JANUARY 1, 2025

THE PROPOSED ESTABLISHMENT OF THE HOPEFIELD PV SOLAR ENERGY FACILITY, SALDANHA BAY MUNICIPALITY, WESTERN CAPE PROVINCE.

SOCIAL IMPACT ASSESSMENT REPORT

REPORT COMPILED BY BGES (PTY) LTD
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DETAILS OF SPECIALISTS

Sibongile Bambisa (Sibongile) *(BA Honours degree in Anthropology and BA in Psychology*) has 14 years' experience in the socialfield. Sibongile has been involved in various Social Impact Assessments during her career as social scientist. These project themes consist of infrastructure development, waste management, road development, water and sanitation programmes, township, and other residential type developments. She has also been involved in the design and management of numerous public participation programmes and communication strategies, particularly on complex development projects that require various levels and approaches.

DECLARATION OF INDEPENDENCE

This report has been prepared as per the requirements of Section 32 of Government Notice No. R982 dated 14 December 2014 (Environmental Impact Assessment Regulations) under sections 24(5),24M and 44 of the National Environmental Management Act, 1998 (Act 107 of 1998). We, Sibongile Bambisa and Nonkululeko Mbasane declare that this report has been prepared independently of any influence or prejudice as may be specified by the Department of Environmental Affairs (DEA).

Specialization	Sibongile Bambisa (Sibongile) is a highly motivated and experienced stakeholder engagement consultant with over 14 years' experience. A result- driven individual with a diversified industry experience (i.e.) mining, environmental management, housing development, renewable energy, oil and gas.
Expertise	Sibongile's expertise includes developing and implementing Stakeholder Engagement Plans/ Strategies, undertaking Social Impact Assessments and Social and Labour Plans. Sibongile has an exceptional ability to communicate with various stakeholders from different sectors of society.
Employment	2022 - 2022: Digby Wells and Associates (South Africa) (Pty) Ltd 2017 - 2021: Kongiwe Environmental (Pty) Ltd 2017 - 2017: WRP Engineers (Pty) Ltd 2013 - 2017: Jones & Wagener (Pty) Ltd 2010 - 2013: Digby Wells and Associates (Pty) Ltd
Languages	English, IsiZulu, Southern Sotho and Setswana

Contents

List of Abbreviations

Abbreviation	Description
DEDAT	Western Cape Department of Economic Development and Tourism
ESIA	Environmental and Social Impact Assessment
GDP	Gross Domestic Product
GRM	Grievance Redress Mechanism
(gH2)	Green hydrogen
(gCH_3OH)	Green methanol
HRBA	Human Rights-Based Approach
IDZ	Industrial Development Zone
IEP	Integrated Energy Plan
IFC	International Finance Corporation
IRP	Integrated Resource Plan
Km	Kilometers
MERO	Municipal Economic Review and Outlook
mtpd	Metric tons per day
PGDS	Provincial Growth and Development Strategy
QLFS	The Quarterly Labour Force Survey
REIPPPP	The Renewable Energy Independent Power Producer Procurement Programme
SBIDZ	SBIDZ
SBM	Saldanha Bay Municipality
SDF	Spatial Development Framework
SETAs	Sector Education and Training Authorities
SIA	Social Impact Assessment
SLO	Social License to Operate
Stats SA	Statistics South Africa
ToR	Terms of Reference
WCDM	West Coast District Municipality

Executive Summary

The global effort to address climate change, as formalised under the Paris Agreement (United Nations, 2015), has committed nations to limit global temperature rise to well below 2°C and pursue efforts to keep it within 1.5°C. In support of this goal, there is an urgent global need to decarbonise energy systems. In this context, renewable energy is increasingly recognised as a key strategic energy carrier in the global shift toward a carbon-neutral economy.

South Africa, with its abundant renewable resources and strategic position in the global energy supply chain, is actively pursuing the development of a solar energy economy for both domestic use and export markets.

In line with this national agenda, Solar Capital (Pty) Ltd, a Cape Town-based global leader in renewable energy solutions, has proposed the development of a PV Solar Energy facility in Saldanha Bay, located within the Western Cape Province. The company has applied for environmental authorisation for the proposed project. Eco Compliance (Pty) Ltd has been appointed as the Environmental Assessment Practitioner (EAP), and Beyond Green Environmental Services (Pty) Ltd (BGES) was subcontracted to undertake the Social Impact Assessment (SIA) in accordance with the requirements of the National Environmental Management Act (NEMA).

Purpose of the Report

This Social Impact Assessment presents:

- A socio-economic baseline description of the study area
- An assessment of potential positive and negative social impacts arising from the proposed project.
- A high-level Social Management Plan (SMP) for impact mitigation and benefit enhancement.
- A reasoned opinion on the project's social acceptability and alignment with local development goals.

Socio-Economic Baseline Overview

The socio-economic baseline analysis was conducted across two geographic scales:

- Regional Context: Western Cape Province
- Local Context: West Coast District Municipality and Saldanha Bay Local Municipality

The baseline assessment analyzed key socio-economic indicators, including population demographics, employment levels, income distribution, infrastructure access, and economic activity. Key findings include:

- High unemployment rates, especially among youth
- Economic inequality across settlements
- Existing pressure on public infrastructure (water, housing, healthcare)
- Strategic opportunities for economic diversification and skills development

This baseline context provides the foundation for understanding how the project may impact local and regional communities.

Summary of Key Social Impacts

Positive Impacts:

- Job creation: Direct employment during construction and operation, with indirect economic multiplier effects and regional employment growth as a cumulative outcome.
- Skills development: Training and upskilling opportunities in renewable energy and industrial operations.
- Local procurement and business support: Opportunities for SMMEs and local suppliers.
- Improved water management: Reuse of treated effluent reduces pressure on freshwater systems, supporting sustainability.
- Economic growth and diversification: Alignment with IDZ expansion and regional industrial development goals.

Negative or Adverse Impacts

- Influx of job seekers: Potential pressure on health services, and social infrastructure.
- Altered sense of place: Visual and psycho-social impacts from industrialization of the coastal landscape.
- Psycho-social distress related to landscape and identity change: An altered sense of place especially in communities with strong cultural, emotional, or historical ties to their environment can lead to psychosocial impacts.
- Increased pressure on local infrastructure: Increased demand on healthcare, and housing due to construction-phase labour influx and industrial activity.

- Community health and safety risks: Increased traffic, construction hazards, and temporary accommodation concerns.
- Nuisance impacts: Noise, dust, and general disruption during construction.
- Land use: Land use changes associated with the proposed project may influence social and economic dynamics, especially for vulnerable or directly affected communities.
- Cumulative impacts: Overlapping developments (IDZ tenants, port upgrades, renewable energy projects) may place additional pressure on local infrastructure, services, and social cohesion.

The No-Go alternative has been assessed, this scenario would mean that the site remains in its current state, avoiding some short-term impacts, but also resulting in a missed opportunity for long-term socio-economic benefits.

Social Management Plan (SMP)

To address these impacts and risks, a Social Management Plan has been developed. Key components include:

- Local hiring protocols and training programmes.
- A Grievance Redress Mechanism (GRM) for community concerns.
- Stakeholder engagement framework, including ongoing consultation.
- Monitoring indicators for employment, housing, infrastructure pressure, and social wellbeing.
- Partnerships with local government to align infrastructure and service delivery planning.

Social Specialist's Recommendation

Based on the impact assessment and risk analysis, the proposed project should be authorised from a social perspective, dependent on the following key conditions:

- Strict compliance with the mitigation and management measures detailed in this SIA and the SMP.
- Ongoing community engagement and a transparent, responsive grievance resolution process.
- Incorporation of social impact monitoring and management measures into the EMP to ensure ongoing tracking, evaluation, and mitigation of social risks and impacts throughout the project lifecycle.

- Collaborate with municipal authorities and industry stakeholders to manage cumulative infrastructure and service demands.

If these conditions are met, the project is likely to make a significant and positive contribution to the local economy, employment landscape, and South Africa's broader clean energy transition. It also has the potential to improve livelihoods and socio-economic resilience in the Saldanha Bay area provided social risks are actively managed and local communities remain engaged and included throughout the project lifecycle.

1 Introduction

1.1 Background

Solar Capital (Pty) Ltd, a subsidiary of Phelan Green Energy, is initiating a project to construct a 1.6 GW Photovoltaic (PV) Solar Energy facility within the Saldanha Bay Local Municipality, located in the Western Cape province of South Africa. This development underscores Solar Capital's commitment to advancing sustainable energy solutions and supporting the global transition toward renewable energy sources.

To ensure compliance with environmental regulations and to assess the potential impacts of the project, Solar Capital has engaged Eco Compliance (Pty) Ltd as the lead consultant responsible for managing the Environmental Impact Assessment (EIA) process. The proposed Hopefield PV Solar Energy facility and its associated infrastructure will be situated approximately 3 km from the town of Hopefield and about 115 km north of Cape Town city.

The EIA is a critical component of the project, designed to evaluate environmental considerations and promote engagement with local stakeholders. This transparent process aims to identify and mitigate any potential impacts, ensuring that the project aligns with the principles of sustainable development and adheres to regulatory requirements.

Solar Capital is dedicated to fostering environmental stewardship and contributing to the advancement of renewable energy in South Africa, thereby enhancing energy security and supporting economic growth within the region.

1.2 Purpose of this document

The purpose of this document is to present the findings of the Social Impact Assessment (SIA) undertaken for the proposed development of a 1.6 GW PV Solar Energy facility by Solar Capital in Saldanha Bay, Western Cape Province, South Africa.

This SIA has been prepared as a key component of the Environmental Impact Assessment (EIA) process, in accordance with the requirements of the National Environmental Management Act (NEMA), Act No. 107 of 1998, and its associated EIA Regulations. The assessment has been conducted to evaluate the potential social impacts both positive and negative arising from the proposed project, and to provide recommendations for enhancing benefits and mitigating adverse impacts.

Specifically, the objectives of this document are to:

- Provide a detailed socio-economic baseline profile of the regional and local study areas, including the Western Cape, West Coast District Municipality, and Saldanha Bay Local Municipality.
- Identify, analyze, and assess the potential social impacts associated with the construction and operation of the proposed project.
- Highlight key social risks and vulnerabilities, including issues raised during stakeholder consultation.
- Propose appropriate mitigation measures and enhancement strategies to be incorporated into the project planning and implementation.
- Establish a Social Management Plan (SMP) as a guiding framework for monitoring, mitigating, and managing social impacts.
- Provide a reasoned opinion by the social impact assessment specialist on whether the project should proceed from a social perspective.

1.3 Project Context

The Paris Agreement on climate change, established in 2015, set forth a significant target aimed at limiting global warming to well below 2 °C, with the aspiration to keep the temperature increase at 1.5 °C or lower (United Nations, 2015). This pivotal international accord highlights the urgency of addressing climate change and has catalyzed a global movement towards sustainable practices and renewable energy sources. In light of this, there is an escalating emphasis on implementing solutions that can effectively decarbonise energy systems on a global scale.

Amidst this context, solar energy is emerging as a foundational pillar in the transition toward a sustainable energy future. It offers a viable and scalable means of reducing reliance on fossil fuels, thus aligning with the overarching goals set by the Paris Agreement. The advantages of solar energy are manifold, encompassing not only environmental benefits such as decreased carbon emissions but also economic incentives through job creation and sustainable development.

In South Africa, the renewable energy sector is rapidly evolving and is increasingly recognized as a critical pathway for achieving both energy independence and climate resilience. The country faces substantial energy and climate challenges, including an overreliance on coal, energy insecurity, and high greenhouse gas emissions. To address these pressing issues, South Africa's transition to solar energy is not solely driven by environmental considerations but is also informed by economic and social imperatives. The adoption of solar technology presents substantial opportunities for innovation and investment, which can stimulate job creation in areas such as manufacturing, installation, and maintenance of solar energy systems.

Moreover, the shift toward renewable energy, particularly solar, is reinforced by the global imperative to mitigate climate change, which compels nations to seek alternative energy sources that significantly lower carbon emissions. South Africa is strategically positioning itself to harness solar energy as a core component of its energy transition strategy. This strategy encompasses a broad commitment to increasing the share of renewables in the national energy mix, thereby promoting energy diversification, reducing dependency on non-renewable sources, and fostering a more sustainable economy.

1.4 Project Locality

The proposed project is located approximately 3km from the town of Hopefield and approximately 115km north of Cape Town city in the Western Cape province. The proposed site is located on Portugeese Fontyn 167 farm. The area of the farm is 797 Ha, but the area being considered for the proposed solar plant is 73 Ha, see Figure 1-1.

