PROOF OF CONCEPT REPORT

(200TR CHILLER and 30TR PACU DX ThermalBlock/CoilSafe Application)

Facility: VITRO Pasig DC
Purpose: Equipment Power Consumption Reduction

Date: May 11, 2026
Prepared by: CoatZone

1. Executive Summary

This POC (Proof of Concept) report presents the energy power reduction initiatives implemented at VITRO Pasig during the reporting period. The objective was to reduce equipment power consumption, optimize efficiency, and lower operating costs while maintaining service reliability and compliance with operational standards. As a result of the implemented POC, an energy reduction of 8-12% were achieved, translating to measurable cost savings and improved operational efficiency.

2. Baseline

The baseline was established to determine the equipment condition and achieve accurate before-and-after comparisons.

Equipment Name	Equipment Setpoint	Ambient Temp	Operation Mode	Power Logs Recording	Power Logger Period uncoated	Power Logger Period - Coated
200TR Chiller No.9	Supply temp. 9-10'C	33-35'C	Compressor mode	Every 30secs	7 days	7 days
30TR PACU 32	21'C	33-35'C	Compressor mode	Every 30secs	7 days	7 days

3. POC Methodology

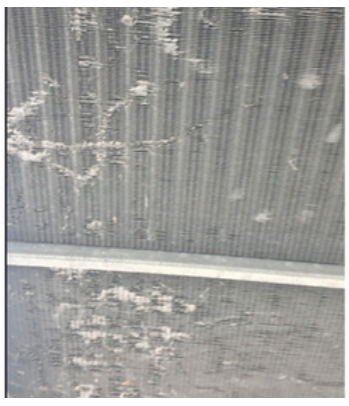
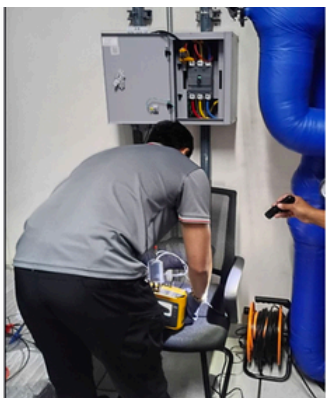
A power energy analyzer was installed on the equipment to obtain baseline measurements during normal operation at full Direct/Compressor mode, ensuring maximum load conditions during the observation period. The same operating parameters were applied after the application of Thermal Coat and Coil Safe to enable accurate before-and-after comparison.

4. Power Quality Analyzer Installation and ThermalBlock/CoilSafe Application.

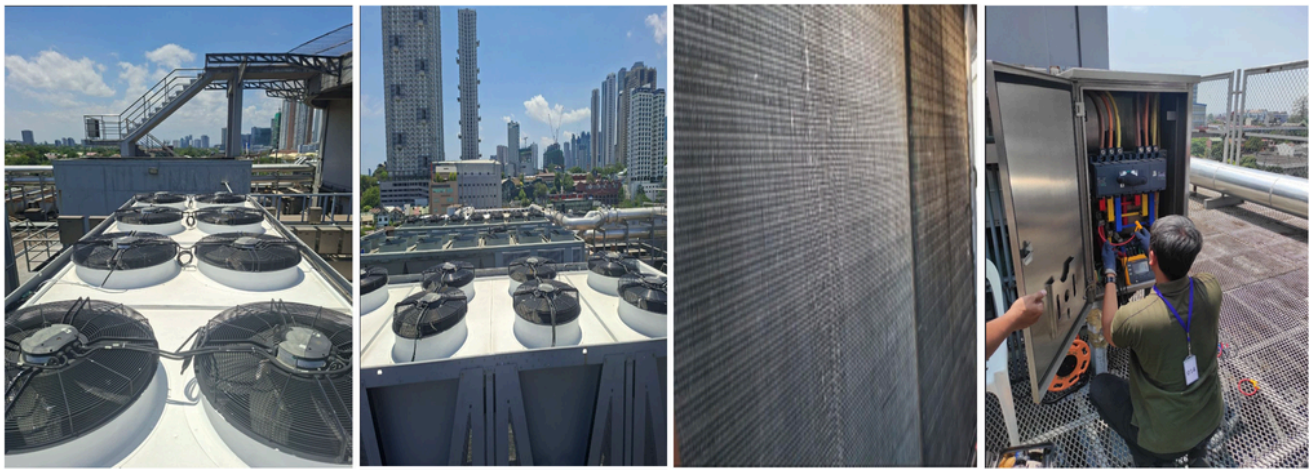
The Power Quality Analyzer was installed on the equipment power line side to record the power energy consumption before and after the application of Thermal Block/Coil Safe.

