



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

Ref no.3/4/1/5

2024-03-04

NOTICE OF AN URGENT MEETING OF THE COUNCIL OF STELLENBOSCH MUNICIPALITY TUESDAY, 2025-03-04 AT 09:00

TO

The Speaker, Cllr Q Smit [Chairperson]
The Executive Mayor, Ald JS Fasser
The Deputy Executive Mayor, Cllr M Slabbert
The Council Whip, Cllr P Crawley

COUNCILLORS

RA Adams	NE Mcombring
J Andrews	XL Mdemka
Ald JC Anthony	NM Mkhontwana
R Cupido	NR Ndalasi
MM Danana	L Nkamisa
JA Davids	M Nkopane
I De Taillerfer	N Ntsunguzi
R Du Toit	N Olayi
A Ferns	GA Petersen
E Groenewald	WC Petersen
AJ Hanekom	RO Pheiffer
RB Hendrikse	WF Pietersen
SC Heneke	MG Rataza
J Joon	Ald JP Serdyn
O Jooste	SR Schäfer
X Kalipa	A Tomose
TO Kumm	RB Van Rooyen
N Mananga-Gugushe	M Van Stade
C Manuel	E Vermeulen
EP Masimini	J Williams

Notice is hereby given in terms of Section 29, read with Section 18(2) if the *Local Government: Municipal Structures Act, 117 of 1998*, as amended, that an **URGENT MEETING** of the **COUNCIL** of **STELLENBOSCH MUNICIPALITY** will be held in the **COUNCIL CHAMBER, PLEIN STREET, STELLENBOSCH**, on **TUESDAY, 04 MARCH 2025** at **09:00** to consider the items on the Agenda.

SPEAKER
CLLR Q SMIT

A G E N D A
URGENT MEETING OF COUNCIL
OF STELLENBOSCH MUNICIPALITY
2024-03-04

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1.	OPENING AND WELCOME
2.	COMMUNICATIONS BY THE SPEAKER
3.	DISCLOSURE OF INTERESTS
4.	APPLICATION FOR LEAVE OF ABSENCE

5.	REPORTS BY THE MUNICIPAL MANAGER [G METTLER]
5.1	STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT - 50MW SOLAR PV & 15MWH BESS IPP FEASIBILITY STUDY REPORT CLARIFICATION

Collaborator No:

IDP KPA Ref No: Sustainable Valley

Meeting Date: 04 March 2025

1. **SUBJECT: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT - 50MW SOLAR PV & 15MWH BESS IPP FEASIBILITY STUDY REPORT CLARIFICATION**

2. **PURPOSE**

For Council to take note of the clarification of the approved Feasibility Study Report (**Stellenbosch Municipal Independent Power Producer Procurement Pioneering Project – T008/23**) report approved by Council in August 2024.

3. **DELEGATED AUTHORITY**

Municipal Council.

4. **EXECUTIVE SUMMARY**

Before embarking on a procurement process, it was deemed necessary to conduct a feasibility study to investigate, amongst others, the technical and financial viability of technical solutions, staff implications as well as the legal and regulatory environment. The Transaction Advisor has previously completed the Feasibility Study report, which is attached as **Annexure B**.

“The Feasibility Study for the 50 MW IPP project revealed that the most feasible options for the Municipality to pursue are:

- Option 1: Solar PV of 50MW only, or;
- Option 2A10S: Solar PV of 71MW and Battery Energy Storage System BESS of 10MW (at a reduced size).

The Western Cape Government undertook, in parallel to the above processes, a formal Eskom confirmation on Grid Capacity, as well as a formal Eskom confirmation on how they view aggregated supply between the Municipal Points of Supply (“PoS”).

Within the Feasibility Report it was specifically pointed out that:

“It is also noted that the large batteries (e.g., Options 2A/B and 3A/B) required for significant loadshedding reduction, **are not economical** (with due consideration of the profit benefit associated with lower unserved energy), given low utilisation levels (batteries substantially used for dispatch during load-shedding) and high capex cost.

A smaller battery, as modelled in Option 2A10S, can provide savings, as well as some contribution to reducing unserved energy under a no-loadshedding scenario”.

This feasibility report therefore revealed that the Municipality's requirement to commence with the investigation to generate at least sufficient electricity such that the municipality will *have the benefit of two levels lower from any Eskom loadshedding levels* **could not be met** as it would not be financially viable for the municipality.

Furthermore, Council at a Special Council meeting on 14 August 2024 noted this condition. Since the Council resolution of 14 August 2024, the Directorate commenced with the procurement processes and therefore wishes to remind Council that the 50MW Solar PV and 15 MWh BESS Project is being embarked upon with the procurement process which is at the Bid Specification stage at this moment.

Benefits of implementing the 50MW Solar PV and 15 MWh BESS Project would be:

- Procurement of electricity from the IPPs will be at a lower tariff than Eskom's tariff.
- The 15 MWh BESS will be charged by the PV Solar Plant during peak hours thus saving on consumption from the Eskom supply.
- Maintenance & repairs of Solar PV and BESS plants will be the responsibility of the IPP.

This Item therefore seeks to remind Council of the above approvals provided in the Feasibility Study Report, as well as approved by Council in August 2024, so that expectations from Council are properly adhered to in the Bid Preparation Process.

5. RECOMMENDATIONS

For noting

- 5.1 that Council takes note of the clarification of the Feasibility Study Report (**Stellenbosch Municipal Independent Power Producer Procurement Pioneering Project – T008/23**) approved in August 2024.
- 5.2 that Council takes note that the project is in the Bid Specification phase of the procurement process of the 50MW Solar PV and 15 MWh BESS Project.
- 5.3 that Council be reminded that the chosen option and size of battery energy storage, as per the approved Feasibility Study by Council in August 2024, will unfortunately not contribute to the Municipality reducing Eskom loadshedding levels, but is projected to significantly contribute towards electricity costs savings to the Municipality and ratepayers.
- 5.4 that Council takes note that should no responsive bidders be found, it will result in the tender cancellation, whereafter Council will be informed.

6. DISCUSSION / CONTENTS

6.1 Discussion

Before embarking on a procurement process, it was deemed necessary to conduct a feasibility study to investigate, amongst others, the technical and financial viability of technical solutions, staff implications as well as the legal and regulatory environment. The Transaction Advisor has previously completed the Feasibility Study report, which is attached as **ANNEXURE B**.

“The Feasibility Study for the abovementioned project revealed that the most feasible options for the Municipality to pursue are: Option 1: Solar PV of 50MW only, or; Option 2A10S: Solar PV of 71MW and Battery Energy Storage System BESS of 10MW (at a reduced size).

The Western Cape Government undertook, in parallel to the above processes, a formal Eskom confirmation on Grid Capacity, as well as a formal Eskom confirmation on how they view aggregated supply between the Municipal Points of Supply (“PoS”).

Within the Feasibility Report it was specifically pointed out that:

“It is also noted that the large batteries (e.g., Options 2A/B and 3A/B) required for significant loadshedding reduction, **are not economical** (with due consideration of the profit benefit associated with lower unserved energy), given low utilisation levels (batteries substantially used for dispatch during load-shedding) and high capex cost.

A smaller battery, as modelled in Option 2A10S, can provide savings, as well as some contribution to reducing unserved energy under a no-loadshedding scenario”

This feasibility report therefore revealed that the Municipality’s requirement to commence with the investigation to generate at least sufficient electricity such that the municipality will *have the benefit of two levels lower from any Eskom loadshedding levels* **could not be met** as it would not be financially viable for the municipality. Furthermore, Council at a Special Council meeting on 14 August 2024 noted this condition. Since the Council resolution of 14 August 2024, the Directorate commenced with the procurement processes and therefore wishes to remind Council that the 50MW Solar PV and 15 MWh BESS Project is being embarked upon with the procurement process which is at the Bid Specification stage at this moment.

Benefits of implementing the 50MW Solar PV and 15 MWh BESS Project would be:

- Procurement of electricity from the IPPs will be at a lower tariff than Eskom’s.
- The 15 MWh BESS will be charged by the PV Solar Plant during peak hours thus saving on Eskom consumption.
- Maintenance & repairs of Solar PV and BESS plants will be the responsibility of the IPPs.