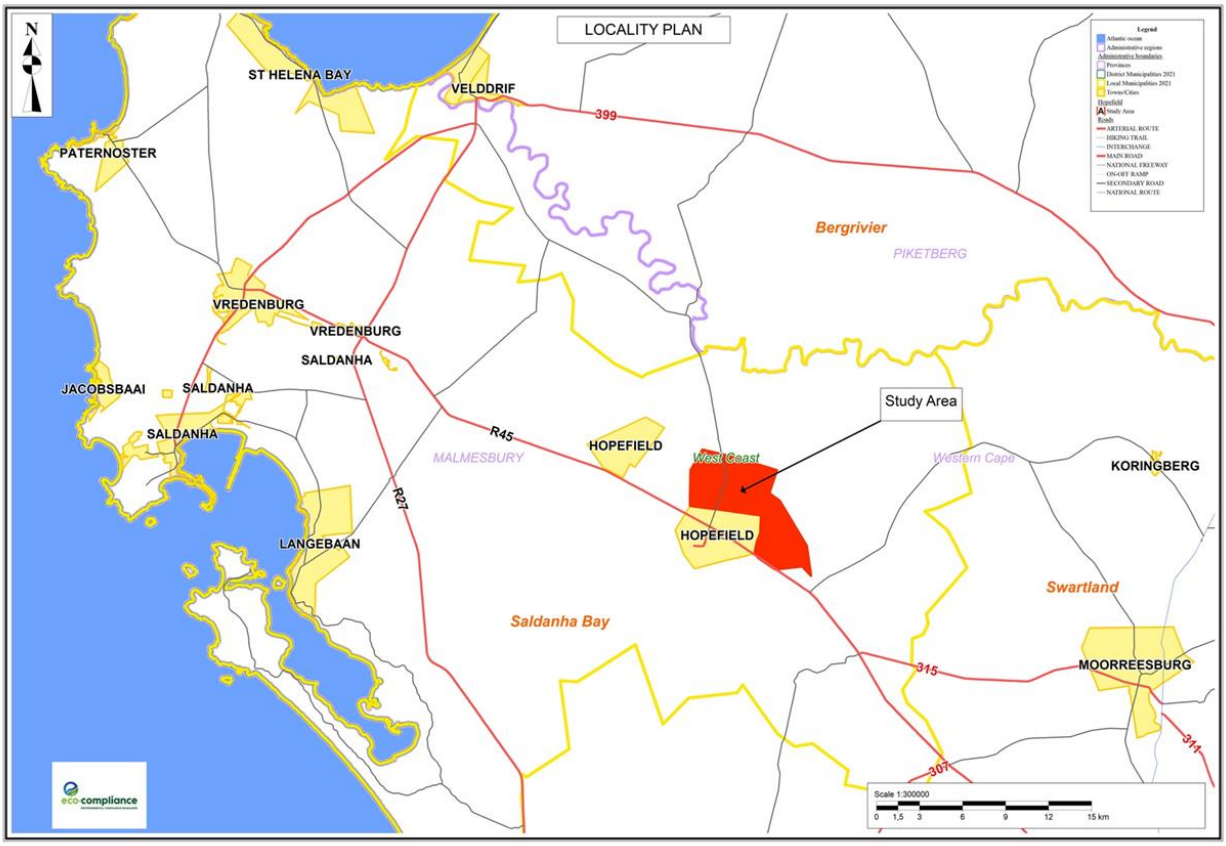

Figure 1-1: Project locality map

1.5 The Applicant

Phelan Energy Group was established in 2005, the Group has global offices in Dublin, Cape Town, New Delhi, Dhaka, Sydney and the Middle East. Phelan Energy Group is a leading international energy developer and operator with an exclusive focus on solar PV, and its vision is to achieve the lowest cost for solar energy in the world. It has installed and grid-connected total capacity of 245 MWp with a large and growing global footprint. Its key solar installation in South Africa is the largest solar farm in Sub-Saharan Africa (https://phelangreen.com/).

2 Proposed project overview

The proposed construction of the 1.6 GW Hopefield PV Solar Energy Facility represents a significant leap towards sustainable energy production within the Saldanha Bay Local Municipality. The energy generated by this facility will be evacuated to a green hydrogen production campus via a 132 kV powerline, a critical infrastructure element that will facilitate the efficient transfer of renewable energy. It is essential to highlight that the proposed solar project will not be interconnected with the Eskom grid; rather, it is intended exclusively to support the operations of the Green Hydrogen Production Campus being developed in the area.

The study area designated for this project is considered highly desirable for several key reasons:

Proximity to Solar Resources: The site benefits from optimal solar exposure due to its geographical location, which is essential for maximizing energy production from photovoltaic technology.

Favourable Climatic Conditions: The climatic conditions in the region are conducive to solar energy generation, with ample sunlight and minimal cloud cover throughout the year.

A broader study area of approximately 3,201 hectares is under consideration for the installation of the solar facility. However, it is important to note that the actual development footprint will be smaller, as certain areas within this study zone may be identified as environmentally sensitive based on detailed specialist studies. The location offers sufficient land for the proposed solar energy project, minimizing conflicts with existing land use and ensuring that the necessary infrastructure can be developed efficiently. The site's closeness to the Aurora Substation presents additional logistical advantages, facilitating the integration of generated power into the hydrogen production campus.

2.1 Proposed infrastructure

The infrastructure associated with the Hopefield PV Solar Energy Facility will include, but is not limited to:

- Photovoltaic Solar Panels: These will be mounted on robust steel structures designed to withstand local climatic conditions and optimize solar energy capture.
- Foundations: Strong foundations will be constructed to ensure the stability and longevity of the solar panels.
- Cabling: Cabling between various project components will be installed underground wherever practical to reduce visual impact and protect against environmental factors.
- Internal Access Roads: Access roads will be constructed to facilitate the movement of maintenance and operational vehicles, ensuring that functionality is not compromised.
- Workshop Area: A dedicated area for maintenance and storage will be established to support the ongoing upkeep of the facility.

The overall design and layout of the facility is strategically focused on several objectives:

- Maximizing Electricity Production: The primary goal is to maximize exposure to solar radiation to enhance electricity output from the PV panels.

- Minimizing Infrastructure Footprint: The design will aim to reduce the overall physical footprint of the facility, thereby limiting disruption to the surrounding environment.

- Cost Efficiency: By optimizing the layout, both operational and maintenance costs can be minimized, ultimately enhancing the financial viability of the project.

- Social and Environmental Impact Mitigation: Special attention will be paid to ensuring that adverse social and environmental impacts are minimized, reinforcing Solar Capital's commitment to sustainable practices.

The use of solar energy for power generation at the Hopefield facility can be characterized as a non-consumptive use of natural resources, with the distinct advantage of emitting zero greenhouse gas emissions in the process. The generation of renewable energy through this facility will significantly contribute to South Africa's commitments to reducing its carbon footprint, aligning with global sustainability goals and supporting the country’s transition towards a clean energy future.

2.1.1 Photovoltaic Solar Energy Facilities & Power Generation

Solar energy facilities, such as those using PV panels use the energy from the sun to generate electricity through a process known as the Photovoltaic Effect. This effect refers to photons of light colliding with electrons, and therefore placing the electrons into a higher state of energy to create electricity.

A Photovoltaic Cell is made of silicone which acts as a semiconductor used to produce the photovoltaic effect. Individual PV cells are linked and placed behind a protective glass sheet to form a photovoltaic panel. The PV cell is positively charged on one side and negatively charged on the other side and electrical conductors are attached to either side to form a circuit. This circuit then captures the released electrons in the form of an electric current (direct current). An inverter must then be used to change the direct current (DC) produced to alternating current (AC). The electricity is then transmitted through a power line for distribution and use, see Figure 2-1 for the overview of the proposed processing plant.

Figure 2-1: Photo showing an elevated view of PV panels & from ground level

The PV panels will be fixed to a support structure set at an angle so to receive the maximum amount of solar radiation. The angle of the panel is dependent on the latitude of the proposed facility and the angles may be adjusted to optimise for summer or winter solar radiation characteristics. The PV panels are designed to operate continuously for more than 20 years, unattended and with low maintenance. It is also important to note the rapid evolution of solar energy technology over a relatively short time, which may result in improved technology for the future.

Figure 2-2: *Photo showing the aerial view of the PV facility*

3 Social Impact Assessment

A Social Impact Assessment (SIA) includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. The primary purpose of the SIA is to bring about a more sustainable and equitable biophysical and human environment (Vanclay, 2003).

3.1 Terms of Reference

The Terms of Reference (ToR) associated with the SIA for the proposed project are as follows:

- To describe the baseline social environment in the vicinity of the study area, including the conditions on and immediately surrounding the proposed site.
- To identify, describe and rate the significance of social impacts associated with the proposed project.
- To develop feasible mitigation measures to avoid/reduce negative impacts and enhance positive impacts.

3.2 Details of the specialist

Table 3-1: Details of the specialist- Refer to the page after cover page..

Specialist Name	**Sibongile Bambisa**
Qualification	BA Hons. Anthropology
Role	Social Impact Specialist

Sibongile Bambisa is the social impact specialist for this study. She holds a BA Hons. in Anthropology and brings over 14 years of extensive experience in conducting Social Impact Assessments (SIAs) across a wide range of sectors. Throughout her career, Sibongile has contributed to SIAs for projects in renewable energy, extractives industry, infrastructure development, and community outreach programs, allowing her to develop a comprehensive understanding of the social dynamics involved in large-scale developments.

Sibongile's experience in SIA has also involved the analysis of socio-economic impacts, social risk assessments, and the development of mitigation strategies that promote sustainable and equitable development outcomes. Her practical approach ensures that social considerations are fully integrated into the planning and execution of projects, with a particular focus on enhancing community benefits and minimizing negative impacts.

Her expertise lies in the development and implementation of effective stakeholder engagement strategies. Sibongile is skilled in identifying key stakeholders, managing consultations, and facilitating dialogues to ensure the inclusion of community perspectives and concerns in the decision-making process.

3.3 Approach and Methodology

The study was designed to comply with relevant South African legislative requirements, as well as with the relevant international best-practice standards, such as the Equator Principles, World Bank Standards and the International Finance Corporation's (IFC) Performance Standards. The activities undertaken as part of the study are outlined below.

3.4 Screening and scoping

The screening phase of the SIA process intended to identify the level of impact assessment required. The objective of conducting a screening and scoping exercise for a SIA for the proposed project, is to systematically identify, evaluate, and understand potential social impacts that may arise from the proposed project.

3.5 Definition of Study Area

The purpose of defining a study area is to ensure that social impacts associated with the proposed project are identified, assessed, and appropriately managed. It provides a framework for stakeholders to understand the scope of potential impacts and mitigation measures required to minimize adverse effects and enhance project benefits.

In the context of the IFC, a study area refers to the geographical area within which the potential direct and indirect impacts of a project are assessed as part of an Environmental and Social Impact Assessment (ESIA). The study area typically encompasses:

- Site specific study area: This includes the physical boundaries of the project site where construction, operation, and decommissioning activities are planned to take place. This area is likely to experience impacts related to the physical intrusion of project infrastructure and project-related activities. In the context of this project, this study area is defined as the settlements near the proposed project infrastructure.
- The local study area: The area likely to experience impacts related to the "economic pull" exerted by the project, this includes West Coast District and Saldanha Bay Local Municipalities.
- Regional study area: An area likely to experience indirect impacts of the proposed project. For the proposed project, the regional study area for the proposed project includes the Western Cape Province as a whole.

3.6 Data collection

Data collection forms a crucial component of the SIA as it serves as a foundational step in understanding and mitigating potential social impacts. This phase involves systematically gathering socio-economic baseline information to assess how the project

may affect local communities and overall socio-economic dynamics within the study area.

The information presented in this document is based on several data collection activities, each of which is described below:

3.6.1 Desktop review

A review of available documents was undertaken to obtain information regarding the baseline socio-economic conditions in the study area. Documents reviewed include the following:

- Available maps and satellite imagery.
- Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDF) for both West Coast District and Saldanha Bay Local Municipalities.
- Socio-economic and demographic statistics (sourced from Statistics South Africa's Census data).
- Comments raised by stakeholders during the consultation meeting.

3.6.2 Stakeholder consultation

As part of the EIA, stakeholder consultations are undertaken to gather input from key community members, local authorities, and other relevant parties. These consultations are vital for ensuring that the perspectives and concerns of those affected by the proposed project are thoroughly understood.

3.7 Assumptions and limitations

Although all reasonable efforts were made to provide an updated and representative picture of socio-economic impacts relevant to the study area, this report is still subject to some assumptions and limitations:

- The study is based on data obtained from Statistics South Africa, as such data should only be viewed as indicative of the broad trends within the area and not as a rigid representation of the area.
- The socio-economic landscape may change rapidly due to factors such as economic fluctuations, political changes, or unforeseen events (e.g. natural disasters). These changes may impact the accuracy of the socio-economic assessment over time.
- Sources consulted are not exhaustive and additional information can still come to the fore to influence the contents, findings, ratings and conclusions made.

3.8 Structure of the report

This specialist study is undertaken in compliance with Appendix 6 of GN 982 of 4 December 2014, as amended by Appendix 6 of GN 326 of 7 April 2017. Table 3-2 indicates how Appendix 6 has been fulfilled in this report.

Table 3-2: Structure of the report

Regulatory Requirements	Reference to relevant section in report
a) The person who prepared the report; and the expertise of that person to carry out the specialist study or specialized process, including a curriculum vitae;	Section 3.2
b) A declaration that the person is independent	Appendix A
c) An indication of the scope of, and the purpose for which, the report was prepared	Section 3
d) An indication of the quality and age of base data used for the specialist report	Section 3.7
e) A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Section 7 and 8
f) The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	Not applicable
g) A description of the methodology adopted in preparing the report or carrying out the specialized process inclusive of equipment and modelling used	Section 3.3 and 3.6
h) Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternative	Section 7
i) An identification of any areas to be avoided, including buffers	Section 7
j) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	To be included
k) Description of any assumptions made and any uncertainties or gaps in knowledge	Section 3.7
l) A description of the findings and potential implications of such findings on the impact of the proposed activity or activities	Section 7, 8 and 9
m) Any mitigation measures for inclusion in the EMPr	Section 7, 8, 9 and 10
n) Any conditions for inclusion in the environmental authorisation	Section 7, 8, 9 and 10
o) Any monitoring requirements for inclusion in the EMPr or environmental authorisation	Section 10
p) A reasoned opinion— (i) whether the proposed activity, activities or portions thereof should be authorized; (iA) regarding the acceptability of the proposed activity or activities; and (ii) if the opinion is that the proposed activity, activities or portions thereof	Section 11

	should be authorized, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan	
q)	A description of any consultation process that was undertaken during the course of preparing the specialist report	Included in the PPP report
r)	A summary and copies of any comments received during any consultation process and where applicable all responses thereto	Included in the PPP report
s)	Any other information requested by the competent authority	Not applicable

4 Legislative and Policy Framework

There are various policies, strategies, and frameworks that highlights South Africa's commitment to developing Solar energy as a sustainable, low-carbon energy solution.

This section outlines the relevant laws, regulations, and policies that govern the social aspects of the project, ensuring that the social impacts are assessed in accordance with legal requirements and policy guidelines.

