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G20 SOUTH AFRICA 2025

Eskom

Distribution Demand Management Program
DDMP – Airport Industria

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- Share information with the Industry about the Eskom Distribution Demand Side Management (DSM) Initiatives
- Introduce the Performance Contracting model to be employed in the implementation of Demand Management contracted projects
- Provide clarity on questions that Project Developers and Customers may have on the implementation of DDMP Programmes



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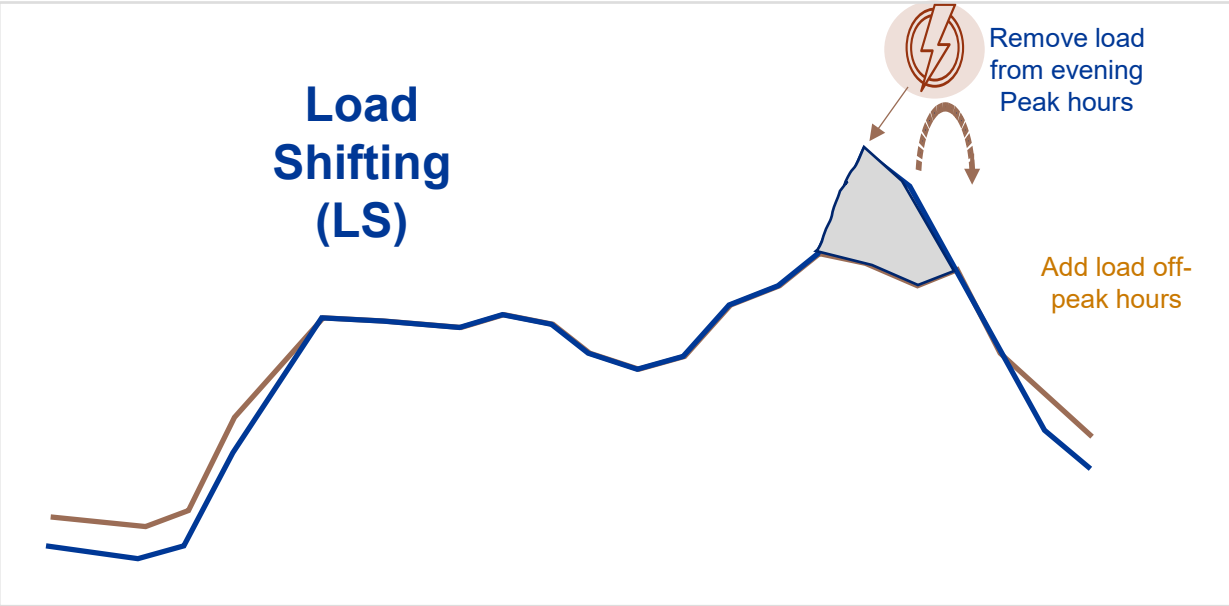
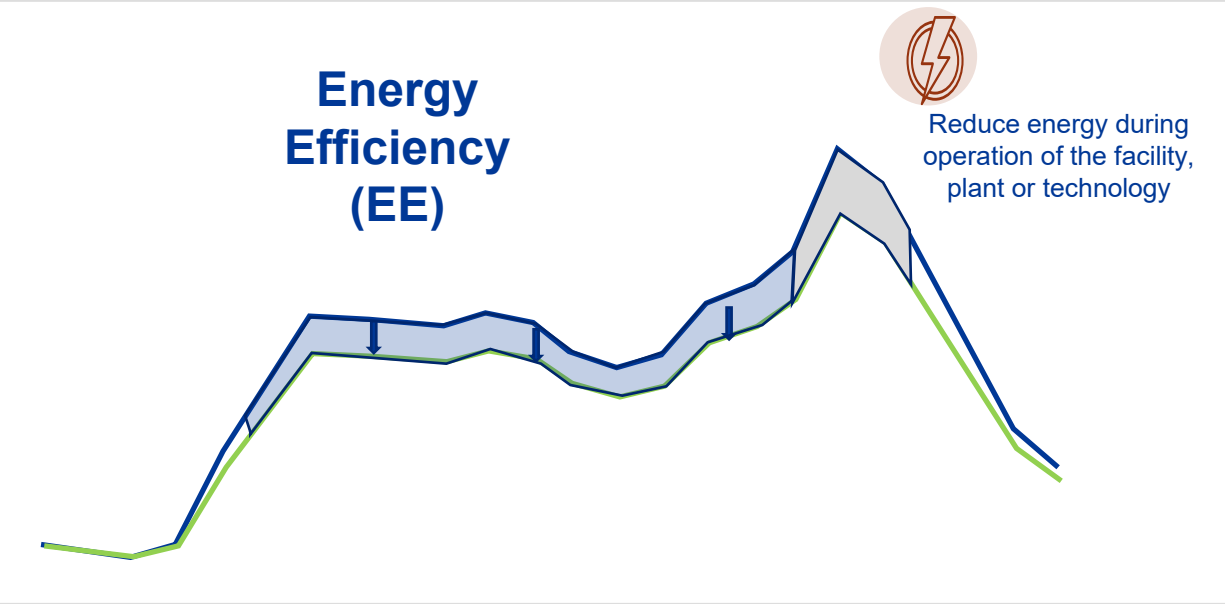
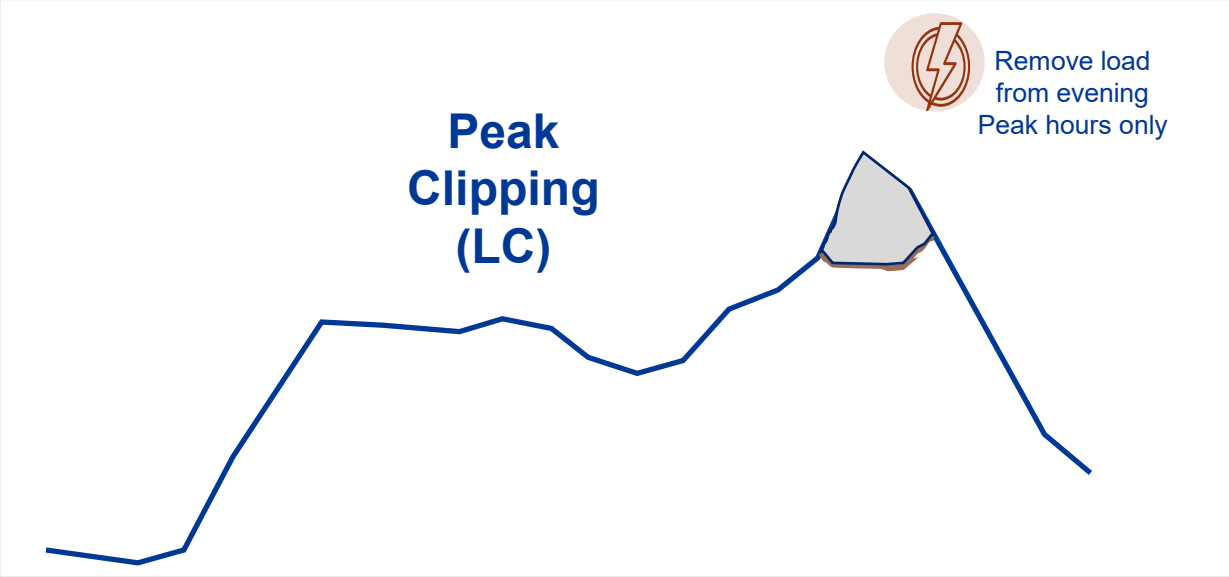
- Eskom is experiencing significant challenges in adequately balancing the national supply and demand of electricity and is regularly forced to implement load shedding to protect the power system. To mitigate these risks ,Eskom has reactivated the Distribution Demand Management Programme (DDMP) to assist with the energy challenges
- On the 13th of April 2023 Eskom launched three (3) Distribution Demand Management Programmes (DDMPs): the Residential Load Management, Energy Efficiency and Load Management Programme to assist with the energy constraints challenges.
- Project developers (PD) are invited to submit proposals as per the prescribed DDMP Programme rules.

