

# Mayogi Photovoltaic (PV) Solar Energy Facility Socio-Economic Impact Scoping Report



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## **1. Introduction**

**SiVest SA (Pty) Ltd** environmental consultants has appointed **Urban-Econ Development Economists** to conduct a Socio-Economic Impact Assessment (SEIA) specialist study for the development of two private photovoltaic (PV) solar energy facilities on the Mayogi farm located in the Sundays River Valley Local Municipality and the Sarah Baartman District Municipality of the Eastern Cape. The proposed Mayogi PV Energy facility will be comprised of two PV facilities of around **70MW AC output each**. This report considers the potential socio-economic impacts associated with the development of these facilities, namely **Mayogi PV 1 and Mayogi PV 2**.

The socio-economic impact assessment aims to assess and determine the significance of the socio-economic impacts that may potentially arise during the construction and/or operational phase of the development of the PV solar energy facility and compare the potential impacts to the "no-go" alternative. This report, however, only presents the scoping phase of the SEIA, with the full SEIA study only to be completed at a later stage. The scoping report aims to present a preliminary assessment of the potential socio-economic impacts and discuss any foreseen issues that may pose as potential areas of conflict for the proposed development.

### **1.1. Project Description, Layout Alternatives and Study Delineation**

This section discusses the project description, the layout alternatives of the proposed PV solar energy facility and the designated study areas of the project.

#### **1.1.1 Project Description**

The study area of the proposed photovoltaic (PV) solar energy facility is situated on Farm No. 692 which lies adjacent to the R75 and is approximately 13km south-east from Kirkwood in the Eastern Cape. The total area of the farm consists of 1200 ha and lies 33° 29' 11.45 "S latitude and 25° 17' 53.78 "E longitude between Kariega (Uitenhage) and Graaff-Reinet. As a result, the study area falls between two municipalities namely, the Nelson Mandela Bay Metropolitan Municipality and the Dr. Beyers Naude Local Municipality of which the latter falls under the greater Sarah Baartman District municipality. The study area itself falls within the Sundays River Valley Local Municipality. The area that the two separate PV facilities will occupy is expected to amount to 250 ha of the existing farm's total area and is intended to connect directly to the Skilpad Substation seen in Figure 1.1 below, which is also located on the property of the Mayogi farm.

The following description summarises the technical aspects of the two projects:

- PV panels will consist of solar panels with a maximum height of 5m above the ground, these will be North facing at a defined angle of tilt. As an alternative, panels will either be fixed to a single-axis horizontal tracking structure where the orientation of the panel varies according to the time of the day, as the sun moves from east to west; or tilted at a fixed angle equivalent to the latitude at which the site is located in order to capture the most sun.
- In terms of roads, existing roads will be utilised as far as reasonably possible, existing access roads may need to be upgraded by approximately 450m x 6m.
- Two substations are proposed with a maximum capacity of 33/132kV, these will be a maximum height of on-site substation: approximately 3-4 m. The substation area is max. 1 ha including a building for switching, measurement and control units, a high voltage transformer and high voltage overhead-lines connecting the transformer to the 132 kV grid line that is close to the site.
- On site, there will be around 15-20 container-sized transformer stations (12192\*2896\*2438 mm; W\*H\*D) that step up the low voltage coming from the inverters to 33 kV medium voltage.
- 1 x Construction camp will be required per PV, offices and other buildings with toilets including septic tank and infrastructure, will used during the construction phase.
- All Auxiliary buildings to be developed include but are not limited to: O&M building, site office, staff lockers, bathrooms, warehouses, etc (with septic tanks and all infrastructure).
- The proposed project will include one on-site IPP substation.
  - 1ha for Substation
  - 1ha for battery storage
- Cables will be laid underground wherever technically feasible, with overhead 33kV lines grouping PV areas to crossing valleys and ridges to get to the on-site substation.

### 1.1.2 Project Layout Alternatives

There are various alternatives proposed in terms of connecting the proposed PV facility to the electricity grid. This section provides an overview of the most viable options and discuss whether the alternatives have socio-economic impact on the designated area. The table below presents a description of each alternative layout including both Mayogi PV 1 and PV 2.

