team and the changes to the layout of the WEF, the report was subsequently amended by adding a chapter analysing the changes in the layout of wind turbines and the implications thereof on the assessment of impacts associated with tourism, economic, and property value issues.**

### **1.1 Brief description of the project**

The Vredenburg Windfarm (Pty) Ltd company proposes to develop a wind farm near Vredenburg, Western Cape. The proposed development is a wind farm with a generating capacity of up to 140 MW to be constructed and operated within a project site identified by the developer. The project is located in the Saldanha Bay Local Municipality (LM) within the West Coast District Municipality (DM) in the Western Cape. The site is located on the West Coast Peninsula and is about 10 km from the Central Business District of Vredenburg.

The project site under consideration for the development of the Boulders Wind Farm consists of 10 farm portions as outlined on Map 1. These farm portions include:

- » Boebezaks Kraal 2/40
- » Boebezaks Kraal 3/40
- » Boebezaks Kraal 5/40
- » Frans Vlei 2/46
- » Schuitjes Klip 3/22
- » Davids Fontyn 9/18
- » Schuitjes Klip 1/22
- » Het Schuytje 1/21
- » Davids Fontyn 7/18
- » Uitkomst RE/6/23



**Map 1: Location of proposed Boulders Wind Farm**

## 1.2 Scope and purpose of the study

The purpose of the study is to determine the key economic parameters applicable to the study area, identify potential benefits and possible negative effects of the proposed project on property values, tourism activities, and the local economy during various the stages of the project's life cycle. The report is prepared in support of the social study and is used as an input into the Socio-Economic Impact Assessment report that is compiled by Tony Barbour.

The structure and method of this analysis report is as follows:

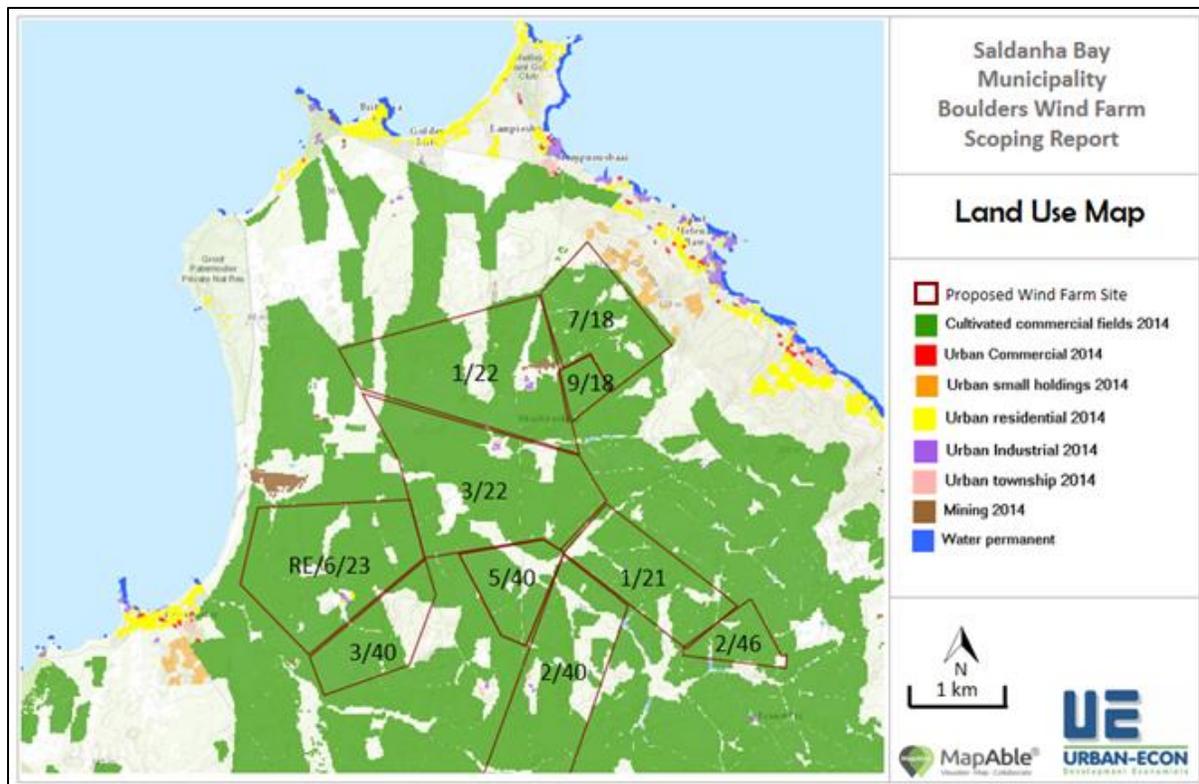
- » Create a profile and identify the historical trends of the local economy, the tourism industry, and property dynamics in the zone of influence using secondary data
- » Review concerns raised by various Interested and Affected Parties (I&Aps) during numerous public engagements related to the project which were undertaken as part of the Scoping Phase
- » Augment the information gathered from secondary sources and gather further insight into the concerns raised during public engagements by engaging with various I&Aps following a structured interview approach
- » Make use of case studies to offer insight on probable effects of windfarms on property prices.

- » Identify potential negative and positive effects on the local economy, the tourism industry, and property values that might ensue during construction and operation of project given the status quo, observations made during the analysis of the historical trends, and feedback received during engagements with I&APs
- » Assess and evaluate the potential negative and positive impacts identified in terms of the local economy, tourism industry and property values
- » Provide recommendations for mitigations

### **1.3 Delineation of the zone of influence**

Map 2 indicates the current land uses of the proposed project site and its surroundings. As indicated, all the farm portions house cultivated commercial fields. Additional land uses identified per farm portion are outlined below.

- » Farm Schuitjes Klip 1/22 has small-scale mining and industrial activities occurring on a portion of the land.
- » A segment of Farm Schuitjes Klip 3/22 has an industrial land use and also includes sheep farming. A township is located adjacent to this the property to the north.
- » A segment of Farm Boebezaks Kraal 2/40 has an industrial land use and a township located within it.
- » The remainder of Uitkomst 6/23 has an industrial land use, mining and is located adjacent to a residential settlement, located to the south-east.



**Map 2: Land Use Map of proposed project site and surroundings**

The potential zone of influence of the proposed project, will not be limited to the above-mentioned farm portions but will extend beyond the boundaries of the project site due to the potential environmental and socio-economic impacts. As such, the following zones of influences are delineated for the purpose of the analysis:

- » Primary zone of influence: For the purpose of the analysis of the impact on property values and the tourism industry, as well as the assessment of potential local economic impacts that could ensue from the project, the primary zone of influence is determined to be the nearby towns of Vredenburg, Paternoster, and St Helena Bay (including Britannica Heights).
- » Secondary and tertiary zones of influence: Economic benefits and impacts will not be limited to the site or the nearby towns only. Most of the goods and services that will be purchased for the construction and will be required for operation of the wind farm will be secured from outside the primary zone of influence and specifically from the Western Cape and further inland. Therefore, the Western Cape and the rest of South Africa are defined as the secondary and tertiary zones of influences of the proposed project from an economic perspective.

As part of the case study analysis, St Francis Bay located in the Eastern Cape is also included in the assessment to benchmark some of the trends.

## 1.4 Methodological approach

### 1.4.1 Methodology

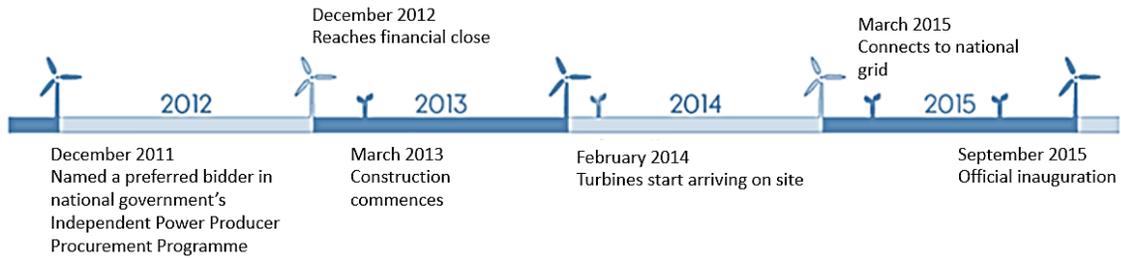
---

The following paragraphs describe research and analytical techniques employed for the assessment of the impacts of the proposed project.

#### *a) Case study approach*

A **case study approach** was employed in order to inform the assessment of the potential effect of wind farm developments on property values and tourism. Two case studies have been selected based on their strong similarities with the proposed Boulders Wind Farm.

- » The first case study was the existing operational West Coast One Wind farm, which is located directly adjacent to the proposed project site. It is constituted of 47 wind turbines. The wind farm was approved in 2012 as part of the Renewable Energy Independent Power Producer Procurement (REIPPP) program. Project construction began in 2013 and commercial operations began in June 2015 (WindLab, 2018). The selection of this case study was motivated by the opportunity to assess the historical trends in property values and tourism flows in the local municipality and selected towns and to identify any possible cause-effect linkages associated with the development of the wind farm before 2013, during the construction period between 2013 and 2015, and after the wind farm started its commercial operations.
  
- » The second case study included the existing operational Kouga Wind Farm located near a popular tourism town of Saint Francis Bay in the Eastern Cape. The facility provides 80MW of capacity to the grid and includes 32 turbines. It is located next to two already operational wind farms, namely Gibson Bay Wind Farm and Tsitsikamma Wind Farm, with another wind farm - Oyster Bay Wind Farm – to be built in the near future. Kouga Wind Farm was constructed during the same period as the West Coast One Wind Farm and became operational in March 2015. Unlike the West Coast One Wind Farm case study, this case study offers perspectives of property owners and tourism effects once there is a concentration of wind farms in one area.



**Figure 1: Timeline of Kouga Wind Farm (Kouga wind farm, 2018)**

Map 3 illustrates the location of the two case studies.



**Map 3: Location of wind farm case studies (Google Earth, 2018)**

*b) Longitudinal approach*

A **longitudinal approach** was applied where property data prior to, during and post construction was analysed. The property data was extracted from Lightstone software. The purpose of this analysis was to identify any changes in the overall trends in property values relative to the ABSA property index and considering the changes in the interest rates over time. It was assumed that any notable differences between the property values and general property trends observed in the country could potentially be attributed to the local conditions. The West Coast One Wind Farm is also assumed to affect these trends.

### c) *Economic modelling technique*

In order to estimate the direct and follow-on effects of the proposed project expenditure, an **economic modelling technique** was utilised. The modelling exercise made use of an economic model developed on the basis of the Western Cape Province's Social Accounting Matrix (SAM) updated to 2018 figures. The SAM is a comprehensive, economy-wide database that contains information about the flow of resources that takes place between the different economic agents, in this case in the provincial economy. A set of models will be developed to quantify the potential issues of the proposed wind farm during construction and operation. The models will apply to the aspects detailed below. Key economic considerations during construction and operations:

- » Increase in production and GDP-R of the national and local economies due to capital expenditure and operations expenditure
- » Employment creation in local communities and elsewhere in the country
- » Household income will lead to the improved standard of living for households directly or indirectly benefitting from employment opportunities

#### 1.4.2 Data gathering and consultation process

---

Secondary data was utilised in order to provide a substantive foundation for the study. The following secondary data sources were employed:

- » Stats SA Census, 2011
- » Quantec Research Standardised Regional Data, 1995–2013
- » Official Tourism, Trade & Investment Promotion Agency for Cape Town and the Western Cape: [www.wesgro.co.za](http://www.wesgro.co.za)
- » West Coast accommodation information: [https://www.tripadvisor.co.za/Attractions-g312653-Activities-Western\\_Cape.html](https://www.tripadvisor.co.za/Attractions-g312653-Activities-Western_Cape.html)
- » West Coast National Parks: [https://www.sanparks.org/parks/west\\_coast/](https://www.sanparks.org/parks/west_coast/)
- » West Coast Attractions: <https://www.safarinow.com/destinations/west-coast/popularattractions.aspx>
- » West Coast Accommodation: <https://www.lekkeslaap.co.za>
- » Western Cape SAM
- » FNB property index
- » Lightstone Software
- » Mapable

To augment and supplement the property and tourism data the following tourism product owners and real estate agents were interviewed during the study:

**Table 1: Key Respondents interviewed**

Company		Position of respondent	Area
<b>Real estate agents</b>			
1.	Infoprop	Agent	Paternoster
2.	Remax	Principal	St Helena Bay
3.	West Coast Properties	Agent	St Helena Bay
4.	Rawson	Agent	St Helena Bay
5.	Allen's Real Estate	Agent	Vredenburg
6.	Chas Everitt	Agent	Vredenburg
7.	Remax	Agent	St Francis Bay
8.	Harcourts	Agent	St Francis Bay
9.	Pam Golding Properties	Agent	St Francis Bay
<b>Tourism product owners</b>			
1.	Ouma se Kombuis	Co-owner	Paternoster
2.	Oystercatcher's Haven	Manager	Paternoster
3.	Paternoster Hotel	Reception manager	Paternoster
4.	Statkis Restuarant	Manager	Paternoster
5.	Smuggler's cottage	Manager	Paternoster
6.	The Square Spoon	Owners	Paternoster
7.	Blikkie Pizzeria	Manager	Paternoster
8.	Goblin's Inn	Manager	St Helena Bay
9.	Saint Helena Hotel	Reception manager	St Helena Bay
10.	Graze Neighbourhood Eatery	Owner	Vredenburg
11.	Anchorage Guesthouse	Owner	Vredenburg
12.	Vredenburg Boutique Hotel	Manager	Vredenburg

The on-site interviews in the Western Cape took place between the 23<sup>rd</sup> and 25<sup>th</sup> of May 2018. Telephonic interviews with the real estate agents in the St Francis Bay area took place on the 1<sup>st</sup> of June 2018.

