Eskom	**PROGRAMME RULES**	**DISTRIBUTION**

Title:	**THE IMPLEMENTATION OF RESIDENTIAL HOT WATER LOAD CONTROL SYSTEM – NEW, REPAIRS AND/OR EXTENSION OF EXISTING SYSTEMS IN VARIOUS MUNICIPALITIES: PARTICIPATION RULES**	Alternative Reference Number:	N/A
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1. INTRODUCTION

The content within this document describes the rules that govern the Residential Hot Water Load Control Programme.

The Residential Hot Water Load Control has been one of the peak demand management tools used by utilities and redistributors to manage residential load peak demand during constrained supply periods. The system when functioning accordingly provides capability to control household geysers using a signal through the powerlines from a central control facility. The system allows the remote switching of geysers during peak and only returns the geyser load in a staggered randomised manner during off-peak periods, minimising the impact on households and optimising comeback load.

Due to supply capacity challenges on the short to mid-term basis, there is an opportunity for Eskom Distribution to remobilize working and non-working municipal existing Residential Hot Water Load Control systems to manage residential peak demand to the benefit of the grid and South Africa as a whole.

2. PURPOSE OF HOT WATER LOAD CONTROL SYSTEM PROGRAMM RULES AND OVERVIEW

2.1. **Purpose of the Hot Water Load Control System programme rules are to:**

2.1.1. Define the rules and guidelines for the new installations, repairs and/ or extensions of existing Residential Hot Water Load Controls system in various municipalities.

2.1.2. Set out the minimum requirements for project developers to participate in the programme.

2.1.3. Provide structure with regards to project developer participation and how they can benefit from the programme.

2.2. **Overview**

2.2.1. In order to achieve the objectives of the Hot Water Load Control system Programme the project developer will be required to comply with the rules to determine performance with respect to demand reduction as outlined within the agreed contract.

3. DEFINITIONS AND INTERPRETATIONS

3.1. **Annual or per Annum** – a consecutive 12-month calendar period.

3.2. **Business Day -** means any day during which banks are open for business in the Republic of South Africa, excluding a Saturday, Sunday or public holiday.

3.3. **Compensation for Reduced Demand**- means the arrangement in terms of which ESKOM shall pay the Project Developer for the energy reduced during the specifically

agreed Time Periods within the Contract Period, due to the reduction of demand with reference to the Customer Base Load Profile.

3.4. **Compensation Rate - means** the rate at which ESKOM shall pay the Project Developer for the Demand reduction.

3.5. **Condonable Period** – A period excluded from consideration within a performance period.

3.6. **Contract Period** – The contract period is the total period of the contract between ESKOM and the Project Developer.

3.7. **Customer** – An electricity consumer facility supplied by ESKOM from the interconnected grid including customers supplied by a Municipality where the Hot Water Load Controls system initiative will be implemented.

3.8. **Municipality** - A town or district that has local government and is a reseller of electricity.

3.9. **Customer Base Load (CBL) -** means a daily profile (from Monday to Friday), derived from the CUSTOMER's previous year's summer and winter profile representing the amount of electricity the CUSTOMER would have consumed in each Integration Period for the days

3.10. **Demand Reduction -** means the resultant reduction in the energy consumption

3.11. **Demand Reduction Period** – ESKOM evening peak defined periods for summer and winter

3.12. **End Date** – The contract closure date.

3.13. **Force Majeure -** Unforeseeable circumstances that prevent the customer from fulfilling the terms of the contract.

3.14. **Integration Period -** means 30 consecutive minutes over which the load at a particular metering point is accumulated.

3.15. **Load Shifting –** means moving demand (MW) from Eskom peak defined evening period to off peak or standard periods

3.16. **Metering Data** – Measured half-hourly integrated energy consumption data supplied from an approved electricity meter, verified through the ESKOM process.

3.17. **Point of Supply** - Means either a single point of supply or a specific group of points of supply on ESKOM's System from where electricity is supplied to the customer.