Table 4-1: Legislative and Policy Framework

Legislation/policy framework	Description
Constitution of the Republic of South Africa	The Constitution of the Republic of South Africa is the supreme law of the Republic and thus must always be taken into consideration. The Constitution outlines the legal rights of all South Africans.
National Environmental Management Act (NEMA), 1998 (as amended)	This is the main framework for environmental management and governance.
National Development Plan (NDP) 2030	The NDP outlines South Africa's vision for economic development, which includes the promotion of clean energy and diversification of the energy mix. It emphasizes reducing dependence on coal and integrating renewable energy sources to achieve sustainable growth.
The Western Cape Environmental Framework and Provincial Growth and Development Strategy (PGDS)	The PGDS focuses on regional priorities, including the growth of renewable energy, and encourages the use of local resources for sustainable development. It also ensures that projects comply with regional regulations on environmental management and socio-economic impacts.
Integrated Resource Plan (IRP) 2019	The IRP sets the roadmap for South Africa's electricity generation sector until 2030 and includes a growing emphasis on renewable energy sources, such as wind and solar power. Although it primarily focuses on electricity, it lays the groundwork for the future integration of renewable hydrogen production as part of the energy mix.
White Paper on the Energy Policy of South Africa (1998)	This foundational document outlines South Africa's energy policy, which advocates for the diversification of energy sources, improving energy security, and reducing environmental impacts.
Climate Change Policy and Nationally Determined Contributions (NDCs)	As part of its commitments under the Paris Agreement, South Africa has committed to reducing greenhouse gas emissions and enhancing the role of renewable energy. Solar energy is viewed as a potential contributor to these climate goals, reducing reliance on fossil fuels and enabling a shift to cleaner energy systems.
Hydrogen South Africa (HySA) Strategy (2008).	The HySA strategy, initiated by the Department of Science and Technology, outlines the country's approach to advancing hydrogen as a strategic technology, with an emphasis on hydrogen

	production, storage, and fuel cell technologies. This strategy serves as a foundational policy document for exploring the role of hydrogen in South Africa's future energy landscape
The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)	This program is designed to attract private investment in renewable energy projects in South Africa. While it primarily focuses on electricity generation, the framework is relevant to solar energy, as it facilitates the development of renewable energy infrastructure that could be leveraged for solar production.
The Integrated Energy Plan (IEP)	The IEP is South Africa's strategic document for long-term energy planning. It emphasizes the role of renewable energy sources, including green hydrogen, in decarbonizing the energy sector and enhancing energy security.
Climate Change Bill (Draft**)**	This draft bill is South Africa's response to its international climate commitments under the Paris Agreement, outlining national strategies for reducing greenhouse gas emissions and promoting low-carbon technologies.
International Best Practice	The most widely recognized and frequently applied set best practice standards pertaining to the assessment and management of social and environmental impacts are the Performance Standards on Social and Environmental Sustainability, developed by the International Finance Corporation in 2006.
UN Guidelines on Business and Human Rights (2011)	In 2011, the UN Human Rights Council unanimously endorsed the UN Guiding Principles on Business and Human Rights, a set of guidelines for States and companies to prevent and address human rights abuses committed in business operations. The document summarizes the content of the UN Guiding Principles and describes the mandate of the UN Working Group on Business and Human Rights, which has been established to aid in their implementation.

5 Socio-Economic baseline

A socio-economic baseline study is an essential tool for assessing the current socio-economic status of the study area. By examining key factors such as income, employment, education, healthcare access, and housing, the study offers a snapshot of living conditions and highlights potential vulnerabilities.

5.1 Regional Study area

5.1.1 Provincial context

The Western Cape, located on the southwestern tip of South Africa, is one of the country's most economically dynamic and diverse provinces. It is characterized by a mix of urban and rural areas, with Cape Town serving as both the provincial capital and the economic hub of the region. The province has a population of over 7,4 million, making it the third most populous province in the country. Afrikaans is spoken by 41,2% of the population, followed by isiXhosa (31,4%) and English (22%) (Statistics SA, 2022). The demographic breakdown of the province is shown in the table below.

Table 5-1: Western Cape demographic overview

Population	**7 433 020**
Young children (0-14 years)	22,4%
No schooling (20+ years)	2,3%
Higher education (20+ years)	17,6%
Number of households	2 264 032
Formal dwellings	88,0%
Flush toilets connected to sewerage	93,9%
Access to piped water in the dwelling	85,5%
Electricity for lighting	96,5%

Source: Census 2022

The Western Cape Province's economic activity is concentrated in the City of Cape Town metropolitan municipality (Cape Metro). The Western Cape has a well-developed and diversified economy, driven by key sectors such as agriculture, tourism, manufacturing, and services. The province is a major contributor to South Africa's Gross Domestic Product (GDP), with a strong focus on exports, particularly in agriculture (e.g., wine, fruit, and vegetables), fishing, and processed foods (MERO: Cape Metro, 2024/25).

The Quarterly Labour Force Survey (QLFS), 2024 states that the Western Cape has outpaced other provinces in South Africa in terms of job creation. Between Q2 and Q3 2024, the province added 75,000 jobs, further cementing its position as a leader in employment growth.

The official unemployment rate has decreased by 2.6% from the previous quarter, now standing at 19.6%. The expanded unemployment rate has dropped by 1.7%, reaching 25.6%.

The Western Cape is increasingly positioning itself as a key player in the development of Solar energy as part of South Africa's broader transition to clean and sustainable energy. With a strong foundation in renewable energy production, infrastructure development, and a focus on sustainability, the region is making progress to support Solar energy initiatives.

The Western Cape Department of Economic Development and Tourism (DEDAT) as cited by Murray (2023) has also emphasized that the development of a Solar energy hub in Saldanha will lead to the creation of both direct and indirect job opportunities (https://wc.da.org.za/2023).

The Western Cape is positioning itself as a hub for green energy innovation, with several academic and vocational institutions actively contributing to the development of a Solar energy skills pipeline. The University of the Western Cape (UWC), through its South African Institute for Advanced Materials Chemistry (SAIAMC), is leading pioneering proof-of-concept hydrogen projects in Vredendal and delivering training workshops on hydrogen and Power-to-X (PtX) technologies (UWC, 2024).

Complementary to this, Stellenbosch University and local TVET colleges are engaging in curriculum development aligned with the national hydrogen strategy, which supports the creation of a skilled workforce capable of meeting industry demand (Department of Science and Innovation [DSI], 2021; GIZ, 2023). These efforts alongside capacity-building programmes supported by international partners such as GIZ reflect a growing institutional readiness and provide a strong foundation to ensure that local talent in Saldanha Bay and the broader West Coast District can participate meaningfully in the emerging Solar energy economy.

5.2 Local Study Area

5.2.1 District Level Context

The West Coast District Municipality (WCDM) is a district in the Western Cape that can be found on the western coastline of South Africa along the Atlantic Ocean. The district is bordered in the north by the Namakwa district municipality in the Northern Cape, by the Cape Winelands district municipality in the southeast; and by the City of Cape Town metropolitan municipality in the south (Wesgro, 2024).

The WCDM is made up of five municipalities which are Matzikama, Cederberg, Bergrivier, Saldanha Bay and Swartland municipalities. The district covers an area 31 118 km2 (WCDM, IDP 2022-2027).

The WCDM is the fourth largest district in terms of population size in the Western Cape. The district accounted for 6.70% of the province's population in 2023 (Wesgro, 2024).

The WCDM is linguistically diverse, with several languages spoken due to the multi-ethnic population. The most spoken languages in the region include Afrikaans, IsiXhosa and English. A small proportion of the population speaks other languages such as Setswana, isiZulu, and Shona, with these languages reflecting the broader migration patterns and cultural diversity in the region.

The overview of the demographic breakdown for WCDM is reflected in Table 5-2.

Table 5-2: WCDM demographic overview

Population	497 394
Ethnic groups	Coloureds (66.64%), African Black (20.66%), Whites (12.15%) and Indian or Asians (0.56%)
Young children (0-14 years)	23,4%
No schooling (20+ years)	2,6%
Literacy rate	64.16%
Higher education (20+ years)	9,8%
Number of households	150 840
Formal dwellings	87,6%
Flush toilets connected to sewerage	94,5%
Access to piped water in the dwelling	86,3%
Electricity for lighting	95,6%

Source: Census, 2022

5.2.1.1 Economic activities

The WCDM is an economically diverse region, with a significant portion of its population engaged in various sectors such as agriculture, fisheries, mining, tourism, and services. Despite the area's economic potential, there are challenges related to unemployment.

In 2020, the Saldanha Bay and Swartland municipal areas were the largest contributors to the GDP of the WCDM, with contributions of 32.2% and 26.5%, respectively. The Bergrivier and Matzikama municipal areas contributed 14.8% and 14.2% to the district's economy. The smallest contributor was the Cederberg municipal area, accounting for 12.3% of the GDP (WCDM, Annual Report 2022-2023).

The WCDM IDP (2022-2027) reveals that in 2019, the primary sector accounted for 38.0% of total employment with 69,688 jobs. The agriculture sector was the largest employer, contributing 37.8% to total employment, but it only contributed 16.4% to the district's GDP, highlighting its reliance on labour-intensive and unskilled work. Between 2015 and 2019, the agriculture sector created an average of 1,257 jobs annually. In contrast, the mining sector was the only one to lose jobs, shedding an average of 12 jobs per year.

According to Wesgro (2024), in 2023, the unemployment rate in the district was estimated at 14.49%, significantly lower than the provincial rate of 21.77%. During the same year, there were 182,266 employed residents, 30,884 unemployed residents, and 139,899 residents who were not economically active.

	Western Cape	West Coast
Population aged 15-64 years (2023)	5,330,951	353,049
Labour force participation rate% (2023)	61.19%	60.37%
Employed (2023)	2,552,061	182,266
Unemployed (2023)	710,075	30,884
Not economically active (2023)	2,068,815	139,899
Unemployment rate%	21.77%	14.49%

Source: Quantec (2024)

Figure 5-1: WCDM employment indicators

Source: Wesgro, 2024

5.2.2 Local Municipality socio-economic profile

The Saldanha Bay Municipality (SBM) is located on the West Coast of South Africa, about 140 kilometers north of Cape Town. It is part of the WCDM in the Western Cape Province and borders the Bergrivier Municipality to the north and the Swartland Municipality to the east and south (SBM: Annual Report, 2020-2021).

SBM is classified as a Category B municipality, meaning it exercises plenary executive authority within its jurisdiction. The municipal administrative seat is located in Vredenburg.

The SBM covers an area of 2 015 km^2 (approximately 166 565,48 hectares) and has a coastline of 238km. In total 6.5% of the geographical land are urban land and 93.5% rural land. Overall SBM constitutes 6.4% of the entire West Coast geographical land making it the smallest municipal area in the district.

The Municipality is currently structured into the following 14 Wards:

Ward number	Areas
1	Middelpos & Daizville West
2	Witteklip (RDP Houses)
3	White City
4	Diazville & RDP Houses
5	Saldanha Town, Blue water Bay & Jacobs Bay
6	Langebaan
7	Hopefield & Koperfontein
8	Vredenburg North, Langebaanweg, Green Village
9	Ongegund and Part of Self Built Scheme
10	Vredenburg South &Louwville North

11	St. Helena Bay & Paternoster
12	Laingville
13	Yskor & Part of Self Built Scheme
14	Langebaan North

Source: SBM: Annual Report 2020/21

In terms of the geographical context of the project area, the application area is located in Hopefield, which falls under Ward 7 of the SBM.

Hopefield is situated at the intersection of roads leading to Vredenburg, Veldrif, and Malmesbury, where the R45 crosses the Sout River. Initially, it served as an agricultural service center on the western edge of the Swartland wheat-growing region, with nearby grain silos located at Koperfontein. Over time, the settlement has evolved into an agri-village, primarily serving as a home for farmworkers from the surrounding areas. Its agricultural significance has led to its designation as a hub for the West Coast District Municipality's Farmer Support Programme. Hopefield is located 37 km from Vredenburg, 33 km from Moorreesburg, 60 km from Malmesbury, and 110 km from Cape Town (SBM, SDF, 2017).

5.2.2.1 Land use

Land use within the SBM is diverse and influenced by its strategic coastal location, natural assets, and industrial infrastructure. The area hosts a major deep-water port and the Saldanha Bay Industrial Development Zone (SBIDZ), a designated Special Economic Zone (SEZ) that supports activities such as steel production, logistics, and maritime services. Residential and urban development is concentrated around key towns including Saldanha, Vredenburg, and Langebaan, where population growth has increased demand for housing, services, and infrastructure (SBM, 2023).

The following section provides an overview of the socio-economic profile for SBM. Data specific to Ward 7 within Hopefield will be included in the report once interviews and consultations with the relevant stakeholders are concluded.

5.2.2.2 Total Population

The total population of SBM is 154,635, with 99,193 of these individuals residing in the more urbanized areas of the municipality. This reflects a growing population, with both urban and rural areas experiencing development and changes in socio-economic dynamics.

5.2.2.3 Age Distribution

Table 5-3: Population growth by age

Age cohorts	2011	2022
Young children (0-14 years)	25.3%	23.6%
Working age population (15-64 years)	69.5%	69.3%
Elderly (65+ years)	5.2%	7.1%

Source: Census 2022

- Young Children (0-14 years): Approximately 23.6% of the population, or 36,487 individuals, are children aged 0 to 14 years. This group is a crucial demographic for educational planning, healthcare, and family support services.
- Elderly (65+ years): Around 7.1% of the population, or 10,973 individuals, are elderly, aged 65 years and older.

The Western Cape Treasury: MERO, 2023 reveals that there is a significant 2.8% increase in the 65+ age group from 2022 to 2027. This growth could reflect improvements in life expectancy or a greater appeal of the Saldanha Bay area as a retirement destination. At the same time, a steady rise in the working-age population is expected, which will likely lead to a reduction in the overall dependency ratio by 2027.