### **1.5 Assumptions and Limitations**

- » The tourism and the property market are subject to many forces and a single factor such as the development of a wind farm would not be the only aspect affecting the dynamics of these sectors.
- » The secondary data sources used to compile the socio-economic baseline (dynamics of the economy), although not exhaustive, can be viewed as being indicative of broad trends within the study area.
- » It is assumed that questions asked during the interviews for data collection were answered accurately and truthfully by respondents and to the best of their abilities and knowledge.

The attitudes of the respondents towards the project is assumed to remain reasonably stable over the short- to medium-term.

- » During the time of the visit to the study area, due to the low season, the areas was devoid of tourists who could be interviewed with respect to their perceptions of wind farms. This shortcoming was mitigated by making use of tourism related data for each town in the primary zone of influence sourced from WESGRO, which was further augmented with the information obtained during interviews with tourism product owners.

## **2. AN ASSESSMENT OF POTENTIAL WIND FARM EFFECTS ON TOURISM**

The purpose of this chapter is to provide an overview of the tourism industry size, composition, and trends in the zone of influence and identify the factors that impacted on the trends historically. The focus of the assessment is to try and determine whether the development of the existing West Coast One Wind Farm has had any negative impact on the tourism numbers and the revenue derived by the local tourism industry. This insight will inform the assessment of the potential effect that the proposed Boulders Wind Farm may have on the local tourism industry in the future.

### **2.1 Tourism industry overview in the zone of influence**

Historically, tourism has been a great driving force behind the economic development in this region of the Western Cape. In essence, the local tourism sector has deep roots in the region and has engrossed itself in almost every aspect of the local populace.

The key tourism significance of the proposed wind farm relates to its strategic location within the Cape West Coast Peninsula. The regional road, R399, provides the most direct link between the towns; therefore, it is likely that the proposed Boulders Wind Farm will be visible to residents and tourists travelling on this road to the area.

Key tourism attractions for this area include the beach fronts hosting numerous aquatic species, the nature reserves, a wind farm and the natural visual aesthetic of the area. Catering facilities, golf estates, beauty spas, and fun parks additionally drive the attraction of tourists into the area and contributes to the local tourism economy. Therefore, in support of these, accommodation and catering business continuously thrive. In the August and September period, the wildflower season attracts numerous tourists into the region.

#### **2.1.1 Tourism profiles of the Primary Zone of Influence**

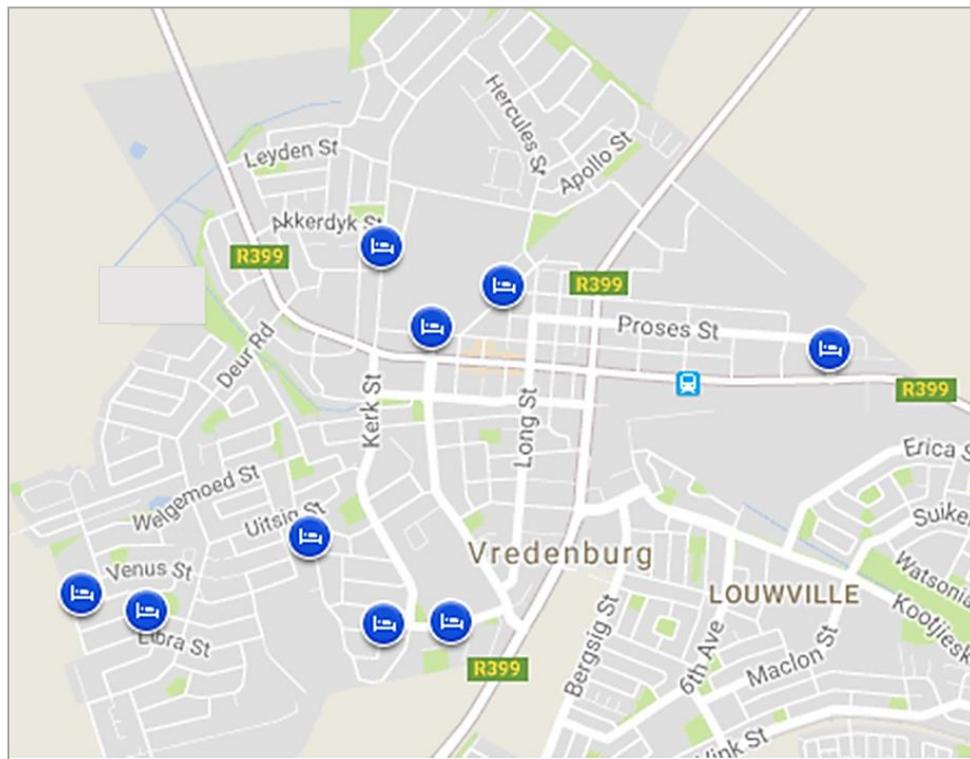
---

##### *a) Vredenburg*

Vredenburg is the administrative centre and the West Coast's commercial hub for the surrounding rural communities of wheat, sheep, and dairy farmers; it also has a number of fish factories and outlets.

Although Vredenburg is located inland, it is ideally situated as a base for day trips to the surrounding West Coast towns and attractions. Within 40 km of Vredenburg are both the West Coast Fossil Park; the beaches of Paternoster; and the Cape Columbine Nature Reserve. In addition, in close proximity are Langebaan and the West Coast National Park, for fauna and flora, as well as Jacobsbaai and St Helena Bay.

The diagram below shows the accommodation offerings in Vredenburg, which are modest when compared to those of St Helena Bay and Paternoster.



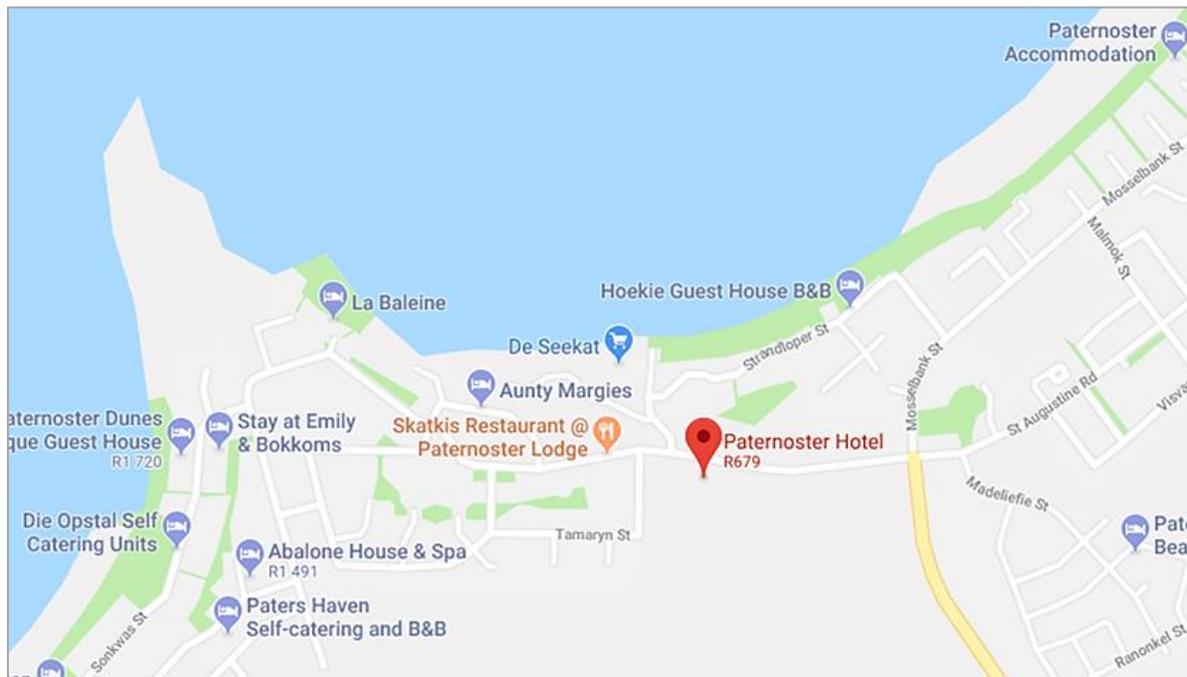
**Map 4: Accommodation offerings in Vredenburg**

*b) Paternoster*

According to the Cape West Coast visitor trends, as published by WESGRO, Paternoster was one of the busiest towns in the region with an increase in tourist flow recorded by the tourism offices in 2016. The main tourism activities in Paternoster include whale watching and a visit to the Cape Columbine Nature Reserve. This reserve boasts the last manually controlled lighthouse to be built in South Africa. It is characterised by a specific style of architecture that offers a picturesque view of the residential area. Everyday life in Paternoster is still very much associated with the sea and the fishing industry, but it is to this historic fishing village that the visitors come to in order to relax.

As per the 2016 visitor trends, the majority of the visitors to Paternoster were domestic visitors (66%), of which most (52%) came from within the Western Cape, while 24% were from Gauteng. The international market was made up of mostly Germans (46%) and tourists from the United Kingdom (21%). Tourists stay mainly in self-catering accommodation and guesthouses. The majority of guests spent between R500 and R1 000 on accommodation, and the same amount was also spent on daily activities (WESGRO, 2017).

The diagram below (Map 5) shows an extensive range of accommodation available in Paternoster, which is indicative of the popularity of this town as a tourist destination. It should be noted though that the tourism industry in Paternoster, as well as other nearby coastal towns is very seasonal as will be discussed further in this section.



**Map 5: Accommodation offerings at Paternoster**

### c) *St Helena Bay*

St Helena Bay is a principal fishing centre. It is well known for its snoek, especially during the winter months. Southern right whales can be sighted at the bay during the months of June to November (which has been identified as a low visitor season). The bay is additionally popular for dolphins with schools of over 1 000 dolphins having been sighted at times. In addition, the bay hosts a variety of marine birds, penguins, and large colonies of seals.



**Map 6: Accommodation offerings at St Helena Bay (TripAdvisor LLC, 2017)**

Visitor trends for 2016 show that the majority of visitors to St Helena Bay were overnight visitors (91%) with an average stay of two nights. Visitors were led by the domestic market, which contributed 94% of the total number of visitors to the bay. The majority of the visitors were from Western Cape followed by Gauteng. International tourists, who make up a relatively small number of tourists in the area, were predominantly from Germany and Namibia. The majority of the tourists visited the beaches and went for scenic drives and as will be discussed later, tend to visit during peak seasons only. Self-catering accommodation and guesthouses (see Map 6 above) were the preferred form of accommodation used by the tourists, where between R500 and R1 000 was spent per day (WESGRO, 2017).

*d) St Francis Bay*

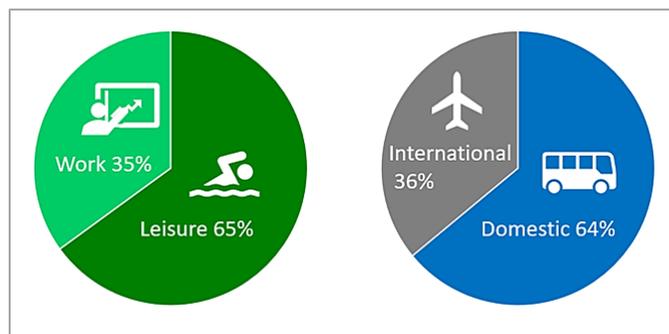
St Francis Bay is situated midway between Port Elizabeth and Knysna in the Eastern Cape Province. It originated as a fishing camp. It is characterised by a specific style of architecture that offers a picturesque view of the residential area. The tourism offerings are centred on the views, beaches and the canal system (Map 7). Tourism is one of the key economic drivers in the Eastern Cape and for this specific area. The Province accounted for 4.4% of South Africa's international tourists in 2014 and is dominated by domestic travellers. In addition, Cape Saint Francis and Oyster Bay are coastal tourism areas to the west of St Francis Bay.



**Map 7: Accommodation offerings in St Francis Bay**

2.1.2 Tourist visitation overview

Leisure is the dominant reason for visits to the primary zone of influence. This attests that the tourism offerings in the area have a notable attraction for leisure seekers. On the other hand, just over a third of the visitors travel to the area for business purposes. The travellers largely consist of South Africans, while over a third are international tourists. In 2016, the West Coast had over 720 000 domestic visitors. In the year 2016 the Saldanha Local Municipality received the greatest number of domestic visitors in the West Coast District Municipality.



**Figure 2: Split of visitors and departure areas**

The tourism offerings receive a large number of customers annually, mostly during peak seasons. The peak seasons in the primary zone of influence include the Christmas holiday season, Easter holidays, public school holidays and the wildflower season mainly between August and September. The rest of the year (April to August and November) are relatively quiet seasons. In fact, a number of interviewed restaurants have confirmed that they close business between mid-May and mid-July due to the lack of visitors during this time. As evidenced during the site visit that took place at the end of May 2018, the visitor's visibility was drastically low.

**About 46% of tourism product owners** interviewed stated that they have experienced a **decline in the number of visitors** in the past five years. They attribute this to:

- » The increase in cheaper alternative accommodation (Airbnb)
- » Drought plaguing the Western Cape
- » Deteriorating quality of municipal services
- » For restaurants, less people eat out due to a self-catering preference (braais etc.) and changed spending patterns (less spending on eating out)

A **quarter of the tourism businesses** interviewed assert that they experienced **an increase in the number of visitors** in the past five years. The reasons for this increase, they argue, are:

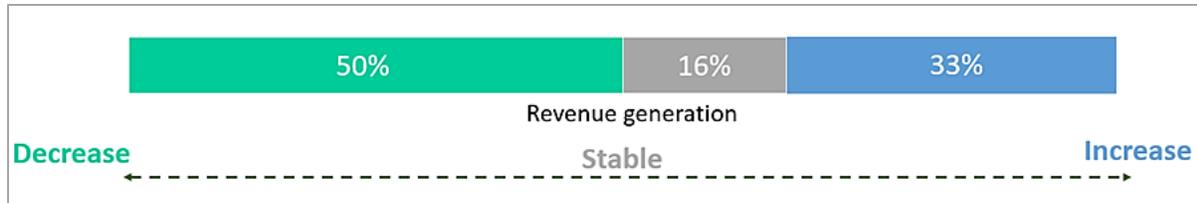
- » Good ratings on travel websites
- » Competitive prices
- » Consistency in satisfactory service offering
- » Recent developments in the area attracting developers and professional staff

The remaining **29% tourist product owners interviewed argue that the visitor statistics have remained the same in the past five years**. Therefore, no external factors were identified during the interviews which negatively or positively disturbed the number of visitors they receive.