4.1 Photos for PACU 32 coating applications



4.2 Photos for Schnieder Chiller No.9 coating applications



5. Data gathering results for the 200TR Chiller No.9

5.1 Before coating application – Schneider Chiller No.9 (uncoated)

Reading sample date: **December 5-13, 2025**

Measured Energy, Power: **19.721 MWh, 114.47 KW**

Fluke Energy Analyze Plus 3.13 - [before thermal coating VITRO VPS CHILLER 1 old name chiller 9 (SN 66504250)_251205_1523]

File View Settings Help

17xx Setup | Download Data | Open File | New File | Export Report

Project Manager | Energy Study | Advanced | Report

RMS Power | Demand | Calendar View | Fundamental Power | V, A, Hz, THD | Unbalance | Energy Loss

Demand overview table

VITRO VPS CHILLER 1

Logging Information

Study type:	Energy study	Topology:	3-ph Wye	Cost: 7.5P/kWh, rcv; 0P/kWh, dlv;
Start date:	12/5/2025 3:23:25 PM	End date:	12/13/2025 10:56:14 AM	
Duration:	7d 19h 32m 48s			
Demand interval:	5min	Number of demand intervals:	2291	* ... series contained partial intervals

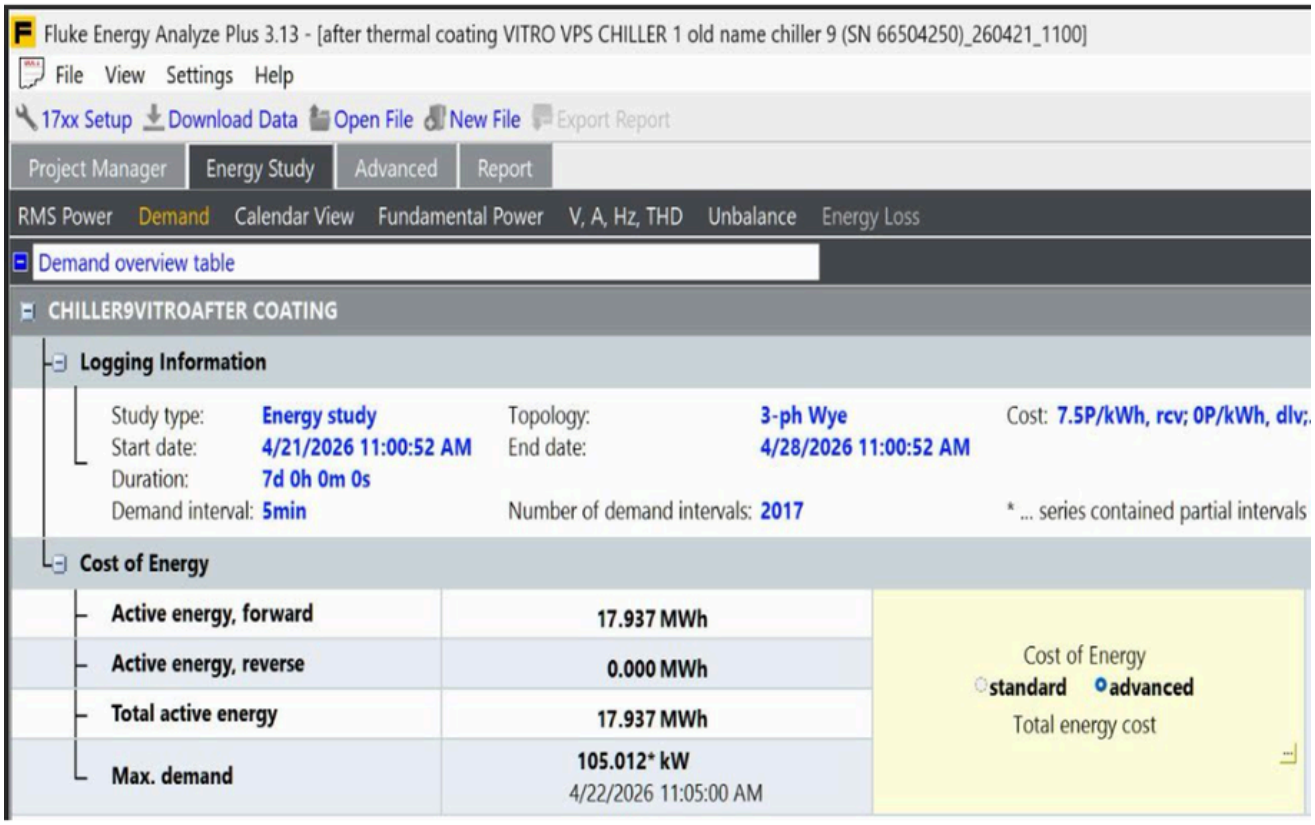
Cost of Energy

Active energy, forward	19.721 MWh	Cost of Energy: standard / advanced
Active energy, reverse	0.000 MWh	
Total active energy	19.721 MWh	Total energy cost
Max. demand	114.472* kW 12/8/2025 3:10:00 PM	

5.2 After coating application – Schneider Chiller No.9 (coated)

Reading sample date: **April 21-28, 2026**

Measured Energy, Power: **17.937 MWh, 105.01 KW**



Summary of Result:

Equipment	Status	Reading Date	Actual Reading		Difference	Average Reduction
			Before	After		
Chiller no. 9	Uncoated	December 5-13,2025	114.4KW		9.4 kW	8%
Chiller no. 9	Coated	April 21-28, 2026		105 kW		

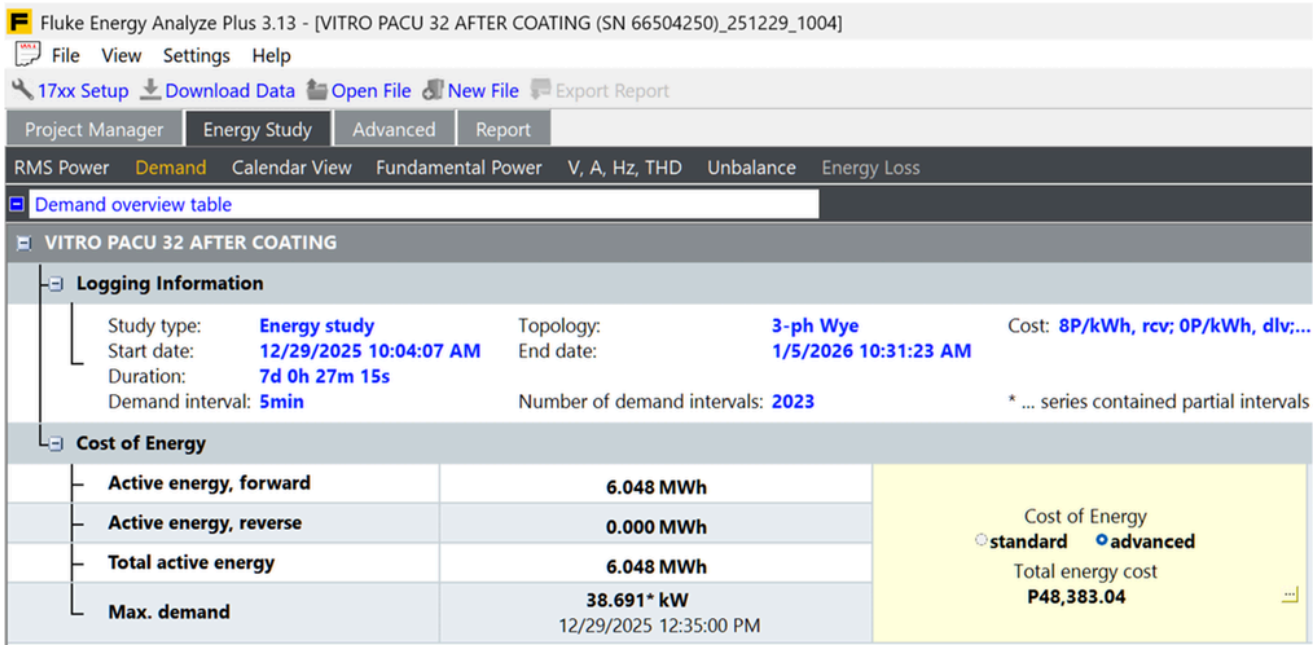
Estimated Savings:

kW Reduction	Monthly kWhr Reduction	Php per kWhr	Ave. Savings Php per Month
9.4 kW	6,768	7.50	Php 50,760.00

6. Data Gathering Results (30TR PACU 32)

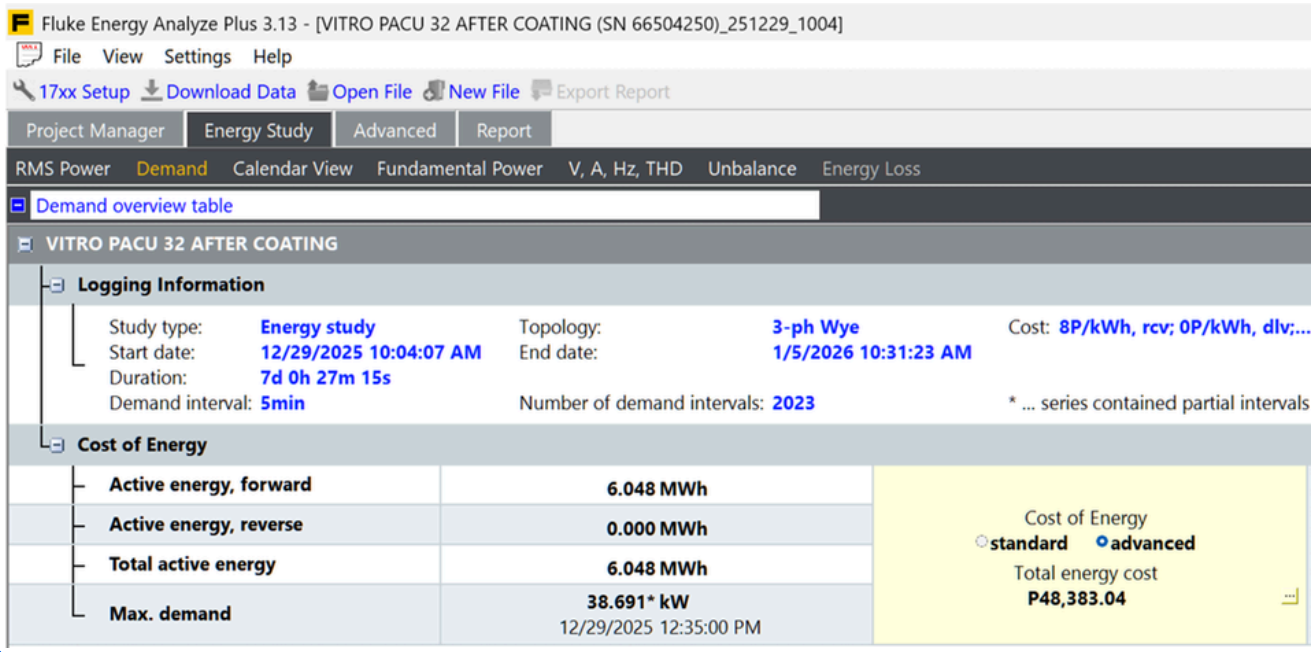
6.1 Before coating application – PACU 32