The observed growth in the elderly population emphasizes the need for specialized services and infrastructure to support this group, especially in areas such as healthcare and retirement facilities.

5.2.2.4 Dependency Ratio

According to Census (2022) the dependency ratio in SBM is 44.3. This ratio represents the number of dependents (young children and elderly) for every 100 working-age individuals. A dependency ratio of around 44.3 suggests that there is a moderate level of pressure on the working-age population to support the dependents. This emphasizes the need for policies that support family welfare, education, and elderly care while also promoting employment and economic opportunities to ensure the working population can effectively support these groups.

5.2.2.5 Sex Ratio

The SBM IDP (2022-2027) indicates that as of 2022, there are more females than males within SBM with a ratio of 50.6% (females) to 49.4% (males). This indicates a relatively balanced gender distribution, though there are slightly more females in the total population, Figure 5-2 below provides an illustration of the sex ration within SBM.

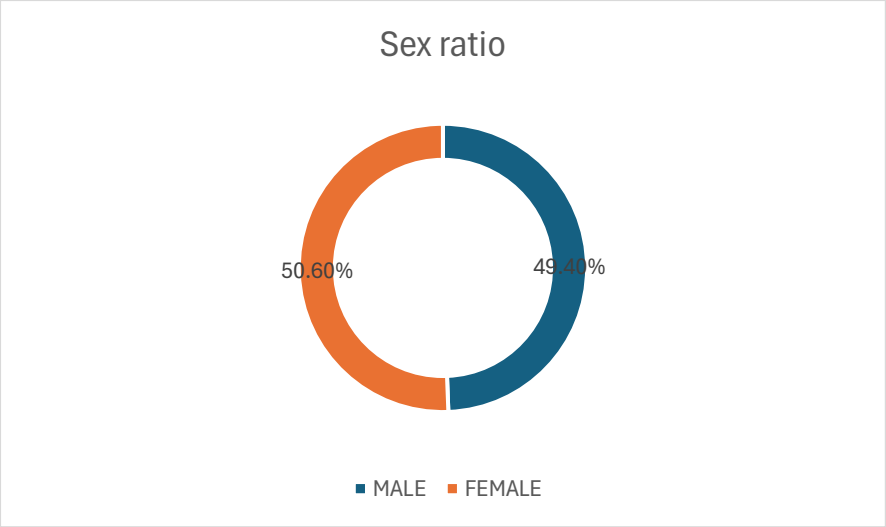

Figure 5-2: Sex ratio

Source: Census 2022

5.2.3 Racial breakdown

The racial composition of the SBM in 2022 reveals a diverse demographic landscape. The largest segment comprises the Coloured population, representing 51%. The Black African demographic follows at 30% and the White community constitutes 16.5% (Western Cape Treasury: MERO, 2024).

5.2.3.1 Educational attainment

The educational landscape of the SBM reveals significant strides in literacy and education, Figure 5-3 provides an overview of the educational level in SBM.

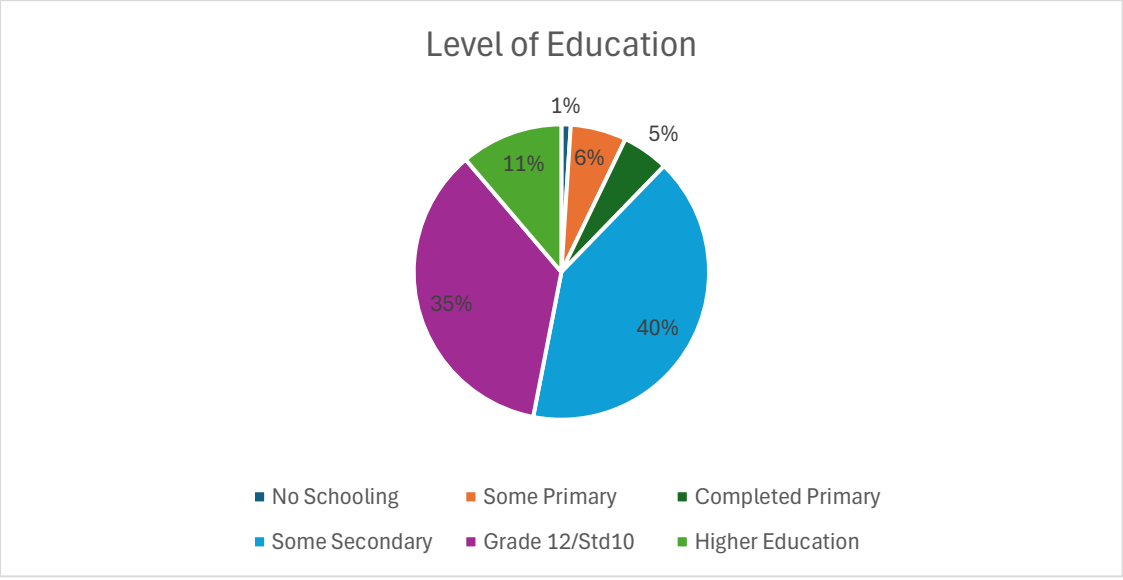

Figure 5-3: Educational level overview

Approximately 1.4% of the population in Saldanha has no formal schooling. This percentage is relatively low, suggesting that most residents have access to at least basic education.

A significant portion of the population, 40%, has completed some secondary education but has not finished the full secondary schooling cycle. This group may face challenges in terms of employment and skill development, as completing secondary education is often essential for accessing better job opportunities.

Around 35.4% of individuals in Saldanha have completed Grade 12, which is a key educational milestone and often required for employment or further studies. This indicates that a substantial portion of the population has access to secondary education and has obtained a qualification that allows for greater opportunities in the labour market.

Approximately 11.3% of the population has attained some form of higher education, including university degrees, diplomas, or other post-secondary qualifications. While this figure reflects positive progress in expanding access to tertiary education, it also suggests that a large proportion of the population still lacks access to higher education.

5.2.3.2 Economic activity

The SBM IDP, (2022-2027) highlights that incomes in the SBM are 8% higher than the national average. Furthermore, the income levels in SBM are significantly higher than those in the district, being 20% above the district average. This wage disparity is likely a key factor in attracting job seekers to the area, drawn by the relatively higher earning potential.

According to the Western Cape Treasury: MERO, (2022), it was estimated that the total number of employed individuals in Saldanha Bay will reach 46,868 in 2021. Of these, 38,657 (82.5%) are employed in the formal sector, while 8,211 (17.5%) are employed in the informal sector.

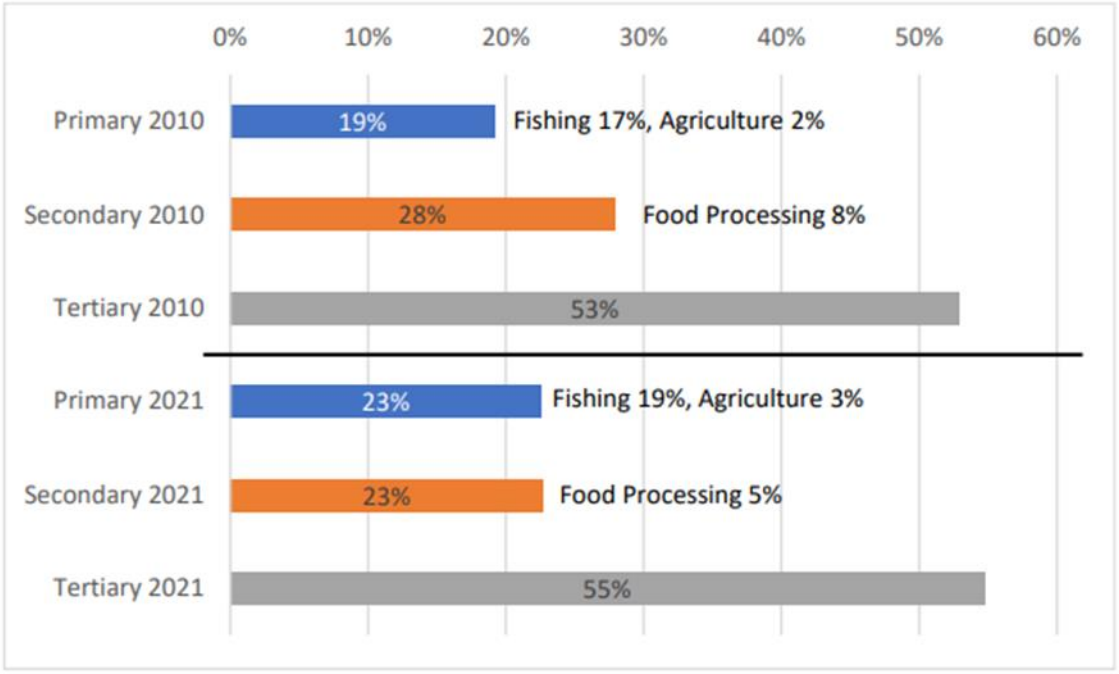

Figure 5-4: Sectoral Structure

The Green Connection, (2023: 5) notes that in 2020, the agriculture, fishing, and forestry sector was the top contributor to the economy, generating R2.2 billion, followed by the manufacturing and finance sectors. The municipal economy was projected to grow by 3.4% in 2022 and 0.7% in 2023. Many development plans highlight the Saldanha Bay Industrial Development Zone (SBIDZ) as a key driver of growth, with investments in export manufacturing industries expected to play a crucial role in supporting economic expansion.

The SBIDZ is the first Special Economic Zone (SEZ) situated within a port, primarily serving the energy and maritime sectors. It is expected that through direct employment in the zone, local firms doing business with zone users and tenants, the SBIDZ will positively change the lives of Saldanha Bay citizens for generations to come (Africa outlook, 2022).

It is reported that the SBIDZ had created 2,911 jobs; attracted over R21 billion in investments; leased approximately 18% of its gross area; offered skills training to over 2,300 beneficiaries; and spent over R200 million (~35%) on local subcontractors (The Green Connection, 2023: 11). The renewable energy project proposed by Solar Capital is recognized as a major economic driver for Saldanha Bay. During its four-year installation phase, the project is expected to generate 2,500 jobs, and once completed, it is anticipated to support more than 500 permanent specialized positions (Green Building Africa, 2023).

In 2022, it was reported that SBM had a broad unemployment rate (all residents of working age that are unemployed) of 26,5% and narrow unemployment rate (residents of working age that are unemployed and actively seeking employment) of 17,6% (The Green Connection, 2022). High unemployment is often correlated with increased levels of poverty and social instability, which can contribute to a rise in criminal activities.

5.2.3.3 Housing

The dwelling type within SBM reflects the broader trends observed in the municipality's residential landscape, as recorded by Census 2022. The data indicates that the majority of residents in Saldanha reside in formal dwellings. Within the SBM, comprising 50 559 households, 87.7 %have access to formal housing. Informal dwellings constitute 11.6%, Figure 5-5 below provides an overview of the dwelling type within SBM.

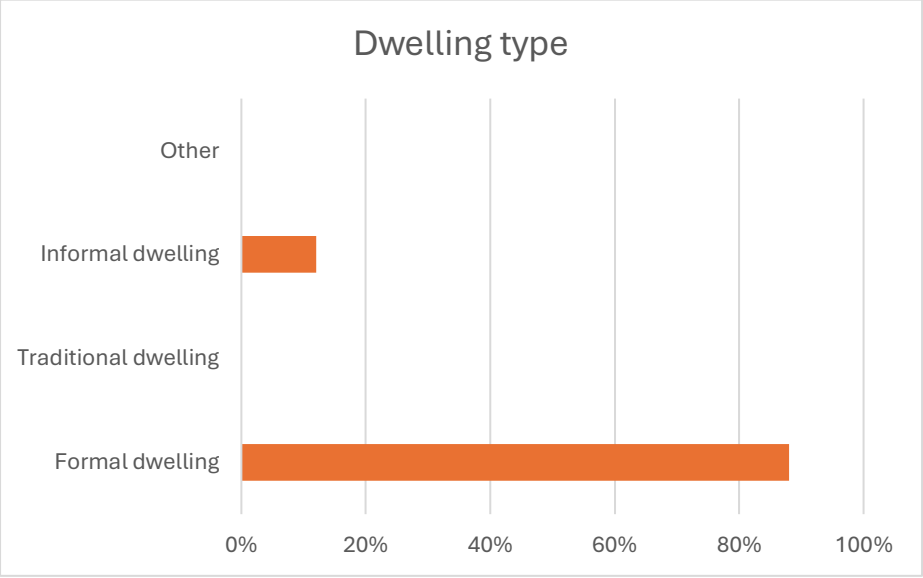

Figure 5-5: Dwelling Type (Source: Census 2022)

As outlined in the SBM IDP, 2022/27, there are presently 12,320 applicants on the waiting list for housing, with 840 applicants aged 60 years or older qualifying for top structures. The bulk of these applicants are from Vredenburg, followed by Saldanha and St Helena Bay. The waiting list is steadily increasing, with 100 to 150 new applicants added each month. The continuous increase in the number of applicants, adding an average of 100 to 150 individuals monthly, suggests that the demand for affordable and formal housing is rising at a pace that may outstrip current supply, potentially leading to further backlogs and longer waiting times for residents.

5.2.3.4 Access to basic services

5.2.3.4.1 Access to piped water

According to Census 2022, the access to piped water in SBM is generally high, reflecting positive progress in water infrastructure and service delivery. A majority (87%) of households have water inside their dwelling, a key indicator of modern water infrastructure. Although most residents have direct access to water, there is still a small percentage of the population that has no access to piped water. The breakdown of access to piped water is presented below in Figure 5-6.