### 2.1.3 Tourism business performance overview

---

Figure 3 below demonstrates the findings that half of the tourism related businesses interviewed experienced a decline in revenue in the past five years. This correlates to the declined visitation numbers discussed above. A mere 16% of interviewed tourism product owners have remained stable in earnings while a third experienced an increase in earnings in the past five years.



**Figure 3: Revenue generation trends in past five years**

The drivers of the trends are numerous. For holiday homes, notable reasons for the decrease in revenue include the Airbnb proliferation in the area, offering cheap and alternative forms of accommodation and therefore increasing options for visitors and competition for existing business.

In terms of catering and restaurants, fine-dining establishments are declining while middle-level dining is on the increase. This further attests the changed spending patterns of visitors. Furthermore, restaurant owners commonly assert that self-catering offerings has a negative effect on their business, which includes the Airbnb establishments. Nonetheless, there have been four new restaurants since 2015, increasing the number of restaurants in Paternoster to 18. Furthermore, accommodation has also witnessed increased development. This is indicative that not all businesses are experiencing the same effects.

The new establishments in tourism offerings could be an indicator of the demand that is not met. The accommodation sector is however saturated. The outlook for the local area in terms of the tourism sector is more positive than negative:

- » Two thirds of the interviewed respondents do not have any expansion nor down-scaling plans for the near future, while
- » A third have plans to upgrade and up-scale business, for amongst other reasons, to increase capacity and appeal to a greater market.

## **2.2 Effects of the West Coast One Wind Farm on tourism**

All tourism product owners argued that the **West Coast One Wind Farm did not have an effect on their business and tourism at large**. In addition, **none of the owners received any complaints about the wind farm from customers**. Others have noted that some **international visitors particularly commented that wind energy facilities were good for energy security but bad for the environment**.

Product owners further noted that the initial landscape change created a 'visual shock' but currently blends with the environment and is not obtrusive. Other businesses benefitted from the development of the wind farm and hosted the West Coast One Wind Farm employees for a notable duration (11 weeks).

### 2.3 Potential effect of the proposed Boulders Wind Farm on tourism in the area

The region remains well distinguished as a tourism area. Visitor numbers and revenue has decreased for the majority of businesses interviewed. The key causes for the declining performance, as derived from interviews with tourism facilities' owners, are the drought experienced in 2017/2018, increased competition, and affordability for the tourists. Having said this, the GDP contribution of accommodation and catering specifically has been gradually increasing, demonstrating the actual growth and positive performance of the tourism sector in the region.

Having noted trends and experiences of select product owners, it is evident that some business owners have experienced a decline, however none attributed it to the existing West Coast One Wind Farm development. Importantly, when enquiring about the expected impact of the proposed Boulders Wind Farm on the tourism activities, the only concern raised was that the project should not obstruct the beach view and affect the beauty of the land. Some product owners further indicated that the visitors did not complain about the existing wind farm nor that the number of leisure visitors were negatively impacted by the existing wind farm. On the contrary, those who catered to and accommodated the development staff benefitted positively. It is also worth noting that international tourists appear to be well-accepting of wind energy facilities and do not experience any negative connotations with such projects, except for a concern regarding the environmental impact of such developments.

Considering that the location of the proposed Boulders Wind Farm is inland and is not expected to obstruct the beach view for tourists visiting the coastal towns (i.e. Paternoster and St Helena Bay), the above-mentioned concern of obstructed beach views is likely to be unrealised and no potential negative impact on leisure tourists is expected. The proposed development of the Boulders Wind Farm is more likely to have a positive impact on tourism in the area (i.e. through increased business tourism during construction activities of the Wind Farm) than a negative effect. The positive impact will however be temporary and will be limited to the duration of construction activities.

<b>Nature:</b>		
Impact on tourism activities as a result of the Boulders Wind Farm construction phase and increased business tourism in the area.		
	<b>Without enhancement</b>	<b>With enhancement</b>
<b>Extent</b>	Local (2)	Local (2)
<b>Duration</b>	Short-term (2)	Short-term (2)
<b>Magnitude</b>	Minor (2)	Low (4)
<b>Probability</b>	Probable (3)	Highly Probable (4)
<b>Significance</b>	<b>Low (18)</b>	<b>Medium (32)</b>
<b>Status (positive or negative)</b>	Positive	Positive

<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	No	No
<b>Can impacts be mitigated?</b>	Yes (enhanced)	Yes (enhanced)
<b>Mitigation measures:</b>		
<ul style="list-style-type: none"> <li>» Procure local accommodation for out-of-town construction and engineering crew</li> <li>» Consider contracting local catering facilities for the provision of catering services</li> </ul>		
<b>Cumulative impact:</b>		
<ul style="list-style-type: none"> <li>» Continued strengthening and support of the local tourism industry</li> </ul>		
<b>Residual Impacts</b>		
None		

### 3 AN ASSESSMENT OF POTENTIAL WIND FARM EFFECTS ON PROPERTY VALUES

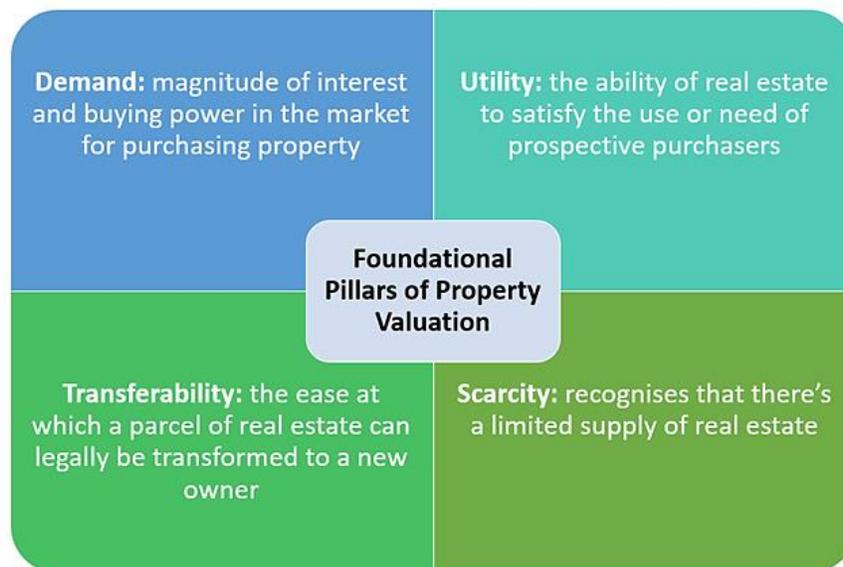
The purpose of this section is to provide an analysis of the potential impacts of the proposed project on property values. The analysis is undertaken by firstly looking at the case studies and deriving the key observations with respect to the effect of wind farm developments on property values and then commenting on the expected impacts of the proposed Boulders wind farm.

#### 3.1 Property value versus property prices

Prior to analysing the potential effects of a project on property values, it is important to make a distinction between property values and property price:

- » **Property value** denotes the fair market value of a given property, albeit the actual price of the property may be higher or lower (Jean Folger, 2018). Property value is determined through property valuation, which determines the economic value of real estate (Madlener, 2016).
- » The **actual sale price** (i.e. property price) is dependent on what information the buyer and seller have and the extent to which one or the other seeks to buy or sell the property and any additional incentives the seller offers to entice the buyer (Study, 2018).

The pillars of property valuation are indicated below.



**Figure 4: Four Foundational Pillars of Property Valuation (Study, 2018)**

Location has long been recognised as the paramount variable in real estate. Therefore, development of neighbouring land can be controversial and often cause nearby landowners

scepticism (Jason Carter, 2011). The four stigmas associated specifically with wind farm developments are (Jason Carter, 2011):

- » Nuisance stigma: sounds or shadow flicker from nearby wind turbines
- » Proximity stigma: turbines make the area appear more developed
- » Scenic vista stigma: an undesirable view (negative visual impact)
- » Wind farm anticipation stigma: the uncertainty surrounding where turbines will be located and the effects the wind farm will have on area residents when development is initially proposed

Not all stigmas affect properties to the same extent. Individual perception of stigmas associated with wind energy developments largely derives from the individual's opinion on wind turbine aesthetics and renewable energy. The predominant perception of wind turbines is that they lower nearby housing values (The Royal Institute of Chartered Surveyors, 2007). The most reliable way to explore the issue is therefore not by polling to gauge public opinion (as it will likely be skewed due to the unknown and perceived nature of the impact), but by analysing property market trends in the areas where such developments have already taken place and deducing the experiences of real estate agents.

## **3.2 Historical trends and assessment**

### **3.2.1 Overview of the property composition in the primary zone of influence**

---

The primary zone of influence associated with the Boulders Wind Farm is largely characterised by residential property. The residential property in the area is largely comprised of private housing followed by holiday homes which include Bed and Breakfast (B&B) accommodation. Commercial property is also prevalent and includes amongst others hotels and office buildings. Paternoster, however is largely comprised of holiday home offerings whereas Vredenburg, Saint Helena Bay and Britannica Heights are dominated by private residential homes. A portion of retirement homes are additionally prevalent here. A segment of private residences has been converted to holiday accommodation. The rest is used as a primary residence.

In recent years, new developments in the primary zone of influence have consisted of medium-sized hotels, holiday homes and private residential property. Significant holiday home developments took place in Paternoster, while limited tourism expansion took place in Saint Helena Bay due to regulations of a major regional growth centre set by the local municipality and homeowners association. Paternoster inversely had limited private home development as the area is largely tourism oriented.

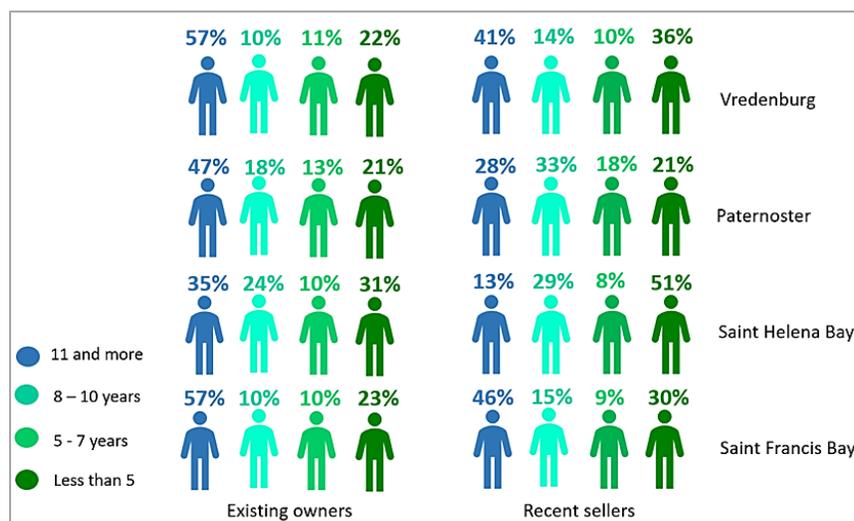
Saint Helena Bay is a relatively new area in terms of investment given that Langebaan is now developed to capacity, therefore new developments are common. This is attributed to the high land availability and low land prices. Inherently, upgrades and renovations are limited due to the relatively new property stock. Britannica Heights similarly has a concentration of new development. In contrast, Vredenburg has experienced limited property investment. This area is largely occupied by long term residents.

### 3.2.2 Trends in property ownership

The period of ownership of existing owners offers insight about the areas in terms of:

- » Existing property owner’s views of the area
- » Recent sellers’ views of the area

The property ownership statistics for the area under analysis (Figure 5) suggests that most owners in all towns under analysis are long-term owners who stayed in the area for more than eight years. In Saint Helena Bay, the average duration of ownership of property is lower than in the other areas, but it is likely attributed to the fact that the development of the area started later than in the other three towns – most of the properties are still owned by long-term owners. The dominance of long-term owners in all of the areas reviewed, though, suggests that the residents are highly content or rarely have motive to move.



**Figure 5: Property ownership statistics for case study areas from May 2017 to April 2018 (Lightstone, 2018)**

What is concerning though is the fact that the sale of properties in Vredenburg and Saint Francis Bay have largely come from long-term owners, suggesting that the utility that the long-term owners derived from owning a property in these two towns have been declining.

The reasons behind this could be numerous and would depend on the profiles of the owners themselves. For example, properties could become part of deceased estates (i.e. loss of the original owners), the area could have seen some notable changes that repelled the owners, etc.

It is worth noting though that in Saint Helena Bay, just over half of recent sellers have been owning property for a short period of time, which could imply unmet expectations or undesirable recent changes in the living environment.

Traversing to the Saint Francis Bay case study, it was also observed that the area has seen a similar trend to that of Vredenburg and Saint Helena Bay - 46% of recent sellers were long term residents; nonetheless the demographics of the area continued to increase.