Refer to weblink for details : https://www.eskom.co.za/distribution/demand-management-programme/

Impact of individual Demand Management Measures







Key insights

- As designed the demand management measures deliver savings during the evening peak, this is also the most constrained period for the grid.
- All three programmes contribute to reducing system peak with EE also contributing to non-peak periods.
- Therefore, the impact of DM measures is and will be the evening peak (e.g., peak rates).

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- Projects are to be financed upfront by the PD or customer.
- PD's may approach the banking sector for finance.
- All approved proposals will be subject to an independent measurement and verification of the proposed baseline prior to contract award.
- Awarded contracts are provided with a standard incentive rate (Rand/MW or Cents/kWh) for achieved demand and/or energy reduction during specified periods.
- On completion, projects will be independently measured and verified quarterly against the contracted demand and energy savings.
- Incentive rebates are paid quarterly (eight quarters) for the savings realised over a 24-month sustainability term.
- Payments are capped at 100% performance, therefore, no payments for over performance.
    - No double dipping/claiming with other incentive programmes will be permitted.

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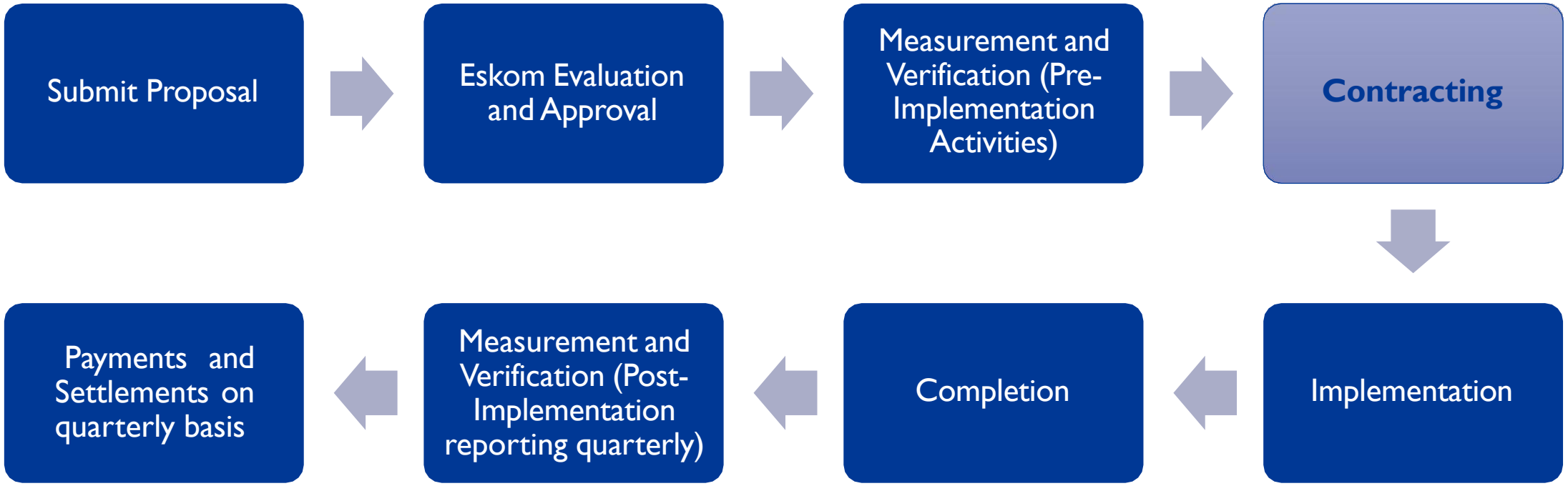

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- The compensation will be weighted equally over 8 quarterly periods (3 monthly basis).
- Payments will be capped at a maximum performance value of 100% per quarter.
- Upon receipt of the quarterly performance assessment report, ESKOM would then calculate the applicable rebate payable to the Project Developer for the quarter.
- Calculations are based on the standard incentive rate of R3m/MW over a 2 year contracted period for RLM and LM programmes (Average demand Savings between 6pm to 8pm summer and 5pm to 7pm Winter)
- The EE programme incentive rate is 41.2c/kWh derived from the standard R3m/MW for the average demand achieved during specified period. (6am to 8pm weekdays)

