

Business Case

Project Name: Solar PV Renewable Energy Project

For Various sites

Operating Division: Transnet Pipelines

Project Classification: A

Addressed to (final approval): TPL CAPIC

Date: May 2026

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Amendment History

<i>Issue</i>	<i>Date</i>	<i>Author</i>	<i>Reason</i>
2	11/02/2026	Ndabezinhle Ndlovu	Change of ETC and Updated Strategy

1. Purpose

To request approval from the Transnet Pipelines Capital Investment Committee (CAPIC) for the following:

- The capital approval of a Solar Photovoltaic (PV) renewable energy plant project at various TPL operational sites, namely Klerksdorp, Langlaagte, Rustenburg, Tarlton, Airport, Sasolburg, Coalbrook, Quagga, Newcastle, Ladysmith, Jameson Park and Mnambithi.
- The estimated overall project costs R 154.429 million (R 177.594 million incl.VAT).
- The Pre-Feasibility phase is scheduled to start in the 2026/2027 financial year, with an expected completion by the end of the 2029/2030 financial year. The CAN will remain valid until 4 October 2030.

The TPL CAPIC is empowered by section 3.6 of the Delegation of Authority Framework, effective from 1 February 2023 and the GCOO Delegation of Authority matrix, effective 01 August 2024, for Capex approval & termination of business cases. Clause 3.6 stipulates that the TPL CAPIC is the final approver, up to but not exceeding R500 million, for revenue-generating projects.

2. Problem Definition/Opportunity Statement

2.1. Problem Statement

Transnet Pipelines (TPL) is experiencing a significant rise in electricity costs due to recurring increase in energy tariff increases. A significant increase of 12,74% for 2024/2025 financial year following an 18.48% increase the previous year resulted in potential negative impact on TPL operational costs annually.

To address this, and in line with Transnet's Net Zero Initiative, renewable energy options are being explored to reduce costs, lower grid dependency, and reduce carbon footprint. Further, the Net Zero Initiative is a key part of Transnet's sustainability strategy, aiming to balance carbon emissions by transitioning to cleaner energy and enhancing energy efficiency across its operations.

2.2. Background

Monthly electricity costs are currently averaging R48 million, highlighting significant operational expenditure. With a projected tariff increase of 8.76% in the 2026/27 financial year, TPL could face an additional R40 million in annual electricity expenses. These rising energy costs place increasing pressure on operating budgets and emissions targets.

Implementing grid-tied Solar PV plants across operational sites would enable TPL to generate its own power, export excess energy to the grid, reduce monthly electricity spend, and significantly lower carbon emissions, supporting both financial sustainability and environmental commitments.