### 3.2.3 Trends in property prices

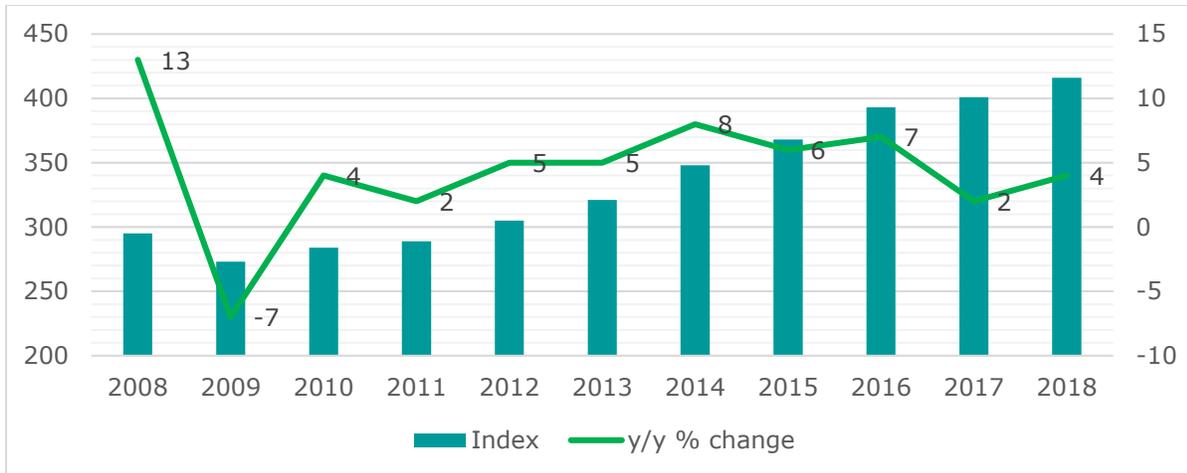
---

This section serves to provide an analysis of average property prices over a period of eight years in our case study areas of Vredenburg, Paternoster, Saint Helena Bay and Saint Francis Bay. The aim is to gain an insight into the overall trends with respect to property prices in the primary zone of influence. However, it is also known that the primary zone of influence has seen one wind energy project being developed (i.e. the West Coast One Wind Farm) in 2013-2015; therefore looking at the property prices for the past eight years could provide a valuable insight into the property price changes (if any) that took place during the time when first news about the wind farm development in the area started to circulate (i.e. pre-construction or pre-2013), when the wind farm (West Coast One Wind Farm) was developed (i.e. 2013-2015), and once the construction was completed (post-2015).

#### *a) Nationwide property trends and dynamics*

Prior to analysing the property trends, and specifically the changes in property prices in the primary zone of influence it is important to understand the general economic conditions that took place during the analysed period and the effects thereof on property prices in the greater area of the Western Cape, as well as on prices of different types of properties – primarily residential and holiday homes.

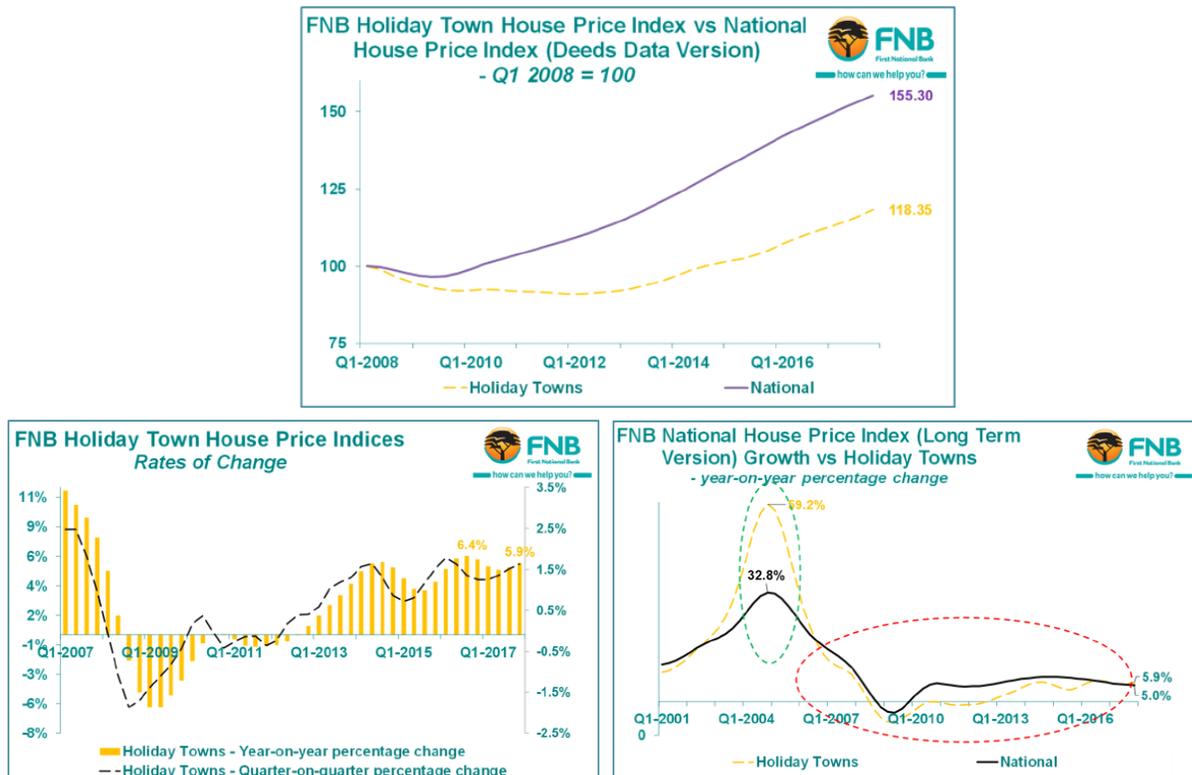
The macro property trends provide an overview of the housing market performance in the country. In order to determine how the residential market is performing in South Africa, FNB's house price index (HPI) is used to illustrate the performance of the housing market (Figure 6).



**Figure 6: FNB Housing Price Index and Percentage change January 2010- January 2018 (FNB, 2018a)**

Based on the FNB house price index, it is clear that South Africa's residential market has performed well in recent years. With the exception of the 2008-2009 global financial recession, house prices have been on the increase. Importantly, though, considering the period that is being analysed, the property market in the country took a couple of years to recover post-2009 financial crisis. As indicated in the diagram above, the property prices somewhat stagnated in 2011 and showed a steady increase thereafter.

However, the above diagram does not necessarily reflect the property market that mirrors that of the primary zone of influence, which is dominated by holiday homes and tourism accommodation. As indicated in the diagram below (Figure 7), the "holiday town prices deflated more significantly than the major cities during the 2008/9 recession period" and continued to experience a negative growth for the three years afterwards showing a growth in prices only in 2013 onwards and achieving a pre-2008 property price level only in 2015 (FNB, 2018b). This is attributed to the constrained economic and financial times experienced in the country post 2008/2009 financial crisis and the subsequent greater focus of the households on necessities such as primary homes rather than luxuries such as holiday homes.



**Figure 7: Holiday town house price index versus national house price index (FNB, 2018b)**

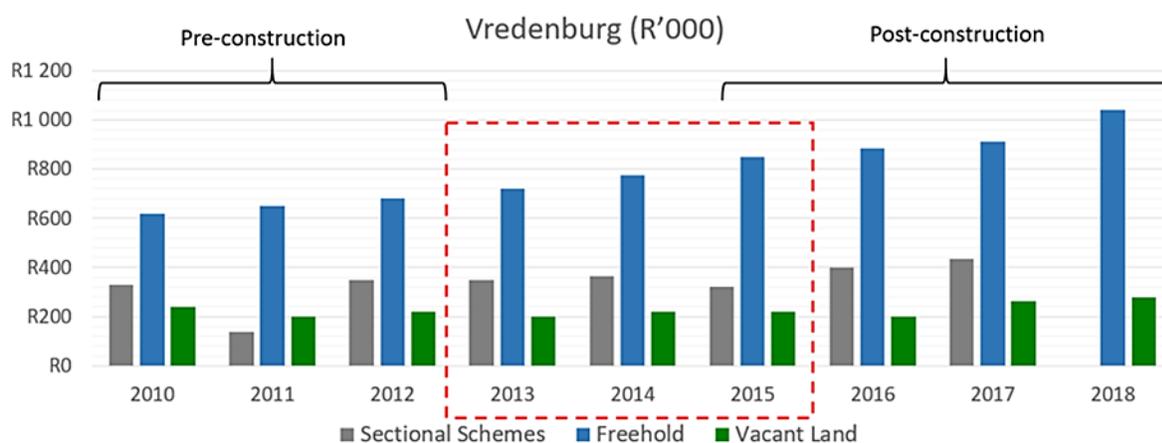
Since 2015, the holiday home prices have been steadily recovering and it is suggested that the level of holiday home buying nationally has been holding up reasonably in 2017 (FNB, 2018b). Importantly, this trend was supported by the migration of the retiree population from Gauteng to the coastal holiday towns (FNB, 2018b). However, since the house price recovery in holiday towns have been lower compared to the national trends, it may be anticipated that house prices in the primary zone of influence will display similar low growth. Therefore, care should be taken not to misinterpret the decline in house prices or the slow growth in prices for holiday homes as being the effect that the West Coast One Wind Farm had on property values.

Considering the above, the following should be noted when looking at the trends in property prices in the primary zone of influence:

- » The property market experienced a **significant drop in 2008/9**.
- » The **recovery of the property market comprising of primary residences was different to that of holiday homes and holiday towns**.
- » Holiday homes and towns took considerably longer to recover post the financial crisis showing a **negative trend in 2010, 2011, and the first half of 2012**.
- » Although property prices in holiday towns were on the rise from 2013 onwards, the **increase in this market showed a dip in 2015**.

The analysis below serves to track property trends in the selected study areas during three distinct phases namely, pre-construction, construction and operations. The motivation for the separation phases is that each phase has distinct effect on property owners and prospective property owners. During the pre-construction phase, the dominant narrative is about what is planned and the perceived effect on property prices. In the next phase, the construction activity represent development, which may be attractive to some and deterring to others. The last phase of operation represents a changed land use which could be positive or negative to prospective buyers. By overlapping these phases of the West Coast One Wind Farm development with the property trends in the respective areas, it assists in identifying whether there was any correlation between the development of the wind farm and the property prices.

b) *Vredenburg*



**Figure 8: Average property Prices in Vredenburg in the past eight years (Lightstone, 2018)<sup>1</sup>**

From the graph above, it is evident that:

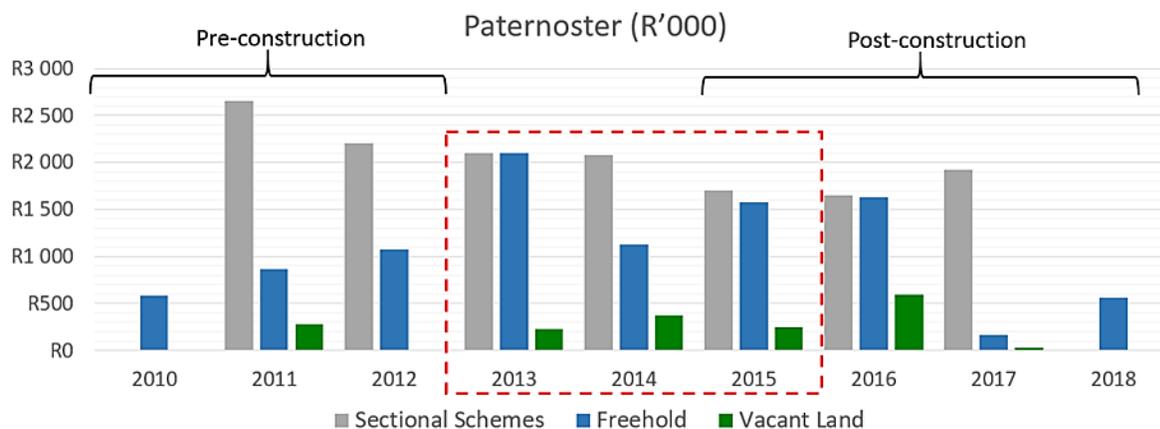
- » Freehold property has the highest property values in Vredenburg. In addition, freehold property prices have been gradually increasing from 2010 growing by 68% between 2010 and 2018 in absolute value, which is in line with the national trends. Importantly, **no apparent change in the freehold property prices has been identified for Vredenburg due to the development of West Coast One Wind Farm before, during and after construction.**

<sup>1</sup> Based on the following range of registrations during the analysed period as indicated in Lightstone, 2018: section title – 1 to 10 registrations per annum; freehold – 139 to 525 registrations per annum; vacant land – 26 to 136 registrations per annum.

- » With regard to sectional titles, the prices have fluctuated between R140 000 to R435 000 in the past eight years. This could possibly indicate that some speculation took place prior to construction and during construction of the West Coast One wind farm, which negatively impacted on property prices, but it is clear that **the property prices on sectional titles in Vredenburg continued to increase after construction of the West Coast One Wind Farm was complete.**
- » Land values in Vredenburg have been largely consistent and range from an average of R200 000 to R280 000.