3.18. **Project Developer** -means the entity that will implement the project in accordance with the terms of the Contract

3.19. **Start Date** –means the contract inception date.

3.20. **Time of Use (TOU) periods** – Defined times of day/week in an electricity tariff as approved by NERSA.

3.21. **ABBREVIATIONS**

Abbreviation	**Description**
CBL	Customer Base Load
CoC	Certificate of Completion
ECB	Electrical Conformance Board
EMP	Environmental Management Plan
Kwh	Kilowatt hour, measures energy
LOI	Letter of Intent
MW	Megawatts
RLM	Resident Load Management
SD&L	Supplier Development and Localisation
SHE	Safety Health and Environment

4. QUALIFICATION AND PARTICIPATION REQUIREMENTS

4.1. The Hot Water Load Control system programme is open to all Project Developers including customers that meet the qualification criteria whether supplied by a municipality or ESKOM.

4.2. The programme will be open to all electricity consuming residential sites within South Africa.

4.3. The PD to plan and comply with applicable legislation, Eskom policies and municipal by-laws:

4.3.1. For new HWLC system, conduct assessment for installation and develop a project proposal.

4.3.2. For an existing HWLC system, conduct an assessment for repairs and/ or expansion and develop a project proposal.

4.4. Project Developers must reduce a minimum of 1 MW of the consumption baseload (baseline) during periods 18h00 – 20h00 during summer and 17h00- 19h00 during winter or as defined by System Operator.

4.5. The participation conditions are:

4.5.1. A minimum demand reduction of 1 MW at a single site is required to participate; the demand reduction has to be achieved in the specified evening peak period.

4.5.2. The Project Developer must respond to the call for proposals providing the project information, the value of load (MW) to be reduced for the specified period, the price (Rands) and the R/MW ratio, utilising the project proposal templates provided.

4.5.3. Project Timelines

- For HWLC system repairs, the projects must be completed between 6 to 12 months period.
- For HWLC system extension, the projects must be completed within 12 months.
- Where both HWLC system extension and repairs are proposed, the project must be completed within 12 months.
- For new HWLC system installations, the projects must be completed within 12 months.

4.5.4. Contract Duration

Based on 4.5.3 the following contract periods are applicable:

- 6 to 12 months system repairs implementation period + 24 months Performance Assessments (Sustainability Period) = 30 to 36 months contract period.
- 12 months system extension implementation period + 24 months Performance Assessments (Sustainability Period) = 36 months contract period.
- 12 months system repairs and extension implementation period + 24 months Performance Assessments (Sustainability Period) = 36 months contract period.
- 12 months for new system installation implementation period + 24 months Performance Assessments (Sustainability Period) = 36 months contract period.

4.5.5. Contracting

- The performance measurement will only start at the beginning of a calendar month.

- The Project Developer has a maximum implementation period between 6 and up to 12 months depending on the nature (scope) of the project, should the Project Developer fail to meet the agreed timelines of up to 12 months implementation period and also fail to submit an early warning letter, Eskom to evaluate and decide on a way forward based on the signed contract.

- An authorized Measurement and Verification (M&V) body will be appointed to conduct all measurement and verification functions in accordance with the methodology and to report on the performance of the project.

- Baseload (baseline) measurements/calculation by the appointed M&V team will be done prior to contracting to confirm the proposed shiftable load for projects classified as, new implementation, repairs, repairs and extensions, and extension only.

- ESKOM shall measure the demand reduction and provide quarterly reports indicating demand reduction achieved against contracted value.

- Demand reduction will be reported quarterly for 24 months i.e. 8 quarterly reports will be issued.

- The Project Developer must notify ESKOM within seven business days of a force majeure event occurring.

- ESKOM will evaluate the request for force majeure applicability and has the right to accept or reject the force majeure period request.

- The Project Developer must provide all electrical metering equipment, if not already installed, for the purpose of measurement and verification of the project and comply with requirements set out by ESKOM and/or the M&V body.

- A signed Measurement and Verification Plan and baseload (baseline) must be in place prior to signing of the contract.