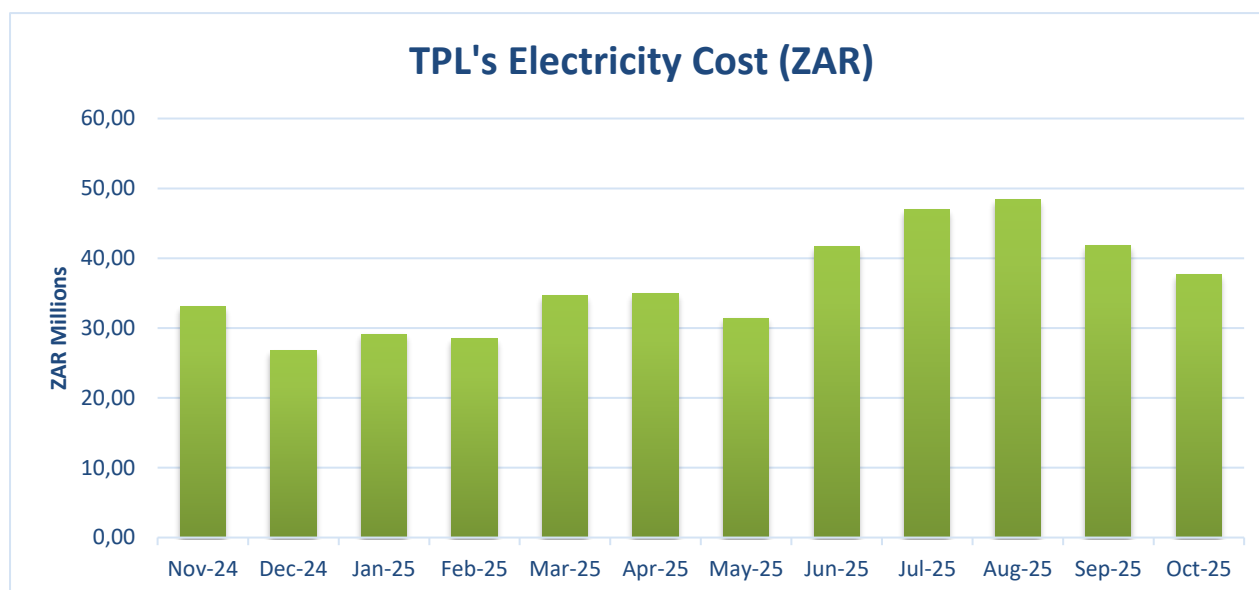


Figure 1 : TPL Monthly Electricity costs (based on consumption invoice)

3. Proposed Solution

During the evaluation phase, Transnet Pipelines (TPL) assessed renewable energy alternatives to mitigate escalating electricity tariffs and reduce reliance on grid-supplied power. The assessment focused on technologies that could be deployed across multiple operational sites while supporting Transnet's Net Zero objectives and delivering financial value within acceptable payback periods.

3.1. Alternative Renewable Energy Options Considered

The renewable energy alternatives assessed included Solar Photovoltaic (PV), Wind Energy, Hydropower, and Biomass.

Wind energy was considered; however, its feasibility is highly dependent on consistent wind resources and significant spatial clearances. Many TPL sites are not located in high-wind zones, and the installation of wind turbines within pipeline depots presents zoning, safety, and operational constraints.

Hydropower was evaluated but found to be unsuitable due to the lack of available water resources and hydraulic head at TPL operational sites. In addition, hydropower projects require extensive environmental impact assessments and lengthy regulatory approval processes, increasing implementation timelines and project risk.

Biomass energy was assessed as an alternative renewable option; however, it introduces substantial logistical and operational challenges. These include the requirement for a continuous and reliable fuel supply, fuel storage and handling, emissions management, ash disposal, and higher maintenance demands. These factors increase operational complexity and reduce suitability for deployment across TPL sites.

Solar PV was identified as a technology that can be deployed across all TPL operational sites using available rooftop and ground space, with relatively low environmental impact and minimal disruption to operations.

3.2. Comparative Assessment of Renewable Energy Options

A comparative assessment was undertaken to evaluate the renewable energy alternatives based on implementation complexity, operational requirements, scalability, and indicative financial performance. Particular focus was placed on deployment timelines, maintenance burden, and expected payback periods.

Table 1: Alternative advantages and disadvantages

Energy Type	Advantages	Disadvantages	Average Payback Time (Based on 100kW plant size)	Key Factors Influencing Payback
Biomass	Utilizes agricultural waste, can contribute to local waste management	Logistical challenges, inconsistent fuel supply, emissions from combustion	12 years	Fuel availability and cost Plant efficiency Government incentives Ongoing maintenance
Wind	Good wind resource potential in certain regions (e.g., Western Cape)	High initial capital costs, less suitable in low-wind areas, visual and noise concerns, complex maintenance	15 years	Wind resource quality Grid connection costs Turbine efficiency
Hydro Power	Established technology with low operating costs, available in certain regions	No site availability	20 years	Water resource availability Environmental impact assessments Infrastructure costs
Solar PV	Low maintenance, quick ROI, reliable supply, supportive government policies	Dependent on sunlight, grid feedback varies	7 years	Solar irradiance Installation costs Tariff rates and feed-in programs

The assessment confirms that Solar PV outperforms alternative renewable technologies in terms of payback period, operational simplicity, and scalability across multiple sites. As a result, Solar PV represents the most appropriate solution for TPL’s distributed operational environment. This outcome is consistent with the Multi-Criteria Analysis Report (September 2024, Project No. 43102774), which concluded that Solar PV is the most cost-effective, technically mature, and strategically aligned renewable energy option for Transnet operating divisions.