**Table 1.1:** Layout alternatives

Layout Alternative Option	Description
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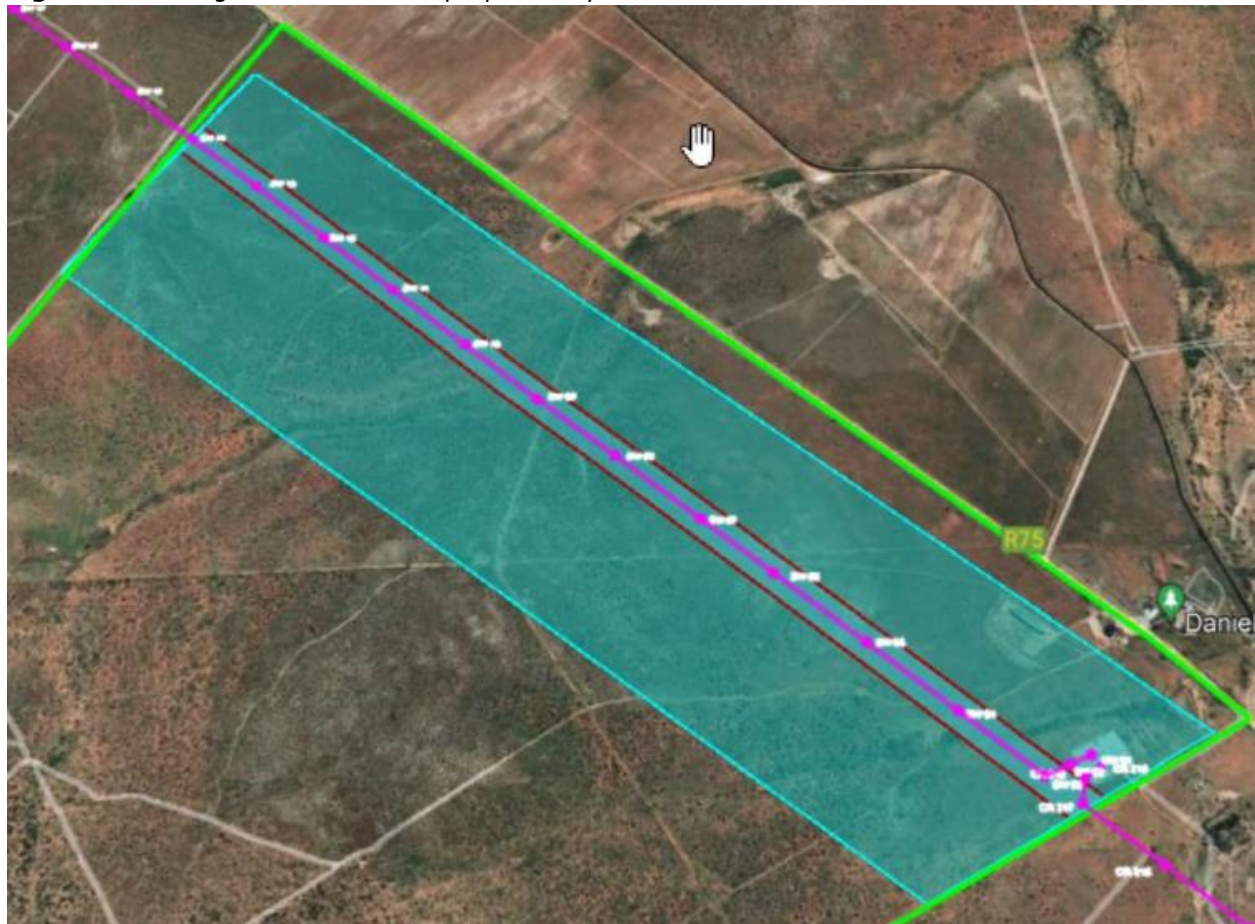
<p><b>Option 1:</b> Connect to the "Skilpad" substation on the northwest side- (PV 1 &amp; 2 Initial layout idea)</p>	<p><b>Mayogi PV 1:</b></p> <ul style="list-style-type: none"> <li>• Build a substation containing the IPP and Self-Built side to the north of the OHL.</li> <li>• Construct an OHL as Self-built prospect</li> <li>• The OHL will connect the IPP/Self-built substation to the nearby "Skilpad" substation.</li> </ul> <p><b>Mayogi PV 2:</b></p> <ul style="list-style-type: none"> <li>• Build a substation containing the IPP and Self-built side to the north of the OHL.</li> <li>• Construct an OHL as Self-built prospect</li> <li>• OHL will connect the PV 2 plant to the tower carrying the PV 1 plant's conductors.</li> </ul>
<p><b>Option 2:</b> Connect to the "Skilpad" substation on the southwest side</p>	<p><b>Mayogi PV 1:</b></p> <ul style="list-style-type: none"> <li>• PV 1 substation will be right across from the "Skilpad" substation.</li> </ul> <p><b>Mayogi PV 2:</b></p> <ul style="list-style-type: none"> <li>• PV 2 substation will be situated 2km away and would require an OHL to connect to the 132kV powerline into the PV 1 substation and onto a common 132kV busbar before being connected to the "Skilpad" substation.</li> </ul>
<p><b>Option 3:</b> One substation to be constructed on the same location as PV 1- Southwest location</p>	<ul style="list-style-type: none"> <li>• One large substation which is fenced off on three sides.</li> <li>• One side is allocated to Eskom, one side is allocated to PV 1 and one side is allocated to PV 2.</li> <li>• This layout option is most likely the preferred option.</li> </ul>

It should be noted that for options one and two, there will be two substations, each with a self-built side for Eskom to take over as well as a short new 132Kv OHL to connect Mayogi PV 2 plant to the Skilpad substation. The new OHL is also to be handed to Eskom.

In terms of all the layout alternatives discussed, from a socio-economic perspective, there are no foreseen complications resulting from the proposed development. Due to the possible addition of two substations and a new OHL, slight increases across certain socio-economic impact indicators during the construction phase should be expected and will be unpacked in further detail in future reports. The figure shows that regardless of which layout option is

selected for the development, a substation will be constructed within the initial demarcated area.

**Figure 1.1:** Designated area for all proposed layout alternatives



**Source:** (JUWI, 2023)

### 1.1.3 Study Area Delineation

A site visit was undertaken on the 3<sup>rd</sup> of November 2022. The main purpose of the visit was for project team members to become acquainted with the area and to identify any potential socio-economic related issues that may affect the area wherein the proposed PV solar energy facility is to be developed. Engagement with the farm owner revealed that the property is mainly used for game farming and breeding and allows for hunting activities particularly aimed at international visitors. The farm itself requires minimal maintenance with only two full-time employees who manage the farmstall business and perform daily maintenance on the farm.

The identified primary study area is Farm No.692, neighbouring properties as well as the entire Sundays River Valley Local Municipality. The secondary study area is made up of the

broader Sarah Baartman District municipality as well as the Nelson Mandela Bay Metropolitan Municipality.

The Sarah Baartman District Municipality is situated in the western hemisphere of the Eastern Cape and covers an area of 58 243 square kilometres with eight people per square kilometre. As of 2021, the district had a total population of 482 340 people and 133 894 households. During this period, the household size was averaging at approximately four people living in a household. Additionally, 26.1% of the district's working age-population was unemployed in 2021 (Quantec Standardised Regional,2023). The Sarah Baartman District Municipality is geographically the largest district in the Eastern Cape and assists seven local municipalities including the Sundays River Valley Local Municipality (Sarah Baartman District Municipality,2023). The socio-economic dynamics of the Sundays River Valley is discussed in further detail later in the Screening Report.