To summarise, prior to the construction of the West Coast One Wind Farm, freehold property prices gradually increased, while sectional schemes and land prices fluctuated. During the construction of the West Coast One Wind Farm, all property prices improved. When operation of the West Coast One Wind Farm commenced, sectional scheme prices declined by 12% whilst land prices remained the same. In the last three years since the operation of the existing wind farm commenced, all property prices increased.

c) *Paternoster*



**Figure 9: Average property prices in Paternoster in past 8 years (Lightstone, 2018)<sup>2</sup>**

The property trends picture for Paternoster differs drastically from that of Vredenburg as indicated above. It is evident that:

---

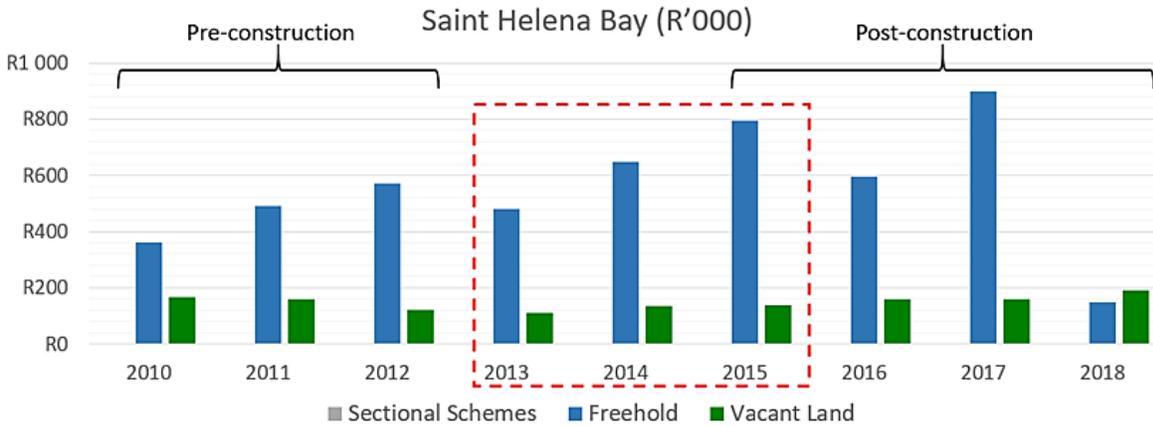
<sup>2</sup> Based on the following range of registrations during the analysed period as indicated in Lightstone, 2018: section title – 3 to 15 registrations per annum; freehold – 17 to 106 registrations per annum; vacant land – 26 to 136 registrations per annum.

- » **Sectional schemes** in Paternoster are a few times more expensive than the average price of sectional schemes in Vredenburg. As shown previously, the overall trend in the country with respect to property prices for sectional schemes was negative since 2011 with the prices dropping sharply in 2012 and in 2015. Paternoster, though, can be characterised as a holiday town and therefore, the property trends observed in this town would follow a slightly different trajectory as that in Vredenburg. As mentioned earlier, holiday home prices have declined between 2008-2012.

Therefore, the dip in sectional scheme prices prior to the development of the West Coast One Wind Farm could largely be attributed to the unfavourable economic conditions experienced by South Africa at that time. The historical national trends suggest that property prices were recovering from the second half of 2012, while the situation in Paternoster with respect to sectional titles suggests that the property prices continued to decline during 2013-2015, which was also the time when the West Coast One Wind Farm was being constructed. Therefore, it could be argued that some local conditions impacted on the local property prices in Paternoster, which prevented them from following the national trends for holiday home prices during 2013 and 2015. This could be related to the development of the West coast One Wind Farm but could also be linked to the growing demand for freehold properties in the area (as indicated further below). In 2016, though, the prices for sectional titles have recovered and showed a positive trend in 2017 – similar to the national holiday home property market.

- » The **freehold properties** showed a sharp increase in sales prices in 2013 (just at the start of West Coast One Wind Farm construction phase), going against the trends observed with respect to holiday home prices nationally. The prices took a dip in 2014 compared to 2013 but were still higher than that experienced in 2012. This suggests that **the year 2013 was clearly an exceptionally good year for freehold properties in Paternoster** and if considered to be an outlier, it can be suggested that the property prices for freehold properties in Paternoster were largely on a rise showing a steady growth from 2010 up to 2016.
- » The situation with **vacant land prices** in Paternoster also suggests that historically they have shown an upwards trajectory. With no property sales observed just before the construction of the West Coast One Wind Farm and some fluctuation during the construction period.

d) *Saint Helena Bay*



**Figure 10: Average property prices in Saint Helena Bay in past 8 years (Lightstone, 2018)<sup>3</sup>**

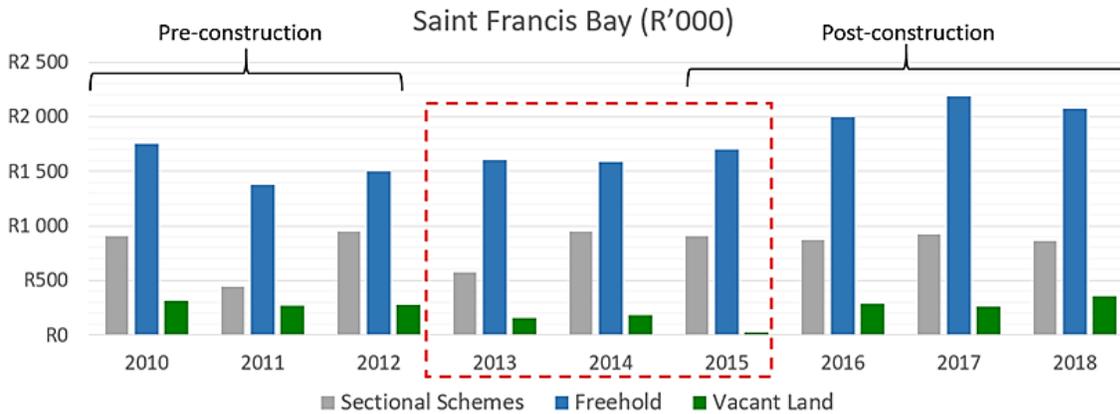
No sectional scheme properties are situated in Saint Helena Bay. Over the past eight years, freehold property prices reached a peak in 2017 at R900 000, and just a year later drastically declined to the lowest at R150 000. Average land values have been similar in the past eight years.

In the period before the construction of West Coast One, freehold property gradually increased and dissimilarly, land values gradually decreased. The first year of construction witnessed a decline in property prices for both freehold property and land. However, in the second year of construction and first year of operations, both freehold and land prices improved. In the past three years since operations commenced, property prices have not been consistent.

e) *Saint Francis Bay*

---

<sup>3</sup> Based on the following range of registrations during the analysed period as indicated in Lightstone, 2018: section title – no registrations; freehold – 80 to 588 registrations per annum; vacant land – 114 to 488 registrations per annum.



**Figure 11: Average property prices in Saint Francis Bay, Eastern Cape (Lightstone, 2018)**

As a holiday home town, the property prices for freehold property in Saint Francis Bay declined during 2010-2011, following the same trend observed nationally. Some recovery is noted in 2012, but the freehold property prices in the area stayed stagnant up until 2015, where after it showed a positive increase.

The situation with sectional title property was somewhat different and there clearly has been some negative impacts on the property prices in 2011 and 2013. Interestingly, though, the sectional title property prices showed some increase in 2014 – during the time when the Kouga Wind Farm was in the midst of its construction period, which could be argued that the development of the wind farm did not impact on the owner’s perceptions of the value derived from sectional title properties in the coastal town.

Interestingly, vacant land prices in the area have been declining since 2010 in the town of Saint Francis Bay and only recovered in 2016.

*f) Feedback from interviews with real estate agents*

To augment the Lightstone data presented above, real estate agents were interviewed as indicated earlier in the report. Their views are summarised below and assist in explaining the causes of the peaks and troughs presented in the graphs above.

As indicated by the real estate agents interviewed during the study, both positive and negative patterns in the property market has occurred in the Saldanha Bay region in the recent years:

- » On the one hand, a stimulated performance in commercial and industrial property emerged due to the Saldanha-related activity. This has additionally led to an increase in rental and residential prices. Moreover, holiday accommodation in the area is saturated creating an abundance in supply and negatively impacting on the property prices.

- » On the other hand, limited investment in all property types in the Vredenburg area has taken place. This is argued to be a result of low market confidence due to the expropriation issue. Vredenburg specifically has less returns compared to Paternoster and Langebaan.

The **experience of all real estate agents interviewed asserts that wind farm developments have not had a notable effect on the demand and value of surrounding properties.** They state that prospective buyers have mostly been indifferent to the presence of wind farms. One real estate agent from Saint Helena Bay stated that one property owner complained that they would not have purchased the property had they known about the development of the West Coast One Wind Farm. This is the only opposing case that was presented.

### **3.3 Potential effect of the Boulders Wind farm on property prices**

The review of the property trends suggests that depending on the nature of the property (holiday home or prime residence) and the type of property (sectional title, freehold, or vacant land), they all follow different demand and pricing patterns. In time of unfavourable economic conditions, households tend to prioritise primary property ownership over holiday home ownership, which leads to a slump in demand and subsequent decline in property prices for holiday homes. As the economy starts to recover, the demand for holiday homes starts to pick up leading to increases in respective property prices. The former trend was clearly observed during 2010-2012, preceded by the financial crisis of 2008/9; while the latter trend was noted post 2013.

As a result, the towns of Vredenburg and St Helena Bay, which are considered to be largely "primary residence" towns, have shown steady growth in property prices post the financial crisis; the opposite is true for Paternoster, which is largely a "holiday home" town, which experienced a decline in property prices during 2010-2012 and showed a steady recovery in the last few years only.

The review of historical property price trends in relation to the development stages of the analysed wind farms suggests that there is no clear linkage between the property price dynamics and developments of wind farms. The above is also confirmed by real estate agents, representing nine property agencies, who were interviewed during the study. They asserted that wind farm developments (West Coast One Wind Farm and Kouga Wind Farm) did not affect demand nor prices of property.

The review of the statistical data though suggests that sectional titles in popular holiday towns are more sensitive to the local change in conditions compared to freehold properties and

vacant land and that the decline in property prices for sectional titles is usually accompanied by the increase in prices of freehold properties.

In conclusion, numerous factors contribute to the value and price of property and a single component such as a wind farm development cannot be assessed in isolation. As mentioned previously, property investors and buyers have differing preferences and perceptions. Moreover, buyers and investors have a variation of perspectives in terms of wind farms. While some buyers may be dissuaded to locate near a wind farm development, it is evident in both case studies that there are buyers who are indifferent while a few are attracted by wind farm developments.

Importantly though, it can be stated with good confidence that wind farm developments in the coastal holiday home towns in South Africa do not appear to have a negative direct impact on property prices. The fact that the analysis of the impact of wind farm developments on tourism also showed no correlation between wind farm developments and tourism visitations further affirms that statement. Since holiday home towns also tend to include a number of catering and accommodation facilities, the changes in tourist visitations could be used as a proxy for the change in attractiveness of a specific location as a holiday destination. As stated in the previous chapter, the interviews with tourism product owners revealed that the West Coast One Wind Farm had no negative impact on the number of tourists to the town of Paternoster and that tourists were generally neutral or positive to the wind farm development. This means that Paternoster continued to be viewed as a favourable holiday destination by tourists and is highly unlikely to be viewed differently by holiday home property owners.

Having said that, some property owners may often have unsubstantiated perceptions concerning the negative impact of renewable energy projects on property prices in general, which is why it is a frequent concern raised by the I&APs. The above shows that such perceptions cannot be corroborated with any empirical evidence, therefore, it is important to dispel these as early as possible i.e. during planning stages of the project.

<b>Nature:</b> Effect on property prices due to the perceived negative impact of the wind farm development.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Local (2)	Local (2)
<b>Duration</b>	Medium-term (3)	Medium-term (3)
<b>Magnitude</b>	Minor (2)	Minor (2)
<b>Probability</b>	Improbable (2)	Very improbable (1)
<b>Significance</b>	<b>Low (14)</b>	<b>Low (7)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Partially reversible	Partially reversible
<b>Irreplaceable loss of resources?</b>	No	No

<b>Can impacts be mitigated?</b>	Yes	Yes
<b>Mitigation measures:</b>		
» Devise and implement awareness campaigns around impacts of wind farms on property values		
» Organise information sharing forums/talks for property owners and interested property investors attended by property specialists and real estate agents.		
<b>Cumulative impact:</b>		
» None identified		
<b>Residual Impacts</b>		
» Reduced negative perception of wind farm effects on property values and improved acceptance of future projects		

## 4 ASSESSMENT OF ECONOMIC IMPACTS

The purpose of this section is to quantify the potential economic benefits and impacts that could be derived from the construction and operation of the proposed Boulders Wind Farm. Overall, the following economic impacts are expected to take place during the construction and operation phases:

- » Increase in economic production and Gross Domestic Product (GDP)
- » Creation of employment opportunities
- » Increase in household income
- » Government earnings through rates and taxes

Each of the above-mentioned impacts are analysed in detail further in this section.

### 4.1 Effect on production and GDP

#### 4.1.1 State of the Regional and Local Economy

In 2016, the Saldanha Bay Local Municipality's economy was valued at R5 783 million in constant prices, which accounts for close to a third of the economy of the West Coast DM and 1% to the economy of the Western Cape (Quantec, 2017). Over a period of ten years (2006-2016), the municipality's economy grew at a positive compounded annual growth rate (CAGR) of 1.5% per year (Quantec, 2017).

**Table 2: Saldanha Bay and Western Cape structure of economies**

Economic Sector	Western Cape (GDP in 2016 prices)			Saldanha Bay Municipality (GDP in 2016 prices)		
	GDP (R'mil)	% of GDP	CAGR (2006-2016)	GDP (R'mil)	% of GDP	CAGR (2006-2016)
Agriculture, forestry and fishing	15 323	4%	2,2%	852	15%	2,2%
Mining and quarrying	948	0%	-0,5%	28	0%	-2,5%
Manufacturing	58 767	15%	0,9%	1 266	22%	-0,2%
Electricity, gas and water	6 963	2%	-1,3%	44	1%	-1,4%
Construction	17 028	4%	4,4%	238	4%	3,8%
Trade, catering and accommodation	62 857	16%	2,5%	848	15%	3,2%
Transport, storage and communication	39 581	10%	2,4%	435	8%	-0,7%
Finance and business services	118 082	30%	3,3%	1 088	19%	4,1%
General government	42 208	11%	3,6%	607	10%	3,5%
Community services	25 943	7%	1,9%	377	7%	3,0%
TOTAL	387 700	100%	1,9%	5 783	100%	1,5%

(Urban-Econ calculations based on Quantec, 2017)

The economic sectors with the greatest contribution to the GDP-R (gross domestic product per region) of the Western Cape are the finance and business services sector and the trade, catering and accommodation sector. At a local scale of the Saldanha Bay Municipality, the key GDP-R contributing sectors are manufacturing and business services, wholesale and retail trade, and catering and accommodation. The Catering and Accommodation services has grown by 93% over the past five years (Quantec, 2017). The economic sectors with the least contribution to the overall GDP-R of Western Cape and Saldanha Bay Municipality are the mining and utilities sectors.