Risks associated with this project would be:

- The municipality not finding responsive bidders during the procurement process.
- Responsive bidders offering tariffs that are not viable resulting to the cancellation of the tender and that the project cannot proceed.

6.2 Legal Implications

None.

6.3 Financial Implications

Transaction Advisor team and Lead Project Management Firm fees are currently paid by the Western Cape Government.

6.4 Staff Implications

Additional technical staff to oversee the management of the project and the electricity network. The Department is considering these requirements with the restructuring process currently underway.

6.5 Previous / Relevant Council Resolutions**“SPECIAL COUNCIL MEETING: 2024-08-14: ITEM 8.2****RESOLVED** (majority vote)

- (a) that Council approves the Feasibility Study Report in Annexure A;
- (b) that Council approves the initiation of a process for the procurement of electricity energy generated from a combined PV Solar and Battery Storage with a Solar capacity of approximately 71MWp / 59MWAc in total, as well as a Battery Energy Storage System with a capacity of approximately 15MWh in total, for the Stellenbosch Municipal Area as per Option 2A 10 S in Table 3 under paragraph 6.2.7.1;
- (c) that the procurement process bid invitation documents include a customised Power Purchase Agreement (PPA) and the process aligns with the requirements of Chapter 11, and Section 33 of the MFMA, the bid invitation documents to be prepared with the support of the Transaction Advisor Team;
- (d) that Council approves that the maximum contracted Solar capacity of the Project as stated in paragraph (b) may be reduced to account for the outcome of the current tender B/SM 60/24 (20MW) IPP plant, should it be successfully concluded and awarded;
- (e) that Council takes note of the dependencies in the Feasibility Study report, such as a successful award of the contract being contingent upon the Western Cape Government obtaining confirmation from Eskom on Grid Capacity and aggregated supply between the Municipal Points of Supply ("PoS"); and
- (f) that Council agrees that an Expression of Interest (EOI) may be requested from the Public prior to the final bid invitation documents being published.

40TH COUNCIL MEETING: 2021-01-27: ITEM 11.5.1**RESOLVED** (nem con)

- (a) that Council approves the investigation into alternate methods of electricity generation and purchases;
- (b) that Council approves the joint investigation to be done by University of Stellenbosch, Council for Scientific and Industrial Research (CSIR), and the Western Cape Government;
- (c) that Council accepts the initiating of the following processes as may be required:
 - i. Municipal Systems Act, Section 78(1) processes
 - ii. Municipal Finance Management Act, Section 33 investigation processes
 - iii. Electricity Regulation Act, Section 13; and

- (d) that Council considers the funding of such investigations and implementation of completed investigations within the determination of the 2021/22 budget process.

3RD COUNCIL MEETING: 2022-03-30: ITEM 11.5.1

RESOLVED (nem con)

- (a) that Council notes the investigation launched by the Western Cape Government, Municipal Electricity Resilience Initiative Attached as **ANNEXURE A**;
- (b) that Council notes the two Pioneering Projects proposed for Stellenbosch Municipality namely:
 - (i) Pioneering Project 2: Stellenbosch Municipality Solar PV project
 - (ii) Pioneering Project 5: Joint Municipality Generation Project
- (c) that in terms of Pioneering Project 2, Council approves the setting up and issuing of a Request for Proposals (RFP) tenders to call for proposals from suppliers, to build multiple generating facilities and supply electricity to Stellenbosch up to a combined level of 51MW;
- (d) that all relevant process works as prescribed by Section 34 of the Electricity Regulation Act, Act 4 of 2006, as well as associated regulations, as amended, be commenced with up to the level prescribed, in addition to those already commenced with by the CSIR;
- (e) that, after further deliberation with the MER team and participating municipalities, a further report be submitted to Council to report on the feasibility and legal framework of Pioneering Project 5 where a number of Municipalities is proposed to jointly establish a process to purchase electricity from one or a number of Independent Power Producers; and
- (f) that it be endeavoured to also purchase electricity to cover the daily, weekly and seasonal requirements of Stellenbosch Municipality in its objective to be able to reduce the necessity to Load Shed during periods of reduced supply from Eskom.

6.7. Risk Implications

- 6.7.1 The municipality not finding responsive bidders during the procurement process;
- 6.7.2 Responsive bidders offering tariffs that are not viable resulting in the cancellation of the tender.

6.8 Comments from Senior Management

6.8.1 Chief Financial Officer

The content and recommendations in the report are supported.

6.8.2 Director: Community & Protection Services

No comment

6.8.3 Director: Planning and Local Economic Development

I have no further comment. Recommendations are supported.

6.8.4 Director: Corporate Services**6.8.5 Municipal Manager****ANNEXURES**

Annexure A: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER
PROCUREMENT PIONEERING PROJECT – COUNCIL REPORT

Annexure B: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER
PROCUREMENT PIONEERING PROJECT – T008/23 - FEASIBILITY
STUDY (Available on request)

Annexure C: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER
PROCUREMENT PIONEERING PROJECT – COUNCIL RESOLUTION

FOR FURTHER DETAILS CONTACT:

NAME	<i>Nombulelo Zwane</i>
POSITION	<i>Senior Manager: Electrical Services</i>
DIRECTORATE	<i>Infrastructure Services</i>
CONTACT NUMBERS	<i>021 808 8324</i>
E-MAIL ADDRESS	<i>nombulelo.zwane@ Stellenbosch.gov.za</i>
REPORT DATE	<i>27 February 2025</i>

**THE AGENDA HAS BEEN DISCUSSED WITH THE SPEAKER,
CLLR Q SMIT AND HE AGREES WITH THE CONTENT.**

ANNEXURE A

8.2	STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT 2 - FEASIBILITY STUDY
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Collaborator No:

IDP KPA Ref No: Sustainable Valley

Meeting Date: Special Council: 14 August 2024

1. SUBJECT: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT 2 - FEASIBILITY STUDY

2. PURPOSE

For Council to consider the Feasibility Study report (covering the needs, technical and financial viability, legal and regulatory environment, staff implications, economic development impacts and the procurement plan for the recommended option) associated with the procurement of electricity generated from renewable sources, from one or more Independent Power Producers (IPPs)). Approval of the Feasibility Study report, and one of recommendations arising from the report, will allow the process to proceed to the procurement phase of the project.

3. DELEGATED AUTHORITY

Municipal Council.

4. EXECUTIVE SUMMARY

4.1 The Portfolio Infrastructure Services five-year plan contained within the IDP lists the Directorate: Infrastructure Services and the Department: Electrical Services as being responsible for developing alternative energy supply, and the purchasing of electricity from IPPs and the conclusion of an IPP tender as a key priority, with a target of 30% of total energy supply to be purchased from IPP's by 2027.

4.2 Further to this, the Council Meeting held on 30 March 2022 included the following statement: "Stellenbosch Municipality to commence with the investigation to generate at least sufficient electricity such that loadshedding up to Level 2 will have no impact on the business of Stellenbosch Consumers."

4.3 Before embarking on a procurement process, it was deemed necessary to conduct a feasibility study to investigate, amongst others, the technical and financial viability of technical solutions, staff implications as well as the legal and regulatory environment. The Transaction Advisor has now completed the Feasibility Study report, which is attached as **Annexure A**.

4.2 The Feasibility Study for the abovementioned project determined that the most feasible options for the Municipality to pursue are:

Option 1: Solar PV of up to 55MW_p only,

or;

Option 2A10S: Solar PV of up to 71MW_p and Battery Energy Storage System (BESS) of approximately 15MWh.

4.3 The Western Cape Government will undertake, in parallel to the above processes, a formal written Eskom confirmation and approval on Grid Capacity on the Municipality's behalf, as well as a formal written Eskom confirmation and approval on how they view aggregated supply between the Municipal Points of Supply ("PoS").