The detailed SEIA will include the tertiary study area which is made up of the rest of the Eastern Cape province and South Africa at large. The figure below shows the "Skilpad" substation located on Farm No.692.

**Figure 1.2:** Location of the Skilpad Substation on the Mayogi Farm



**Source:** (Urban-Econ,2022)

In Figure 1.3 below, the site locality of the two Mayogi PV solar energy facilities is marked in green while the rest of the primary area being the Sundays River Valley Local Municipality is shaded in orange. The secondary study area is shaded in white.

**Figure 1.3:** Map of the Primary, Secondary and Tertiary study areas



**Source:** (Urban-Econ,2022)

## 1.2. The Socio-Economic Scoping/Scoping Process

Impact scoping and scoping may be defined as a process that involves the decision-making of whether a proposed project, policy or programme requires further environmental evaluation. The appropriate level of detail and criteria that are required for further evaluation is also guided by the scoping process. It should be noted that the information provided in a scoping report is more qualitative and surface-based and is presented in a preliminary format compared to the full environmental assessment (SEIA) report.

The scoping process takes into consideration the alignment of proposed projects with existing policy and planning frameworks, the scale of proposed projects as well as the intensity and significance of potential impacts. Therefore, a key element of the scoping process is deciding whether or not a proposed project's potential implications would be noteworthy.

In conclusion, the scoping phase may be used as a tool to identify and where possible, quantify impacts which are evaluated from the view of the environment that would be affected by the development of the proposed project. In this case, the scoping report is done in the context of the socio-economic impact assessment and implements the necessary steps to evaluate

the socio-economic impacts that the development of the proposed PV solar energy facility may have on the receiving environment.

## 2.1. Policy and Planning Environment

In order to conduct the socio-economic scoping process, a review of the relevant national, provincial, district and local municipalities' policies and planning documents needs to take place. The purpose of reviewing the relevant policy and planning documentation is to ensure that the proposed development aligns with the development aims and objectives of a particular policy or strategy at a national, provincial, district and local level. A brief overview of each of the policies is provided in Table 2.1.

**Table 2.1:** Overview of the National, Provincial, District and Local policies and plans

Policy Name	Description
<b>National</b>	
<p><b>National Development Plan 2030 (NDP, 2012)</b></p>	<p>The National Development Plan (NDP) seeks to tackle triple development challenges of poverty, inequality and unemployment in South Africa by 2030. The Plan highlights that the country needs to protect the natural environment in all respects, enhance resilience of people and the economy to climate change, reduce greenhouse gas and improve energy efficiency. The NDP prioritises the infrastructural investment of procuring at least 20 000MW of renewable energy by 2030 and decommissioning 11 000MW of ageing coal-fired power stations.</p> <p>Despite the fact that the NDP was adopted back in 2012, the transition to clean energy remains a key priority, therefore any development such as the proposed Mayogi PV Solar Energy facility is highly appreciated.</p>
<p><b>National Infrastructure Plan 2050 (NIP, 2012)</b></p>	<p>The National Infrastructure Plan is designed to establish the groundwork for realizing the NDP's vision of inclusiveness and expansion. The NIP 2050 strategically links the objectives of the NDP with tangible steps, aiming for rapid outcomes. The NIP has the role of driving proactive infrastructure implementation and addressing the most crucial tasks necessary for bringing about lasting changes in public infrastructure provision.</p> <p>According to the NIP, by 2050, energy demand is expected to double and installed generation will need to expand from 53 GW in 2018 to approximately 174 GW by 2050. While by 2030, at least 25 GW would be required to be added to installed capacity with the</p>



	<p>necessary supportive transmission and distribution infrastructure. The NIP proposes the following five conditions should be met in order to achieve the 2050 vision for the energy sector:</p> <ul style="list-style-type: none"> <li>• The reform of the energy sector must be sustainable and progressive;</li> <li>• Best-practice energy services must be in order and create opportunities for global competitive economic growth;</li> <li>• There must be a pivot to a low-carbon energy sector, including a just transition;</li> <li>• Access to energy sector opportunities must be ensured, and;</li> </ul> <p>State institutions must be capable in facilitating energy sector reform and delivery.</p>
<p><b>Department of Mineral Resources Energy Strategic Plan (2020-2025)</b></p>	<p>The Energy Strategy Plan formulated by the DMRE comprises three clusters, one of which is the Energy cluster. This cluster bears the responsibility of delivering sustainable energy security to the South African economy. The Plan acknowledges the existing deficiency in energy supply within the country, which poses a challenge for the DMRE to meet the required level of energy security. In response, the DMRE has crafted a strategic approach and proposed resolution to tackle the energy supply crisis. This involves ensuring the availability of resources for energy consumption, expediting the adoption of alternative and efficient energy sources, and diversifying the technological landscape of energy provision. This strategy aims to attain substantial energy security and facilitate economic development.</p>
<p><b>Industrial Policy Action Plan (2018/2019-2020/2021)</b></p>	<p>The Industrial Policy Action Plan (IPAP) signifies a notable advancement in elevating the nation's endeavours to foster enduring industrialization and diverse industrial growth. The IPAP underscores the concerning escalation in electricity prices over recent years within the country, a consequence of consumer demand surpassing the available electricity supply.</p> <p>From an energy perspective, the IPAP introduces the Industrial Energy Efficient Project, designed to assist the industrial sector in reshaping energy consumption patterns for greater sustainability and effectiveness. This project aims to enhance the energy efficiency of industries in South Africa, thereby bolstering national initiatives to enhance energy stability and electricity provision. Simultaneously, it ensures that the shift toward energy efficiency doesn't impede GDP growth through further electricity shortages and price hikes.</p>