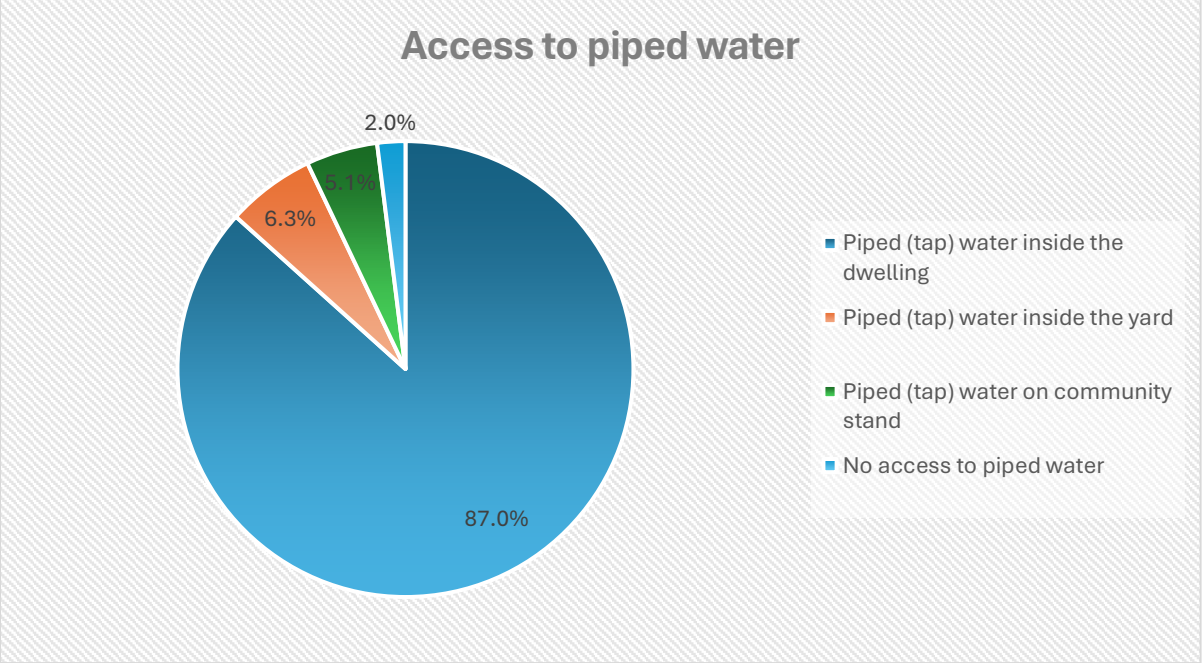

Figure 5-6: Access to piped water

Source: Census 2022

5.2.3.4.2 Source of water

Smaller proportions of the population use alternative sources, such as boreholes, water tankers, and rainwater tanks (Census, 2022).

5.2.3.4.3 Access to sanitation

The access to sanitation in SBM, as per the latest data, shows that majority of residents having access to modern and safe sanitation facilities. According to Census 2022, a total of 91% of the population in SBM have access to a flush toilet connected to a public sewerage, Figure 5-7 provides a breakdown of the main sanitation facilities within SBM.

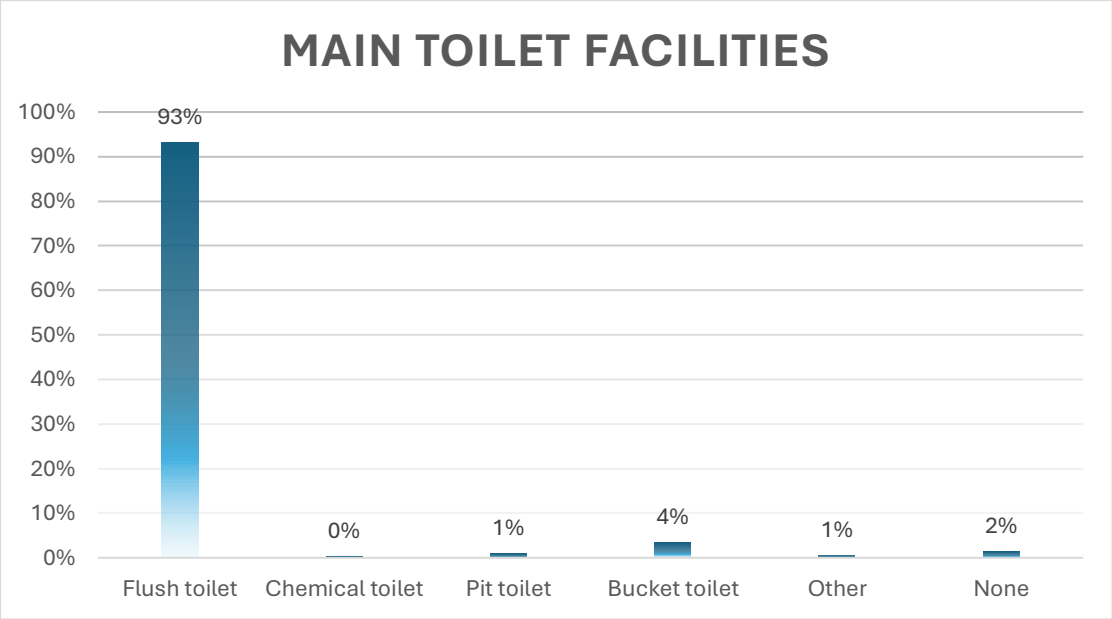

Figure 5-7: Sanitation facilities (Source: Census 2022)

5.2.3.4.4 Energy for cooking

The data on energy sources for cooking in Saldanha Bay reveals a diverse range of methods used by residents to meet their cooking needs. The energy mix highlights the dominant role of electricity and gas as the primary energy sources but also indicates some reliance on alternative and less conventional fuels. Below (Figure 5-8) is a breakdown of the energy sources used for cooking.

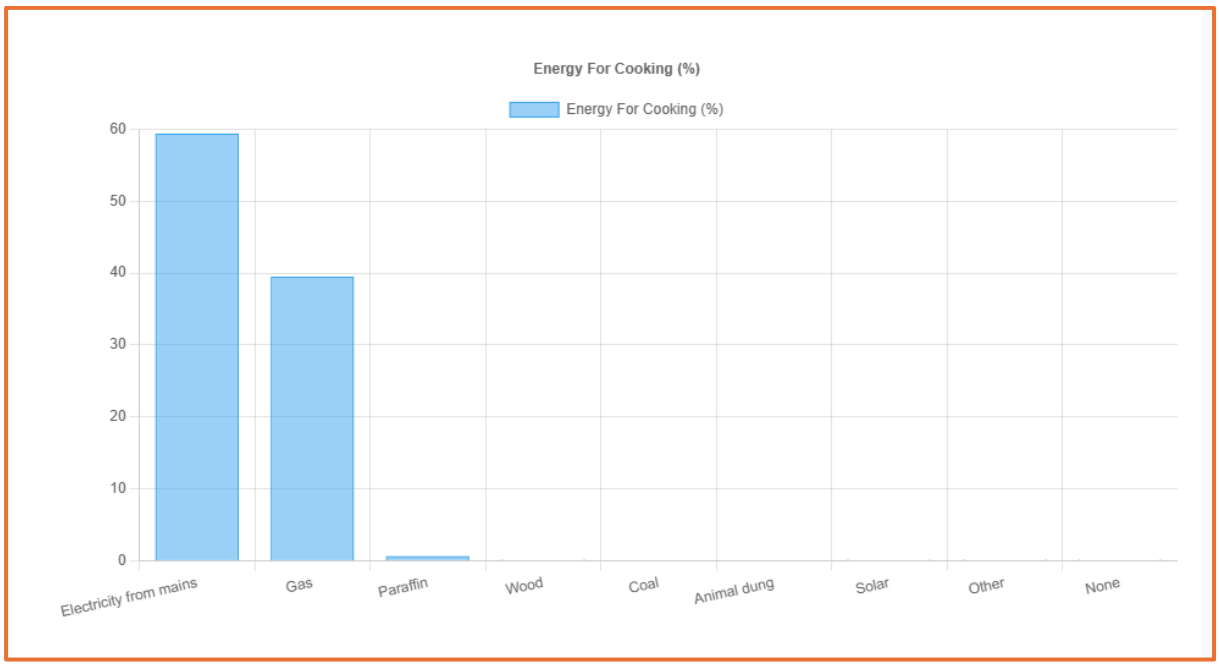

Figure 5-8: Energy cooking sources

The data shows that the majority of residents in Saldanha Bay, 59.4%, rely on electricity from mains for cooking, followed by 39.5% using gas. These two sources dominate the cooking energy landscape, reflecting a relatively high level of access to modern cooking energy in the municipality. However, there are still small proportions of households using paraffin, wood, coal, or animal dung, particularly in areas where access to cleaner and more efficient fuels may be limited. The relatively low usage of solar energy for cooking indicates that while renewable options are available, they may not yet be widespread due to cost or infrastructure barriers. Efforts to expand access to clean and sustainable energy sources, such as solar power, could help reduce reliance on traditional fuels and improve both environmental and health outcomes for residents.

5.2.3.4.5 Refuse removal

The refuse removal data for SBM reflects a well-established system for waste management, with the majority of residents having access to regular waste removal services. In the municipality, the minimum level of service is removal once a week, ensuring that waste is managed efficiently (SBM IDP, 2022/27).

5.2.3.5 Infrastructure and services

5.2.3.5.1 Schools

In 2020, there were 23 schools within SBM which include both primary and secondary schools, with a combination of government-run public schools and a few private institutions (SBM IDP, 2022/27).

Access to schooling in SBM is generally good, particularly in urban areas. However, there is a growing concern about the performance in Mathematics and Mathematics Literacy in the SBM, as highlighted by the data from the Western Cape Provincial Treasury (2024). The pass rates for these critical subjects are 58.0% for Mathematics and 59.7% for Mathematics Literacy. These relatively low pass rates indicate that a significant portion of learners are struggling to achieve proficiency in these foundational subjects (SBM IDP, 2022/27).

The lower pass rates in Mathematics and Mathematics Literacy are particularly concerning, as these subjects are crucial for the development of quantitative skills, which are essential in a wide range of industries. These subjects form the bedrock of many fields, including technology, engineering, and finance, all of which require a strong understanding of mathematical principles. The inability of a significant number of students to achieve satisfactory results in these areas could have long-term implications for the preparedness of the future workforce.

5.2.3.5.2 Health

The health care system in SBM is structured to provide essential services to its residents through a combination of primary health care clinics, a district hospital, and ambulance services.

SBM is equipped with eleven primary health care clinics, which are integral to delivering basic health services to the community.

In addition to the network of primary health care clinics, SBM is home to a district hospital. This hospital provides more specialized health services and serves as a referral point for cases that require higher levels of care that cannot be provided at primary health care clinics.

The municipality has five operational public sector ambulances, providing emergency medical transport services to residents. With a ratio of approximately 0.4 ambulances per 10,000 people, the ambulance services in SBM are aligned with the district average. While this ratio may be adequate in some contexts, it could be a challenge during times of high demand, such as in medical emergencies or accidents, or in areas that are geographically distant from emergency care (SBM, IDP 2022-2027).

5.2.3.5.3 Roads

According to the SBM IDP (2022-2027), Paternoster has the best structure and pavement condition, followed by St Helena Bay, Vredenburg and Hopefield. Langebaan, Saldanha and Jacobs Bay have the lowest scoring road conditions. The continuous maintenance to affordable standards of the current road infrastructure, including gravel are a challenge. The SBM, reveals that there was an increase of complaints received as reflected in the 2024/2025IDP review inputs regarding the fixing of potholes and re-gravelling of gravel roads, Figure 5-9 below provides a snapshot of the road condition by town within SBM.

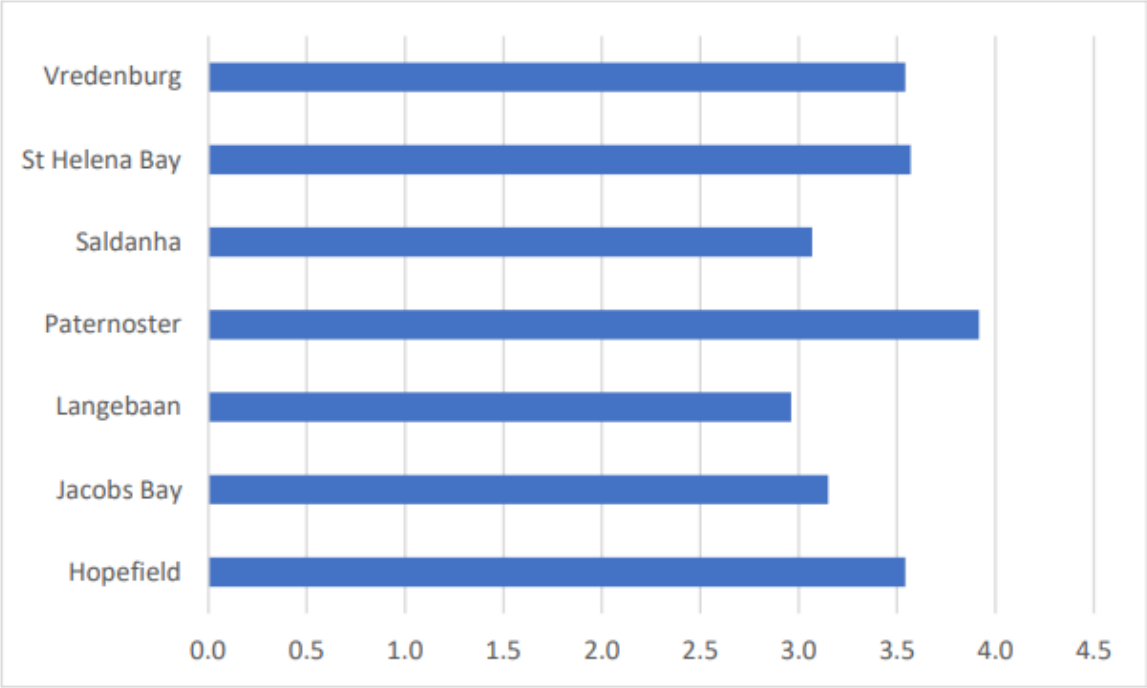

*Figure 5-9: Road condition by town (*Source: SBM IDP 2022-2027)

The SBM IDP (2022-2027) indicates that the general road conditions were assessed to estimate the road quality in each town. A scoring system was used, with categories ranging from "very poor" to "very good," assigned scores from 1 to 5, respectively.