SPECIAL COUNCIL MEETING: 2024-08-14: ITEM 8.2**RESOLVED** (majority vote)

- (a) that Council approves the Feasibility Study Report in Annexure A.;
- (b) that Council approves the initiation of a process for the procurement of electricity energy generated from a combined PV Solar and Battery Storage with a Solar capacity of approximately 71MWp / 59MWAc in total, as well as a Battery Energy Storage System with a capacity of approximately 15MWh in total, for the Stellenbosch Municipal Area as per Option 2A 10 S in Table 3 under paragraph 6.2. 7 .1;
- (c) that the procurement process bid invitation documents include a customised Power Purchase Agreement (PP A) and the process aligns with the requirements of Chapter 11, and Section 33 of the MFMA, the bid invitation documents to be prepared with the support of the Transaction Advisor Team;
- (d) that Council approves that the maximum contracted Solar capacity of the Project as stated in paragraph (b) may be reduced to account for the outcome of the current tender B/SM 60/24 (20MW) IPP plant, should it be successfully concluded and awarded; and
- (e) that Council takes note of the dependencies in the Feasibility Study report, such as a successful award of the contract being contingent upon the Western Cape Government obtaining confirmation from Eskom on Grid Capacity and aggregated supply between the Municipal Points of Supply ("PoS"); and
- (f) that Council agrees that an Expression of Interest (EOI) may be requested from the Public prior to the final bid invitation documents being published.

FOR FURTHER DETAILS CONTACT:

NAME	Shane Chandaka
POSITION	Director Infrastructure Services
DIRECTORATE	Infrastructure Services
CONTACT NUMBERS	021 808 8213
E-MAIL ADDRESS	shane.chandaka@ Stellenbosch.gov.za
REPORT DATE	1 August 2024

ANNEXURE B

Annexure B:
**STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT
PIONEERING PROJECT – T008/23 - FEASIBILITY STUDY (Due to the large size of this
document, the document will be available on request)**

ANNEXURE C

8.2	STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT 2 - FEASIBILITY STUDY
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Collaborator No:

IDP KPA Ref No: Sustainable Valley

Meeting Date: Special Council: 14 August 2024

1. SUBJECT: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT 2 - FEASIBILITY STUDY

2. PURPOSE

For Council to consider the Feasibility Study report (covering the needs, technical and financial viability, legal and regulatory environment, staff implications, economic development impacts and the procurement plan for the recommended option) associated with the procurement of electricity generated from renewable sources, from one or more Independent Power Producers (IPPs)). Approval of the Feasibility Study report, and one of recommendations arising from the report, will allow the process to proceed to the procurement phase of the project.

3. DELEGATED AUTHORITY

Municipal Council.

4. EXECUTIVE SUMMARY

4.1 The Portfolio Infrastructure Services five-year plan contained within the IDP lists the Directorate: Infrastructure Services and the Department: Electrical Services as being responsible for developing alternative energy supply, and the purchasing of electricity from IPPs and the conclusion of an IPP tender as a key priority, with a target of 30% of total energy supply to be purchased from IPP's by 2027.

4.2 Further to this, the Council Meeting held on 30 March 2022 included the following statement: "Stellenbosch Municipality to commence with the investigation to generate at least sufficient electricity such that loadshedding up to Level 2 will have no impact on the business of Stellenbosch Consumers."

4.3 Before embarking on a procurement process, it was deemed necessary to conduct a feasibility study to investigate, amongst others, the technical and financial viability of technical solutions, staff implications as well as the legal and regulatory environment. The Transaction Advisor has now completed the Feasibility Study report, which is attached as **Annexure A**.

4.2 The Feasibility Study for the abovementioned project determined that the most feasible options for the Municipality to pursue are:

Option 1: Solar PV of up to 55MW_p only,

or;

Option 2A10S: Solar PV of up to 71MW_p and Battery Energy Storage System (BESS) of approximately 15MWh.

4.3 The Western Cape Government will undertake, in parallel to the above processes, a formal written Eskom confirmation and approval on Grid Capacity on the Municipality's behalf, as well as a formal written Eskom confirmation and approval on how they view aggregated supply between the Municipal Points of Supply ("PoS").

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- 4.4 Council to note that neither option (on their own) will be able to provide the required original intention of the Municipality to avert the full two stages below Loadshedding Stage 1 or 2. However each option has been selected in terms of optimum affordability for the Municipality as well as the procurement of alternative “renewable” energy in accordance with the Municipal IDP, and previous Council resolutions
 - 4.5 Council to note that the project will require a proper functioning Supervisory Control and Data Acquisition (SCADA) system, which is currently being implemented by the Municipality. Note that such a requirement is in any case a licenced requirement as well as a Grid Code requirement regardless of the addition of IPPs.
 - 4.6 Council to note that a full human personnel analysis will still need to be conducted prior to the conclusion of the procurement process

Note that while reference is made to the quantity of 55MW_p of installed PV module power, the full amount of energy received from the sun is not converted to usable AC power at the inverters (as per best practice engineering principles for solar PV system design). For this reason, the energy from the sun is shown as eg. 55MW_p but the amount of usable energy from the inverter is shown as approximately 45MW_{AC}. This size reduces the risk of the solar system producing excessive amounts of energy which cannot be absorbed by the Municipal load. If batteries are included, more sun energy can be captured and supplied to the Municipal load leading to a larger system with PV module power of approximately 71MW_p and correspondingly larger inverter capacity of approximately 59MW_{AC}. Some of the energy from this larger solar system will also be used to charge the battery. Both options are synonymous with an approximately 50MW_{AC} Municipal load requirement.

5. RECOMMENDATIONS

For consideration

- 5.1 That Council approves the Feasibility Study Report in Annexure A.
- 5.2 That Council approves the initiation of a process for the procurement of electricity energy generated from only PV Solar for a capacity, of approximately 55MW_p / 45MW_{AC} in total, for the Stellenbosch Municipal Area as per Option 1 in Table 3 under paragraph 6.2.7.1

Or

- 5.2 That Council approves the initiation of a process for the procurement of electricity energy generated from a combined PV Solar and Battery Storage with a Solar capacity of approximately 71MW_p / 59MW_{AC} in total, as well as a Battery Energy Storage System with a capacity of approximately 15MWh in total, for the Stellenbosch Municipal Area as per Option 2A 10 S in Table 3 under paragraph 6.2.7.1.
- 5.3 That the procurement process bid invitation documents include a customised Power Purchase Agreement (PPA) and the process aligns with the requirements of Chapter 11, and Section 33 of the MFMA, the bid invitation documents to be prepared with the support of the Transaction Advisor Team.
- 5.4 That Council approves that the maximum contracted Solar capacity of the Project as stated in paragraph 5.2 may be reduced to account for the outcome of the current tender B/SM 60/24 (20MW) IPP plant, should it be successfully concluded and awarded.

5.5 That Council take note of the dependencies in the Feasibility Study report, such as a successful award of the contract being contingent upon the Western Cape Government obtaining confirmation from Eskom on Grid Capacity and aggregated supply between the Municipal Points of Supply ("PoS").

5.6 That Council agrees that an Expression of Interest (EOI) may be requested from the Public prior to the final bid invitation documents being published.

6. DISCUSSION / CONTENTS

6.1 Discussion

The Municipality has been prioritised as the first municipality to implement one of the Pioneering Projects that form part of the Western Cape MER Initiative which was initiated by the WCG. In March 2022, the Stellenbosch Municipal Council approved a resolution to proceed with the Stellenbosch Municipal Independent Power Producer Procurement Programme (MIPPPP) (the Project).

To implement the Pioneering Project, the Western Cape Government (WCG) Department of Infrastructure (Department) appointed a Transaction Advisor (the Cresco Advisory Consortium) and Project Manager (Pegasys) to facilitate the successful conclusion of a long-term Power Purchase Agreement ("PPA") between the Municipality and one or more IPPs (the Project).

In conducting the feasibility study to investigate the technical and financial viability of technical solutions for the Project as well as the legal and regulatory environment, we have applied best practice and taken account of relevant statutes and regulations, which will also serve to provide context for engagement with key stakeholders, and for the considerations that will have to be applied by the Municipal Council when it makes a final decision on the Project. The core objective of the feasibility study is to test whether the Project, in its recommended form:

- is consistent with the Municipality's legal obligations, development plans and strategic imperatives;
- will be affordable for the Municipality during the Project term;
- is technically feasible;
- identifies and mitigates all material risks in relation to the Project as far as possible; and
- will not have unintended adverse consequences for the Municipality or the local community.

6.2 The Feasibility Study report covers the following sections:

6.2.1 Needs Analysis –

The Needs Analysis has considered the Project's alignment with the Municipality's Strategy and approach to energy resilience as well as the WCG Provincial Strategic Plan and other strategy documents.