<p><b>Integrated Resource Plan (2019)</b></p>	<p>The Integrated Resource Plan outlines that advancing the electricity generation sector has the potential to bolster the growth of the national economy. From the perspective of the IRP, ensuring energy security entails South Africa developing ample generation capacity to satisfy consumer demand in various economic growth scenarios, both modest and improved. According to the IRP, South Africa aims to foster a varied energy mix that reduces reliance on a small subset of primary sources.</p> <p>As per the IRP, renewable energy provides an avenue for diversifying the energy mix through distributed generation, off-grid electricity supply, and the creation of job opportunities, novel industries, and local development throughout the value chain. The IRP observes a consistent trend in renewable energy investment, as numerous countries, including South Africa, transition their existing energy systems toward cleaner and more efficient sources.</p>
<p><b>South African Renewable Energy Master Plan (SAREM, 2022)</b></p>	<p>The preliminary version of the Renewable Energy Master Plan for South Africa outlines the vision and prospects related to the local renewable energy manufacturing process. This manufacturing chain corresponds with the renewable energy technologies mandated by the Department of Mineral Resources and Energy. The proposal suggests that the renewable energy sector can yield multiple advantages from a socio-economic standpoint. These benefits encompass the direct generation of jobs, a significant contribution to the GDP, a revamped value chain that incorporates emerging suppliers with a focus on inclusive involvement, ownership, and management. Additionally, the plan offers economic diversification to key regions in support of the Just Transition, while also facilitating skills enhancement and generating fresh opportunities for young individuals and former workers from the coal sector.</p>
<p><b>National Environmental Management Act (No. 107 of 1998)</b></p>	<p>The National Environmental Management Act serves as a legal structure for enacting the provisions of Section 24 in the Constitution of the Republic of South Africa. Its purpose is to encourage collaborative administration, ensure the well-being of both the public and the environment, and secure human rights, all while recognizing the importance of economic progress. The objective is to:</p> <ul style="list-style-type: none"> <li>• Avoid pollution and harm to the environment;</li> <li>• Encourage preservation; and</li> </ul>

	<ul style="list-style-type: none"> <li>• Ensure environmentally sustainable development and responsible use of natural resources while also supporting reasonable economic and social growth.</li> </ul>
<b>New Growth Path (2010)</b>	<p>The primary goal of the New Growth Path revolves around boosting economic expansion, generating employment opportunities, and promoting fairness. The central objective of this strategy is to generate five million jobs within the upcoming decade. This plan underscores the government's dedication to making job creation a foremost consideration in all economic strategies. It outlines tactics that will facilitate South Africa's growth with a stronger emphasis on fairness and inclusivity, while also aligning with the nation's developmental objectives. The NGP has outlined various pivotal elements and sectors of importance that require concentrated attention for the purpose of generating employment. These sectors include:</p> <ul style="list-style-type: none"> <li>• Infrastructure</li> <li>• Agriculture value-chain</li> <li>• Green economy</li> <li>• Manufacturing</li> <li>• Tourism and certain high-level service industries.</li> </ul>
<b>Renewable Independent Power Producer Program (2022)</b>	<p>The South African Renewable Independent Power Producer Programme has established a competitive selection process designed to facilitate private sector investment in grid-connected renewable energy production, with a particular focus on solar and wind sources. The DMRE is anticipated to initiate the launch of the Request for Proposals for the Sixth Bid Window within the REIPPP framework. This call for proposals invites independent power producers to propose projects that would contribute a new generation capacity of 2600 MW. This capacity comprises 1600 MW from onshore wind energy and 1000 MW from solar photovoltaic power plants. Additionally, the Sixth Bid Window has been designed to foster socio-economic and environmentally responsible development. It aims to promote increased local involvement and economic empowerment within South Africa's renewable energy sector, in harmony with the REIPPP's overarching objectives.</p>
<b>Provincial</b>	
<b>Eastern Cape Vision Provincial Development Plan (2030)</b>	<p>The Eastern Cape Provincial Development Plan (ECPDP) is a developmental strategy that branches off from the NDP 2030, while also addressing socio-economic concerns specific to the Eastern</p>

	<p>Cape Province. The ECPDP acknowledges the province's substantial potential for economic advancement due to its abundant natural resources.</p> <p>The ECPDP has outlined multiple objectives to realize the 2030 vision for the province. Within the realm of renewable energy, one objective aims to position the province as a primary investment centre in the energy sector, ensuring a dependable energy supply for sectors with high growth potential. The ECPDP highlights that such investments in renewable energy have the potential to drive economic progress throughout the province, particularly if the associated benefits are proactively pursued. As per the ECPDP, some of the local advantages expected to result from these energy sector investments encompass:</p> <ul style="list-style-type: none"> <li>• Affordable energy, resulting in reduced costs for products, services, and transportation, along with heightened competition for the labor market.</li> <li>• Employment generation through the construction, operation, and maintenance of new energy installations, as well as the provision of manufactured parts.</li> <li>• New rental collection systems to capture a share of the surplus coming from the new investments.</li> </ul>
<p><b>Eastern Cape Sustainable Energy Strategy (2012)</b></p>	<p>The Eastern Cape Sustainable Energy Strategy outlines the province's intended course of action within the energy sector. The primary aim of this strategy is to promote the generation of energy that is sustainable, cost-effective, and ecologically responsible. This will be accomplished by establishing conducive conditions for energy production and the growth of sustainable technologies, skills, and industries. These objectives are set to be realized through a range of initiatives, including:</p> <ul style="list-style-type: none"> <li>• Thorough training initiative for pertinent decision-makers regarding the approval of renewable energy projects;</li> <li>• Creation of an implementation task force to offer potential investors a centralized source of renewable energy insights within the province;</li> <li>• Creation of a regional viewpoint on the placement of renewable energy projects;</li> <li>• Advocating for Eskom to accelerate and enhance the power transmission capacity in the former Transkei area;</li> </ul>