3.3. Selected Solution – Grid-Tied Solar PV Portfolio

Based on the comparative assessment, a grid-tied Solar PV portfolio has been selected as the preferred solution. The proposed solution entails the installation of Solar PV systems at 12 TPL operational depots to offset daytime electricity consumption. System capacities will be determined by available rooftop and ground space, with larger depots such as Jameson Park and Mnambithi utilizing a combination of rooftop and ground-mounted installations to maximize energy generation.

Surplus energy generated during periods of low on-site demand will be exported to the grid in accordance with applicable municipal or Eskom Small-Scale Embedded Generation (SSEG) frameworks. The proposed solution builds on the proven performance of the Solar PV system commissioned at Pinetown in 2017, with a detailed case study provided in Annexure B.

3.4. Solar PV System Configuration and Sizing Methodology

Solar PV system sizes were determined based on the available roof and ground space at each depot. The sizing methodology assumes an average of 5 sun-hours per day, reflecting conservative solar resource conditions across the sites.

The percentage contribution of Solar PV to each site's daily electricity demand was calculated using Equation (1), which considers plant size relative to peak daily demand. Annual energy production was estimated using Equation (2). The expected energy contribution and annual generation for each site are summarized in Table 2 below.

Table 2: Solar Plants and energy consumption contribution

Depot	Highest Daily Demand [kWh]	Generation Capacity/Plant Size [kWp]	Solar Plant Annual Production [kW/h]	Solar PV daily contribution [%] Ref Equation 1
Airport	258	103	112 695	199.61*
Langlaagte	518	103	112 695	99.42
Klerksdorp	339	90	98 550	132.75*
Rustenburg	322	85	93 075	131.98*
Tarlton	3532	350	383 250	49.63
Jameson Park	34613	460	503 700	6.64
Sasolburg	12260	245	268 425	7.07
Coalbrook	20558	430	471 975	10.45
Quagga	40400	170	186 150	2.10
Newcastle	41773	320	350 400	3.87
Mnambithi	22706	520	569 400	11.45
Ladysmith PS	58183	400	438 000	3.36

* Indicates a surplus that will be fed back to the grid during the day.

Where,

$$\text{Solar PV Excess Energy} = \frac{\text{Plant size (kW)} \times 5 \text{ sun hours (h)}}{\text{Highest Daily Demand (kWh)}} \times 100\% \quad \text{Equation (1)}$$



Solar Plant Annual Production = Plant size (kW) × 5 sunhours (h) × 365 days × 60% Equation (2)

Sites identified with surplus daytime generation will export excess energy to the grid where permitted, further reducing electricity costs. While larger sites show lower percentage contributions due to higher absolute demand, they still achieve meaningful tariff avoidance in absolute energy terms.

3.5. Implementation, Operations, and Safety Considerations

Solar PV systems have low operational and maintenance requirements when compared to other renewable energy technologies. Maintenance activities are generally limited to periodic inspections and panel cleaning, typically conducted two to four times per year, along with routine inverter and electrical checks.

Implementation timelines are estimated at 1 - 2 months per site, enabling TPL to realize energy cost savings within a short period following project approval. This rapid deployment significantly reduces exposure to ongoing tariff escalations.

Existing fire detection and suppression systems at TPL sites are adequate to manage the fire risks associated with the proposed Solar PV installations, provided routine maintenance is maintained. All installations will comply with applicable safety standards and regulatory requirements.

3.6. Project Implementation Strategy

Two implementation approaches were evaluated: execution using internal TPL resources and appointment of an external Engineering, Procurement, and Construction Management (EPCM) consultant.

An internally resourced approach would require a phased rollout over approximately six years, driven by limited capacity to perform concurrent feasibility studies, detailed designs, and multi-site project management. While this approach would reduce annual capital commitments, the extended implementation period would delay the realization of savings and expose the project to continued electricity tariff escalation, thereby extending the overall payback period and eroding forecast benefits.