The Municipality's IDP is the Municipality's principal five-year strategic plan that deals with the most critical development needs of the municipal area (external focus) as well as the most critical governance needs of the organisation (internal focus). The IDP touches on energy resilience in a number of areas that include the following strategic goals:

- 'Ensure access to affordable, reliable, sustainable, and modern energy for all', which speaks to the Municipality's strategy in respect of energy resilience.
- 'Take urgent action to combat climate change and its impacts' speaks to the drive towards greener energy sources.
- 'Produce sufficient energy to support the industry at competitive prices, ensuring access for poor households, while reducing carbon emissions per unit of power by about one-third.'
- The Portfolio Infrastructure Services five-year plan contained within the IDP lists the Directorate: Infrastructure Services and the Department: Electrical Services as being responsible for developing alternative energy supply, and the purchasing of electricity from IPPs and the conclusion of an IPP tender as a key priority, with a target of 30% of total energy supply to be purchased from IPP's by 2027.

Further to this, the Council Meeting held on 30 March 2022 included the following statement: "Stellenbosch Municipality to commence with the investigation to generate at least sufficient electricity such that loadshedding up to Level 2 will have no impact on the business of Stellenbosch Consumers."

The Needs Analysis concluded that the Project is aligned with the strategic objectives of the Municipality. A detailed stakeholder management plan was also developed to guide the Municipality in engaging with key stakeholders during the various Project development processes.

6.2.2 Options Analysis – this section identified possible technical solutions, which included detailed technical and financial assessments per technical option identified. Technical solutions included various configurations of Solar PV only; and Solar PV and Battery Energy Storage System (BESS) as discussed below:

Option 1A/B/C – Solar PV only solution (considering different sizing, points of connection, wheeling from outside of the municipal border and operation under a loadshedding and no loadshedding scenario).

Summarised Outcome: Option 1 and its permutations resulted in the highest Net Present Value (NPV) saving in cost of supply and proved to be the optimal financial solution. However, a Solar PV only option may not contribute to the reduction of unserved energy (customer demand that cannot be supplied due to e.g., load shedding supply reduction) as the Solar PV plant(s) would need to be offline during load shedding.

Option 2A/B – Solar PV and BESS assuming the Municipality is a loadshedding customer (considering different sizing; points of connection; and operation under a loadshedding and no loadshedding scenario).

Summarised Outcome: Option 2A/B reduced the unserved energy (load shedding) from an assumed base of 7.8% to between 0.09% and 0.23%. Option 2A/B however resulted in a negative NPV impact given low utilisation levels (batteries substantially used for dispatch during load-shedding) and high capital cost associated with the addition of batteries.

Option 3A/B – Solar PV and BESS assuming the Municipality is a load curtailment customer (considering different sizing; points of connection and operation under load curtailment, instead of load-shedding).

Summarised Outcome: Option 3A/B reduced the unserved energy from an assumed base of 7.8% to between 1.57% and 1.91%. Option 3A/B however resulted in a negative NPV impact given low utilisation levels and high capex cost associated with the addition of batteries.

Option 2A 10S – Solar PV and BESS at a reduced size - An additional option was evaluated with a reduced BESS size (10 MWh for the Stellenbosch supply point) to evaluate to what extent a smaller BESS could reduce unserved energy, but still be within acceptable financial parameters.

Summarised Outcome: This option reduced the unserved energy as a result of load shedding from an assumed base of 7.8% to 3.93%. This option provides NPV savings under the current Megaflex tariff structure and remains positive under the proposed MunicFlex tariff structure and a 10% tariff flex. A further sensitivity analysis was run for this option to ascertain the outcome under a no loadshedding scenario, which provided savings under both the current Megaflex and MunicFlex tariff structures.

In summary, based on the outcome of the comparative technical and financial analysis, only Option 1A/B/C (Solar PV plant without BESS) and Option 2A10S (Solar PV with reduced BESS size) is recommended as viable as per the Table 1 below:

Table 1: Recommended Options - Maximum Contracted Capacity for the Project

Technology	*Maximum Contracted Capacity (Total from all Supply Points)
Option 1A/B/C: Solar PV only	Approximately 55 MW _p / 45 MW _{AC}
OR	
Option 2A10S: Solar PV and BESS	Approximately 71 MW _p / 59 MW _{AC} Approximately 7.5 MW / 15 MWh

**The minimum individual IPP project sizes making up the maximum contracted capacity for the Project will be determined during the procurement phase*

An important consideration would be how the Municipality's other initiatives, specifically the Tender: 'B/SM 60/24 Request for Proposal (RFP) from Independent Power Producers to Provide 20MWP Renewable Energy to Stellenbosch Municipality' ("B/SM 60/24 20MW Tender") impacts the maximum contracted capacity for the Project as specified in Table 1 above. No information could be shared with the Transaction Advisor in respect of the tender responses as it is still under evaluation. If the B/SM 60/24 20MW Tender proves to be successful, then the maximum contracted capacity for this Project will be reduced accordingly.

The Project will be designed to facilitate the procurement of new electricity generation capacity from either Option 1: Solar PV or Option 2A10S: Solar PV and BESS (at a reduced size), to contribute towards the strategic objectives of the Municipality. The Municipality is required to make a decision as to their preferred option.

6.2.3 Legal Assessment – the legal assessment included a detailed analysis of the legislation and regulations that are applicable to the Project and assesses whether these present any major obstacles for successful project implementation. Key approvals, procedures and other requirements that may impact the planning, procurement and implementation stages of the Project, have been noted for consideration during the Project procurement and contracting process. It is envisaged that the Municipality will enter into a long-term Power Purchase Agreement (PPA) with one or more IPP's constituting a long-term financial commitment(s) on the part of the Municipality. As such, Municipal Council approval will be required in terms of section 33 of the MFMA before entering into these contracts.

6.2.4 Economic Development Assessment - this section considered the potential socio-economic development measures that could be incorporated as part of the procurement process. The following measures have been prioritised for their suitability to this Project, for the benefit of the local community:

- Creating employment in the construction programme and power plant operations;
- Spend on skills development of historically disadvantaged individuals; and
- Social spending (i.e., building specified social infrastructure for local community benefit and spend on social well-being programmes).

It is recommended that these socio-economic development measures be incorporated as a condition of award/ contractual obligation.

It is also recommended that the Municipality should apply its current preference points system to the bid evaluation for this Project. Specifically, the Municipality should award a maximum of 10 points for the B-BBEE Level of the bidder. A 90/10 preference points evaluation system is envisaged since the estimated total value of the 20-year PPA will exceed R50 million.

6.2.5 Procurement Plan – the procurement plan summarised the recommended procurement solution(s), required regulatory approvals, provisional risk allocation, procurement timetable and items that would need to be resolved during the procurement process. It is also recommended that an Expression of Interest (EOI) be issued before issuing the RFP to solicit information from interested parties on project readiness and other matters including land availability which has been identified as a potential constraint to bidder participation.

6.2.6 Summary Outcome

6.2.6.1 The municipal strategic objectives are summarised in Table 2 below and considers how the recommended options in Table 1 meet these objectives:

Table 2: Assessment - Recommended Options Against the Municipal Strategic Objectives

Municipal Strategic Objectives		Option 1 A,B and C Solar PV plant only	Option 2A10S Solar PV plant + BESS Reduced size
1	Combat climate change and reduce carbon emissions	All the proposed options contribute towards combatting climate change and reducing carbon emissions.	
2	Diversification - Meeting IDP target of procuring electricity from IPPs - 30% by 2027	The maximum contracted capacity determined for the Project will contribute to this objective.	
3	Reliable Energy Supply - reduction in unserved energy as result of load shedding	This option does not contribute to reducing unserved energy	Some reduction in unserved energy (7% to 3.9%)
4	Affordability - in respect of Municipality's Balance Sheet	Lower bound guarantee requirements within balance sheet debt limits	Lower bound guarantee requirements within balance sheet debt limits
5	Affordability - in respect of impact on cost of supply and end-user tariff	Financial assessment outcome shows positive impact on Municipal Cost of Supply	Financial assessment outcome shows positive impact on Municipal Cost of Supply
6	Transferring substantial risk to private party	By virtue of the risk allocation of an IPP project structure the Municipality's risk is minimised to mainly the payment obligation (and providing a termination payment guarantee in the event of termination due to Municipality default).	