The area includes the **Port of Saldanha Bay**, which hosts an iron ore terminal from where iron ore mined at Kumba Iron Ore is exported, and ArcelorMittal, among other manufacturing companies. The area also hosts the **Saldanha Bay Industrial Development Zone (IDZ)** or, as later designated, a Special Economic zone (SEZ), which is aimed to serve as the primary oil, gas and marine repair engineering and logistics services complex in Africa.

As a result, the transport sector and iron and steel manufacturing are among the key economic drivers in the Saldanha Bay Municipality. Over the years, the manufacturing industry has declined by 0.2% from 2012 to 2017; however, it remains the largest contributing economic sector to the Saldanha Bay Municipality GDP (Quantec, 2017). The decline in the manufacturing sector was offset by the above-average growth rate observed among the tertiary industries except for the trade sector.

#### 2.1.2 Potential effect on production and GDP-R during construction

---

Since the start of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), 452 MW of wind and solar energy capacity spread among nine projects (four wind and five solar) has been procured and connected to the national grid in the Western Cape (DoE, NT, and DBSA, 2017). These projects amounted to R4.5 billion worth of procurement spend, of which R2.8 billion has been localised (DoE, NT, and DBSA, 2017). Therefore, for every 1MW of the procured energy mix from the IPPs in the province (solar and wind), the provincial and national economies derived R6.2 million of domestic production.

The propose Boulder Wind Farm will require an **investment to the tune of R1 520 million**, of which 33% or R494 million will be spent in South Africa. Considering the project's exerted nameplate capacity of 140 MW, for every 1 MW of the wind energy capacity to be developed, the domestic economy will experience an increase in production to the tune of R3.5 million. This expenditure will be directed towards the construction and erection of turbine towers, and construction of the wind farm components such as access roads, turbine towers' foundations, cranes hire, insurances, etc.

The construction will last for just about two years, which is in line with the average duration of similar projects in the past. For example, the establishment of the West Coast One Wind Farm started in June 2013 and the project came online in June 2015. During that period, the procurement of goods and services for the construction of the wind farm will create a direct, as well as a multiplier effect on the economic activities in the local economy of the Saldanha Bay municipality, as well as the provincial economy of the Western Cape, and possibly the national economy. The extent to which each of these economies will benefit will depend on the location of businesses that will be contracted and sub-contracted to provide the related services and goods.

The Western Cape economy is a relatively diverse economy and considering the range of services and goods that will need to be procured for the construction of the wind farm, it is likely that the majority of these services and goods will be sourced from within the Western Cape. This means, that most of the domestic expenditure will likely be localised in the Western Cape, suggesting that the multiplier effects are also likely to ensure within the same province.

It is estimated that a spending of R494 million on procurement of construction-related services, materials, equipment, machinery, and other items required for the development of the proposed Boulder Wind Farm will generate an additional R573 million of production through multiplier effects; therefore, **the project will lead to the increase in domestic production to the tune of R1 066 million over the two-year construction period.** This means that for every R1 million invested in the project, the provincial economy will grow by R2.2 million as a result of direct and spill over effects.

The increase in production will lead to the growth of the GDP. It is estimated that the province's GDP will expand by R342 million, which equates to about R171 million per annum for two years in a row. Considering that the Western Cape's economy was valued at R387 700 million in 2016, the above-mentioned economic stimulus that is to ensue from **the development of the Boulders Wind Farm will increase the provincial economy by roughly 0.04% and sustain this growth for two years.**

The **construction sector will benefit the most** from the project during its construction phase. It will also be the main driver of the indirect and induced impacts. Other sectors that are expected to experience a notable growth throughout the two-year period of construction are **manufacturing and financial and business services.** In terms of manufacturing, businesses operating in such industries as non-metallic mineral products (particularly cement, brick, and concrete manufacturers) and basic metal products will experience the largest increases. At the same time, industries that manufacture goods for household consumption such as food and beverages, clothing, petrol, and plastic products will be the most stimulated

through the induced impact. Importantly, the induced effects of the project expenditure will boost the output of tertiary sectors, and particularly trade, real estate, and insurance.

The development of the proposed wind farm will also have **a positive impact on SMMEs** particularly those located in the Saldanha Bay LM. The exact spend of the project to support SMMEs is not possible to quantify at this stage as it would be directly dependent on the tender awarded to contractors and their practices. Nonetheless, it is envisaged that local small businesses will be involved in onshore haulage, turbine tower erection, health and safety auditing and management, crainage, site security, catering, welfare services, accommodation, civil works, and electrical reticulation.

The project is expected to particularly benefit the tertiary sector of the nearby towns of **St Helena Bay, Paternoster and Vredenburg during the construction phase**. Since the project will not have a construction camp on-site, all out-of-town construction workers will need to be housed in the nearby towns and transported to the site. Therefore, businesses offering accommodation and transportation are expected to experience an increase in the demand for their services, while the local tertiary industries comprising of retail, catering, and personal services are envisaged to benefit as a result of the increase in spending of the construction workers in these towns.

<b>Nature:</b> Increase in economic activity during construction		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Regional (4)	Regional (4)
<b>Duration</b>	Short (2)	Short (2)
<b>Magnitude</b>	Moderate (6)	Moderate (6)
<b>Probability</b>	Definite (5)	Definite (5)
<b>Significance</b>	<b>Medium (60)</b>	<b>Medium (60)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
» Undertake an audit of local SMMEs that could be used to provide selected services and goods during construction		
» Contract as many local SMMEs as possible, without jeopardising the viability of the project		
<b>Cumulative effects:</b>		
» Development of the local economy		
<b>Residual impacts:</b>		
» SMMEs enhanced track record		

### 2.1.3 Potential effect on production and GDP-R during operation

During operations, the proposed project economic benefits will be notably smaller, but they will last for a considerably longer period – 25 years. It is envisaged that operations of the wind farm will incur about R63.7 million of annual expenditure. About 15% of this will be spent on tertiary services, such as insurance, security, and monitoring, while the rest will be spent on operating and maintaining the facility.

It is estimated that for every R1 spend on operating and maintaining the facility, there are R2.68 generated throughout the economy. Therefore, it is envisaged that the project, once operational, will contribute to the creation of R170.7 million of business sales throughout the Western Cape economy. This will in turn translate into an annual figure of R49.8 million of GDP. Considering the size of the provincial economy, the proposed project is envisaged to contribute roughly 0.013% to the provincial economy for 25 years. The largest growth will be created in the provincial electricity sector, followed by the tertiary industries such as business services and finance.

<b>Nature:</b> Contribution to the growth of the local and provincial economies for the duration of the Boulders Wind Farm operation phase		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Regional (4)	Regional (4)
<b>Duration</b>	Long term (4)	Long term (4)
<b>Magnitude</b>	Low (4)	Low (4)
<b>Probability</b>	Definite (5)	Definite (5)
<b>Significance</b>	<b>Medium (60)</b>	<b>Medium (60)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
<ul style="list-style-type: none"> <li>» Undertake an audit of local SMMEs that could be used to provide selected services and goods during operation (i.e. security, transportation, land clearance and road maintenance, etc.)</li> <li>» Contract local SMMEs for on-site related non-technical activities</li> </ul>		
<b>Cumulative effects:</b>		
<ul style="list-style-type: none"> <li>» Development of the local economy</li> </ul>		
<b>Residual impacts:</b>		
<ul style="list-style-type: none"> <li>» SMMEs enhanced track record</li> </ul>		

#### 2.1.4 Potential effect on production and GDP-R during decommissioning

---

The decommissioning phase of the proposed Boulders Wind Farm will last for about 1.5 years. It will include a number of activities, such as disassembly of structures and rehabilitation of land. Aside from the funds that will be spent on decommissioning activities, which will increase the production of construction companies involved in the process, the decommissioning phase will lead to the recovery of metals that could be recycled and reused in other construction activities.

Steel from foundations, tower shafts, steel sections of turbines, switch cabinets, a control cabinet, and transformers will be recovered, cleansed, and milled before re-melting in a blast furnace and selling to other users. In addition, copper and other metallic materials will be recovered and recycled. Recovery of valuable metallic materials on one hand will lead to the generation of revenue for the owner and on the other hand will allow for savings in production costs of companies that will use the recovered materials in their processes.

<b>Nature:</b> Increased production due to decommissioning activities and recovery of valuable resources through recycling		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Regional (4)	Regional (4)
<b>Duration</b>	Very short (1)	Very short (1)
<b>Magnitude</b>	Minor (2)	Low (4)
<b>Probability</b>	Highly probable (4)	Definite (5)
<b>Significance</b>	<b>Low (28)</b>	<b>Medium (45)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
» Develop and implement a material recovery strategy to optimise the use of valuable metallic materials comprising various components of the wind farm		
» Procure services from local construction business		
<b>Cumulative effects:</b>		
» Improved resource utilisation		
<b>Residual impacts:</b>		
» None envisaged		

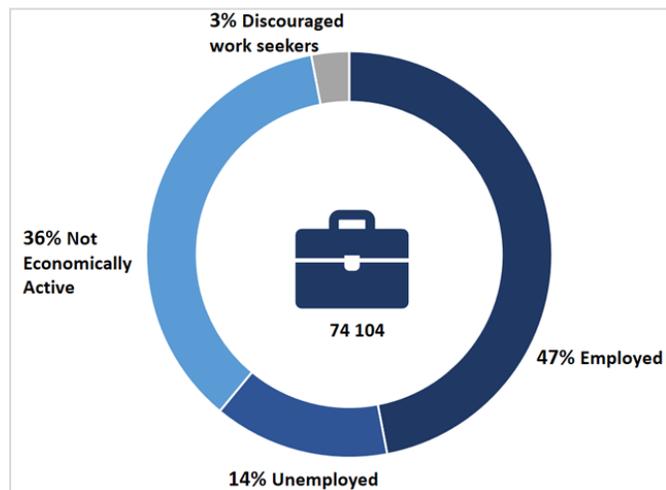
## 4.2 Effect on employment

### 4.2.1 Labour force and dynamics status quo

---

Employment is the primary means by which individuals who are of working age may earn an income that will enable them to provide for their basic needs and improve their standard of living. As such, employment and unemployment rates are important indicators of socio-economic well-being. The following paragraphs examine the study area’s labour market from a number of perspectives, including the employment rate and sectoral employment patterns.

According to Census 2011 data, the working age population of the Saldanha Bay Municipality was about 74 104 (Statistics South Africa, 2015). Amongst these, 45 152 were economically active (Statistics South Africa, 2015). Not economically active (NEA) persons are those who do not contribute to the production of goods and services either due to age (i.e. students or pensioners), personal circumstances, or lack of desire to seek employment (i.e. discouraged job seekers).



**Figure 12: Labour statistics in Saldanha Bay LM (Statistics South Africa, 2015)**

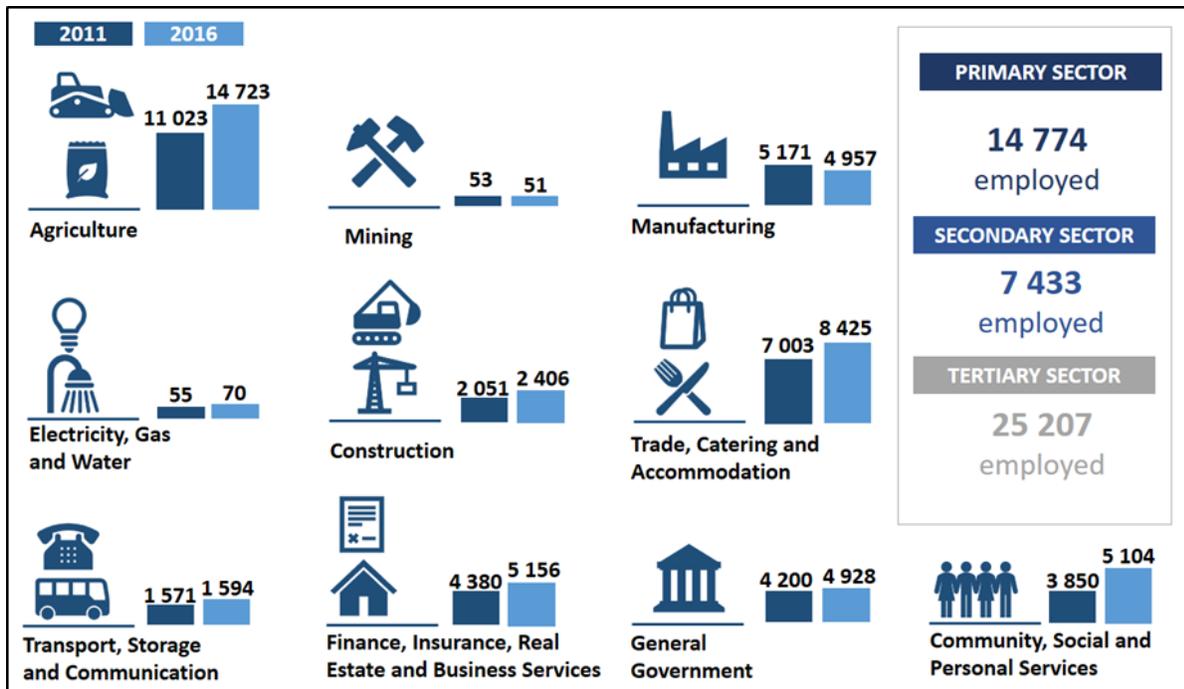
According to the latest statistics available from Quantec, the Saldanha Bay Municipality had 47 414 employed people and 8 991 unemployed. This results in an unemployment rate of 15.9%. For comparison, the Western Cape economy had an unemployment rate of 17.7% with a total of 540 210 people being unemployed and actively looking for work (Quantec, 2017).