First sample reading
Reading sample date: **December 12 – 19, 2025**
Measured Energy, Power: **6.180 MWh, 39.49 KW**



6.1 After coating application (Coated) – PACU 32

First sample reading
Reading sample date: **December 29, 2025 – January 5, 2026**
Measured Energy, Power: **6.048 MWh, 38.69 KW**

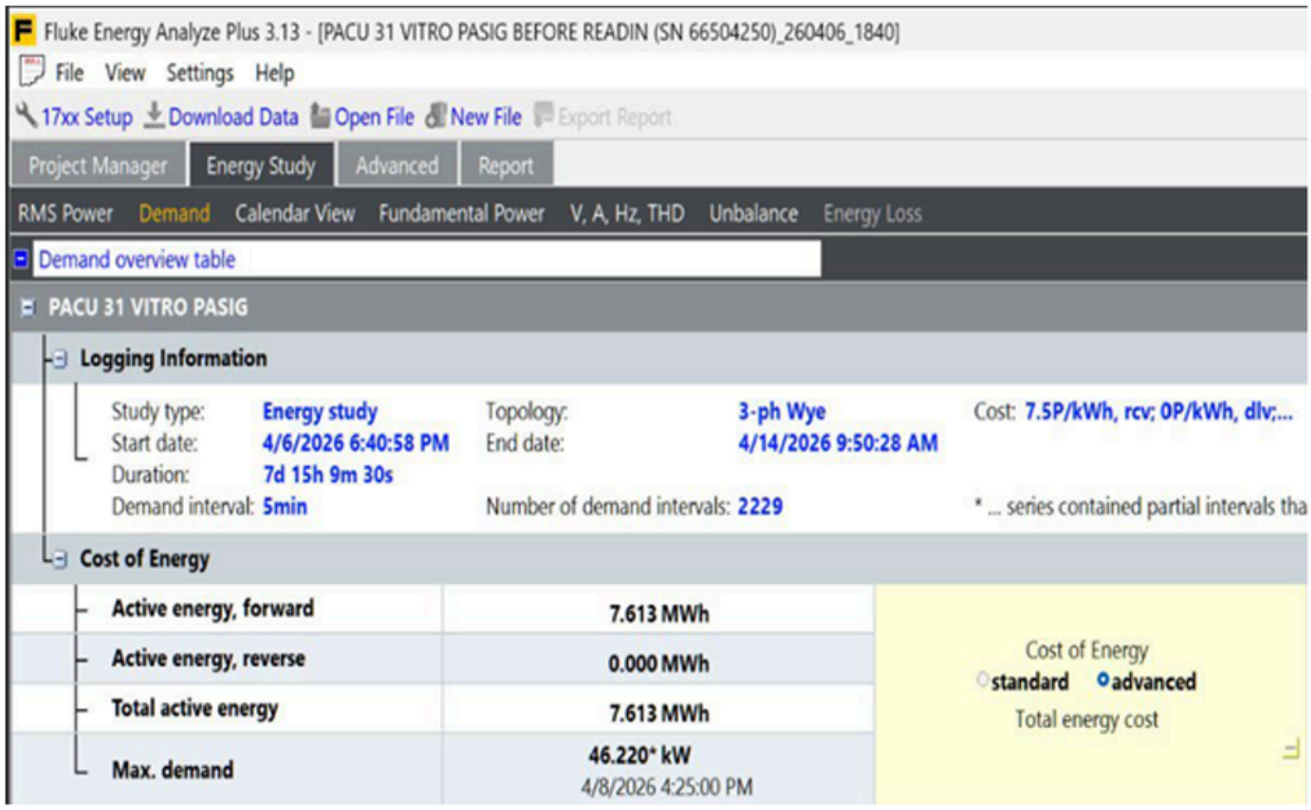


6.3 Cross unit data reading comparison as requested.

Sample reading – Gathered data to the uncoated other PACU with same capacity/operation (PACU-31) uncoated.