Option 1A/B/C presents a no-regret option from a financial point of view and achieves the highest NPV savings. The option however does not contribute to reducing unserved energy. Option 2A10S presents a middle ground in respect of reducing unserved energy from 7.8% to 3.93% and also results in a NPV saving, albeit lower than Option 1A/B/C.

The Municipality's view of loadshedding in the medium to long term should be considered in deciding whether to pursue Option 1A/B/C vs Option 2A10S. A battery solution can be added at a later stage if necessary. The Municipality is required to make a decision as to their preferred option.

6.2.7 Options Analysis

The objective of the Options Analysis is to identify and assess the viable technical solutions that aligns to the Municipality's strategic objectives and to assess their financial impacts and any regulatory/legal, socio economic and economic development aspects that may differ in respect of the options.

6.2.7.1 Identification of plausible options

The Options Analysis was undertaken by firstly assessing the Municipality's electricity supply network and load, and plausible technical solution options were identified as per Table 3 below.

Table 3: Overview of the Technical Solution Options evaluated

Option	Solar PV	BESS	Load Shedding vs. Curtailment	Connection Configuration
1	A	√	Load shedding	Four plants, behind-the-meter at each supply point
	A NLS	√	No Load shedding	Four plants, behind-the-meter at each supply point
	B	√	Load shedding	One plant behind-the-meter at Stellenbosch supply point, net-metering to other supply points
	C	√	Load shedding	One plant, connected to Eskom network, wheeling to all supply points
2	A	√	Load shedding	Four plants, behind-the-meter at each supply point
	B	√	Load shedding	One plant behind-the-meter at Stellenbosch supply point, net-metering to other supply points
	A NLS	√	No Load shedding	An additional scenario was modelled for option 2A where no load shedding is experienced.
	A 10S	√	Load shedding	An additional scenario was modelled for option 2A with a smaller (10 MWh) BESS size (only modelled for Stellenbosch supply point as a proxy for all supply points)
	A 10S NLS	√	No Load shedding	An additional scenario was modelled for option 2A with a smaller (10 MWh) BESS size and where no load shedding is experienced (only modelled for Stellenbosch supply point as a proxy for all supply points)
3	A	√	Load curtailment	Four plants, behind-the-meter at each supply point

Option	Solar PV	BESS	Load Shedding vs. Curtailment	Connection Configuration
B	√	√	Load curtailment	One plant behind-the-meter at Stellenbosch supply point, net-metering to other supply points

6.2.7.2 Methodology and approach in assessment of the technical solution options

A technical assessment of the options was undertaken with the key objectives of a) determining the potential maximum contracted capacity b) development of energy generation profiles c) developing BESS charge and discharge profiles d) network capacity and strength (power system) studies and e) calculation of the reduction (if any) of unserved energy.

A financial assessment of the options was undertaken that considered

- a) a supply analysis
- b) the cost of supply or tariff of the options considered
- c) the impact on the blended cost of supply of the Municipality
- d) the NPV impact of the options; and
- e) the impact on the Municipal Balance Sheet.

The financial analysis also considered the potential impact of the proposed MunicFlex tariff restructure expected to be implemented in the medium term.

6.2.7.3 Comparative Technical and Financial assessment of the Options

Table 5 presents the comparative technical and financial outcomes.

Summary conclusion on the technical assessment

- For the 2022 reference year, the total amount of unserved energy due to loadshedding was 7.8% across the entire Municipality.
- Our baseline assumption for the Option 1 scenarios (i.e., PV only and the Municipality is a load shedding customer) is that the PV plants would need to be offline during load shedding. This is based on the assumption that 1.) if Eskom is conducting the load shedding, then the PV plants will not be able to operate in an islanded mode (the PV inverters are grid following and will automatically shut down when disconnected from the grid) and 2.) if the Municipality is self-load shedding, then the System Operator would not want the Municipality to rely on the Eskom network to provide the ancillary services necessary to support the Municipal network and its PV generator during load shedding. Based on these assumptions, the Option 1 scenarios do not reduce load shedding / unserved energy.
- In the case of the Option 2 scenarios, which are the load shedding reduction scenarios, the solar PV plants combined with BESS reduce the quantum of loadshedding down from 7.8% of unserved energy, to 0.09% of unserved energy for scenario 2A. For 2B, the combined solar PV plant and BESS results in 0.23% of unserved energy for the year. Note that loadshedding is not completely eliminated. However, larger solar PV plant and larger BESS capacities than those modelled will result in a higher capex cost with only marginal reduction in the unserved energy.

- In the case of the Option 2A 10S scenarios, which is the load shedding reduction scenario with a smaller battery size (10 MWh), which was only modelled for Stellenbosch supply point, the quantum of unserved energy was reduced from 7.8% to 3.93% at Stellenbosch supply point.

In the case of the Option 3 scenarios, which are load curtailment scenarios, the solar PV plant and BESS plants reduce the quantum of loadshedding down from 7.8% of unserved energy, to 1.91% of unserved energy for scenario 3A. For scenario 3B, which is two solar PV plants and one BESS located at Stellenbosch, the plants reduce the quantum of loadshedding down from 7.8% of unserved energy, to 1.57% of unserved energy.

- Note: comparing the unserved energy and hours of unserved energy between the Option 2 and Option 3 scenarios is not recommended. The Option 2 scenarios are working to service the Municipal load during hours of load shedding; and the Option 3 scenarios are working to provide a constant reduction over an extended period, to meet load curtailment requirements.
- In conclusion, the results suggest that BESS, even at a smaller size of 10 to 20MWh will have an impact on loadshedding, and if the Municipality had to procure a smaller size BESS, they would still benefit from improved security of supply, as well as improved production of renewable energy, if the BESS is coupled with a solar PV plant, which will not go offline during load shedding.

Summary conclusion on the technical assessment

In respect of the NPV assessment:

- Options 1A and 1B achieve the highest savings under the current Megaflex tariff structure (R395/MWh and R393/MWh respectively); and remain positive under the proposed MunicFlex tariff structure and a 10% tariff flex;
- Option 1C (wheeling) achieves second highest savings (R355 /MWh); and remains positive under the proposed MunicFlex tariff structure and a 10% tariff flex;
- Options 2A, 2B, 3A, and 3B are loss-making over the duration of the PPA period under the current Megaflex -, and proposed MunicFlex tariff structures;

(Note: running Option 2A under a no-loadshedding scenario (more efficient battery utilisation and using Megaflex tariff structure) still result in a negative NPV savings value, albeit smaller (-R5/MWh).)

- Option 2A10S provides savings under the current Megaflex tariff structure (R321/MWh); and remains positive under the proposed MunicFlex tariff structure and a 10% tariff flex. A further sensitivity was run for this option to ascertain the outcome under a no loadshedding scenario (Option 2A10S NLS), the latter which provided savings under the current Megaflex (R293/MWh)- and MunicFlex (R152/MWh) tariff structures.
- Finally, avoided diesel cost shown are immaterial in the context of losses associated with large batteries. However, reduced avoided cost does strengthen the business case for a smaller battery option (e.g., 2A10S).

In respect of the impact on cost of supply:

- average cost of supply reduces between 16c/kWh to 19c/kWh for variations of Options 1; while cost of supply increases between 11c/kWh to 40c/kWh for variations of Option 2 and Option 3 (with the exception of a 10c/kWh saving for both 2A10S and 2A10 NLS);
- the introduction of MunicFlex reduces overall savings of renewable energy, which accentuates savings and losses mentioned above.

Other considerations:

- It is important to note that higher Eskom tariff increases in comparison to CPI linked IPP tariff increases will see a growing gap between the average utility- and IPP tariffs; and therefore, have to be considered together with NPV savings.
- Stellenbosch Municipality indicated that above inflation energy tariff increases are not affordable for the average household; hence, technology solutions that increase the current cost of supply would be less favourable.
- The future MunicFlex rate adjustment is a key consideration for the calculation of the cost of supply.

6.2.7.4 Measurement against the Municipality's strategic objectives

The Municipality's strategic objectives and related output specifications are detailed in Table 4 below which evaluates how the options meet the objectives.

All options contribute to strategic objectives 1 and 2. From the table one can see that no one option meets all the objectives and the balance falls between reducing unserved energy vs impact on cost of supply.