Contracted MW

Rate

Project Name		xxxx
Project Number		xxxxx
Input Contracted MW		1
Input Contracted R/MW		R 3000000.00
Total Project Cost		R 3000000.00

Sustainbility Periods	Target (MW)	Performace Achieved (MW)	% Performance against target	Payment Schedule	Cumulative Quartely % Payment	Payment	Cumulative Payment
Quarter 1	1.00	1.00	100%	12.50%	12.50%	R 375000	R 375000.00
Quarter 2	1.00	1.00	100%	12.50%	25.00%	R 375000	R 750000.00
Quarter 3	1.00	1.00	100%	12.50%	37.50%	R 375000	R 1125000.00
Quarter 4	1.00	1.00	100%	12.50%	50.00%	R 375000	R 1500000.00
Quarter 5	1.00	1.00	100%	12.50%	62.50%	R 375000	R 1875000.00
Quarter 6	1.00	1.00	100%	12.50%	75.00%	R 375000	R 2250000.00
Quarter 7	1.00	1.00	100%	12.50%	87.50%	R 375000	R 2625000.00
Quarter 8	1.00	1.00	100%	12.50%	100.00%	R 375000	R 3000000.00
					TOTAL	R 3000000	

Performance based **Quarterly payments** **Total payment over 24months**

The Quarterly payments will be based on the formula: [Actual Performance (MW) x Approved Compensation Rate (Rm/MW) x 1/8]

Load Management (LM)

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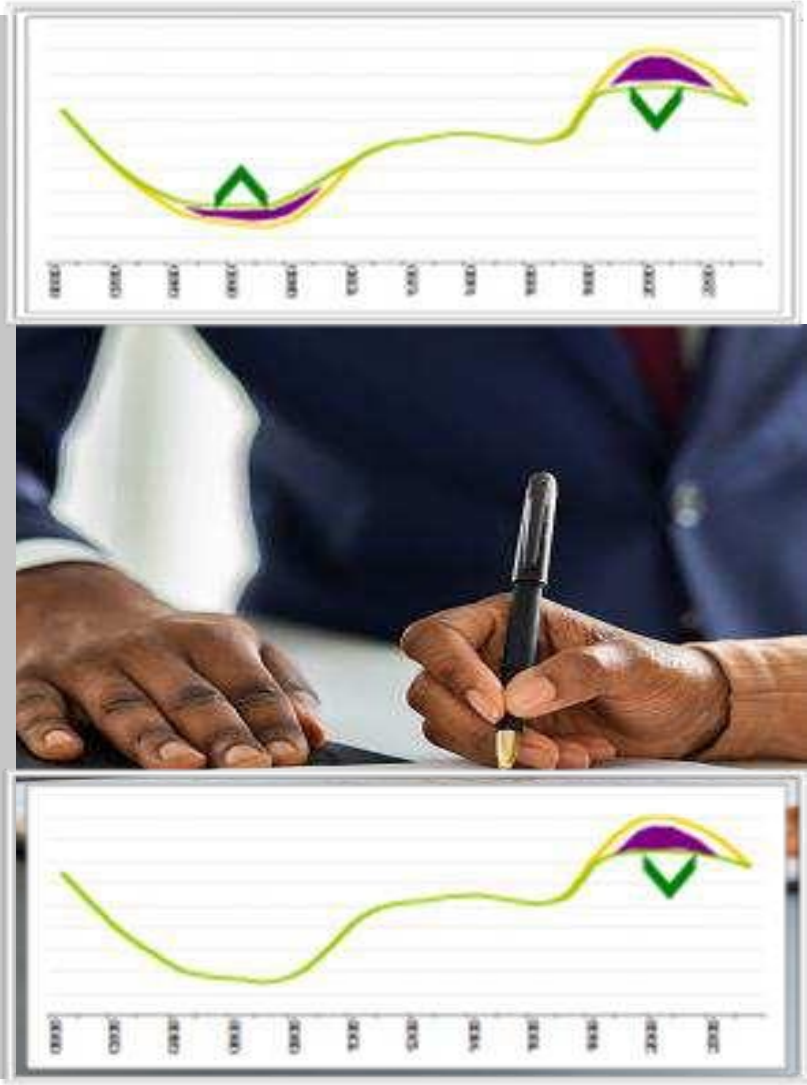
- Target Market: **All sectors (excluding residential sector)**
- Targeted period – **Eskom evening** peak (2hrs)
- **Load Shifting and Peak Clipping** are applicable.
- MW reduction is the **average demand** reduction over the evening peak period.
- A minimum demand reduction of **0.2MW at a single site** is required to participate
- Aggregation up to 4 sites (same entity) for the commercial sector.
- The maximum contract duration for the Load Management programme is **30 months**. Up to a maximum of 6 Months Implementation and 24 months sustainability.
- The Project Developer must provide all electrical metering equipment for the purpose of measurement and verification of as stipulated by the M&V body.



Energy Efficiency (EE)