In the town of Vredenburg, 13 414 of the working age population were employed, whereas 4 709 were unemployed in 2011 (Statistics South Africa, 2015). This indicates a 26% unemployment rate. In the case of Paternoster, the unemployment rate (10%) is significantly lower than that of the municipality and is the closest town in terms of the small population size (Statistics South Africa, 2015). Conversely, Saint Helena Bay has the highest unemployment rate of 30% (Statistics South Africa, 2015).

A majority (80%) of the employed labour work within the formal sector, whereas a minority (20%) work within the informal sector (Statistics South Africa, 2015). Within the formal sector, 41% are semi-skilled, closely followed by 40% low-skilled and the minority remainder are highly skilled (Statistics South Africa, 2015).

The agriculture, forestry and fishing sector employed the largest number of people in the Saldanha Bay Municipality in 2016 (Quantec, 2017). This is attributed to the coastal location

with numerous fishing activity. The mining sector conversely employed the least. A decline in employment across most sectors of the economy took place between 2008 and 2010. This can be attributed to the global financial crisis, followed by the national economy's recession observed during this period. The agriculture, forestry and fishing sector particularly experienced a decline in employment numbers from 2007 to 2011 in the area. The exceptions have been the general government and utilities sector, which has consistently experienced growth in employment over the past ten years.



**Figure 13: Employment figures per economic sector 2011 and 2016 comparison for Saldanha Bay Municipality (Quantec, 2017)**

This illustrates the high reliance that the local economy has on the fishing and agricultural activities, tourism activities, and activities associated with the Saldanha Bay IDZ. Observing 2011 and 2016 employment data, it is evident that most economic sectors have increased their labour absorption during this period with the exception of the manufacturing and mining sectors.

### 2.2.2 Potential effect on employment during construction

Renewable energy projects create a significant number of employment opportunities during the construction phase. Although, such projects are considered to be capital-intensive, the establishment of renewable energy projects provides an opportunity for making use of labour-intensive techniques and employment of low skilled labour, which is in abundance in South Africa. In the case of the West Coast One Wind Farm, which include 47 wind turbines with a total contracted capacity of 91 MW, since the start of the development of that project and

considering the two years of its operation, a total of 511 full-time equivalent jobs have been created (DoE, NT, and DBSA, 2017). Most of these employment opportunities were made available during the construction phase.

The proposed Boulders Wind Farm will have a far bigger contracted capacity but will have a similar number of wind turbines included (up to 45 wind turbines). This though means that the towers will need to be taller and the foundation may need to be bigger than that of the West Coast One Wind Farm, all of which will require additional labour. It is estimated that a total of **813 direct full-time equivalent person-years will be created during the construction of the proposed Boulder Wind Farm**, 54% of which will be jobs involved in the production and erection of the concrete-based wind towers.

In addition to the direct number of jobs to be created at the construction site, the project will also lead to the creation of employment opportunities through backward linkages. The increase in production of companies due to the growth in demand for goods and services derived from the investment into Boulder Wind Farm is likely to translate into the creation of additional temporary employment. It is estimated that **an additional 1 049 full-time equivalent person-years will be created through the multiplier effects**, some of which will be localised in the nearby towns of Paternoster, Vredenburg and St Helena Bay.

Overall, the project is expected to create a total of 1 861 full-time equivalent person-years, which equates to about 931 jobs created and maintained for two years. The **above annual equivalent of jobs to be created equates to 0.17% of the 2016 provincial unemployment figure**, which suggests that the proposed project may have a small but positive contribution towards the unemployment situation in the province during the two-year construction period.

The number of jobs created for the local labour in the local municipality will be determined by the EPC contractor; however, the developer commits to adhere to the maximum targets set by the Department of Energy with respect to the renewable energy projects in the future bid windows. It should be noted though, that in the case of the West Coast One Wind Farm, three quarters of all direct employment opportunities created during construction were absorbed by local labour (WindLab, 2018). This could be achieved due to the significant portion of the work involved in the construction of renewable energy projects requiring relatively low skills. Therefore, it could be argued that **the potential for employment from the local communities in the case of the proposed Boulder Wind Farm could be significant**. However, the localisation of employment opportunities will not be limited to the direct or on-site construction jobs only; it will also include jobs that will be created in the accommodation, catering, and personal services sectors in the nearby towns that are expected to benefit from the proposed project.

<b>Nature:</b> Creation of temporary employment opportunities during construction		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Regional (4)	Regional (4)
<b>Duration</b>	Short (2)	Short (2)
<b>Magnitude</b>	Moderate (6)	Moderate (6)
<b>Probability</b>	Definite (5)	Definite (5)
<b>Significance</b>	<b>Medium (60)</b>	<b>Medium (60)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
<ul style="list-style-type: none"> <li>» Employ labour-intensive methods in construction, where feasible, to increase the number of unskilled and low skilled people benefitting from the project's development</li> <li>» Undertake a skills audit in the nearby towns of Paternoster, St Helena Bay and Vredenburg and identify the local skills that could be used during the construction phase</li> <li>» Employ the local labour, based on their skills and capabilities, as far as feasible</li> </ul>		
<b>Cumulative effects:</b>		
<ul style="list-style-type: none"> <li>» Improved employment situation in the area for a short period</li> </ul>		
<b>Residual impacts:</b>		
<ul style="list-style-type: none"> <li>» Skills development</li> </ul>		

### 2.2.3 Potential effect on employment during operation

---

During operation, the project will employ about 17 people, majority of who will be technicians. In addition, another 33 full-time equivalent jobs could be created through the multiplier effect primarily within agriculture, trade, business services, and community services sectors. It should be noted though that while the jobs created by the project on -site are expected to be new jobs, the job creation of the multiplier effect is likely to result in the maintenance of the existing positions rather than creation of new positions. Therefore, once operational, Boulders Wind Farm will initially create 17 new jobs and support about 50 jobs on an annual basis for the duration of its operational life – 25 years.

The area is highly reliant on the agricultural and fishery sector as well as jobs created within the tourism industry. The employment in the agricultural sector can be relatively volatile and is seasonal; the same can be said about the tourism sector – employment in this industry varies between off-peak and peak seasons. Although the proposed project will create a relatively small number of jobs, the jobs created will be permanent and will assist in diversifying the employment opportunities in the local economy, therefore, offsetting the fluctuations in the above-mentioned two industries.

<b>Nature:</b> Creation of sustainable employment opportunities		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Local (3)	Local (3)
<b>Duration</b>	Long term (4)	Long term (4)
<b>Magnitude</b>	Low (4)	Low (4)
<b>Probability</b>	Definite (5)	Definite (5)
<b>Significance</b>	<b>Medium (55)</b>	<b>Medium (55)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
<ul style="list-style-type: none"> <li>» Employ from the local labour pool as far as feasible</li> <li>» Identify potential candidates from the local labour pool during construction and train them in-time for the start of operations</li> </ul>		
<b>Cumulative effects:</b>		
<ul style="list-style-type: none"> <li>» Diversification of the local employment profile</li> <li>» Reduced dependency on seasonal employment</li> </ul>		
<b>Residual impacts:</b>		
<ul style="list-style-type: none"> <li>» Improved unemployment figures</li> </ul>		

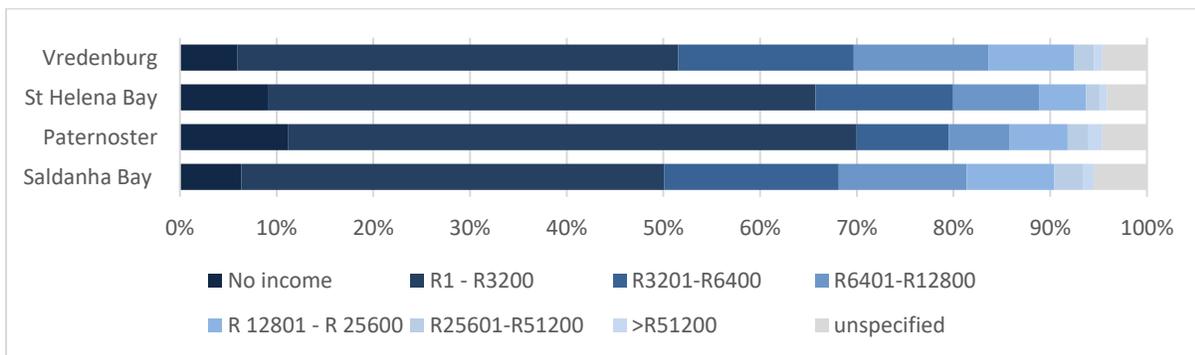
### 4.3 Effect of household income

#### 4.3.1 Current situation with regard to income levels

---

The average monthly household income in the Saldanha Bay Municipality is R10 759 (2011 figures adjusted to 2017 prices), with 6% of households earning no income. Overall, 44% of the households within the Saldanha Bay Municipality earn up to R3 200 per month. A great proportion of the study area observed earns between R1–R3 200 per month, as indicated in Figure 14 below; on average, a household in Paternoster earns about R6 886 (2011 figures adjusted to 2017 prices). In the town of Vredenburg, 6% of the households have no income

and 46% earn up to R3 200; their average household income is about R9 847 (2011 figures adjusted to 2017 prices).



**Figure 14: Income levels across study areas (Quantec, 2017)**

#### 4.3.2 Potential effect on household income during construction

The establishment of employment opportunities during the construction period will have a positive impact on the welfare of directly and indirectly affected households. As indicated above, the project will create 1 861 full-time equivalent person-years, which equates to about 931 jobs (supported for two years). Although not all of these jobs will be maintained by the same person, it could be argued that at least **931 households could benefit from the project during its construction phase, which will earn them a total of R200 million in income.** Since some of the jobs will benefit the local labour, a portion of the above income will be maintained and spent in the local municipality.

<b>Nature:</b>		
Increased household income and living standards for a temporary period (construction phase)		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Regional (4)	Regional (4)
<b>Duration</b>	Short (2)	Short (2)
<b>Magnitude</b>	Moderate (6)	Moderate (6)
<b>Probability</b>	Highly probable (4)	Highly probable (4)
<b>Significance</b>	<b>Medium (48)</b>	<b>Medium (48)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
» Employ from the local labour pool as far as feasible		
» Identify potential candidates from the local labour pool during construction and train them in-time for the start of operations		
<b>Cumulative effects:</b>		

» Improved average household income

**Residual impacts:**

» Improved living standards

#### 4.3.3 Potential effect on household income during operation

---

During operations, the project will spend about R3.5 million on salaries and wages of the directly employed personnel. Considering that there will be about 17 jobs created on-site, the average income earned by the workers at the wind farm will be above the average household income in the local municipality. Furthermore, considering that the average household size in the Saldanha Bay LM is 3.5, it could be argued that a total of 60 people will benefit from the project as a result of the direct employment created by the Boulders Wind Farm. Furthermore, landowners of the farm, where the proposed wind farm is to be developed, will receive rental income, which will improve the overall productive use of the land and benefit the landowners financially.

<b>Nature:</b> Improved household income and living standards during operation		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Local (3)	Local (3)
<b>Duration</b>	Long term (4)	Long term (4)
<b>Magnitude</b>	Low (4)	Low (4)
<b>Probability</b>	Highly probable (4)	Highly probable (4)
<b>Significance</b>	<b>Medium (44)</b>	<b>Medium (44)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b> » Employ from the local labour pool as far as feasible		
<b>Cumulative effects:</b> » Increased average household income in the local municipality		
<b>Residual impacts:</b> » Improved living standards		

#### 4.4 Effect of government earnings

##### 4.4.1 Situation with national fiscus

---

In 2017/18, government revenue experienced a considerable shortfall with the revenue gap growing from R30.7 billion experienced in 2016/17 to R48.2 billion (NT, 2018). The shortfall

was largely attributed to lower income tax, VAT and customs duties collected as a result of slowing wage increases, weaker consumer spending, and lower import growth (NT, 2018). The situation therefore is considerably grimmer than that observed during the 2008 financial crisis with the gross debt-to-GDP ratio increasing from 26.0% in 2008/09 to unprecedented 53.3% (NT, 2018).

Government has put a number of interventions in place to prevent the fiscus from being further eroded and jeopardising its ability to deliver services. These interventions include among others an increase in VAT by 1% and increase in the fuel levy (NT, 2018).

A relationship between tax revenue growth and economic growth is termed tax buoyancy. In the past few years, it was above 1 meaning that the pace of government revenue growth matched or even exceeded that of economic growth (NT, 2018). However, in the past few years, the tax buoyancy started to drop suggesting of the decreasing tax morality and other problems in the tax collection system in South Africa (NT, 2018).

Considering the above, strengthening tax morality combined with the continued economic development that would ensure growth in personal and income tax, company tax, and VAT – the three top contributors to gross tax revenue in South Africa - will be key to sustaining the future government budgets. While strengthening tax morality will require a number of soft interventions, continued growth can only be assured by means of investment into the economy and increasing productivity levels.

#### 4.4.2 Effect on government revenue due to initial investment into the project

---

The Boulders Wind Farm construction phase is expected to last about two years; during this time, as indicated above, companies and workers will earn income and pay government taxes such as payroll and income taxes. In addition, the increased spending power will translate into more purchases which should increase the Value Added Tax base for the national government. Overall, it is expected that government will earn up to R175 million in 2018 prices from the initial investment in the wind farm over the two-year period. Considering the 2017/18 gross tax revenue of R1 217 billion, the project could contribute about 0.007% to the national fiscus for two years in a row.