Table 4 - Assessment of the Options Against the Municipal Strategic Objectives

Municipal Strategic Objectives	Option 1 A,B and C Solar PV plant only	Option 2A+B Solar PV plant + BESS Loadshedding	Option 3A+B Solar PV plant + BESS Load Curtailment	Option 2A10S Solar PV plant + BESS Reduced size
1 Combat climate change and reduce carbon emissions	All the proposed options contribute towards combatting climate change and reducing carbon emissions.			
2 Diversification - Meeting IDP target of procuring electricity from IPPs - 30% by 2027	The maximum contracted capacity determined for the Project will achieve this objective.			
3 Reliable Energy Supply - reduction unserved energy as result of load shedding	This option does not contribute to reducing unserved energy	Based on the sizing Option 2 offers greatest impact on reducing unserved energy	Reduction in unserved energy, however not as much as Option 2	Some reduction in unserved energy (7% to 3.9%)
4 Affordability - in respect of Municipality's Balance Sheet	Lower bound guarantee requirements within balance sheet debt limits	Financial Analysis indicates the option is not affordable as it increases the blended cost of supply and has a negative NPV impact.	Financial Analysis indicates the option is not affordable as it increases the blended cost of supply and has a negative NPV impact.	Lower bound guarantee requirements within balance sheet debt limits
5 Affordability - in respect of impact on cost of supply and end-user tariff	Financial assessment outcome shows positive impact on Municipal Cost of Supply			Financial assessment outcome shows positive impact on Municipal Cost of Supply under the Megaflex tariff structure.
6 Transferring substantial risk to private party	By virtue of the risk allocation of an IPP project structure the Municipality's risk is minimised to mainly the payment obligation (and providing a termination payment guarantee in the event of termination due to Municipality default).			

AGENDA

SPECIAL COUNCIL MEETING

2024-08-14

Table 5 - Summary outcome of the technical and financial analysis undertaken

Evaluation of Options	Option 1 (Solar PV Only)			Option 2 (Solar + BESS)			Option 2 (Solar + Small BESS)		Option 3 (Solar + BESS)	
Criteria	Imbedded	Imbedded	Wheeled	Loadshedding	Loadshedding	No Loadshedding	Loadshedding	No Loadshedding	Load Curtailement	Load Curtailement
	1A	1B	1C	2A	2B	2A NLS	2A10S	2A10S NLS	3A	3B
Technical outputs										
PV Size (MWp)	34.2MWp (S) + 8.7MWp (C) + 7.9MWp (F) + 1.4MWp (P) = 52.1 MWp total	55MWp	52.1 MWp	47.6MWp (S) + 11.6MWp (C) + 9.7MWp (F) + 1.8MWp (P) = 70.7MWp total	71.3MWp	71.3MWp	47.6MWp	47.6MWp	37.5MWp (S) + 13.1MWp (C) + 10.7MWp (F) + 1.8MWp (P) = 63.1MWp total	66.6MWp
BESS Size (MW/MWh)	No BESS	No BESS	No BESS	50/100 (S) + 15/30 (C) + 10/20 (F) + 2/4 (P) = 77/154 total	55/110	55/110	5/10	5/10	25/100 (S) + 7.5/30 (C) + 5/20 (F) + 1/4 (P) = 38.5/154 total	37.5/150
Substation	All	All	All	All	All	Stellenbosch	Stellenbosch	Stellenbosch	All	All
% PV Curtailment	10%	10%	6.3%	10%	10%	9.9%	10%	9.7%	10%	10%
% Unserved Energy	7.8%	7.8%	7.8%	0.09%	0.23%	n/a	3.93%	n/a	1.91%	1.57%
% Reduction of eskom consumption	28%	31%	32%	39%	43%	44%	39%	39%	34%	36%
Financial Considerations										
Sizing considered in Financial Model	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing	Appropriate Sizing Considered; Tariff Based on Commercial Scale Project Costing
Energy Sold (MWh/annum)	351 211	351 211	351 211	380 237	380 004	380 790	361 235	380 790	373 529	374 805
Total Generation (MWh/Annum)	120 335	127 131	128 183	176 294	142 615	123 590	111 026	111 026	144 394	150 812
2023/24 Cost of Supply (R/kWh)	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
2023/24 Cost of Supply (Drakenstein Replaced) (R/kWh)	1.75	1.75	1.75	1.74	1.74	1.74	1.75	1.74	1.74	1.73
2024/25 Cost of Supply (Drakenstein Replaced) (R/kWh)	1.98	1.98	1.97	1.96	1.96	1.96	1.97	1.96	1.96	1.95
2024/25 IPP Cost of Supply (R/kWh)	0.95	0.95	0.90	2.16	2.31	2.31	1.19	1.22	2.62	2.37
2024/25 Blended Cost of Supply IPP & Eskom (R/kWh)	1.79	1.79	1.82	2.26	2.23	2.07	1.87	1.85	2.36	2.26
2024/25 (Reduction)/Increase (c/kWh)	(19)	(19)	(16)	30	27	11	(10)	(11)	40	31
2024/25 NPV Savings - Current Tariff Structure (R/MWh)	395	393	355	(150)	(149)	(-5)	321	293	(368)	(211)
Debt Ratio (36 month guarantee)**	48.0%	49.0%	48.0%	83.0%	77.0%	70.0%	50.0%	51.0%	83.0%	80.0%
Debt Ratio (12 month guarantee)**	37.6%	37.9%	37.7%	48.8%	46.7%	44.8%	38.4%	38.5%	48.7%	47.8%
2024/25 Municflex (Cost of Supply- Drakenstein Excl)	1.94	1.94	1.94	1.90	1.90	1.90	1.92	1.90	1.91	1.90
2024/25 MunicFlex Blended Cost of Supply IPP & Eskom (R/kWh)	1.86	1.86	1.89	2.34	2.29	2.14	1.92	1.89	2.43	2.34
2024/25 MunicFlex (Reduction)/Increase (c/kWh)	(8)	(8)	(5)	44	39	24	-	(1)	52	44
NPV Savings - Proposed MunicFlex (R/MWh)	257	249	166	(284)	(291)	-	192	152	(503)	(359)

*36 months future IPP revenue buyer default termination guarantee

** norm: 45%

6.2.7.5 Conclusion of the comparative analysis of the technical solution options

Based on the outcome of the technical and financial analysis, we conclude that Option 1A/B, being an embedded solar PV plant/s without BESS provides the optimal financial impact, however it may not contribute to reducing unserved energy. It is also noted that the large batteries (e.g., Options 2A/B and 3A/B) required for significant loadshedding reduction, are not economical (with due consideration of the profit benefit associated with lower unserved energy), given low utilisation levels (batteries substantially used for dispatch during load-shedding) and high capex cost. A smaller battery, as modelled in Option 2A10S, can provide savings, as well as some contribution to reducing unserved energy. It also provides savings under a no-loadshedding scenario.

The Municipality's view of loadshedding in the medium to long term should be considered in deciding whether to pursue Option 1A/B/C vs Option 2A10S. A battery solution can be added at a later stage if necessary. The Municipality is required to make a decision as to the preferred technical solution to be procured and to provide their approval for the continuation of the Project to the procurement phase, with the support of the TA Team on this basis as per Resolution 5.4.

6.2.8 Economic Development Assessment

The Municipality's current approach to awarding preference points for specific goals considers B-BBEE level and locality: at least 50 percent for the B-BBEE contributor status level of the tenderer and a maximum of 50 percent for the location of the business offices of the tenderer.

It would be administratively simple to apply the Municipality's approach to preference points to this Project. However, it would likely do little to promote meaningful, broad-based socio-economic benefit or help mitigate local community risk. Furthermore, it would be unwise to ignore the precedents set by South Africa's REIPPPP.

There are three options available to address the limitations of Stellenbosch's preference scoring and to mitigate local community risk in this Project: 1) amend the Municipality's Preferential Procurement Policy to make provision for creating an expanded preference scoring system for this Project; 2) use "objective criteria" related to socio-economic development in the assessment of bid responses; and 3) include contractual obligations related to socio-economic development as a condition of bid award.

The outcome of a pros and cons assessment for each of the abovementioned three options preferred utilising contractual obligations related to socio-economic development. The pros and cons relate to a) impact on the procurement process and future contract management; b) likely behaviour by bidders; c) possible influence on the electricity tariff; and d) socio-economic development impact.