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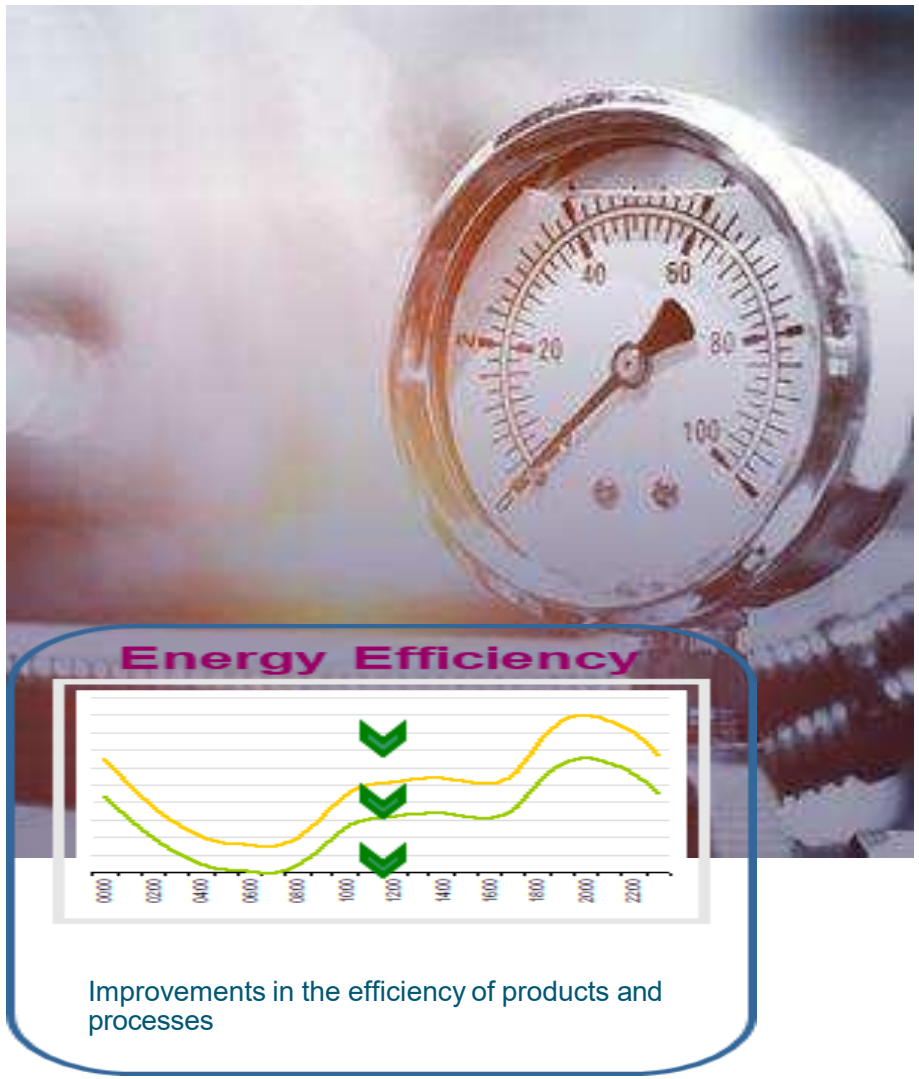

Improvements in the efficiency of products and processes

- Project developers must reduce consumption, measured between 6am and 8pm daily excluding weekends.
- A minimum average load reduction of 50kW per quarterly period for 8 quarters over a 24-month sustainability term.
- Aggregation up to 30 sites of the same entity project proposal.
- The project developer will be allowed up to a maximum of 6 months from the start date of the contract to implement the Approved Project.
- On completion of the implemented project, a completion certificate is to be issued (signed by, both the project developer/customer and Eskom) to activate the performance assessments.

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Examples: EE & LM

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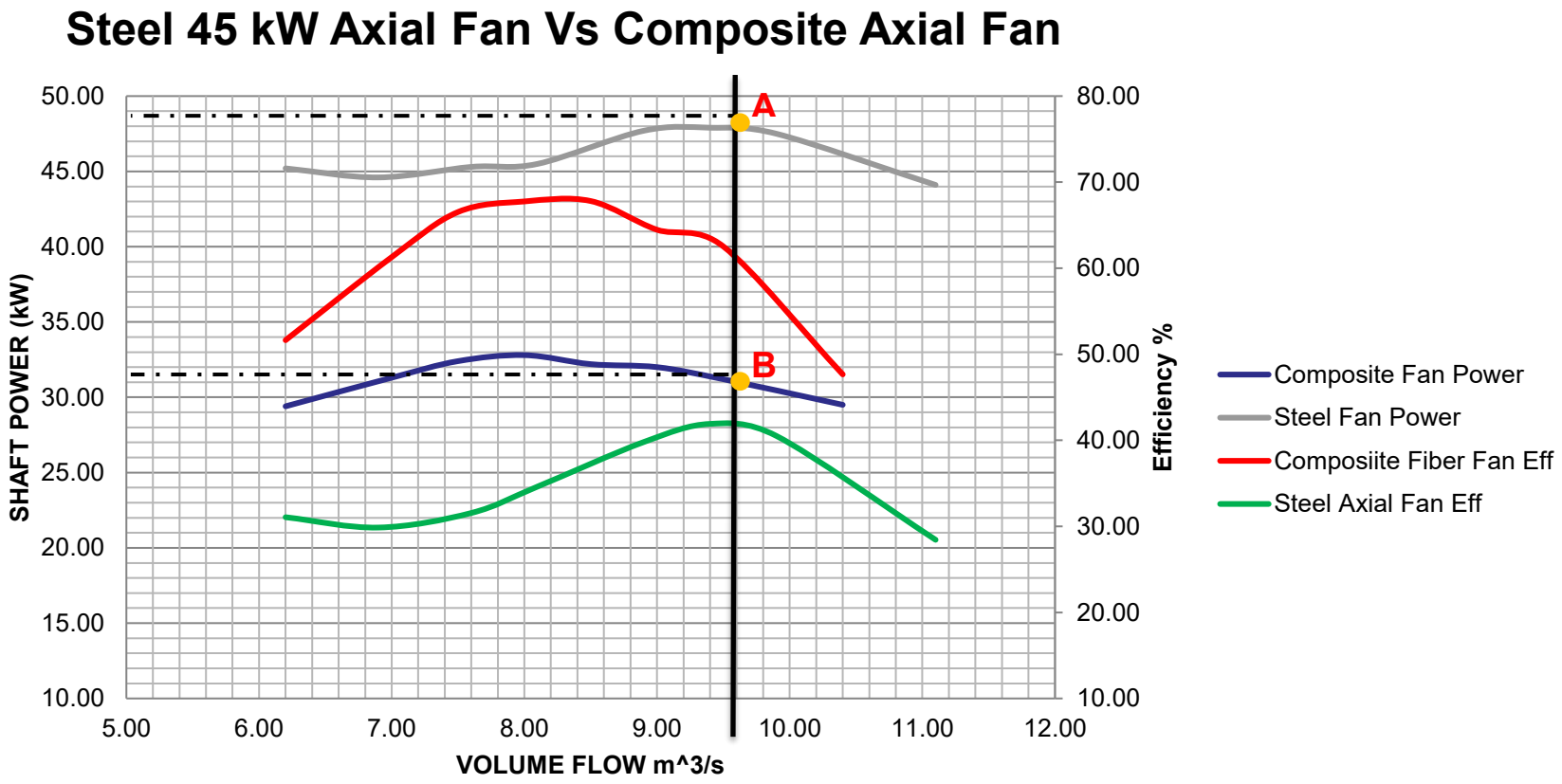
- The fan is manufactured making use of various composite fibre materials.
- Depending on the environment, the combinations of materials used may be varied to suit the environment in which it will operate.
- Some of the characteristics of the fan beside energy efficiency include:

  -Light weight and durable.

  -Increased total “Jet Throw” while maintaining the same air flow rate and pressure.(“Jet Throw” - distance from physical fan to end point).

Savings Energy Efficiency Fans Replacement Project

The Best Efficiency Point (BEP) of the existing fans was used as the baseline.
At the BEP point : Conventional Steel fans power (Point A) = 48.1 kW/fan
Composite fans power (Point B) = 31.1 kW/fan
Power savings = 17 kW/fan

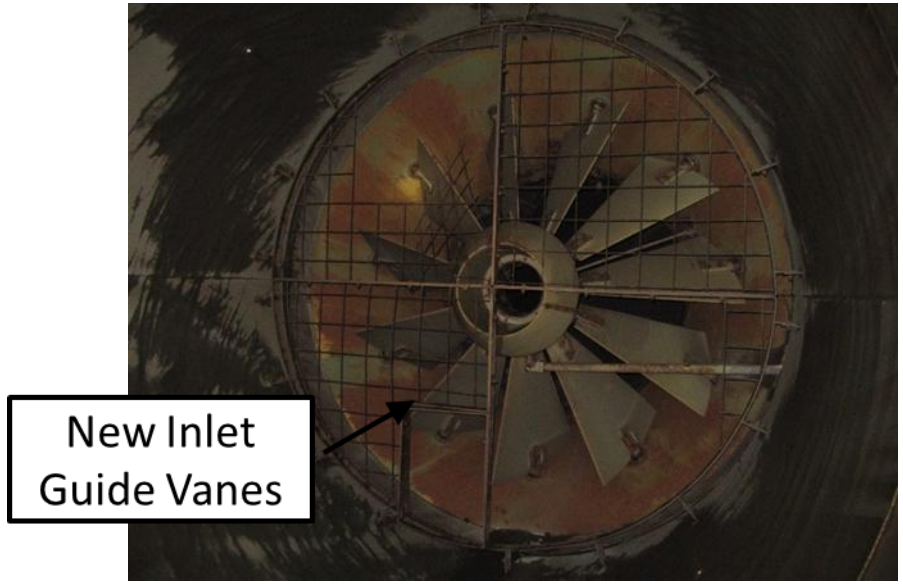


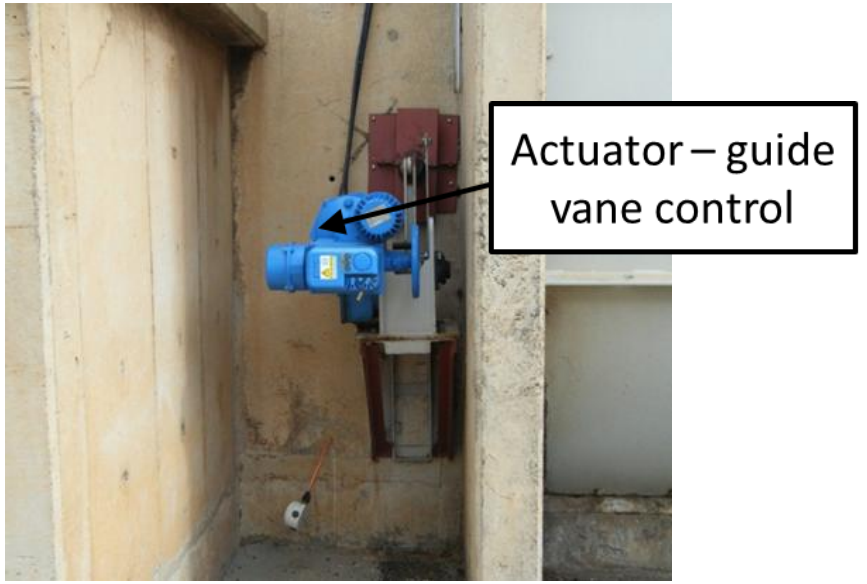
Example Energy Efficiency Fans Replacement Project

Name	Number of Fans	Demand Reduction
Various installations (Mining Ventilation Fans)	1338	21.5MW

Example 2 Load Management Fan Control

- Main Fan stations is one of the largest energy consumers on a mine.
- Power Consumption can be reduced by controlling the Inlet Guide Vane.
- Absorbed Power can be reduced by 30 % during peak Eskom Demand Periods without affecting the underground working significantly.





- The selected main surface fan station located on surface and used to provide primary ventilation to the extensive workings.

- The unloading of the fans have been achieved by using inlet pre-rotation guide-vane controls.

- The selected main surface fan 5.4 MW.

- Project has been successfully completed.