The EPCM approach enables concurrent design and implementation across all identified sites, supporting accelerated delivery and alignment with the projected payback period. Under this model, specialist external resources are appointed, with TPL retaining governance oversight of progress, cost, and performance. Procurement of the EPCM consultant will follow TPL's approved procurement strategy to ensure the appointment of suitably qualified solar PV specialists with experience in multi-site delivery and system integration, including centralized monitoring.

Based on the assessment, the EPCM approach is the preferred implementation strategy, as it offers improved schedule certainty, enhanced quality and safety control, and reduced execution risk across all sites.



3.7. Project Implementation Plan

The EPCM consultant will be responsible for verifying site electrical demand profiles and confirming the optimal solar PV capacity for each location. This will include assessment of existing electrical infrastructure to maximize solar production while ensuring compliance with operational and safety requirements.

The EPCM scope will include the execution of feasibility studies, development of the project scope of work, preparation of conceptual and detailed engineering designs, compilation of procurement documentation, and preparation of EPC cost estimates. The EPCM will further support TPL through the procurement and appointment of EPC contractors.

The project will be implemented through two EPC work packages. The EPCM consultant will support TPL in coordinating these EPC contracts across all sites and will assist TPL in fulfilling its obligations as NEC Project Manager and Supervisor. Responsibilities will include design reviews, technical approvals, quality assurance, safety oversight, and verification of compliance with approved capacity and performance requirements.

This approach enables effective coordination across multiple workstreams, strengthens governance oversight, and reduces execution risk associated with parallel site implementation.

3.8. Benefits

The benefits of this investment are as follows:

1. Alignment with Transnet's Net Zero Initiative. This ensures compliance with corporate sustainability goals and energy efficiency mandates.
2. Protection against electricity price volatility: Generating electricity on-site provides a buffer against annual electricity tariff increases.
3. Opportunity to sell excess electricity back to the grid: This generates additional revenue streams and maximizes the return on investment.
4. Potential for future scalability: Allows for easy expansion as energy needs grow or as technology advances.

4. Capital Cost Estimates and Capital Cash Flows

The capital cost estimate comprises two primary components.

The first component is the EPCM contract, which covers prefeasibility activities, development of the scope of work, preparation of procurement packages, and ongoing support to TPL during the implementation of the EPC contracts. The EPCM cost estimate is based on anticipated professional resource requirements and applicable hourly rates.

The second component is the EPC contracts, which include detailed design, supply, installation, testing, and commissioning of the Solar PV systems. EPC cost estimates are based on the proposed energy generation capacities per site as summarised in Table 2.

The principal items included in the capital cost estimate, excluding VAT, are summarised in Table 3 below.

Table 3: Main items in the capital cost estimate excluding VAT

Item	ETC
Engineering, Procurement, and Construction Management (EPCM)	13.041
EPC-Work Package	108.488
Owner's cost 12%	9.269
Contingency (unforeseen project costs) 10%	10.888
Escalations (CPI Forecast) Pre-4.30%; Post-4.50%	12.743
Estimated Total Cost	154.429

Table 4: Project's capital cash flows

Financial Years	2025/26 Rm	2026/27 Rm	2027/28 Rm	2028/29 Rm	2029/30 Rm	Total Rm
2025/26 Corporate Budget	0.135	47.750	79.018	-	-	126.903
Forecast	-	2.068	8.325	130.589	13.447	154.429
Variance	-0.135	45.682	70.693	130.589	13.447	27.526

5. Financial Evaluation

5.1. Assumptions and Approach

As Transnet Pipelines is a regulated entity, any capital expenditure that is deemed prudent will be recovered in full and TPL will earn a return on capital cost, commensurate with the risk of the business. The Solar PV Renewable Energy Project for Various sites project ETC of R154.429m will be included in the Regulatory Asset Base as it is part of the petroleum business. The attributable allowable revenue from this investment is R1.271 billion over 30 years of useful life of the asset.

The following aspects were considered as part of the financial analysis:

- The initial capital investment required for the project is R154.429 million,
- Installations at Jameson Park, Klerksdorp, Langlaagte, Tarlton, Rustenburg, Airport, Newcastle, Quagga, Coalbrook, Sasolburg, Mnambithi PS5, and Ladysmith are anticipated to be capitalized on 1 April 2030 at a cost of R154.429 million.
- The useful life expectancy of the solar installations is 30 years.
- Incremental Allowable Revenue of R1.271 billion.