Although the spending of the money earned by government through tax collection is difficult to associate with a specific budget item, any revenue received by national government is allocated towards certain budget items, provinces or local municipalities to support and assist with the improvement of their service delivery. Therefore, without a doubt this revenue will be spent on improving socio-economic conditions of the population one way or another.

**Nature:**

Generation of revenue by government during construction

	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	National (5)	National (5)
<b>Duration</b>	Short (2)	Short (2)
<b>Magnitude</b>	Low (4)	Low (4)
<b>Probability</b>	Definite (5)	Definite (5)
<b>Significance</b>	<b>Medium (55)</b>	<b>Medium (55)</b>
<b>Status (positive or negative)</b>	Positive	Positive
<b>Reversibility</b>	Reversible	Reversible
<b>Irreplaceable loss of resources?</b>	None	None
<b>Can impacts be mitigated?</b>	Yes (Enhanced)	
<b>Enhancement measures:</b>		
» Increase procurement of goods and services from within South Africa as far as feasible		
<b>Cumulative effects:</b>		
» Sustained gross tax revenue by government		
<b>Residual impacts:</b>		
» Fiscal health		

## **5 CHANGES TO THE PROPOSED WEF LAYOUT AND IMPLICATIONS ON PROPERTY, TOURISM, AND ECONOMIC IMPACT ASSESSMENT RESULTS**

Since the completion of the draft socio-economic report in June 2018, a number of changes have been made to the layout of the WEF and specifically the location of wind turbines on the directly affected properties.

The assessment of the impact of the proposed project back in June 2018 on property, tourism, and economy considered the location of the proposed development and the potentially affected properties.

- » In determining the effect of the proposed project on property values in the nearby towns, the assessment relied on the two case study analyses and the general trends observed with respect to property values in the towns located in close proximity from the two case studies – West Coast One and Kouga. In addition, the interviews with real estate agents were conducted to triangulate the information that was derived from the secondary data analysis.
- » In undertaking the impact analysis on tourism, in the nearby towns of Vredenburg, St Helena Bay and Paternoster, the assessment relied on the primary data gathered through interviews with the tourism attraction owners and tourists.
- » Lastly, the assessment of the impact on the economy considered the planned investment into the project and the potential for localisation in the local municipality.

The above clearly shows that in conducting an impact assessment on property values within the nearby towns, tourism in the area, and economy, the location of wind turbines within the directly affected properties was not a differentiating parameter. Therefore, any changes to the layout of the wind turbines, provided that these wind turbines are still developed within the original boundary of the project, will have no implications on the results of the impact assessment undertaken in July 2018.

In the context of the above, it is the conclusion of the specialist that the proposed project with a revised wind turbine layout would still be associated with the same impacts on property values in the nearby towns, economy, and tourism dynamics as assessed considering the original layout. Ratings assigned to these impacts are not sensitive to the layout, therefore, their assessments will not change either.

## **6 IMPACT STATEMENT**

Vredenburg Wind farm Pty (Ltd) is proposing to develop a wind farm with a contracted capacity of up to 140 MW comprising of up to 45 wind turbines. The project is planned to be located in the Saldanha Bay Municipality within the Western Cape Province. The project site will directly affect 10 farm portions near Vredenburg.

A number of concerns were raised during various engagements with the local communities (identified during the Scoping Phase public participation process) including the effects of the proposed project on property values and on the local tourism activities. In order to investigate these concerns, Urban-Econ made use of a longitudinal approach, case study analysis, and survey techniques to gain better insight into the above-mentioned issues and support the assessment through empirical evidence. A total of 21 individuals were engaged with representing the tourism industry and real estate sector in two locations:

- » the Saldanha Bay LM, where the proposed project is to be located and where the West Coast One Wind Farm has been developed back in 2013-2015, and
- » the Kouga LM, which includes Kouga Wind Farm located near the St Francis Bay holiday town.

The investigations revealed the following:

### **a) With regard to the effect on tourism**

The local area, where the proposed project is to be built is a well-recognised tourism area encompassing Paternoster – one of the much-loved coastal holiday towns in South Africa. In the past few years, the town of Paternoster has experienced some decline in tourist spending; however, this was not attributed to the development of the West Coast One Wind Farm but to the unfavourable economic conditions experienced in the country and the changing preferences of the tourists with regard to accommodation and eating out. On the contrary, some of the local tourism product owners have experienced a positive effect on their business activities as a result of the development of West Coast One Wind Farm during its construction.

The local tourism product owners are also in support of similar developments and only request that such developments do not obstruct the beach view. Considering that the location of the proposed Boulders Wind Farm is inland and is not expected to obstruct the beach view for tourists visiting the coastal towns (i.e. Paternoster and St Helena Bay), the above-mentioned concern is likely to be unrealised and no potential negative impact on leisure tourists is expected. Moreover, considering the noted effects of the West Coast One Wind Farm, the proposed development of the Boulders Wind Farm is more likely to have a positive impact on

tourism in the area than a negative effect. The positive impact will be temporary and will be limited to the duration of the construction activities.

#### **b) With regard to the effect on property values**

The review of the property trends suggests that depending on the nature of the property (holiday home or prime residence) and the type of property (sectional title, freehold, or vacant land), they all follow different demand and pricing patterns. In time of unfavourable economic conditions, the demand for holiday homes slows down or contracts leading to a decline in property prices. The opposite is true for the situation when the economy starts to recover or grow. Considering the economic dynamics in South Africa for the past ten years, the former trend was clearly observed during 2010-2012, preceded by the financial crisis of 2008/9; while the latter trend was noted post 2013.

The towns of Vredenburg and St Helena Bay are largely "primary residence" towns, while Paternoster and St Francis Bay in the Eastern Cape are largely "holiday home" towns. As a result, during the recessions and stagnation of South Africa's economy between 2010 and 2012, the prices for property in Paternoster and St Francis Bay declined while property prices in Vredenburg and St Helena Bay, during the same period, grew. From 2013, property prices in all towns recovered and continued to grow.

Considering that the West Coast One and Kouga Wind Farms were developed during 2013 and 2015 and taking into account the external property market conditions at that time, no correlation (positive or negative) between the property price dynamics and developments of these wind farms could be confirmed. This was also attested by real estate agents operating in the Paternoster and St Francis Bay areas, who were interviewed during the study. They asserted that wind farm developments (West Coast One Wind Farm and Kouga Wind Farm) did not affect demand nor prices of property in the two holiday home towns mentioned above.

Buyers and investors have a variation of perspectives in terms of wind farms - while some buyers may be dissuaded to locate near a wind farm development, it is evident in both case studies that there are buyers who are indifferent while a few are attracted by wind farm developments. Having said that, some property owners may often have unsubstantiated perceptions concerning the negative impact of renewable energy projects on property prices in general, which is why it is a concern raised by some I&APs. However, as indicated above, such perceptions cannot be corroborated with any empirical evidence, therefore, it is important to dispel these as early as possible through awareness campaigns and regular engagements with the local property owners prior to the construction phase.

### **c) With regard to the effect on economy**

The proposed project is expected to have a positive impact on the local and provincial economies particularly during the construction phase. A total of R1 049 million of business scales is envisaged to be stimulated by the project's development during the two-year construction period, leading to the creation of about 931 jobs throughout the provincial economy, which will be sustained for two years. Increase in household income and government revenue earnings are secondary effects that will ensue because of spending on the wind farm's development.

During operations, the proposed project will create a minor economic stimulus in the context of the provincial economy. In the context of the local economy, the project will create at least 17 permanent jobs and will diversify the local economic base. Although the number of jobs is relatively small, it is important to realise that many of the jobs in the Saldanha Bay LM are seasonal and are therefore relatively volatile. The proposed project will create permanent employment opportunities, which will improve the lives of up to 60 people in the area.

In conclusion it can be stated that no red flags could be identified from an economic impact perspective associated with the proposed development activities and operation of the Boulders Wind Farm. The proposed project, both in its original layout as well as the proposed changes to the layout of wind turbines, will also not affect the sea views for tourists visiting the coastal towns as the farm will be located inland; thus, it is not envisaged to have a negative impact on tourism and property values. It is therefore recommended that the project is approved for development from an economic standpoint.

## REFERENCES

- Coastal and Environmental Services. (2014). *Environmental Management Programme for the Proposed Richards Bay Wind Energy Project*. Kwa-Zulu Natal Province of South Africa: uMhlatuze Local Municipality.
- Department of Energy . (2011). *Integrated Resource Plan 2010 - 2030*.
- Jason Carter. (2011). *The effect of wind farms on residential property values in the Lee County, Illinois*. Illinois: Illinois State University.
- Jean Folger. (2018). *Basic Valuation Concepts*. Investopedia.
- Madlener, Y. S. (2016). *The Impact of wind farm visibility on property values: A Spatial difference-in-differences analysis*. Energy Economics vol. 55 pg. 79-91.
- Quantec. (2015). *Census 2011*.
- Statistics South Africa. (2015). *Census 2011*.
- Study. (2018, May 28). *study.com*. Retrieved from Property Valuation: Definition and Principles: [www.study.com](http://www.study.com)
- The Royal Institute of Chartered Surveyors. (2007). *What is the impact of wind farms on house prices*. Oxford Brookes University: RICS Research.

## APPNDIX A: IMPACT RATING METHODOLOGY

### **Assessment of Impacts**

Direct, indirect and cumulative impacts of the issues identified through the scoping study, as well as all other issues identified in the EIA phase must be assessed in terms of the following criteria:

- » The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- » The **duration**, wherein it will be indicated whether:
  - \* the lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
  - \* the lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
  - \* medium-term (5–15 years) – assigned a score of 3;
  - \* long term (> 15 years) - assigned a score of 4; or
  - \* permanent - assigned a score of 5;
- » The **magnitude**, quantified on a scale from 0-10, where a score is assigned:
  - \* 0 is small and will have no effect on the environment
  - \* 2 is minor and will not result in an impact on processes
  - \* 4 is low and will cause a slight impact on processes
  - \* 6 is moderate and will result in processes continuing but in a modified way
  - \* 8 is high (processes are altered to the extent that they temporarily cease)
  - \* 10 is very high and results in complete destruction of patterns and permanent cessation of processes
- » The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1–5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).

- » the **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- » the **status**, which will be described as either positive, negative or neutral.
- » the degree to which the impact can be reversed.
- » the degree to which the impact may cause irreplaceable loss of resources.
- » the degree to which the impact can be *mitigated*.

The **significance** is calculated by combining the criteria in the following formula:

$$S=(E+D+M)P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- » < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- » 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

Assessment of impacts must be summarised in the following table format. The rating values as per the above criteria must also be included. Complete a table and associated ratings for **each** impact identified during the assessment.

**Example of Impact table summarising the significance of impacts (with and without mitigation)**

<b>Nature:</b> [Outline and describe fully the impact anticipated as per the assessment undertaken]		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	High (3)	Low (1)
<b>Duration</b>	Medium-term (3)	Medium-term (3)
<b>Magnitude</b>	Moderate (6)	Low (4)
<b>Probability</b>	Probable (3)	Probable (3)
<b>Significance</b>	<b>Medium (36)</b>	<b>Low (24)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Low	Low
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	Yes
<b>Mitigation:</b>		

"Mitigation", means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.

Provide a description of how these mitigation measures will be undertaken keeping the above definition in mind.

**Cumulative impacts:**

"Cumulative Impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to existing and reasonably foreseeable impacts eventuating from similar or diverse activities<sup>3</sup>.

**Residual Risks:**

"Residual Risk", means the risk that will remain after all the recommended measures have been undertaken to mitigate the impact associated with the activity (Green Leaves III, 2014).

### Assessment of Cumulative Impacts

As per DEA's requirements, specialists are required to assess the cumulative impacts. In this regard, please refer to the methodology below that will need to be used for the assessment of Cumulative Impacts.

"Cumulative Impact", in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to existing and reasonably foreseeable impacts eventuating from similar or diverse activities<sup>4</sup>.

The role of the cumulative assessment is to test if such impacts are relevant to the proposed project in the proposed location (i.e. whether the addition of the proposed project in the area will increase the impact). This section should address whether the construction of the proposed development will result in:

- » Unacceptable risk
- » Unacceptable loss
- » Complete or whole-scale changes to the environment or sense of place
- » Unacceptable increase in impact

The specialist is required to conclude if the proposed development will result in any unacceptable loss or impact considering all the projects proposed in the area.

---

<sup>3</sup> Unless otherwise stated, all definitions are from the 2014 EIA Regulations, GNR 326.

<sup>4</sup> Unless otherwise stated, all definitions are from the 2014 EIA Regulations, as amended, GNR 326

**Example of a cumulative impact table:**

**Nature:** Complete or whole-scale changes to the environment or sense of place (example)

<b>Nature:</b> [Outline and describe fully the impact anticipated as per the assessment undertaken]		
	<b>Overall impact of the proposed project considered in isolation</b>	<b>Cumulative impact of the project and other projects in the area</b>
<b>Extent</b>	Low (1)	Low (1)
<b>Duration</b>	Medium-term (3)	Long-term (4)
<b>Magnitude</b>	Minor (2)	Low (4)
<b>Probability</b>	Improbable (2)	Probable (3)
<b>Significance</b>	<b>Low (12)</b>	<b>Low (27)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	High	Low
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	Yes
<b>Confidence in findings:</b> High.		
<p><b>Mitigation:</b>            "Mitigation", means to anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.            Provide a description of how these mitigation measures will be undertaken keeping the above definition in mind.</p>		
<b>Residual Risks:</b>		