- Evening Peak Reduction =1.1MW

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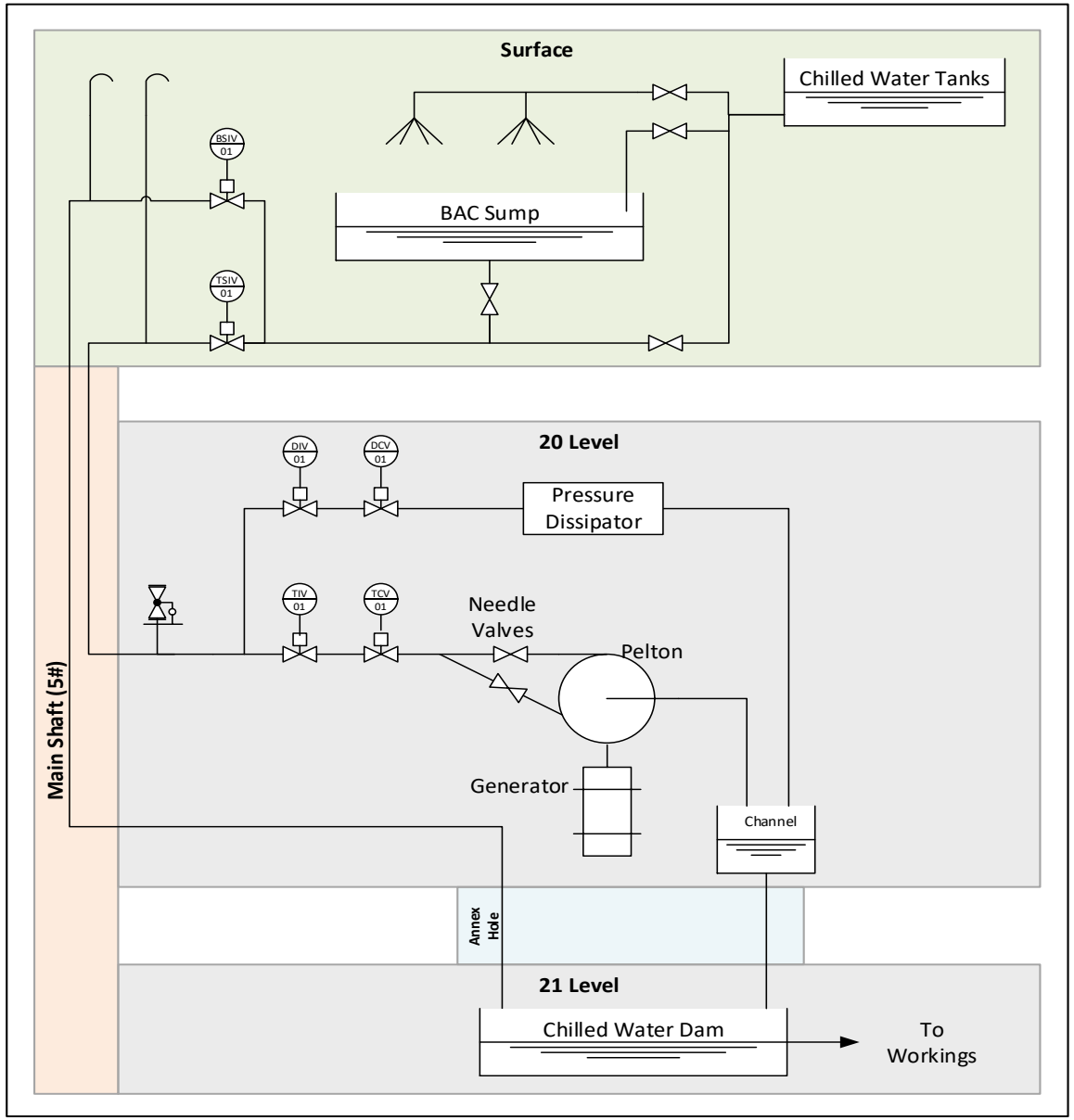