Estimated savings are based on a conservative 60% performance factor to accommodate weather variability and system losses, benchmarked against historical performance data from the Pinetown Solar PV installation and the proposed generation capacities in Table 2.



Table 5: Cost Savings

Sites	Project Site Cost [R million]	Annual Saving without CPI [R million]
Airport	R 9.199	R 0.127
Langlaagte	R 9.189	R 0.644
Klerksdorp	R 8.924	R 0.331
Rustenburg	R 8.825	R 0.429
Tarlton	R 16.377	R 1.440
Jameson Park	R 26.940	R 1.672
Sasolburg	R 26.479	R 0.779
Coalbrook	R 14.280	R 1.156
Quagga	R 9.481	R 0.437
Newcastle	R 12.271	R 0.936
Mnambithi	R 20.036	R 1.344
Ladysmith Pump Station	R 17.899	R 1.449

Note: Annual Savings are shown in Annexure C.

- Savings per site are based on the simulated energy to be produced by the solar systems per site converted to cost using the prevailing municipal cost per kWh for the region. A factor of 60% has been applied to the expected kWh's produced to cater for the impact of unfavourable weather.
- The completed installations are expected to generate annual savings of R10.7 million. When escalated at CPI over the asset's 30-year useful life, the total projected savings amount to R662.386 million.
- Capital allowances of R41.696 million will be claimed under Section 12B of the Income Tax Act relating to photovoltaic solar energy of more than 1 megawatt.
- Company taxation rate of 27% has been applied
- Discount rate used is 13.10% as per the Transnet WACC & Hurdle rate policy.

5.2. Results

The financial evaluation shows that the project is financially viable due to the positive measures outlined below:

Table 6: Financial Evaluation Indicators

Financial measure	Evaluation outcome
Net Present Value (R million)	115.166
Profitability Index (number)	2.08
Internal Rate of Return (Nominal) (%)	26.80%
INTERNAL RATE OF RETURN (Real) (%)	21.44%
MODIFIED INTERNAL RATE OF RETURN (%)	15.60%
PAY BACK PERIOD (Years)	6
Discounted Payback Period (years)	8
Discount factor (WACC) (%)	13.10%

6. Risk Management

The risks associated with this project are listed below in Table 7 and are to be mitigated as outlined.

Table 7: Risks Table

Risk Description	Consequences	Mitigation
Delays in obtaining necessary SSEG permits and approval from respected utilities.	1. Expiry of CAN 2. Project Delay 3. Project Cost increase 4. Decrease in the return on investment (ROI)	The Project Manager is to ensure engagement with regulatory bodies early in the project, understand local regulations, ensure all documentation is complete, and also stay informed on policy developments, this will be included in the schedule.
Project schedule delays due to procurement and other relevant stakeholders exceeding estimated cycle times.	1. Expiry of CAN 2. Project Delay 3. Project Cost increase 4. Decrease in the return on investment (ROI)	The Project Manager will collaborate closely with procurement and all relevant stakeholders. Regular stakeholder engagements will be held to ensure commitment to deliverable deadlines. Engineering department heads will ensure that procurement and all relevant stakeholders adhere to the agreed service level agreement to deliver the project on schedule.