4.5.6. Payment

- The contract payments will be weighted equally over 8 quarterly periods and will be based on verified performance.
- No payments for over performance will be allowed, payments will be capped at a maximum performance value of 100% per quarter.

- Upon receipt of the quarterly performance assessment report from the M&V body, ESKOM would then calculate the applicable rebate payable to the Project Developer for the quarter.
- Calculations are based on the approved compensation/payment rate.
- ESKOM will then issue the Project Developer the value to be invoiced for that quarter, as per the Assessment Period (AP) performance reflected in the Performance Assessment Report.
- On receipt of a valid invoice from the Project Developer, ESKOM will within 30 calendar days from date of receipt of the valid and correct invoice, make payment to the Project Developer.
- The Quarterly payments will be based on the formula: [Actual Performance (MW) x Approved Compensation Rate (Rm/MW) x 1/8].

- The table below is an **indicative example** of how performance contract payments may be affected:
- The R/MW as presented is not a true reflection of the actual R/MW

Table 1: indicative example of how performance contract payments may be affected:

cted MW /	Quarters	Quarterly performance(MW)	Maximum payable(R)	% Performance	Performance Based Payment(R)
R4 000 000		M&V	500 000,00		
(example)	R 2 000 000				
QUATERLY PAYMENTS	Q1	1,8	500 000,00	0,90	450 000,00
	Q2	2	500 000,00	1,00	500 000,00
	Q3	2	500 000,00	1,00	500 000,00
	Q4	2,1	500 000,00	1,05	500 000,00
	Q5	1,7	500 000,00	0,85	425 000,00
	Q6	1,5	500 000,00	0,75	375 000,00
	Q7	1,9	500 000,00	0,95	475 000,00
	Q8	1,6	500 000,00	0,80	400 000,00

4.5 Measurement and Verification

An independent Measurement and Verification body will be appointed to perform the following tasks:

- Develop a measurement and verification scope and plan.
- Determine the customer base load (baseline) and obtain sign off.
- Verify demand reduction achieved in each quarter (Performance Assessments).
- Provide the relevant performance reports to the parties

4.6. Measurement to start at the beginning of a calendar month after the certificate of completion is received.

4.7. Project Developers may participate in the programme under the following conditions:

4.7.1. No double compensation with any other ESKOM incentive programme or special electricity pricing agreements the particular site or premises, unless with written permission from ESKOM.

4.7.2. Project Developer must notify ESKOM of any special electricity agreements in place at the particular site or premises.

4.8. Reference Period for Baseload

4.8.1. The baseload for a customer group point of supply shall be determined if necessary.

4.8.2. The latest winter and summer baseload will be utilised but not limited to determine baseload profile.

4.8.3. The M&V body has the right to incorporate adjustments and utilise historical (not more than 3 years) usage patterns necessary to establish the baseload.

5. PROJECT DEVELOPER'S OBLIGATIONS

5.1. Commence and complete the implementation of the Approved Project at the municipality at its sole (own) cost and risk, upon Contract start date.
5.2. Ensure that ESKOM and the M&V body, upon reasonable notice given, have access to the Facility for the duration of this contract.
5.3. Implement the SD&L Implementation Plan, if applicable.
5.4. Ensure that the necessary equipment required by the M&V team is available at the project site.
5.5. Ensure that necessary site permits, induction requirements are provided for necessary site visits.
5.6. Provide and install the required M&V equipment /metering where applicable.
5.7. Maintain the accuracy of the M&V Equipment, at own cost, for the duration of the contract.
5.8. Provide a Certificate of Completion to indicate that all work has been completed for the commencement of measurement and verification.
5.9. Comply with all applicable legislation which relate to the implementation and continued operation of the contract.
5.10. Do all that is reasonably required and necessary to give effect to the terms and spirit of the contract.

6. ESKOM'S OBLIGATIONS

6.1. To compensate the Project Developer for the evening peak demand reduction in accordance with the terms of the contract.
6.2. ESKOM to contract with the Measurement and Verification (M&V) body and pay fees to the M&V body as per the contract between the parties.