	<ul style="list-style-type: none"> <li>Advocating to the Department of Energy for the formulation of an extended program for procuring renewable energy generation.</li> </ul> <p>Through the pursuit of these initiatives the Eastern Cape Province seeks to become a leading and preferred destination for sustainable energy investment in South Africa.</p>
<b>District</b>	
<b>Sarah Baartman District Municipality IDP (2022-2027)</b>	The policy acknowledges the significance of renewable energy in the district and province at large and notes the growth opportunities that the sector offers in terms of job creation. Furthermore, the policy places emphasis on the potential of the area to be a manufacturer of renewable energy generation infrastructure and the added social and economic potential benefits that may be reaped from it. The Sarah Baartman District is already a host to renewable energy projects, particularly wind energy farms. The IDP notes that the district has made steady improvement in terms of electrification, however, additional renewable energy projects in the area may assist with areas in the district that continue to experience electricity backlogs.
<b>Sarah Baartman District Municipality SDF: (2013)</b>	Renewable energy potential forms part of the spatial pillars of the document. The core principle of the spatial planning framework for the district regarding renewable energy is to optimize the use of the sector's potential in the area. The framework highlights the importance of developments to create opportunities that will support economically competitive communities and positively contribute to the growth of the local economy.
<b>Local</b>	
<b>Sundays River Valley Local Municipality IDP (2021-2022)</b>	The local municipality IDP draws attention to the growing need for electricity supply in the area as a result of the expansion of citrus farming in the area which has influenced the area's population. The IDP has also highlighted the advertisement of alternative energy sources within the local municipality and the call upon environmental agents from the private sector to conduct appropriate assessments in order to determine the suitability for renewable energy sources in the area.

## 2.2. Needs and Desirability Assessment

Over the past decade, South Africa has faced continuous power cuts due to limitations in electricity supply from its main provider, Eskom. This has significantly affected not only the

nation's economy but also the larger society in South Africa. As a result, Table 2.2 aims to discuss needs and desirability pertaining to the proposed PV solar development, in relation to the various government planning documents.

**Table 2.2:** Needs and desirability of the proposed Mayogi PV Solar energy facility

<b>Socio-Economic Variable</b>	<b>Needs and Desirability Rationale</b>
<b>Job creation</b>	<p>The majority of the government policy documents highlight the urgency of tackling South Africa's elevated unemployment rate. The National Development Plan (NDP) and the New Growth Path (NGP) recognizes that a viable approach to achieving this goal involves drawing in investments to the country. Such investments not only drive economic expansion but also foster the generation of job opportunities. These policies also acknowledges that to foster job-generating growth, the economy must possess a consistent and dependable energy supply. The suggested project aims to directly confront this concern, thereby contributing to resolving the unemployment challenge not only in South Africa but specifically within the SBDM and SRVLM regions.</p>
<b>Poverty reduction</b>	<p>Addressing the issue of poverty in South Africa holds significant policy importance across all levels of government. This emphasis is evident in documents such as the National Development Plan (NDP), Industrial Policy Action Plan (IPAP), Eastern Cape Provincial Development Plan (ECPDP), and the Sarah Baartman and Sundays River Valley Integrated Development Plans (IDPs). Poverty and employment share a close connection, and economic theory indicates that any action that fosters job growth is likely to eventually result in a gradual decrease in poverty. The potential for job creation within the suggested project is thus expected to play a constructive role in diminishing poverty levels, both within the local and district municipality and on a broader scale in South Africa.</p>
<b>Economic growth &amp; recovery</b>	<p>In the past ten years, South Africa has gone through multiple phases of limited economic expansion. The situation worsened due to the COVID-19 pandemic and aggravated by power shortages, ultimately causing a technical recession in the nation. Access to ample and reasonably priced electricity is a critical factor for future economic advancement. It plays a vital role in encouraging the growth of businesses, thereby leading to increased employment opportunities. Therefore, any initiative that could potentially spur economic growth is highly favorable.</p>

<p><b>Energy diversification</b></p>	<p>South Africa heavily depends on coal-based power plants for generating the majority of its electrical power. Similarly, the country relies significantly on Eskom to deliver this electricity. This situation presents two main risks: 1) possible disruptions in coal supply; or 2) potential challenges in Eskom's ability to meet electricity demand. The 2019 Integrated Resource Plan (IRP) aims to decrease the country's reliance on coal and shift toward alternative energy sources. Simultaneously, it aims to introduce competition from other energy providers in the sector. Therefore, a project that offers energy from a source other than coal and not tied to Eskom would align with the objectives of the IRP.</p>
<p><b>Energy supply</b></p>	<p>The energy supply challenges in South Africa have been extensively recorded. In light of this situation, the government introduced the RMIPPPP program to swiftly tackle the existing energy shortage in the nation. Therefore, a project that aims to offer energy solutions to alleviate the current scarcity in South Africa would be favorable, aligning with both the Integrated Resource Plan (IRP) and the RMIPPPP.</p>

This section provided an overview of the national, provincial, district and local policies and plans related to renewable energy and PV solar energy where possible. The review presented in Table 2.1., suggests that at this stage of the socio-economic assessment, the proposed Mayogi PV energy solar energy facility aligns with the relevant policies and plans across all government spheres and is considered a suitable development in terms of mandated renewable energy related policy and planning frameworks. The section also provided a Needs and Desirability assessment which discussed aspects that support the need and desirability for the proposed Mayogi PV Solar energy facility development.

### **3. Socio-Economic Profile of the Study Area**

The socio-economic profile section of the scoping report briefly discusses key employment, demographic, and education attainment indicators as well as the economic structure of the Sundays River Valley Local Municipality. The socio-economic profile does not only serve the purpose of being a guideline for the socio-economic impact assessment but also enables one to better understand the dynamics of the particular study area. The chapter first discusses the population structure, followed by the employment profile and the level of education attainment in the region and finally provides the economic structure of the local municipality.