5.2.3.5.4 Internet Access

Consistent with the need to address digital divide, SBM is equipped with a world-class Open Access Fibre Network through Baobab. Open Access Fibre provides residents with access to high-speed internet, facilitating connectivity. By providing reliable internet connectivity, the municipality is fostering digital inclusion and ensuring that all residents, regardless of location or socio-economic status, have the opportunity to participate in the digital world and benefit from its many services (SBM IDP, 2022-2027).

5.2.3.6 Safety and Security

The incidence of murder, which is defined as the unlawful and intentional killing of an individual, showed a notable fluctuation in the Saldanha Bay area. The number of reported cases rose from 29 in 2020/21 to 37 in 2021/22, and then stabilized at 37 in 2022/23 (SBM IDP, 2022-2027).

In the 2022/23 period, sexual offences, which include crimes such as rape, sex work, pornography, public indecency, and human trafficking, totalled 101 incidents in the Saldanha Bay area. This accounted for 20% of the district's total of 505 incidents.

The incidence rate for sexual offences in the municipality was 81 per 100,000 people. The rate of 81 incidents per 100,000 people suggests that sexual offences are a notable concern within the community.

The number of drug-related crimes in the Saldanha Bay area rose from 816 cases in 2021/22 to 858 cases in 2022/23. However, when examining the rate per 100,000 people, Saldanha Bay fares better with 686 cases, compared to the district's 919 cases. This difference suggests that while drug-related crimes have increased locally, the municipality's rate is still lower than the district's average.

5.2.3.7 Vulnerable groups

Vulnerable groups are people who by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by project impacts than others and who may be limited in their ability to claim or take advantage of project related benefits. The most common groups identified as vulnerable are children, the elderly, child or female headed households, the poor and the disabled.

In 2020, the municipality demonstrated its commitment to supporting vulnerable communities by gradually increasing the number of households receiving free basic services. This increase reflects the municipality's dedication to improving the quality of life for vulnerable residents, ensuring they have access to fundamental services regardless of their financial circumstances.

Through these efforts, the municipality helps reduce inequalities, by providing vulnerable groups with a foundation to access necessary services, improve their living conditions, and participate in broader social and economic activities. Continued support for these communities is vital to enhancing social inclusion and sustainable development within the municipality.

5.2.4 Risks and vulnerability factors

The Western Cape Treasury (2023) noted the following risks and vulnerability factors for SBM:

- Sea-level rise and Storm Surges: While fewer storm systems are expected to directly impact the Western Cape in the future, the rise in sea temperatures may lead to more intense storm activity and slightly stronger winds. Stronger winds could further increase the risk of property damage, infrastructure disruption, and coastal flooding, highlighting the need for effective climate adaptation strategies in the region.
- Drought: The CSIR Green Book (as cited in the Western Cape Treasury, 2023) indicates that Saldanha Bay faces a medium to high potential exposure to

increased drought risk. Currently, 2.2 years per decade are vulnerable to drought, with projections showing that this will rise to 6 out of every 10 years by 2050.

- Temperatures: Average temperatures have been rising since the 1900s, and projections suggest that by 2050, Saldanha Bay will experience 21 more extremely hot days annually. This increase will have implications for food security, exposure to extreme heat, public health, and water quality.
- Vegetation Fires: The Western Cape Treasury (2023) has identified vegetation fires as a significant risk, posing a serious threat to human lives, food security, socioeconomic activities, livelihoods, infrastructure, and other valuable assets.
- Floods: Floods cause significant damage, often amounting to millions or even billions of Rands, impacting built structures, productivity, livelihoods, and, in some instances, resulting in loss of life.

6 Methodology for Impact Rating

The assessment of social impacts associated with the proposed project in Saldanha Bay followed a systematic and rigorous methodology aligned with international best practice frameworks, including the IFC Performance Standards and South African environmental and social guidelines.

Identification of Social Impacts

The initial step involved identifying potential social impacts through:

- Review of project documentation, including engineering designs and operational plans
- Baseline socio-economic and demographic data collection for Saldanha Bay and surrounding communities
- Stakeholder engagement and consultation sessions, including inputs from local authorities, community representatives, and other key stakeholders
- Analysis of relevant policy documents such as the Saldanha Bay Integrated Development Plan (IDP) and regional development strategies

These activities enabled the identification of a comprehensive list of potential positive and negative social impacts arising across the project lifecycle phases—construction, operation, and decommissioning.

6.1 Impact Characterization

Each identified impact was characterized by its nature, magnitude, spatial scale, duration, and probability of occurrence:

- **Nature**: Positive or negative effect on social, economic, or cultural dimensions
- **Spatial Scale**: Geographic extent of impact (local, regional or national)
- **Duration**: Temporary (e.g., construction phase) or permanent (e.g., operational phase)
- **Probability**: Likelihood of impact occurrence, categorized as rare, unlikely, possible, likely, or definite

Impact Significance Rating

Impact significance was determined using a qualitative scoring system that combines the characteristics above to assess the overall importance of each impact prior to and after mitigation measures. The significance of rating process followed these key principles:

- Pre-Mitigation Significance: Assessed assuming no management or mitigation measures are in place, reflecting the raw potential impact severity.
- Post-Mitigation Significance: Assessed considering the effectiveness of proposed mitigation, management, and enhancement strategies.

A five-level significance scale was applied:

Significance Rating	Description
Negligible	Impact is insignificant or minimal
Low	Minor impacts; unlikely to affect community wellbeing significantly
Moderate	Noticeable impacts requiring management but unlikely to cause lasting harm
High	Significant impacts are likely to cause material change in social conditions
Very High	Critical impacts with potentially irreversible social consequences

6.2 Use of Impact Rating Tables

Impact rating tables were developed for key social impact categories, including employment opportunities, skills development, economic growth, psychosocial impacts, health and safety, nuisance, land use disruption, infrastructure pressure, and cumulative impacts. Each table specifies:

- **Project Phase**: Construction, operational, or both
- **Nature of Impact**: Positive or negative

- **Spatial Scale**
- **Duration**
- **Probability**
- **Significance (Pre- and Post-Mitigation)**

These tables provide a transparent and structured approach to assessing and communicating impact significance.

7 Identified Impacts

The social impact assessment is designed to ensure that the project's potential impacts on individuals and groups of people are understood, so that positive impacts can be enhanced by project design while negative ones are mitigated.

7.1 Positive Employment Impacts of a Solar energy Plant in Saldanha Bay

The proposed development in Saldanha Bay is expected to serve as a catalyst for creating employment opportunities, enhancing skills development, and promoting inclusive economic participation. This aligns with the objectives outlined in recent Solar energy strategies, which emphasize the sector's potential to drive socio-economic transformation through targeted local benefits and capacity building (Department of Science and Innovation, 2023; GreenCape, 2023).

Table 7-1: Employment opportunities

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Positive – Job creation for local labour force, including general workers, artisans, and support staff. Opportunity for short-term upskilling and training.	Regional	Medium-term (approx. 3–5 years)	Possible	Moderate positive	**Moderate (+)**	**High (+)**
Operational	Positive – Long-term employment in technical, operations, logistics, and maintenance roles. Potential to establish a new skilled labour market in green hydrogen.	Regional	Long-term (10+ years)	Likely	High positive	**High (+)**	**Very High (+)**

7.1.1 Mitigation and Enhancement Measures Recommended

To elevate employment impacts to their full potential, the following interventions are recommended:

- Formulate a local labour procurement policy that prioritises the employment of workers from Saldanha Bay and neighbouring communities.
- Establish partnerships with provincial training institutions such as Stellenbosch University's Hydrogen Engineering Research Platform and the University of the Western Cape's green hydrogen programme to develop pipelines of skilled professionals, supported by TVET colleges and regional training centres focusing on solar energy competencies.
- Promote inclusive employment by setting measurable goals for hiring young people and ensuring the representation of women in technical occupations.
- Facilitate internships and learnerships by aligning with existing GIZ-supported initiatives to provide structured, on-the-job training opportunities.
- Establish long-term employment pathways by implementing succession planning for operational roles to support local skills retention.

The employment-related impacts of the proposed project are considered to be strongly positive, with the potential to contribute meaningfully to local development goals and national green transition strategies. These impacts are highly sensitive to proactive management, and the successful implementation of inclusive employment and training frameworks will determine the overall social return on investment.

7.2 Development Skills and Capacity Building

The development of the proposed project presents a unique opportunity to establish and develop local technical and vocational skills. Given the emerging nature of the renewable energy sector, this impact area has the potential to contribute significantly to long-term workforce transformation and socio-economic upliftment particularly among youth, women, and historically disadvantaged individuals.

Table 7-2: Skills Development and Capacity Building

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Positive – Short-term training for construction-related trades and technical support roles. Entry point for future skills	Regional	Medium-term (approx. 3–5 years)	Possible	Moderate positive	**Moderate (+)**	**High (+)**

	development pathways.						
Operational	Positive – Development of technical skills in hydrogen production, engineering, plant operations, safety, and maintenance.	Regional to National	Long-term (10+ years)	Likely	High positive	**High (+)**	**Very High (+)**

7.2.1 Mitigation and Enhancement Measures Recommended

To fully realize the potential for skills development, the following strategies are recommended:

- Establish structured partnerships with regional universities, TVET colleges, and Sector Education and Training Authorities (SETAs) to co-develop solar energy aligned curricula and training programmes. These collaborations should leverage the existing readiness of institutions such as the University of the Western Cape and Stellenbosch University, which are already engaged in renewable energy research and capacity building, to ensure local skills development is aligned with industry needs.
- Integrate on-the-job training by requiring EPC (Engineering, Procurement, and Construction) contractors to embed structured skills transfer initiatives and mentorship programmes throughout the implementation phase of the project.

The skills development opportunities associated with the green hydrogen project are substantial and strategic. If actively managed through inclusive and collaborative frameworks, they can deliver enduring benefits by creating a locally skilled workforce, enhancing economic resilience, and contributing to a just energy transition. With appropriate investment and governance, this impact area rates as Very High Positive over the long term.

7.3 Economic Growth and Infrastructure Development

The development of the solar plant has the potential to significantly stimulate economic growth in the Saldanha Bay region. Through large-scale capital investment, increased demand for goods and services, and the positioning of Saldanha Bay as a strategic energy export hub, the project aligns with both local development priorities and national transition principles. If optimally implemented, it could contribute to sustained economic upliftment and industrial diversification across the West Coast region.

Table 7-3: Economic Growth and Infrastructure Development

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Positive – Economic stimulation through procurement, services, and logistics; increased local business activity.	Regional	Medium-term (3–5 years)	Likely	High positive	**High (+)**	**Very High (+)**
Operational	Positive – Long-term economic growth driven by industrial development, exports, increased energy security, and investment attraction.	Regional to National	Long-term (10+ years)	Highly Likely	Very High positive	**Very High (+)**	**Very High (+)**

7.3.1 Mitigation and Enhancement Measures Recommended

To maximize the economic growth benefits, the following actions are advised:

- Ensure the inclusion of local small- and medium-sized enterprises (SMEs) in procurement and service contracts during both construction and operation phases.
- Implement enterprise development initiatives, including business incubation and targeted support programmes, to assist local enterprises in meeting procurement standards and capitalizing on economic opportunities arising from the renewable energy sector.
- Align project development with the Saldanha Bay Industrial Development Zone (SBIDZ), Municipal Integrated Development Plan (IDP), and the Hydrogen Society Roadmap to ensure coordinated regional economic development.

From an economic development perspective, the solar project is poised to be a transformative economic catalyst for Saldanha Bay and the broader West Coast region. Its potential to drive investment, support enterprise development, create new markets, and contribute to energy transition positioning makes this impact area very high in significance. With well-targeted economic inclusion strategies, the project can play a critical role in advancing inclusive and sustainable economic growth.

7.4 Improved Local Water Management

The proposed solar project intends to utilize treated effluent from the municipal wastewater treatment plant as its primary water source. This approach represents a sustainable and resource-efficient solution that aligns with principles of circular water use. By repurposing wastewater treated for industrial purposes, the project is expected to reduce demand for local freshwater supplies, which are under increasing stress due to population growth and climate variability.

This reduced pressure on potable water systems may, in turn, improve water availability for other essential uses, including domestic consumption, agriculture, and small business operations. As a result, the broader community may benefit from more resilient and efficient water resource management. This represents a secondary but important positive social and environmental impact.

The project's water sourcing strategy offers an innovative and sustainable approach to industrial water use. By repurposing treated wastewater, the project supports municipal water efficiency, contributes to environmental stewardship, and indirectly benefits community water security. This aligns with sustainable development objectives at the local and national level.

Table 7-4: Improved Local Water Management

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction & Operational	Positive – Reduced pressure on freshwater sources through use of treated wastewater. Potential improvement in water availability for agriculture, households, and local businesses	Local to Regional	Long-term (10+ years)	Likely	Moderate positive	**Moderate (+)**	**High (+)**

7.4.1 Mitigation and Enhancement Measures Recommended

- Establish formal, long-term supply agreements with the local municipality to guarantee the sustainable and equitable utilization of treated wastewater.
- Implement monitoring and management protocols to ensure water reuse does not pose environmental or public health risks.
- Communicate transparently with local stakeholders about the project's water use strategy to build public confidence and support.

- Collaborate with the municipality and local organizations on broader water conservation and infrastructure improvement programmes.

The proposed reuse of treated municipal effluent for green hydrogen production represents a sustainable water management solution that contributes to broader social and environmental resilience. While indirect, the impact on community water availability is notable and strategically aligned with integrated water resource management goals. With appropriate planning and collaboration, this impact can be classified as highly positive over the long term.