To determine the socio-economic development obligations, assessment criteria were applied to ten common socio-economic development measures. The following measures have been prioritised for their suitability to this Project, for the benefit of the local community:

Table 7 – Recommended socio-economic development measures

Socio-economic development measure	Contractual obligation	Relevant conditions
Job creation for local community members.	40% of total person months in the construction phase. 50% of total person months in the operating phase.	"Local community" is defined as verified residents of the Local Municipality in which the Project is located. This definition can be expanded in the following instances: in the event the Project site straddles the demarcated boundary of two Local Municipalities, or

		there is a second adjacent Local Municipality that incorporates a human settlement that reasonably could impact or be impacted by the Project.
Skills development spending to improve the employability of local community members.	0.2% of the total 20-year PPA revenue.	To be spent on internships and bursaries related to post-secondary school education and training – for local community members.
Social spending to improve the quality of life of the local community.	0.8% of the total 20-year PPA revenue.	To be spent on social well-being programmes and social infrastructure in the local community. The latter can only be made within the Stellenbosch Municipal boundary, and must be approved and appear in the Stellenbosch Municipality IDP to qualify.

It is recommended that these socio-economic development measures be incorporated as a condition of award/ contractual obligation. It is estimated that these measures, as envisaged, will have a negligible impact on the electricity tariff i.e., 1 cent per kWh.

It is recommended that the Municipality should apply its current preference points system to the bid evaluation for this Project. Specifically, the Municipality should award a maximum of 10 points for the B-BBEE Level of the bidder. A 90/10 preference points evaluation system is envisaged since the estimated total value of the 20-year PPA will exceed R50 million.

6.2.9 Procurement Plan

6.2.9.1 Technical Solution to Procure

The Project will be designed to facilitate the procurement of new generation capacity from either Option 1: Solar PV or Option 2A10S: Solar PV and BESS (reduced BESS size), to contribute towards the strategic objectives of the Municipality. The Municipality is required to make a decision as to their preferred option as per resolution 5.4. Table 8 below presents the maximum contracted capacity for purposes of the Project.

Table 8 - Recommended Options - Maximum Contracted Capacity for the Project

Technology	*Maximum Contracted Capacity (Total from all Supply Points)
Option 1A/B/C: Solar PV only	~ 55 MW _p / 45 MW _{AC}
OR	
Option 2A10S: Solar PV and BESS	~ 71 MW _p / 59 MW _{AC} ~ 7.5 MW / 15 MWh

*The minimum individual IPP project sizes making up the maximum contracted capacity for the Project will be determined during the procurement phase

An important consideration would be how the Municipality's other initiatives, specifically the B/SM 60/24 20MW Tender, may impact the maximum contracted capacity for the Project. If the B/SM 60/24 20MW Tender proves to be successful, then the maximum contracted capacity for this Project in Table 8 above will be reduced accordingly.

6.2.9.2 Items to consider during the procurement phase:

The following items will need to be considered during the procurement phase that will inform the minimum size of individual IPP projects making up the maximum contracted capacity of the Project and the points of supply:

- Formal Eskom confirmation on Grid Capacity;
- Formal Eskom confirmation on how they view aggregated supply between the Municipal Points of Supply (“PoS”)
- Land availability, bidder readiness and time required to obtain necessary approvals - it is recommended that the Municipality issue an EOI (which has already been drafted by the TA Team) to gather information from the market in respect of potential project sizes, location and readiness to participate in the intended procurement process.
- Impact of the B/SM 60/24 20MW Tender on the Project.

The following are preparatory activities that the Municipality will have to undertake in anticipation of the procurement and operational phases of the Project:

- Grid connections - the Municipality will need to consider how it will manage approaches from potential bidders in respect of connecting their projects to the Municipal grid.
- Control Measures - the Municipality will need to investigate and implement the necessary control measures to ensure it is able to dispatch any generation plant based on any local or Eskom grid requirements.

6.3 Legal Implications

6.3.1 Legislation and regulations applicable to the Project

- The purpose of this assessment was to determine which legislation and regulations are applicable to the Project, and whether the applicable legislation and regulations have different consequences for the different technical solutions considered for the Project.
- The legal assessment also considers whether the requirements of applicable legislation and regulations present any major obstacles or risks to Project procurement and implementation.
- Finally, the legal assessment identifies key approvals, procedures and other requirements, which impact on the planning, procurement and implementation of the Project, so that those can be considered in the Project procurement and contracting process.

6.3.2 Key Legal and regulatory questions considered

Below is a summary of the key legal and regulatory questions that arose in relation to the feasibility phase of the Project, and conclusions on these questions. These questions address the applicability of the key legal requirements which bind or affect the Municipality, both in regard to the procurement phase and thereafter, during contract finalisation, and the consequences of those requirements for the Project design and the timing / sequencing of the process. The questions below are only those that are deemed critical to note, however other questions were considered in the Feasibility Study.

- The procurement of electricity by the Municipality from one or more IPPs does not entail the delivery of “municipal services” through an external mechanism, as contemplated in the Municipal Systems Act. Therefore, the requirements set out at section 76 of the Municipal Systems Act and in the following sections are not applicable to the Project.

- If the Project is designed so that the Municipality only purchases electricity (and possibly services which are ancillary thereto) from IPPs which bid for the opportunity, for the term of the PPA, the Project will not constitute a PPP. The key reason for this conclusion is that the IPPs in this scenario will not be performing municipal functions on behalf of the Municipality. As such, section 120 of the MFMA, read with the Municipal Public-Private Partnership Regulations, is not applicable to the Project.
- Even if one or more IPP generation facilities were situated on Municipal-owned land, that would not automatically make the Project a PPP. Only if the Municipality requires such generation facilities to be located on specific Municipal-owned land, and requires the generation facility to be constructed, funded, commissioned and operated for the Municipality, is there a possibility that the Project would be considered a PPP. This is not the case.
- Although the Municipal PPP Regulations are not applicable, relevant sections of the MFMA and the Municipal SCM Regulations are applicable to the procurement process, which will entail competitive bidding. In addition, the Municipality's SCM Policy and its Preferential Procurement Policy will be applicable.
- It is not necessary for the Minister of Mineral Resources and Energy to issue a determination in terms of section 34 of the Electricity Regulation Act (ERA), as a pre-condition for the Project to proceed. The Municipality can initiate the Project and procure the new generation capacity based on its own assessment of the need and the feasibility thereof.
- As long as the Project is procured on the Municipality's own initiative and not pursuant to a section 34 Ministerial determination, the Electricity Regulations on New Generation Capacity (NewGen Regulations) issued in terms of ERA are not applicable to the Project. The reason for this is that "new generation capacity" in the NewGen Regulations is defined as generation capacity procured pursuant to a section 34 determination.
- National Treasury Circular No 118 was issued to give guidance to municipalities on the interpretation and consequences of the NewGen Regulations, where applicable to municipal IPP procurement. Circular No 118 is not directly applicable to the Project or binding on the Municipality but provides useful guidance on best practice in municipal IPP procurement. To date, the steps taken by the Municipality in relation to the Project are consistent with the preparatory steps outlined in Circular No 118, for projects that fall within Scenario 2.
- Based on the current Schedule 2 of ERA, it appears that IPPs which are successful in the Municipality's Project procurement process will not require a generation licence issued by NERSA. Depending on where the generation facilities are located, they will be exempt from both licensing and registration by NERSA under item 2 of Schedule 2, or exempt from licensing but required to register under item 3 of Schedule 2 of ERA.
- The contracts which result from the Project procurement process will result in long-term financial commitments on the part of the Municipality. Therefore, Municipal Council approval will be required in terms of section 33 of the MFMA. Section 33 approval should be sought towards the end of the procurement process, or at least after the RFP has been issued, when the PPAs and associated agreements are in near-final form. To the extent that the public participation component of the section 33 approval process can be aligned with the Municipality's IDP process, this opportunity should be pursued.