In 2021, the Sundays River Valley Local Municipality had a total population of 58,708 people with a historic annual population growth rate of 1.5% over a ten-year period from 2011-2021.

The disposable average monthly household income for the local municipality in 2021 was calculated at R8,421.

**Table 3.1:** Population structure of the Sundays River Valley Local Municipality

Indicator	Sundays River Valley	
	2011	2021
Population	58,708	
Number of Households	15,903	
Average Household Size	3.7	
Annual Population Growth (2011-2021)	1.5%	
Average Monthly Household Income	R8, 421	

**Source:** Urban-Econ calculations based on Quantec (2021)

The Sundays River Valley Local Municipality employment profile indicates that in 2021 the region had an unemployment rate of 20.8% and a total of 15,035 people formally and informally employed. In comparison to 2011, the area had fewer people employed with a slightly lower unemployment rate of 19.1%. The increase in the recent unemployment rate of the local municipality may be due to the recent COVID-19 pandemic which resulted in many people losing employment due to the unexpected shutdown of businesses because of lockdown regulations. Other factors may include the migration of youth to larger urban centres in search of formal employment as well as formal tertiary education.

**Table 3.2:** Employment profile of the Sundays River Valley Local Municipality

Indicator	Sundays River Valley	
	2011	2021
Employed	13,521	15,035
Unemployed	3,189	3,953
Unemployment Rate	19.1%	20.8%
Labour Force Participation Rate	50.0%	48.2%

**Source:** Urban-econ calculations based on Quantec (2021)

In terms of the local region's education profile, in 2021, 15% of the region's population had no schooling. Additionally, only 16.1% obtained matric. Although there has been improvement in the level of no schooling and matric attainment, the overall level of education attainment in the region still remains low.

**Table 3.2:** Level of education attainment in the Sundays River Valley Local Municipality

Indicator	Sundays River Valley	
	2011	2021
No Schooling	10.6%	15.5%



Some Primary	23.1%	18.0%
Completed Primary	8.7%	7.7%
Some Secondary	39.3%	38.8%
Matric	14.6%	16.1%
Tertiary	3.7%	3.9%

**Source:** Urban-Econ calculations based on Quantec (2021)

In terms of total GVA (Gross Value Added) the local economy's output reached R2390.2 million (constant prices) in 2021. The agriculture sector contributed 19.1% to the total GVA in 2021 compared to the 18.1% contribution made in 2011. The Sundays River Valley Local Municipality is popularly known for its agriculture and ecotourism sectors. Citrus production is one of the largest sub-industries of the agricultural sector and takes place mainly in and around the Kirkwood and Sunday's River Valley areas. The Addo Elephant National Park located in Addo is another key contributor to the local economy, both directly and indirectly. The agricultural sector is the main contributing sector to the local economy of the region with the development and growth of this sector strongly being supported by an adequate infrastructural base consisting of suitable irrigation systems, road connections and access to the main regional airport and export node also within close proximity to the area. The manufacturing and trade sectors are also key value adding sectors in the region having contributed 18.1% and 18.7% respectively in 2021.

**Table 3.3:** Economic structure of the Sundays River Valley Local Municipality

Sector	Sundays River Valley	
	2011	2021
Agriculture	18.1%	19.1%
Mining and Quarrying	0.04%	0.03%
Manufacturing	13.5%	18.1%
Electricity, Gas and Water	4.0%	3.0%
Construction	3.5%	2.1%
Trade	21.4%	18.7%
Transport and Communication	6.2%	4.6%
Finance and Business Services	9.6%	11.8%
General Government	7.4%	8.3%
Community Services	16.4%	14.3%
<b>Total GVA</b>	<b>R1986.2</b>	<b>R2390.2</b>

**Source:** Urban-Econ calculations based on Quantec (2021)

The socio-economic profile provides valuable information for further impact assessment as it assists with determining the impact of the construction and operation phases that the proposed PV solar energy facility may have on the local and regional economies in terms of skills development, employment, and the generation of revenue

#### 4. Socio-Economic Impact Scoping

This section of the scoping report aims to discuss the impact indicators that will be used for further evaluation in the economic modelling section of the full socio-economic impact study where the impacts will also be quantified. The section also suggests other socio-economic criteria that should be investigated further in the detailed socio-economic impact assessment study. The chapter reports the anticipated net outcome of each impact indicator during the construction and operation phases highlighting appropriately whether the net outcome of each indicator is expected to be positive or negative.

Appropriate socio-economic impact indicators have been identified for the purpose of the scoping report and at a later stage for the full socio-economic impact assessment. These impact indicators are used as guidelines to measure the impact that the proposed PV solar energy facilities would have on the socio-economic environment of the study area and other identified areas mentioned in Section 1.1. The impact indicators have been tabulated in Table 4.1. below and is included for both the construction and operation phase with the highlighted net impact outcome for each indicator. Proposed management and mitigation measures have also been provided. Management in this case is to enhance the positive impact indicators that have been listed.