7.5 Influx of Job Seekers and Construction Workers

During the stakeholder engagement process, community members and local stakeholders expressed concerns about a potential influx of out-of-town job seekers and contract workers during the construction phase of the proposed solar project. Concerns centred on these specific issues:

- Pressure on housing and accommodation infrastructure, especially informal and temporary worker housing.
- Increased risk of crime and anti-social behavior, often associated with rapid population growth in small towns.
- Potential for strained labour relations, particularly between local unemployed residents and external laborers.
- Uncertainty regarding the employment of local labour vs. imported workforce.
- A rumour was noted during consultation that approximately 2,500 workers would be brought in during construction. Stakeholders also strongly expressed concerns, emphasizing that squatting would not be acceptable.
- Stakeholders requested clarity on the post-construction outcome for these workers—including whether they would be absorbed into long-term operations, relocated, or left behind with limited options.

These dynamics, if not proactively managed, have the potential to disrupt community cohesion, overburden public services, and exacerbate social tensions.

Table 7-5: Influx of Job Seekers and Construction Workers

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Negative – Influx of job seekers and temporary workers may strain local infrastructure, housing, and social services. Potential for increased crime, social tension, and labour disputes.	Local to Regional	Medium-term (3–5 years)	Likely	High negative	**High (-)**	**Moderate (-)**

7.5.1 Mitigation and Management Measures Recommended

- Communicate to stakeholders the expected labour profile (local vs. external) to stakeholders.
- Prioritize employment of local residents where feasible to reduce in-migration and promote community support.
- Develop a formal Worker Accommodation Strategy in collaboration with the municipality, ensuring transparent communication with local stakeholders to address and alleviate concerns about an influx of job seekers. The strategy should cover:
    - A comprehensive plan to accommodate additional workers recruited from outside the local area, ensuring their housing, well-being, and integration with community services are effectively managed.
    - Security and health standards
    - A clear demobilization and exit plan following the construction phase

- Establish a contractor management framework to ensure responsible contractor conduct and compliance with social and environmental standards.
- Collaborate with local law enforcement, NGOs, and social services to monitor and address potential increases in crime, social tension, or substance abuse.
- Establish transparent labour relations protocols and a grievance redress system for both local and external workers to prevent exploitation and promote cohesion.
- Communicate with stakeholders about what will happen to temporary workers post-construction, whether they will be:
    - Demobilized and supported in returning to their original locations
    - Absorbed into permanent operations (if skilled and needed)

- Supported through upskilling or placement programmes

The anticipated influx of construction labour poses a potentially significant negative impact if not addressed through adequate planning and community-sensitive strategies. With strong mitigation measures including transparent communication, accommodation planning, and prioritization of local labour the impact can be reduced to moderate levels and managed effectively. This issue should remain a priority for ongoing monitoring and stakeholder engagement throughout the construction phase.

7.6 Altered Sense of Place due to Industrial Development

Industrial developments, such as the proposed project in Saldanha Bay, can significantly alter the physical environment and community character, potentially disrupting residents' established "sense of place." Research by Raymond, Brown, and Weber (2019) demonstrates that strong emotional and cultural attachments to a location particularly in coastal and small-town settings heighten sensitivity to environmental and social changes. When large-scale infrastructure and increased industrial activity transform familiar landscapes, it can lead to feelings of loss, exclusion, and frustration among local communities.

The study highlights that such altered senses of place are not merely aesthetic or perceptual concerns, but they directly influence how residents perceive social and environmental risks associated with the development. This can exacerbate community resistance, reduce social cohesion, and ultimately undermine the social license to operate. Therefore, recognizing and addressing changes to the sense of place is critical in ensuring that the proposed project does not inadvertently contribute to negative social outcomes.

Table 7-6: Altered Sense of Place due to Industrial Development

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction & Operational	Negative – Alteration of visual, cultural, and experiential landscape may lead to reduced community attachment or pride in place	Local	Long-term (10+ years)	Likely	Moderate to High Negative	**High (-)**	**Moderate (-)**

7.6.1 Mitigation and Enhancement Measures Recommended

- Consider mitigation measures as outlined in the visual impact assessment.
- Identify and protect culturally or historically significant features within the broader project area. Avoid development in sensitive areas where possible.
- Maintain a platform for long-term dialogue with residents and cultural interest groups to ensure that ongoing changes are communicated and culturally sensitive.

7.7 Psychosocial Distress related to landscape and Identity Change

The proposed solar project will bring significant and lasting changes to the physical and social fabric of Saldanha Bay. For certain community members especially long-term residents, elderly individuals, and those with strong cultural connections to the coastal environment such visible and permanent alterations may cause psychosocial stress. This stress is linked to an altered sense of place and may manifest as:

- Feelings of disconnection as familiar landmarks are replaced by industrial infrastructure.
- Anxiety about the long-term transformation of the town's identity.

This aligns with findings from Scannell and Gifford (2017), who emphasize that disruptions to place attachment can lead to psychological distress and social conflict, underscoring the importance of inclusive engagement and responsive planning in large-scale developments.

Table 7-7: Psychosocial Distress Related to Landscape and Identity Change

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction & Operational	Negative – Emotional stress, anxiety, or identity loss due to long-term changes in valued physical and cultural landscapes	Local	Long-term (10+ years)	Likely	Moderate to High Negative	**High (-)**	**Moderate (-)**

7.7.1 Mitigation and Management Measures Recommended

- Consider partnering with local NGOs or clinics to provide community wellness programmes, counselling referrals, or psychosocial outreach for vulnerable groups.
- Keep communication channels open and transparent to build trust and reduce uncertainty-related stress.

Psychosocial impacts, though often overlooked, are real and measurable effects of large-scale industrial developments particularly in small, identity-rich communities like Saldanha Bay. With proper mitigation, these impacts can be reduced from high to moderate levels. However, failure to address them proactively could result in long-term community disengagement, resistance, or dissatisfaction.

7.8 Increased pressure on infrastructure and services

During the construction phase of the proposed project, a significant number of workers may be temporarily accommodated within or near the Saldanha Bay area, such changes to the receiving environment can create the following challenges:

- Increased demand on water, electricity, and sanitation infrastructure
- Pressure on healthcare facilities, especially primary health clinics
- Strain on municipal services if worker accommodation is not properly serviced or coordinated.

The Saldanha Bay Municipality's IDP (2022–2027) already identifies infrastructure backlogs, particularly in informal settlements and rural areas. A sudden increase in population (even though it could be however temporary, it could exacerbate existing delivery challenges, unless mitigation is well-coordinated with local authorities.

Table 7-8: increased pressure on infrastructure and services

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Negative – Temporary but significant increase in pressure on roads, water, sanitation, waste, and health services	Local to Regional	Medium-term (2–4 years)	Highly Likely	High Negative	**High (-)**	**Moderate (-)**
Operational	Negative – Long-term increased demand on some infrastructure (e.g., roads, port access, water) depending on plant needs.	Regional	Long-term (10+ years)	Possible	Moderate Negative	**Moderate (-)**	**Low to Moderate (-)**

7.8.1 Recommended Mitigation and Management Measures

- Ensure on-site or nearby facilities are fully serviced with potable water, waste, and electricity independent of local municipal supply where feasible.
- Establish formal agreements with SBM for service use and contribution toward maintenance or upgrades.
- Partner with local clinics or mobile health units to provide healthcare support during peak construction.
- Implement mitigation measures as outlined in the EMP to mitigate traffic impacts
- Align infrastructure planning with Saldanha Bay IDZ initiatives, particularly regarding utilities and road upgrades.
- Monitor service impacts regularly and maintain an open grievance platform for local residents to report disruptions or concerns.

7.9 Increased risk to Health and Public Safety

The proposed project will introduce a large-scale industrial operation in proximity to residential communities, existing economic zones, and public infrastructure in Saldanha Bay. During both the construction and operational phases, there are potential risks to community health and safety

Potential risk factors include:

- Exposure to construction-related dust, noise, and emissions, potentially affecting respiratory health, especially among vulnerable groups (e.g. elderly, children, those with chronic conditions).
- Risk of industrial accidents or hazardous material exposure during production and transport, especially if safety protocols are not well managed.
- Strain on emergency and health services due to a temporary increase in population (influx of workers).
- Potential rise in communicable diseases, including STIs or respiratory illnesses, often associated with migrant labour force influxes.

Table 7-9: Increased risk to health and public safety

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Negative – Increased health and safety risks from dust, noise, traffic, and social	Local	Medium-term (3–5 years)	Likely	High Negative	**High (-)**	**Moderate (-)**

	disruption due to influx of workers						
Operational	Negative – Long-term industrial risk exposure (e.g. hydrogen leaks, accidents, emissions), and increased pressure on local emergency services	Local to Regional	Long-term (10+ years)	Possible	High Negative	**High (-)**	**Moderate (-)**

7.9.1 Recommended Mitigation and Management Measures

- Implement mitigation measures related to traffic and transport management as outlined in the EMP.
- Enforce best-practice construction environmental management.
- Ensure production and handling of hazardous materials comply with international safety standards.
- Develop and share an Emergency Response Plan with local authorities.
- Assess local health system capacity and explore temporary support or partnerships (e.g. mobile clinics, contractor medical stations).
- Conduct Community Awareness Campaigns to educate residents on safety measures, traffic hazards, and emergency procedures.
- Work with local health departments and NGOs to monitor worker health and prevent disease transmission in host communities.

Community health and safety impacts are significant but manageable with the implementation of appropriate safety, communication, and planning measures. Early engagement with local health and emergency services, combined with stringent industrial safety compliance, will be critical to ensure risk is minimized and the project maintains a social license to operate.

7.10 Nuisance Impacts

The construction and operation of the proposed solar facility is expected to generate a range of nuisance-related impacts, particularly for communities and sensitive receptors located near the project footprint, access roads, and construction laydown areas. These include:

- Dust and particulate matter from land clearing, earthworks, and construction vehicle movement
- Noise pollution from heavy machinery and transport

These impacts are not hazardous, but they can contribute to a decrease in quality of life, sleep disruption, stress, and community dissatisfaction if not properly managed.

Table 7-10: Nuisance impacts

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction	Negative – Temporary nuisance from dust, noise, vibration, and traffic; may affect daily life of nearby residents	Local	Short- to Medium-term (2–4 years)	Highly Likely	High Negative	**High (-)**	**Moderate (-)**
Operational	Negative – Long-term low-level nuisance from traffic, lighting, and operational noise	Local	Long-term (10+ years)	Possible	Moderate Negative	**Moderate (-)**	**Low to Moderate (-)**

7.10.1 Recommended Mitigation and Management Measures

Implement mitigation measures as outlined in the EMP such as:

- Dust suppression
- Noise control (e.g. equipment maintenance, scheduling noisy work during daytime)
- Establish a comprehensive Grievance Mechanism and Community Engagement Framework:
    - Set up a transparent system for community members to report nuisance issues
    - Proactively inform communities about high-impact activities in advance

While nuisance impacts are generally temporary and non-hazardous, they can have notable social consequences if unaddressed, particularly in terms of stress, reduced comfort, and erosion of community trust. With the implementation of the EMP and commitment to ongoing engagement, these impacts can be reduced to low or moderate levels throughout the project lifecycle.

7.11 Land Use and livelihood disruption

The development of the proposed project may lead to land use changes and restricted access to areas previously used for a range of economic, subsistence, or recreational activities. These include:

- Small-scale or informal farming activities on municipal/common land
- Possible exclusion of previously accessible open spaces, used for cultural or social purposes

While much of the proposed project area may be zoned for industrial development, community stakeholders may perceive the loss of access even if informal as a loss of opportunity, identity and possibly livelihood. These impacts are more likely to affect vulnerable and low-income residents living adjacent to or dependent on marginal or shared land resources.

Table 7-11: Land Use and Livelihood Disruption

Project Phase	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Pre-construction & Construction	Negative – Disruption or displacement of land-based or informal livelihoods	Local	Medium- to Long-term	Likely	High Negative	**High (-)**	**Moderate (-)**
Operational	Negative – Long-term change in land use patterns and permanent exclusion of previous land users	Local	Long-term (10+ years)	Possible	Moderate to High Negative	**High (-)**	**Moderate (-)**

7.11.1 Recommended Mitigation and Management Measures

- Identify and consult with all formal and informal land users, including those without formal tenure.
- Where feasible, maintain safe and manage access to remaining community-use areas.
- Offer fair compensation or alternative support mechanisms to individuals or groups whose income or access is disrupted.

The proposed project may lead to land use and livelihood disruption for adjacent communities, particularly those dependent on informal or land-based activities.

With appropriate mitigation including early identification, inclusive consultation, and livelihood support, this impact can be reduced to a moderate level. Failing to recognize informal users may generate social conflict or long-term resentment toward the project thus threatening Solar Capital's opportunity to secure and maintain a Social License to Operate (SLO).

8 Cumulative impacts

Cumulative impacts refer to the combined and incremental effects of the proposed renewable energy project in conjunction with other past, current, or foreseeable developments in the region. These impacts may unfold over time and space, influencing both social and environmental systems.

In the context of Saldanha Bay, the proposed project forms part of a broader industrialisation trend that includes the Saldanha Bay Industrial Development Zone (SBIDZ) expansions, port upgrades, renewable energy projects, and supporting logistics infrastructure. Collectively, these developments are expected to generate significant employment opportunities across various skill levels, contributing positively to regional economic development and job creation.

However, this transformation also brings cumulative social and environmental implications, including:

- Progressive industrialisation of the coastal landscape
- Visual changes and loss of natural open space
- Shifts in local identity, with potential impacts on tourism and cultural heritage
- A diminished sense of place for some long-term residents.

Table 8-1: Increased employment opportunities

Project Phase	Nature of Impact	Cumulative Context	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Construction & Operational	Positive	In combination with SBIDZ, port upgrades, Renewable Energy projects, etc.	Regional	Long-term	Highly Probable	High (+)	**Very High (+)**

Enhancement measures:

- Enhancement measures for this impact align closely with those presented in Section 7.1.1.