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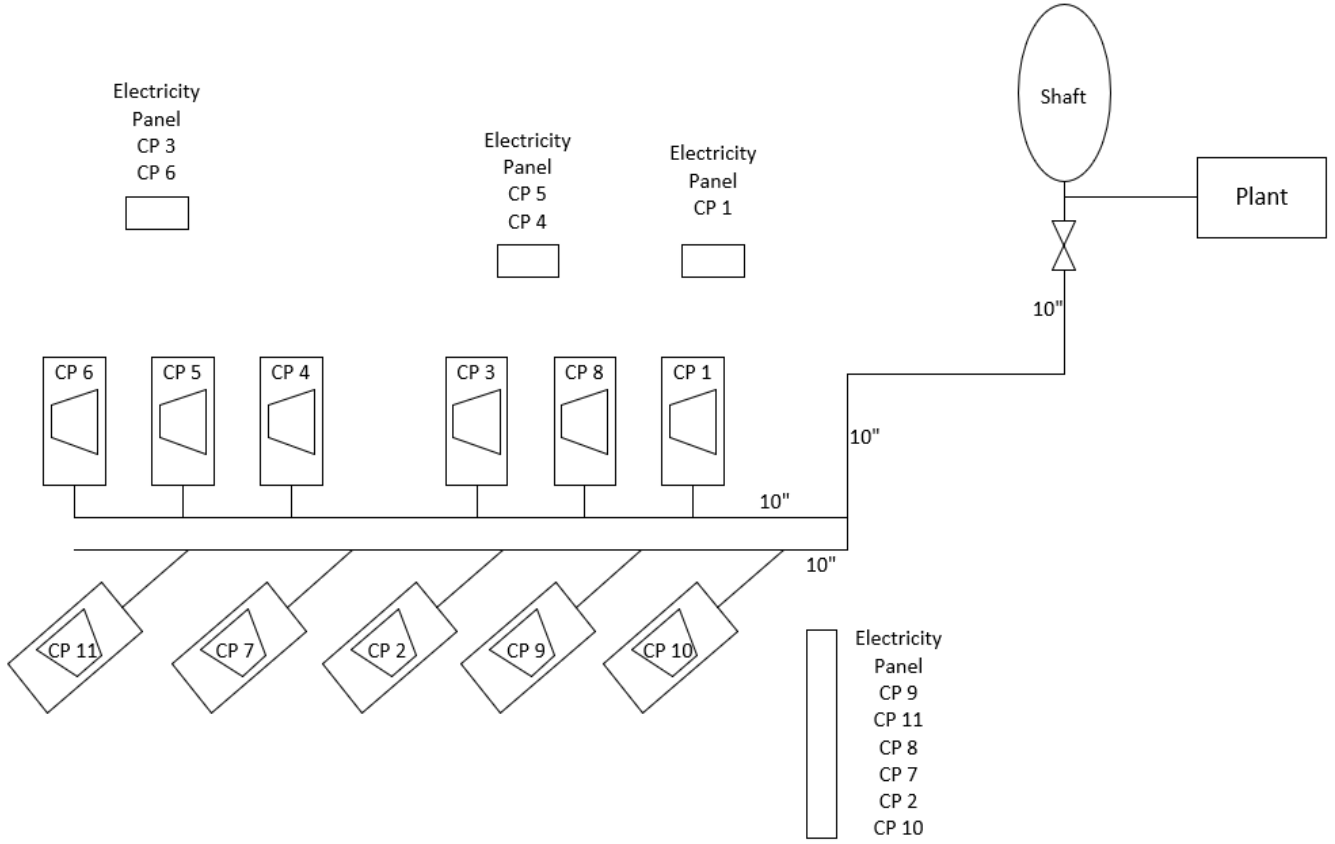
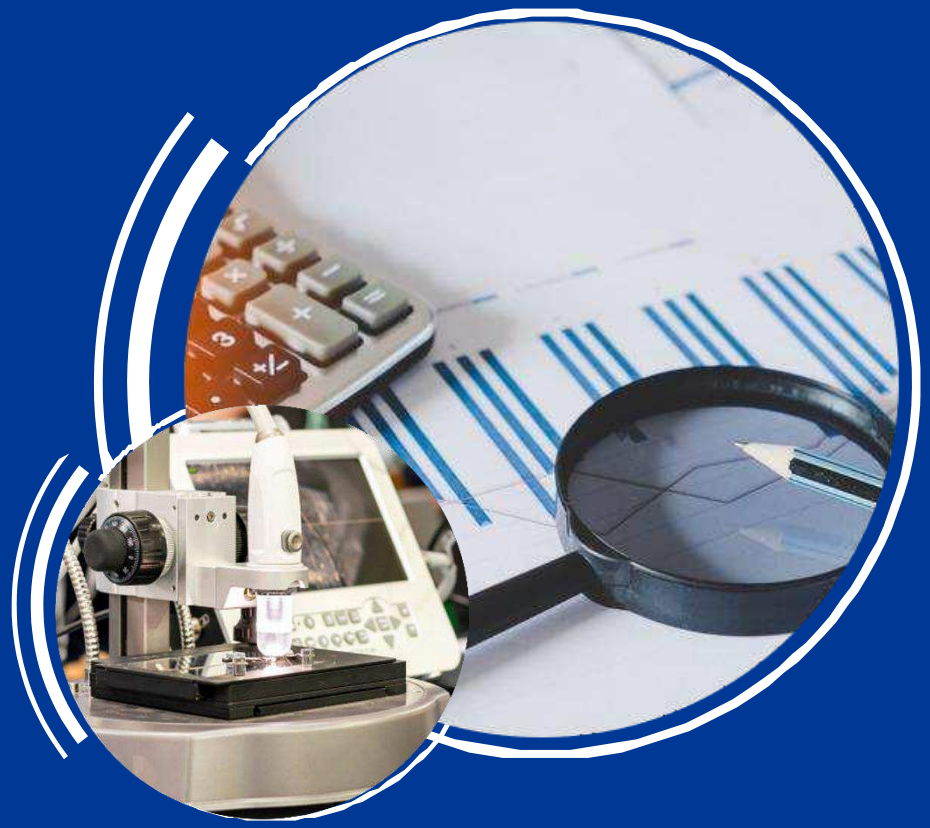
- The installed compressors are Ingersoll Rand Screw compressors.
- These compressors are able to switch off automatically or by means of an instruction from a PLC.
- The aim for the project is to install a PLC control system that will regulate the pressure feeding down the shaft to a specific schedule.
- This will be done by a pressure transmitter and Profibus connection to each compressor.
- Current system's pressure setpoint is 710 kPa during Eskom Peak.
- Aim to reduce pressure to 200 kPa from 17:00 to 20:00
- Evening peak impact : 1MW