**Table 4.1:** Net impact of socio-economic indicators- construction and operational phases

<b>Construction phase</b>			<b>Operation phase</b>		
<b>Indicator</b>	<b>Net Impact</b>	<b>Proposed Management &amp; Mitigation</b>	<b>Indicator</b>	<b>Net Impact</b>	<b>Proposed Management &amp; Mitigation</b>

<p><b>Impact on GDP and production</b></p>	<p>Positive</p>	<ul style="list-style-type: none"> <li>• The PV solar plant developer should encourage local procurement of goods and services to be prioritised where possible.</li> <li>• Awareness for local businesses should be raised and extended to catering and accommodation establishments, prior to the construction phase.</li> </ul>	<p><b>Impact on GDP and production</b></p>	<p>Positive</p>	<ul style="list-style-type: none"> <li>• The operator of the PV solar facility should be encouraged as far as possible, to procure materials and products for the maintenance of the facility from local suppliers to improve the positive impact on the local economy.</li> <li>• Operator should be encouraged to use local MSME's in security, cleaning and other sub-industries for the basic maintenance of the facility.</li> </ul>
<p><b>Impact on employment</b></p>	<p>Positive</p>	<ul style="list-style-type: none"> <li>• Arrange meetings through the Sundays River Valley Local Municipality and labour unions to inform the local labour force what jobs could be applied for.</li> <li>• Recruit from the local labour force as far as possible and provide training prior to construction phase.</li> </ul>	<p><b>Impact on employment</b></p>	<p>Positive</p>	<ul style="list-style-type: none"> <li>• As far as possible, local MSME enterprises should be approached to investigate opportunities for supply inputs needed for the maintenance and operation of the facility.</li> </ul>
<p><b>Contribution to skills development</b></p>	<p>Positive</p>	<ul style="list-style-type: none"> <li>• Provide basic construction training to local members prior to</li> </ul>	<p><b>Contribution to skills development</b></p>	<p>Positive</p>	<ul style="list-style-type: none"> <li>• Consider maintenance training programmes for</li> </ul>

		<p>the construction phase.</p> <ul style="list-style-type: none"> <li>Facilitate knowledge and skills between highly specialised technical experts and the construction crew prior and during construction phase.</li> </ul>			<p>the local labour force which will enable them to assist with general maintenance issues of the facility and elsewhere.</p>
<b>Impact on household earnings</b>	Positive	<ul style="list-style-type: none"> <li>Recruit as much local labour as possible to increase local household earnings.</li> <li>Use local suppliers where possible and use local MSME's and B-BBEE compliant enterprises to provide transport and catering to the construction crew.</li> </ul>	<b>Impact on household earnings</b>	Positive	<ul style="list-style-type: none"> <li>Use local MSME's as far as possible for the general maintenance and low-level technical repairs required at the facility after the construction has been completed.</li> </ul>
<b>Impact on government revenue</b>	Positive	<ul style="list-style-type: none"> <li>The proposed PV solar energy facility and related infrastructure will contribute to national revenue through the purchasing of goods and materials needed for construction of the facility and through the salaries and wages of temporary staff involved with the construction phase of the facility.</li> </ul>	<b>Impact on government revenue</b>	Positive	<ul style="list-style-type: none"> <li>The proposed PV solar energy facility and related infrastructure will contribute to national revenue through salaries and wages of permanent staff involved with the maintenance of the facility.</li> </ul>
<b>Impact on social conflict</b>	Negative	<ul style="list-style-type: none"> <li>Through the SRVLM, use local</li> </ul>	<b>Impact on social conflict</b>	Negative	<ul style="list-style-type: none"> <li>Operator of the facility should</li> </ul>

		<p>municipal office as recruitment office and follow strict labour recruitment practices to reduce the number of potential job seekers loitering around in hope of finding employment.</p> <ul style="list-style-type: none"> <li>Establish a management forum with key stakeholders to monitor potential issues that may arise due to the influx of job seekers to the area.</li> </ul>			<p>work through the SRVLM to recruit employees where possible</p>
<b>Impact on economic and social infrastructure</b>	Negative	<ul style="list-style-type: none"> <li>Provide sufficient signage along roads near the construction site to warn motorists of construction activities taking place nearby.</li> <li>Developer and contractor should ensure prior to the construction phase making use of their own mobile social services as far as possible, i.e., mobile clinic, water tanks, generator for electricity supply.</li> </ul>	<b>Impact on economic and social infrastructure</b>	Negative	<ul style="list-style-type: none"> <li>The economic and social infrastructure not owned by the facility operator should remain untouched.</li> <li>Clear signage should be used to demarcate these aspects.</li> </ul>
<b>Impact on the sense of place</b>	Negative	<ul style="list-style-type: none"> <li>Natural environments not affected and needed by the proposed</li> </ul>	<b>Impact on the sense of place</b>	Negative	<ul style="list-style-type: none"> <li>Visual and Noise mitigation measures should be adhered to</li> </ul>

		development should remain untouched. Regulation of boundaries of such areas need to be made transparent between all key relevant stakeholders, the developer and contractor before the construction phase.			during the operational phase. <ul style="list-style-type: none"> <li>Natural environments not affected and needed by the proposed development should remain untouched during the operation phase and should be made transparent between all key relevant stakeholders and facility operator.</li> </ul>
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The following points summarized in Table 4.2. below refer to socio-economic criterions suggested for further investigation based on engagements held during a recent site visit to the Mayogi study area. These impacts are primarily related to tourism and the game animals found on Farm No.692 and have been identified as the only potential areas of direct conflict to the development of the proposed PV solar energy facility.

**Table 4.2:** Suggested socio-economic criterions for further investigation

<b>Socio-economic criteria for further impact consideration</b>	<b>Description</b>
<b>Impact on business/eco-tourism in the study area</b>	<ul style="list-style-type: none"> <li>The accommodation establishments in the area inclusive of the two bush camps and Thorndale lodge on the neighbouring farm as well as the Daniel Cheetah rehabilitation centre and citrus farmstall opposite to the study area are common sites for tourists who come into the area for game hunting activities and for leisure, respectively. This poses as a potential area of conflict for business and eco-tourism should neighbouring farm owners and visitors find the proposed PV solar energy facility distracting during its construction and/or operational phase. Additionally, the study area itself currently experiences an influx of approximately 100-150 international shooting clients per year. The change of</li> </ul>