- In addition to these measures, Solar Capital should implement ongoing monitoring of employment demographics and produce annual public reports. This will help foster transparency, support informed decision-making, and promote accountability in local benefit-sharing.

Table 8-2: Industrialization of the Coastal Landscape

Cumulative Impact	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Industrialization of the Coastal Landscape	Negative – Visual, spatial, cultural and land use change caused by cumulative industrial growth along the coast	Regional	Long-term (10+ years)	Highly Likely	High Negative	**High (-)**	**Moderate (-)**

Table 8-3: Increased pressure on local infrastructure

Cumulative Impact	Nature of Impact	Spatial Scale	Duration	Probability	Significance (Pre-Mitigation)	Significance Rating (Pre-Mitigation)	Significance Rating (Post-Mitigation)
Increased Pressure on Local Infrastructure and Services	Negative – Cumulative burden on roads, water, sanitation, waste systems, housing, healthcare, and energy infrastructure	Local to Regional	Medium- to Long-term	Highly Likely	High Negative	**High (-)**	**Moderate (-)**

8.1 Recommended mitigation measures:

- For impacts presented in Table 8-2 and Table 8-3, consider the following mitigation measures:
    - Collaborate with relevant stakeholders, including SBM, the IDZ, and other developers in the region, to collectively identify, monitor, and manage cumulative impacts associated with ongoing and future developments in the area.
    - Align with municipal infrastructure master plans.
    - Keep communities informed about the cumulative impacts, with a focus on grievance redress and early warning of service disruptions.

9 Assessment of the No-Go Alternative

Under the No-Go scenario, the solar project would not be developed. This would result in the avoidance of short-term disruptions, such as labour influx or construction-related nuisances. However, it would also mean a missed opportunity for significant long-term social benefits, including job creation, skills development, and regional economic upliftment. Given the socio-economic needs of the Saldanha Bay area, and South Africa's strategic shift toward a just energy transition, the No-Go alternative would likely perpetuate existing unemployment and inequality challenges.

10 Potential social risks

Social Risks Associated with the proposed project

The proposed project in Saldanha Bay represents a major opportunity for economic development, technological innovation, and a low-carbon industrial transition. However, such large-scale transformation also brings a range of social risks, particularly for vulnerable and historically disadvantaged communities.

This chapter identifies key social risks, including deepening inequality, exclusion of local and informal enterprises, labour market barriers due to skills mismatches, declining social cohesion, and potential community distrust. Many of these are closely tied to broader changes in the region's physical environment and social identity.

The assessment applies a Human Rights-Based Approach (HRBA), in line with the best national and international practice. This approach ensures that the rights, dignity, and inclusion of all affected people, especially those at risk of marginalization, are central to impact management. It also recognizes the importance of both material and non-material impacts, such as equity, participation, sense of place, and emotional well-being.

By embedding principles of non-discrimination, accountability, transparency, and meaningful participation, the report aims to guide socially just and inclusive development. This aligns with South Africa's constitutional values and international frameworks such as the UN Guiding Principles on Business and Human Rights.

10.1 Inequality and Social Cohesion Risks

Social Risk: Unequal access to project benefits may exacerbate existing inequalities and fuel social tensions by eroding trust, deepening divisions, and potentially inciting social unrest.

Wilkinson and Pickett (2009) found that societies with greater inequality often suffer from deteriorated social cohesion, poorer mental and physical health, and higher rates of violence and mistrust demonstrating how unequal distribution of benefits can destabilize communities and undermine social wellbeing.

10.2 Exclusion of Local Businesses and Informal Economy

Social Risk: Emerging and informal enterprises may encounter systemic obstacles in participating in procurement and benefiting from project-related economic activity. This could result in:

- Barriers to accessing procurement opportunities arising from onerous compliance and procedural demands.
- Exclusion of smaller businesses from economic opportunities due to limited competitiveness or capacity.
- Competitive disadvantages due to lack of support or inclusion mechanisms.

The *Green Hydrogen: Mechanisms for Community Beneficiation* report (2023) highlights that without proactive inclusion mechanisms such as targeted procurement, enterprise support, and skills development green hydrogen projects risk reinforcing existing socio-economic divides. The report stresses the need for enabling frameworks that facilitate the participation of SMMEs, cooperatives, and informal businesses in the green hydrogen value chain, particularly in historically disadvantaged areas.

10.3 Skills Gaps and Labor Market Exclusion

Recent studies, including the Green Hydrogen Commercialization Strategy (DSI, 2023) and Green Hydrogen: Mechanisms for Community Beneficiation (GreenCape, 2023), emphasize that South Africa's success in building a globally competitive green hydrogen sector depends on addressing current skills gaps. These publications advocate for early investment in technical and vocational education, localization strategies, and inclusive skills development programmes that prioritize youth, women, and historically marginalized communities.

Social Risk: Due to limited access to higher education in the area as highlighted in Section 5.2.3.1 there is a risk that the existing skill levels within local communities may not meet the technical and specialised labour requirements of the green hydrogen project. This skills gap could result in local residents being excluded from employment

opportunities associated with the project, despite its proximity. If unaddressed, this may result in:

- Community frustration and perceptions of exclusion, particularly where expectations for local job creation are high.
- Limited local economic benefits, reinforcing socio-economic inequality and contributing to a weak Social License to Operate (SLO).

10.4 Community Distrust and Institutional Breakdown

As highlighted in the Green Hydrogen: Mechanisms for Community Beneficiation report (GreenCape, 2023) and the Green Hydrogen Commercialization Strategy (DSI, 2023), transparent, inclusive, and ongoing stakeholder engagement is critical for maintaining trust. These studies emphasize that fostering meaningful dialogue and managing expectations from the outset are key to securing a strong social license to operate and ensuring equitable benefits from green hydrogen projects.

Social Risk: Ineffective communication and failure to meet community expectations can undermine trust in both the proposed project and local institutions. This erosion of trust may lead to:

- Reduced community support and cooperation, potentially causing delays or disruptions.
- Long-term decline in community participation and social license to operate.
- Heightened social tensions and conflict between stakeholders.

10.4.1 Risk Management Recommendations

To mitigate these social risks, the following should be developed and integrated into the project lifecycle:

- Implementation of the EMP
- Social Management Plan (SMP) aligned with stakeholder concerns
- Skills Development Strategy focused on local employment readiness
- Grievance Redress Mechanism that is accessible, transparent, and trusted
- Stakeholder Engagement Plan (SEP) with ongoing consultation.

11 Social Management Plan (SMP)

The Social Management Plan (SMP) outlines the framework, strategies, and actions that Solar Capital must implement to effectively manage and monitor the social impacts and risks associated with the development and operation of the proposed project in Saldanha Bay.

The SMP aligns with national regulations, IFC Performance Standards, and international best practices to ensure the project contributes positively to local socio-economic development while minimizing negative social impacts. The implementation of the SMP requires cross functional input from Solar Capital's internal and external stakeholders.

11.1 Objectives

The key objectives of the SMP are to:

- Prevent, mitigate, and manage adverse social impacts identified in the Social Impact Assessment (SIA).
- Maximize positive social benefits, including employment, skills development, and local business opportunities.
- Enhance community wellbeing and foster social cohesion.
- Ensure compliance with all relevant legislative and policy requirements.
- Promote transparency, accountability, meaningful stakeholder engagement throughout the project lifecycle and assist Solar Capital to secure and maintain a Social License to Operate (SLO).

Table 11-1 SMP roles and responsibilities

Responsible Party	Roles and Responsibilities
Phelan (internal cross functional team)	Overall implementation and resourcing of SMP activities
Phelan 's Social Manager	Coordination of social impact mitigation and monitoring
Contractor(s)	Compliance with social requirements during construction phase
Local Municipality (SBM)	Collaboration on infrastructure, service provision, and local development initiatives
Community Liaison Officer	Facilitate ongoing communication with communities and stakeholders
Third-Party Monitor	Independent verification of SMP implementation and social performance

11.2 Key Social Management Measures

11.2.1 Community Engagement and Communication

- Maintain ongoing dialogue with all stakeholder groups, including vulnerable populations.
- Implement a transparent Grievance Redress Mechanism (GRM) accessible to all affected persons.
- Provide timely information on project activities, timelines, and employment opportunities.
- Conduct regular community meetings and feedback sessions.

11.2.2 Employment and Skills Development

- Prioritize local hiring aligned with agreed-upon targets.
- Develop and implement a Skills Development and Training Program focused on building capacities for renewable enegry technologies.
- Partner with local TVET colleges and training institutions.
- Support inclusive workforce participation, with targeted initiatives for women and youth.

11.2.3 Infrastructure and Service Support

- Collaborate with local authorities to support capacity-building for municipal services (water, sanitation, healthcare).
- Monitor impacts on local infrastructure and proactive support mitigation where needed.

11.2.4 Land Access and Livelihoods

- Ensure clear communication and consultation with affected land users and informal sector participants.
- Implement compensation and livelihood restoration measures where displacement or restriction occurs.
- Support local informal businesses and traders to access project-related opportunities.

11.3 Monitoring and Reporting

Table 11-2: Proposed Monitoring and Reporting Timelines

Monitoring Area	Indicators	Frequency	Responsible Party
Employment and Training	Number of local hires; Training sessions conducted; Gender balance	Quarterly	Human Resources Manager and Social Manager
Community Engagement	Number of meetings; Grievances received and resolved	Monthly (or required)	Community Liaison Officer
Infrastructure and Services	Reports on service availability and strain	Quarterly	Solar Capital's cross functional team & Municipality
Livelihood Restoration	Number of affected persons compensated; Business support provided	Bi-annually	Human Resources Social Specialist

To increase accountability and transparency, it is recommended that Solar Capital implements the following activities:

- Regular reports should be prepared and shared with stakeholders and regulatory authorities.
- An independent audit or third-party verification will be conducted annually or as required.
- Management will ensure the SMP remains responsive to emerging risks and community feedback.

11.4 Capacity Building and Resources

- Allocate sufficient budget and personnel to implement SMP activities effectively.
- Provide training for project and contractor staff on social performance standards and community relations.
- Foster partnerships with local government, NGOs, and training institutions to support delivery.

11.5 Grievance Redress Mechanism (GRM)

The GRM serves as a complementary pathway to the project's proactive engagement efforts throughout its lifecycle, ensuring that stakeholder concerns are effectively addressed. While proactive engagement aims to anticipate and resolve issues early, the GRM provides a structured avenue for stakeholders to seek recourse when concerns

persist. It is designed to be accessible, transparent, timely, and solution-oriented, relying on mechanisms such as dialogue, fact-finding, and collaborative problem-solving to resolve issues.

The Department of Forestry, Fisheries and the Environment (DFFE) underscores the importance of accessible grievance processes as part of its mandate to ensure environmental and social accountability, foster public trust, and uphold human rights frameworks.

Key Considerations for the Design and Implementation of the Grievance Redress Mechanism (GRM).

- Establish a multi-channel GRM (in-person, phone, online) accessible in local languages
- Ensure grievances are logged, acknowledged, investigated, and resolved within a reasonable timeframe
- Maintain confidentiality and protect complainants against retaliation
- Provide feedback and closure to complainants.

11.6 Implementation timeline

Table 11-3: Proposed SMP activities timeline

Project Phase	SMP Activities
Pre-construction	Stakeholder engagement; Baseline data update; Training and capacity building
Construction	Active implementation of all mitigation and monitoring measures; Regular reporting
Operation	Continuation of social programs; Monitoring and adaptive management

The SMP provides a structured, transparent approach to managing social risks and realizing the benefits of the Solar Capital Project. Its success depends on active collaboration among the project team, local government, communities, and other stakeholders.

Through diligent implementation, monitoring, and adaptation, the project aims to contribute positively to the sustainable development of Saldanha Bay and the broader Western Cape region.

12 Specialist's Reasoned Opinion

Based on the findings of the Social Impact Assessment, consideration of the current socio-economic baseline conditions, and the outcome of stakeholder consultation processes, it is the specialist's professional opinion that the proposed project in Saldanha Bay can be supported and should be authorized from a social perspective, contingent on:

- Strict compliance with mitigation measures detailed in this Social Impact Assessment and the Social Management Plan
- Ongoing community engagement and responsive grievance resolution
- Integration of social performance monitoring into the EMP
- Collaboration with local authorities to manage cumulative pressures on infrastructure and services

If the above-mentioned conditions are met, the project is likely to contribute meaningfully to local and regional development and support South Africa's transition to a cleaner, more inclusive energy economy.

13 Conclusion

The Social Impact Assessment (SIA) for the proposed project in Saldanha Bay has carefully examined the potential social risks and benefits, grounded in a robust socio-economic baseline and active stakeholder consultation.

The analysis confirms that the region faces pressing challenges such unemployment, economic inequality, and limited skills alignment while also offering strong opportunities for inclusive growth and diversification. In this context, the proposed project is well-positioned to contribute meaningfully to regional development through:

- Expanded employment and income-generation
- Skills development in green energy sectors
- Support for SMMEs and local enterprise
- Improved water resource management
- Economic transformation aligned with IDZ and national green economy objectives

Critically, the No-Go alternative in which the project does not proceed would miss these long-term socio-economic benefits, particularly at a time when cumulative employment

gains from other regional developments (e.g., SBIDZ, port upgrades, renewables) are taking place.

While potential risks such as housing pressure, labour influx, and psychosocial impacts must be acknowledged, these can be effectively managed through the proposed Social Management Plan (SMP), which includes clear mitigation strategies, local inclusion mechanisms, and ongoing monitoring.

Overall, the SIA concludes that, with the implementation of effective mitigation and management strategies, the proposed project can deliver meaningful and sustainable social benefits while responsibly managing its risks. A balanced and inclusive approach one that prioritizes community engagement, local inclusion, and ongoing monitoring will be essential to ensuring the long-term success of the solar project and its positive contribution to the socio-economic transformation of Saldanha Bay and the broader West Coast region.

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