

# CURRENT REPORT OF MAIN INCOMING CAPASITOR BANK CONDITION MPC SOUTHERN REGION

For:

PERBADANAN PRODUKTIVI MALAYSIA JOHOR BAHRU (MPC)

Conducted & Prepared by :



Bina Tenaga Energy

*your power factor solution*

Measurement & Calibration • Unique Design &  
Installation • Comprehensive Maintenance

POWER FACTOR CORRECTION SYSTEM

**PFCS**   
**BİNATENAGA**

- Carbon Avoidance
- ESG Compliance



PROTECTING THE CLIMATE THROUGH POWER FACTOR CORRECTION

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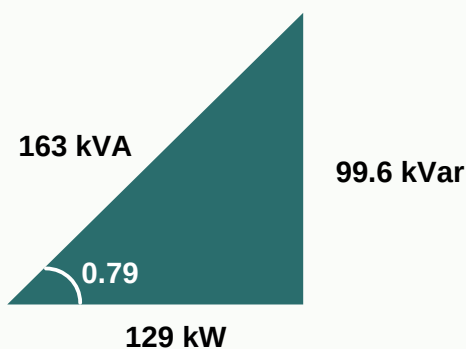
# 01 BILLS & DESKTOP STUDY

Table below shows 6 months date extracted from bill for MPC Johor Bahru  
Feb 2024 to July 2024

Particulars	Feb 2024	March 2024	April 2024	May 2024	June 2024	July 2024	Average for 6 months
Current Charges (RM)	RM13,771	RM11,840	RM10,784	RM10,855	RM13,448	RM12,193	RM12,149
PF Level	0.81	0.80	0.79	0.81	0.81	0.87	-
PF Surcharge (RM)	RM768	RM815	RM876	RM606	RM751	-	RM763
kVarh	17,143	14,926	13,980	13,185	16,313	12,803	14,725
kWh	23,468	19,923	17,850	18,522	22,941	22,436	20,857
kW	153	265	129	273	154	137	185

PF level for month of August 2023 to Dec 2023 is at very good level @1.00. However, the PF starting drop @ 0.94 in Jan 2024 and continuously drop as per above table

Calculation of additional kVar compensation based on April 2024 bill as the pf level is at the lowest point for propose PFCS-Binatenaga



$$\frac{\text{Active Power (kW)}}{\text{Power Factor}} = \text{Apparent Power (kVA)}$$

$$\text{Apparent Power (kVA)} = 163 \text{ kVa}$$

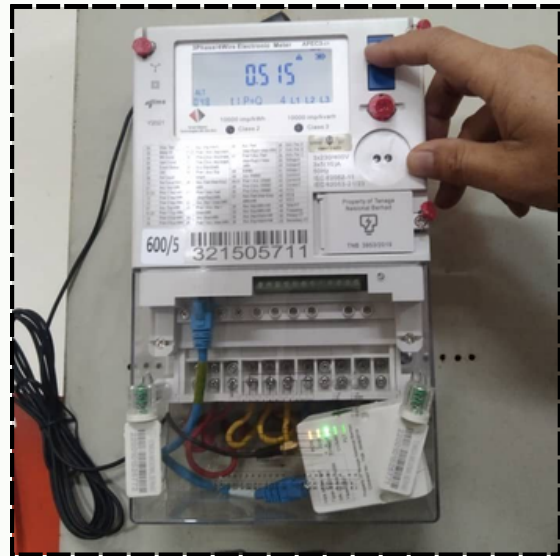
$$\text{Reactive Power (kVar)} = \sqrt{163^2 - 129^2}$$

$$\text{Reactive Power (kVar)} = 99.6 \text{ kVar}$$

## 02 SITE VISIT PICTURE



**The capacitor bank is no longer working. The indicator light is not on**



**PF Reading @ 0.515**



**CAP BANK INTERNAL PICTURE**



## 03 POWER FACTOR SURCHARGE RATE

A Power Factor surcharge is imposed when the customers' Power Factor:

- is less than 0.90 (electricity supply 132kV and above) or
- less than 0.85 (electricity supply below 132 kV).

Power Factor Level	PF Surcharge %
0.84	1.5%
0.83	3.0%
0.82	4.5%
0.81	6.0%
0.80	7.5%
0.79	9.0%
0.78	10.5%
0.77	12.0%
0.76	13.5%
0.75	15%
0.74	18%
0.73	21%
0.72	24%
0.71	27%
0.70	30%
0.69	33%
0.68	36%
0.67	39%

**1.5% surcharge of the current bill  
– for every 0.01 less than 0.85  
power factor**

**3% surcharge of the current bill  
– for every 0.01 less than 0.75  
power factor.**

Table 1: Power factor (PF) surcharge percentage if PF drop below 0.85%

# Thank You

## Technical Partners



## Strategic Partners



## Commercial Partners



## Contact Information

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Power Factor Correction System