	<p>scenery might be overwhelming to some visitors particular to regular shooters accustomed to the natural bush environment. However, visual analysts on the EIA team would need to investigate the potential extent of the impact and determine the significance thereof. The impact of the visual disturbance of solar panels may then be mitigated accordingly allowing flexibility for the layout of the facility.</p>
<p><b>Effect on game farm animals</b></p>	<ul style="list-style-type: none"> <li>• With the farm specialising in game farming and breeding, a variety of animals are found in the area including buffalos, wildebeest, impalas, springbucks, and kudus. Based on the engagement with the landowner, it is possible for the animals to be relocated to an isolated area away from the designated PV solar panel site. Relocating the animals is anticipated to not have an impact on the animals as well as the current hunting activities that take place on the farm. This will later be confirmed by the respective specialist.</li> </ul>

Overall, the socio-economic impact indicators show that at this stage, and for the purpose of completing the full socio-economic impact assessment, there are no fundamental implications or flaws identified from a socio-economic perspective that is believed to arise as a result of the development of the proposed Mayogi PV solar energy facility (consisting of Mayogi PV 1 and Mayogi PV 2). The table also indicates that the anticipated net positives outweigh the net negative impacts. It should be noted that the net negative impacts proposed in Table 4.1 may be mitigated or improved which could potentially result in the negative impact having a low significance and overall, not having a severe negative impact on the study area. The table merely provides the anticipated net impact of each socio-economic indicator.

**5. Conclusion**

The socio-economic scoping report first provided a brief overview of the study area for the proposed Mayogi PV solar energy facility comprising of Mayogi PV 1 and Mayogi PV 2. The study area is isolated from households and structures and is surrounded by neighbouring game and citrus farms. Several small to medium accommodation establishments are found within close proximity to the study area that are mainly used for trophy hunting that takes place and leisure purposes.

The scoping report reviewed the national, provincial, district and local policy and planning documentation that relates to renewable energy developments in the area in order to assess the alignment of the proposed project to the development and objectives of the respective municipalities. The proposed Mayogi PV Solar energy facility aligns with the respective government mandates relating to renewable energy. A macro needs and desirability assessment was also provided, including aspects in support of the proposed development. A more location specific needs and desirability assessment will be provided in the full Socio-Economic Impact Assessment report.

A brief overview of the population structure, employment profile, education attainment levels and the economic structure of the primary study area was also provided to highlight and discuss key socio-economic components in order to better understand the socio-economic climate of the area. The addition of the Mayogi PV solar energy facility may be considered beneficial to the area in terms of skills development and job creation during the construction of the facility in particular. The addition of electricity generation may also be considered valuable to the area that has been found to be reliant on value adding sectors such as agriculture, manufacturing, trade.

The results of this socio-economic scoping assessment suggests that there are no foreseen complications from a socio-economic perspective indicating that the study area is unsuitable for the development of the proposed Mayogi PV solar energy facility. The scoping assessment does, however, discuss impacts to be considered for further investigation which may potentially be areas of conflict for business and eco-tourism offered by the study area. It has been briefly mentioned that at a further impact assessment level, these impacts may be mitigated accordingly in order to improve the overall significance thereof. At the scoping stage, proposed mitigation suggestions have been provided and will also be unpacked at a later stage.

The scoping report also briefly discussed the layout alternatives of the proposed Mayogi solar plant facility. As a result of all the listed alternatives still being within the boundaries of the initial demarcated study area, overall, the outcome results in no foreseen complications from a socio-economic perspective and it can be concluded that the study area remains suitable for the development for a PV solar energy facility.



## References

- DEAT. (2002). *Screening: Information Series 1*. Pretoria: Department of Environmental Affairs and Tourism .
- DEDEA. (2012). *The Eastern Cape Sustainable Energy Strategy*. Bhishe: Department of Economic Development, Environmental Affairs and Tourism.
- Department of Economic Development. (2010). *New Growth Path*. Pretoria: National Planning Commission.
- Department of Energy. (2019). *Integrated Resource Plan*. Pretoria: Department of Energy.
- Department of Mineral Resources & Energy. (2019). *Strategic Plan 2020-2025*. Pretoria: Department of Mineral Resources & Energy.
- Department of Mineral Resources & Energy. (2022). *Renewable Independent Power Producer Program*. Pretoria: Department of Mineral Resources & Energy.
- Department of Mineral Resources & Energy, Department of Science and Innovation, & Department of Trade, Industry and Competition. (2022). *Draft South African Renewable Energy Masterplan (SAREM)*. Pretoria: Department of Mineral Resources & Energy.
- Department of Trade and Industry . (2018). *Industrial Policy Action Plan 2018/19-2020/21*. Pretoria: Department of Trade and Industry.
- Eastern Cape Planning Commission. (2014). *Eastern Cape Vision 2030 Provincial Development Plan*. Bhishe: Eastern Cape Planning Commission.
- JUWI. (2023). *Proposed substation layout and design ideas*. JUWI.
- National Planning Commission. (2012). *National Development Plan 2030*. Pretoria: Department of The Presidency.
- National Planning Commission. (2012). *National Infrastructure Plan 2050*. Pretoria: Department of the Presidency.
- Quantec Standardised Regional. (2023, July 21). *Quantec: Standardised Regional Data*. Retrieved from Quatec Easy Data: <https://www.easydata.co.za/service/rsa-standardised-regional-quantec-regional-service/>
- Republic of South Africa. (2022). *National Environmental Management Act (No.107 of 1998)*. Cape Town: Government Printing Works.
- Sarah Baartman District Municipality. (2021). *Integrated Development Plan 2022-2027*. Gqeberha: Sarah Baartman District Municipality .
- Sarah Baartman District Municipality. (2023, July 21). *Sarah District Municipality: About Us*. Retrieved from Sarah District Municipality: [https://www.sarahbaartman.co.za/index.php?option=com\\_zoo&view=item&layout=item&Itemid=1993](https://www.sarahbaartman.co.za/index.php?option=com_zoo&view=item&layout=item&Itemid=1993)
- Sundays River Valley Municipality. (2021). *Integrated Development Plan 2021-2022*. Kirkwood : Sundays River Valley Municipality .