Risk Description	Consequences	Mitigation
Long lead on project materials.	1. Project Delay 2. Project Cost increase 3. Decrease in the return on investment (ROI)	The Project Manager is to allow for long lead of project materials in the schedule such as hybrid inverters and solar panels. The Project Manager is also to assess the market for the availability of the project materials and where possible selects the material that is easily available in the market not compromising on the material quality.
All possible unforeseen circumstances e.g. Strike, Floods, looting, riot, inclement weather conditions, loadshedding, fire etc.	1. Project Delay 2. Project Cost increase/ Contract claim standing time 3. Decrease in the return on investment (ROI)	The Project Manager is to allow for all possible unforeseen circumstances in the project schedule.
Theft of materials in storage	1. Project delay due to replacement time 2. Increased project costs due to replacement materials	1. Secure storage area with 24/7 security and surveillance
Damage to panels during storage or installation	1. Project delay due to reordering damaged materials 2. Increased costs for replacement and labour 3. Potential delays in completing the installation phase	1. The project manager to ensure proper handling procedures and protective packaging when in storage
Lack of TPL site agents or insufficient personnel	1. Project delays in finding a site agent 2. Lack of oversight leading to quality or safety issues 3. Increased project costs due to inefficiencies	1. The project manager is to engage with TPL management early to assign site agents. 2. Ensure continuous communication and provide training to ensure readiness 3. Have backup personnel
Roof structure failure or unsuitability	1. Structural damage to the building 2. Delays due to engineering assessments and reinforcements 3. Increased project costs due to roof reinforcements or redesign	1. Conducting thorough roof structure assessments has been included as part of the scope of work for the contractor 2. Engage with structural engineers to ensure the roof can handle the load 3. Where needed, the contingency for roof reinforcements has been incorporated into the project timeline and budget

7. Project Interdependencies:

The continuation of this project implementation is not dependent on any other project, each site is independent, and each has its budget and timeline.

8. Commercial Considerations

Transnet Pipelines is a regulated entity and any capital expenditure that is deemed prudent will be recovered in full, based on the NERSA Petroleum Pipeline Tariff Methodology. Tariffs are determined by taking into account the allowable revenue and forecast volumes for an integrated petroleum system. The tariff impact is foreseen to be as shown on the table below.

Table 8: Tariff Impact

Increase in Durban to Alrode (tariff)	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35
Tariff Impact Real (cents per liter)	0.13	0.31	0.31	0.31	0.32	0.32
Tariff Impact Nominal (cents per liter)	0.16	0.37	0.37	0.38	0.38	0.39

9. Procurement

Project Classification

The project is classified as Type A. Although the overall costs of the project may appear high, the individual packages, executed annually, are relatively small, which aligns more closely with Type A projects, where costs are typically lower. Additionally, while the project involves some degree of engineering work, these modifications and tie-ins to existing equipment are standard connections, not significantly complex or innovative. Furthermore, the work is similar to previous solar projects like Pinetown, Alrode, and Ladysmith, suggesting a level of repeatability and familiarity that fits a Type A classification. Given that this project doesn't represent groundbreaking work but rather the extension of existing solutions, a Type A classification may be appropriate. The execution strategy involves engaging a contractor to perform detailed design and installation at each site. However, this approach is not a turnkey solution, as internal teams will still be responsible for conducting feasibility assessments and ensuring alignment with project requirements before implementation.

The Key procurement packages, high-level sourcing strategy employed as well as the Procedures and Legislation governing procurement and contracts are discussed below.

List of Applicable Procurement Procedures and Legislation

The proposed procurement packages and activities are in line with the Transnet Procurement Procedures principles, and thus are also aligned with the following:

- National Treasury Instruction Notes
- Transnet Construction Procurement Manual
- Transnet Goods and Services Manual
- Transnet Integrated Management System (Contractor Management Procedure)
- Delegation of Authority Framework.

- Procurement Manual Revenue for Commercial

The following national legislation will be adhered to during the project lifecycle:

- Standard for Infrastructure Procurement and Delivery Management.
- Preferential Procurement Policy Framework Act (Act 5 of 2000)
- Preferential Procurement Policy Framework Act, Regulations of 2022
- Public Finance Management Act (Act 1 of 1999)
- Construction Industry Development Board Act (Act 38 of 2000)
- Construction Industry Development Board Act, Regulations and Standards for Uniformity.
- Broad-Based Black Economic Empowerment Act (Act 53 of 2003)
- Broad-Based Black Economic Empowerment Amended Act (Act 46 of 2013)

Procurement package plan

A detailed procurement package plan has been developed and outlines the various work packages required on the project and is summarized as follows:

The following procurement packages have been identified:

Table 9: Procurement Package

No.	Description	Tendering Option	Estimated Value (ZAR)	Contracting Strategy	Contract Duration
001	EPCM Contract	Open Tender	16.730mil	NEC PSC (Option G)	36 Months
002	EPC Contract Package	Open Tender	137.699mil	NEC ECC (Option A)	24 Months

10. Operational Readiness

The operational readiness requirements for implementing the solar PV renewable energy project across various sites are minimal.