6.3. Perform all other functions reasonably required and necessary to give effect to the terms and spirit of this Contract.

6.4. ESKOM has the right to terminate the contract without consequence should the Project Developer not meet the performance milestones.

7. SUPPLIER DEVELOPMENT AND LOCALISATION (SD&L)

7.1. The Project Developer must submit a SD&L performance report to ESKOM as evidence against targets set, if applicable.

7.2. The SD&L retention on each invoiced amount will be applicable up to fulfilment of clause 7.1

7.3. The SD&L retention will be released on a pro-rata basis upon verification of achievement of the targets agreed to.

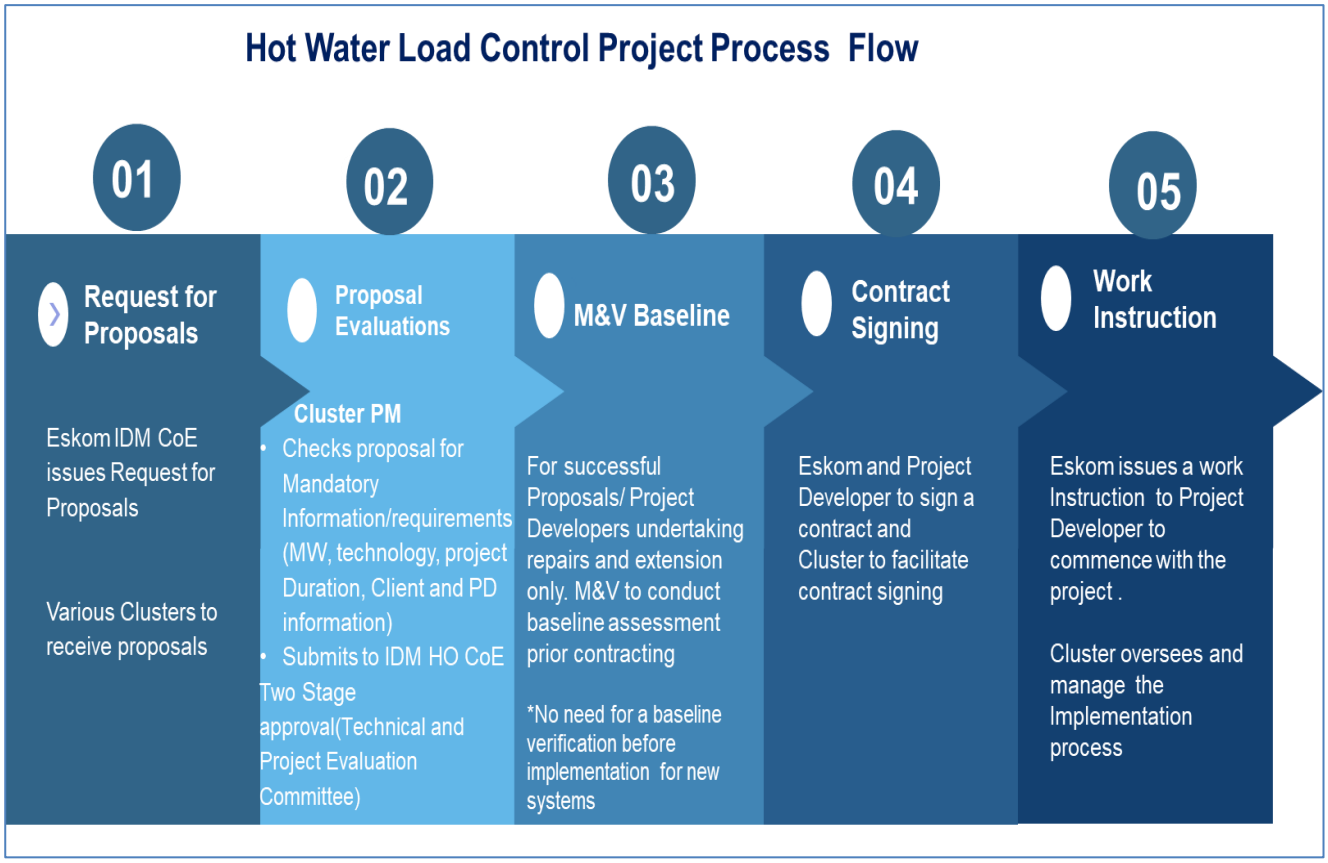