Reading sample date: April 6-14, 2026

Measured Energy, Power - 7.613 MWh, 46.22 KW

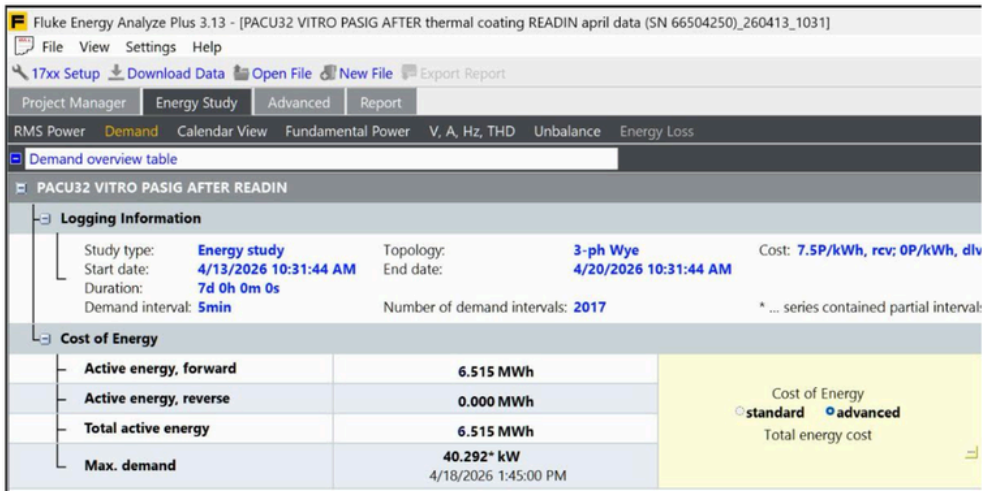


6.4 After coating application (Coated) – PACU 32

Second sample reading, as requested, a second sample reading on the coated PACU-32 is provided to compare performance on different seasons.

Reading sample date: **April 13-20, 2026**

Measured Energy, Power - **6.515 MWh, 40.29 KW**



Summary of Result:

Equipment	Status/Remarks	Reading Date	Actual Reading		Difference	Average Reduction
			Before	After		
PACU 32 Uncoated	1st reading Before	Dec 12 – 19, 2025	39.49 KW		1 KW	3%
PACU 32 Coated	1st reading After	Dec 29, 2025 – Jan 5, 2026		38.69 KW		
PACU 31 Uncoated	Unit comparison to other PACU with same capacity and operation	April 6-13, 2026	46.22 KW		5.93 kW	12%
PACU 32 Coated	2nd reading as requested to check performance comparing different season	April 13-20, 2026		40.29 KW		

Estimated Savings:

kW Reduction	Monthly kwHr Reduction	Php per kWhr	Ave. Savings Php per Month
5.93 kW	4,269	7.50	Php 32,022.00

7. ThermalBlock/CoilSafe Proposal

Items	Equipment	Unit Quantity	Supply and Installation Cost
1	200TR Chiller	1 unit	Php 460,000.00
2	30TR PACU	1 unit	Php 85,000.00

8. Return of Investment (ROI)

7 Months

Conclusion

The Proof of Concept (POC) confirmed the effective application of the Thermal Block/Coil Safe. Performance improvements were validated through before-and-after measurements using a Power Analyzer. The results met the intended objectives and demonstrated the technical viability of the solution under actual operating conditions.