Grid feedback for solar PV systems, also known as Small-Scale Embedded Generation (SSEG), has been confirmed with municipalities like Ekurhuleni, Alfred Duma, Amajuba, and City Power.

There are currently ongoing discussions with other municipalities. There are some sites that were found to have connected directly to Eskom; however, this benefit is currently limited to certain regions. Permits needed from Eskom and local municipalities to ensure compliance with relevant laws and regulations are also being processed.

The current fire systems found at the operational sites which included detection and suppression functionalities were found to be sufficient to support the solar PV installation. The fire systems met the required minimum safety standards, and no upgrades are needed for the implementation of the solar PV systems as long as regular maintenance continued.



The project team will liaise with the relevant stakeholders to ensure that any permits and/or onsite requirements are coordinated as per the process. Additionally, training will be provided to the maintenance department to ensure they are equipped to maintain the new systems effectively. The Contractor shall provide training to TPL personnel, including the preparation of training manuals as part of the total engineering service scope.

11. Key Milestones

The key milestones for this project are outlined in Table 8. The first part of the table presents the planned activities for the EPCM, which will be the initial focus of the project.

Table 10: Key Milestones

Activity	Estimated Start Dates	Estimated Completion Dates
Business Case BSC Approval	11 February 2026	05 June 2026
Business Case IF Recommendation	10 June 2026	13 June 2026
Business Case CAPIC Approval	30 June 2026	30 June 2026
Engineering Scoping - EPCM	13 November 2024	6 February 2026
Procurement Process- EPCM	03 March 2026	16 October 2026
Project Kick-off meeting	30 October 2026	30 October 2026
Project Execution	30 November 2026	25 October 2029
Procurement Process - EPC	5 April 2027	7 September 2027
Project Execution	4 October 2027	5 October 2029
Final Defects Period – 52 weeks	5 October 2029	4 October 2030

12. Post Implementation

The Post Implementation Review (PIR) will evaluate current energy consumption and costs against previous levels, comparing these metrics with projections outlined in Table 2. Monthly monitoring will ensure the achievement of production targets and financial savings as detailed in Annexure D. Feedback from the energy manager and site invoices will confirm alignment with the business case. The project is also expected to yield environmental benefits, including a reduction of 3,944 tons of CO₂ emissions, savings of 5.62 million liters of water, and a decrease in ash waste by 586 tons over the 30 year life span, underscoring its positive impact despite these benefits not being actively tracked.

13. Recommendation

It is recommended that the Transnet Pipelines Capital Investment Committee (CAPIC) approve capital expenditure for:



- The capital approval of The Solar PV Renewable Energy Project for Various sites project at an estimated total cost (ETC) of R 177.594 million (R m incl. VAT).
- A CAN validity period determined by the project's scheduled completion date of 4 October 2030.

The TPL CAPIC is empowered by section 3.6 of the Delegation of Authority Framework, effective from 1 February 2023 and the GCOO Delegation of Authority matrix, effective 01 August 2024, for Capex approval & termination of business cases. Clause 3.6 stipulates that the TPL CAPIC is the final approver, up to but not exceeding R500 million, for revenue-generating projects.



14. Signatories

COMPILED BY:

Ndabezinhle Ndlovu
Energy Engineering Technician
Date: 11/05/2026

RECOMMENDED BY:

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Principal Electrical Engineer
Date: 11/05/2026

RECOMMENDED BY:

Bernard Burger
Chief Engineer
Date: 12-05-2026

RECOMMENDED BY:

Mpho Ramuhulu
GM: OPS and Tech
Date: 13/05/2026

APPROVED / NOT APPROVED BY:

Tanuja Naidoo
Chairperson, TPL CAPIC
Date:



Annexure A

Project Risk Register

Annexure B

Pinetown Case Study

Annexure C

Cost Savings