Measurement & Verification

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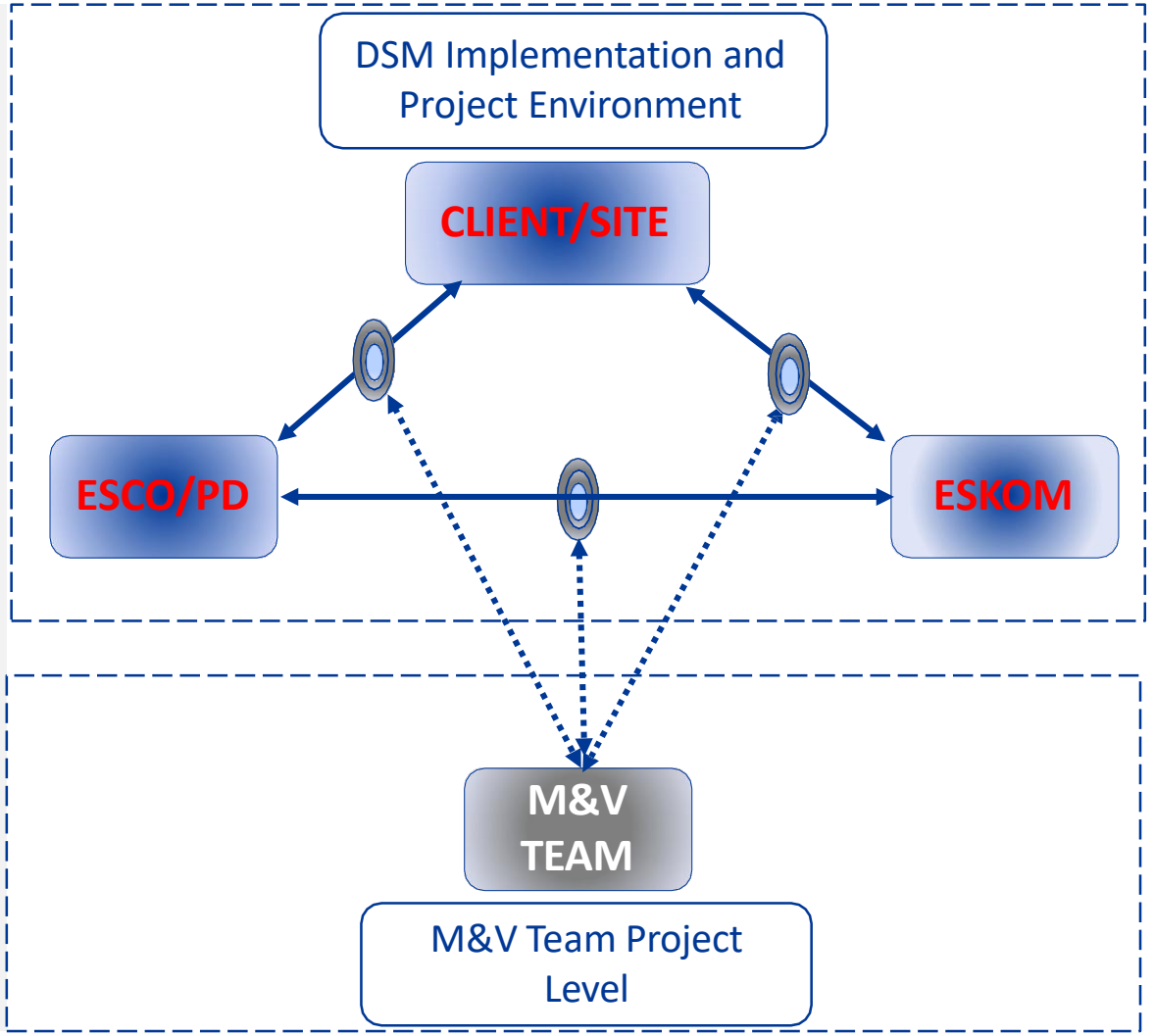
- The function of M&V Service Provider is to independently and objectively protect the interest of all stakeholders by quantifying project impacts over the contractual life of a project. The M&V Service Provider must provide an impartial, credible, transparent and replicable process in alignment to the National M&V Standard (SANS 50010).



ISO 50015 – the International Standard "Energy Management Systems — Measurement and Verification of Energy Performance of Organizations — General Principles and Guidance", is available as national standard.

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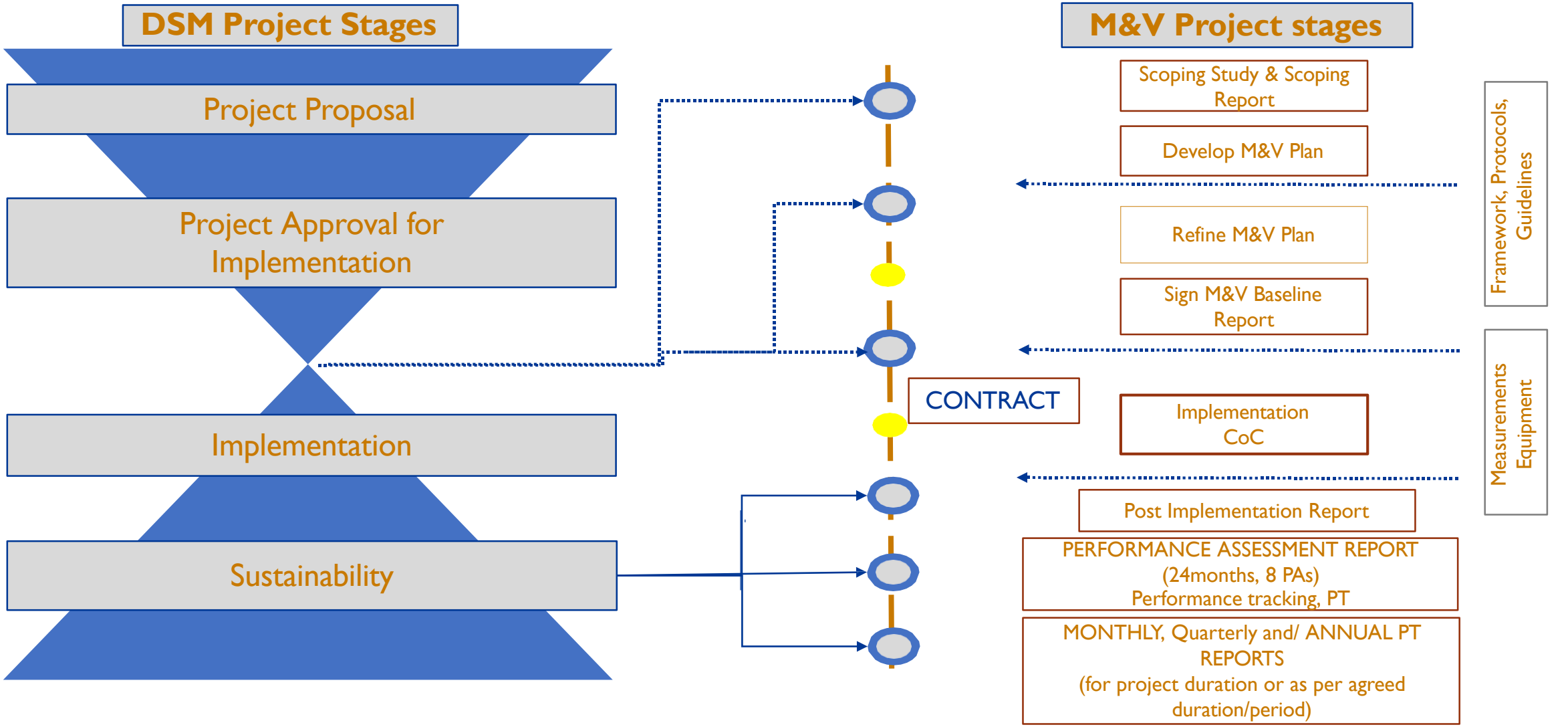

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