- It will be prudent, and has become best practice in IPP procurement processes, to issue largely non-negotiable draft agreements along with the RFP, for purposes of indicating to prospective bidders what the intended commercial terms of the transaction will be, and the respective risk allocation between the parties. The draft agreements will also, to the extent relevant, include any socio-economic development obligations imposed as contract terms by the Municipality.
- There are no regulatory restrictions in the NRS 048-9, the Municipality's Distribution Licence, or the Electricity Supply Agreements, that would require consultation with or permission from Eskom for the establishment of an embedded generation facility in the Municipality's licensed area. However, it should be noted that embedded generators connected to the distribution system will still have to comply with the specifications and obligations set out in the various distribution Grid Codes.
- Even though Eskom consent is not required by law, Eskom (or its successor NTCSA) as the System Operator has the ultimate responsibility for overall system stability and is empowered to take appropriate measures in an emergency to mitigate any risk to grid stability. Also, Eskom is and will remain the principal supplier of electricity to the Municipality, and there have apparently been ongoing engagements between Eskom and the Municipality on amendments to, or replacement of the existing Electricity Supply Agreements for the Stellenbosch area. Therefore, it would be prudent for the Municipality to continue engaging with Eskom on the Project and the potential impact of the Project on grid stability in the Western Cape, to obtain Eskom's support.
- The legal landscape surrounding the approval of project pricing for IPPs and the regulation of fees, charges, and tariffs by the NERSA is multifaceted and subject to ongoing developments. While IPPs exempted from licensing under the ERA will not be subject to NERSA approval for PPA pricing, the Municipality is required to obtain NERSA approval, on an annual basis, of its electricity tariffs for municipal services, including electricity. Recent legal developments underscore the necessity for a cost-reflective methodology in tariff approval processes.

The recommendations in the feasibility study report, as reflected herein, comply with Council's procurement policies and all applicable legislation. It should be noted that although the purchase of electricity from IPPs, by buyers in both the public and private sectors, is well-established, municipal IPP procurement programmes are novel and certain aspects of the regulatory regime for implementation of such programmes are confusing. The legal conclusions reflected in the feasibility study report and the recommendations made, are based on ordinary principles of legal interpretation and relevant case law. To the extent reasonably possible, the Municipality's standard documents will be applied in the procurement phase, but the PPA will be customised to conform to established commercial principles and risk allocation, and the Municipality's specific circumstances.

6.4 Financial Implications

The premise (or risk allocation) of the Project is that the Municipality will purchase electricity generated by one or more IPPs on a take or pay basis at a fixed price per kWh as bid by the bidder, which will escalate with CPI over the term of the PPA (with a term that is typically 20 years). The IPP is responsible for the design, finance, construction and operation of the electricity generation facility. The Project, if implemented, is estimated to generate first electricity 18 to 24 months after reaching commercial close (i.e., signing the PPA after receiving Municipal Council approval in terms of section 33 of the MFMA) which will be the first direct financial implication of the Project to the Municipality. The Feasibility Study report shows that the two

recommended options would yield an NPV saving to the Municipality, meaning that the cost of purchasing energy from IPPs is expected to be lower than the cost of purchasing electricity from Eskom (i.e., not increasing the Municipality's electricity cost).

In addition to the monthly purchase commitment, the PPA will have a contingent liability in the form of a buyer termination guarantee of between 12 and 36 months of future IPP revenue. The feasibility study has shown that lower bound guarantee requirements can be absorbed within the municipality balance sheet debt limits. The guarantee value is subject to bankability requirements and will be included in the draft PPA, which will form part of the RFP documentation.

6.5 Staff Implications

It must be noted that the Municipality has identified the impact of human capital for the operation of the control room for remote switching purposes. All the staff requirements that were identified for this specific purpose was to gear the municipality for self loadshedding, should Eskom approval be granted to the municipality as a self loadshedding customer.

The feasibility study did not provide an outcome of human capital that would be required for the successful implementation for a project of this nature (50 MW)

6.6 Previous / Relevant Council Resolutions:

"40TH COUNCIL MEETING: 2021-01-27: ITEM 11.5.1

RESOLVED (nem con)

- (a) *that Council approves the investigation into alternate methods of electricity generation and purchases;*
- (b) *that Council approves the joint investigation to be done by University of Stellenbosch, Council for Scientific and Industrial Research (CSIR), and the Western Cape Government;*
- (c) *that Council accepts the initiating of the following processes as may be required:*
 - i. *Municipal Systems Act, Section 78(1) processes*
 - ii. *Municipal Finance Management Act, Section 33 investigation processes*
 - iii. *Electricity Regulation Act, Section 13; and*
- (d) *that Council considers the funding of such investigations and implementation of completed investigations within the determination of the 2021/22 budget process.*

3RD COUNCIL MEETING: 2022-03-30: ITEM 11.5.1

RESOLVED (nem con)

- (a) *that Council notes the investigation launched by the Western Cape Government, Municipal Electricity Resilience Initiative Attached as **ANNEXURE A**;*
- (b) *that Council notes the two Pioneering Projects proposed for Stellenbosch Municipality namely:*
 - i) *Pioneering Project 2: Stellenbosch Municipality Solar PV project*
 - ii) *Pioneering Project 5: Joint Municipality Generation Project*

- (c) *that in terms of Pioneering Project 2, Council approves the setting up and issuing of a Request for Proposals (RFP) tenders to call for proposals from suppliers, to build multiple generating facilities and supply electricity to Stellenbosch up to a combined level of 51MW;*
- (d) *that all relevant process works as prescribed by Section 34 of the Electricity Regulation Act, Act 4 of 2006, as well as associated regulations, as amended, be commenced with up to the level prescribed, in addition to those already commenced with by the CSIR;*
- (e) *that, after further deliberation with the MER team and participating municipalities, a further report be submitted to Council to report on the feasibility and legal framework of Pioneering Project 5 where a number of Municipalities is proposed to jointly establish a process to purchase electricity from one or a number of Independent Power Producers; and*
- (f) *that it be endeavoured to also purchase electricity to cover the daily, weekly and seasonal requirements of Stellenbosch Municipality in its objective to be able to reduce the necessity to Load Shed during periods of reduced supply from Eskom*

6.7 Risk Implications

Risks such as sufficient electricity supply and proper funding balancing are being mitigated.

6.7.1 Risk of Electricity Purchase costs

Should the Eskom Tariff rise as recently predicted within the media, the Municipality would be challenged to ensure an affordable service to its customer. By reducing the prices of the electricity purchased, the risk of the onward sales of electricity can be reduced.

6.7.2 Risk of Severe Impact of Loadshedding

Depending on the choice of Plant selection the level of loadshedding can also be reduced. By reducing the level of loadshedding, the sale of electricity is increased, and the cost of diesel decreased. The Risk of Loadshedding is therefore reduced.

6.7.3 Risk of Increased Deemed Energy Payments – The Risk that the Municipality cannot receive the energy and needs to curtail the generation plant, but still make deemed energy payments. The technical and financial modelling undertaken during the feasibility study has factored in the risk and ran sensitivities to ensure the Project remains viable under the likely parameters. In the event of excess energy being available, it is likely that excess energy will be able to be sold to other consumers and this upside has not been factored in.

6.7.4 Risk to Municipality being negatively affected when Eskom Municflex tariff is implemented – sensitivities were undertaken as part of the feasibility study to evaluate the impact under the anticipated Municflex tariff structure. The recommended option[s] still remains viable under this structure.

Inadequate addressing of the staff implications to operate a network configured to accommodate a project of this nature poses a risk to the municipality. The Directorate is in the process of preparing a list of staff requirements to implement the project, along with other Alternative Energy Generation initiatives.

The non-confirmation by Eskom whether the Municipality would be allowed to implement load curtailment or self loadshedding poses a risk to the successful implementation of the project.

- 6.7.5 **Benefit to the Municipality** The Municipality has not done its own detailed network simulation however the feasibility report confirms that the proposed options have been simulated to the advantage of the municipality and confirmation was given that the network capacity and strength (power system) studies and calculation on the proposed options were done.

6.8 Comments from Senior Management:

NOT CIRCULATED FOR COMMENTS. DISCUSSED IN DIRECTOR'S MEETING AND COMMENTS INCLUDED.

6.8.1 Municipal Manager

Council to consider the content of the report.

ANNEXURES

Annexure A: STELLENBOSCH MUNICIPAL INDEPENDENT POWER PRODUCER PROCUREMENT PIONEERING PROJECT – T008/23 - FEASIBILITY STUDY

Annexure B: List and explanations of abbreviations and terminologies used

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