8. SAFETY

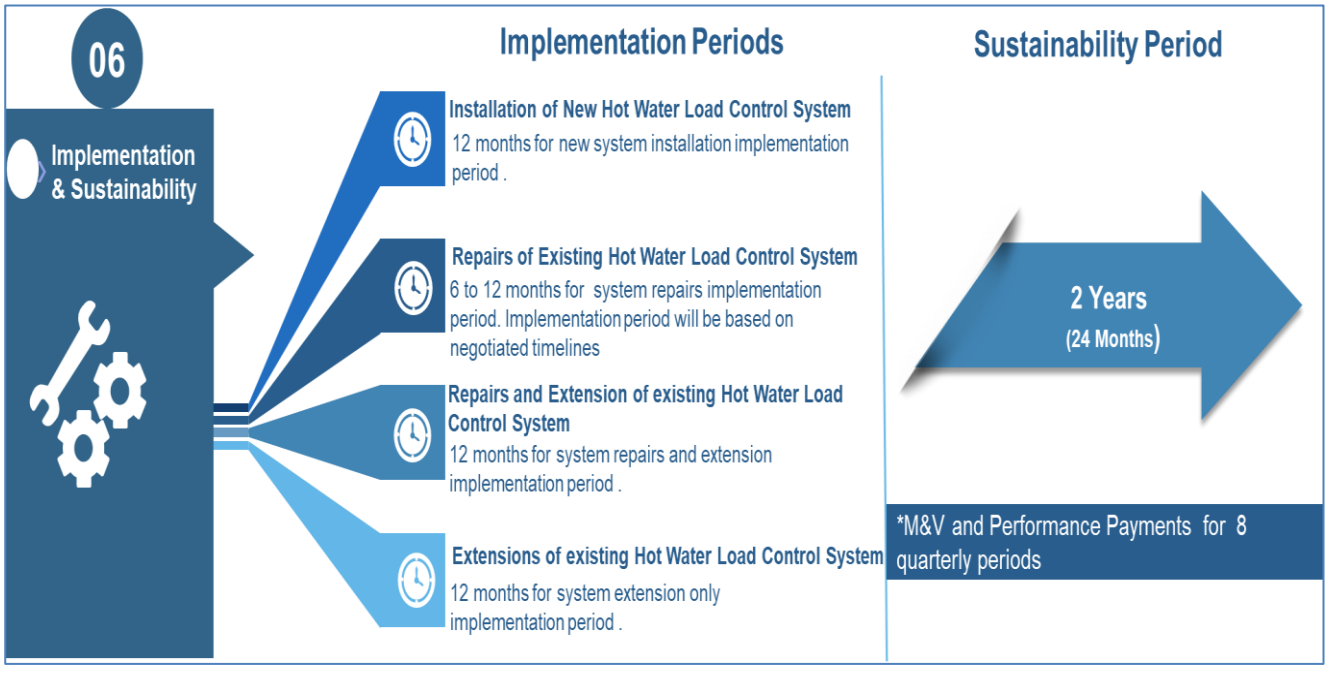
8.1. The Project Developer must provide a safety plan and agree to operate according to the minimum safety requirements as set out by ESKOM and to comply fully with the relevant Safety Act governing the industry.

9. PROJECT PROPOSAL SUBMISSION METHODS

Project Developers will be informed on programme launch and during the request for projects on how the submissions will be received.

10. ANNEXTURE A: RESIDENTAL HOT WATER LOAD PROJECT PROCESS FLOW





11. REVISIONS

Date	Rev.	Remarks
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12. DEVELOPMENT TEAM

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