

SECOND SCHEDULE

FORM A

ELECTRICITY SUPPLY ACT 1990

EFFICIENT MANAGEMENT OF ELECTRICAL ENERGY REGULATIONS 2008

REPORT ON EFFICIENT MANAGEMENT OF ELECTRICAL ENERGY

FOR THE YEAR 2023

[paragraph 6(1)(d)]

Name of Private Installation Licensee/Consumer*:

Universiti Sains Malaysia - Kampus Utama

Address of Private Installation Licensee/Consumer*:

11800, USM Pulau Pinang, Pulau Pinang

Telephone No.: **04-653 2327**

Fax No.: **04-658 7688**

Email Address: **msalmi@usm.my**

Installation Registration No.:

Total consumption of electrical energy/ total net generation of electrical energy* for six consecutive months in the period reported **06/2023 - 11/2023 : 17,266,357.08 kWh.**

Total consumption of electrical energy/ total net generation of electrical energy* for six consecutive months in the previous period reported **12/2022 - 05/2023 : 14,888,496.16 kWh.**

Efficient management of electrical energy improvement measures implemented in the period reported

Efficient management of electrical energy improvement measures proposed but not implemented together with reasons for not implementing them

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Estimated savings in total consumption of electrical energy/ total net generation of electrical energy* achieved as a result of efficient management of electrical energy improvement measures implemented in the period reported kWh.

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Name(s) and registration number(s) of the registered electrical energy manager(s) responsible for the installation in the period reported

A.Aziz Bin Mat Ali (PTE-0076-2010)

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We, **Universiti Sains Malaysia - Kampus Utama** the private installation licensee/consumer*, declare and confirm that all the information given in this report and in the attached annexes are true and accurate.

Date:

13/12/2023

.....
**Name:

I.C. No.:

Designation:

for and on behalf of private
installation licensee/consumer *

Note:

- 1 If the space is insufficient to provide the information or particulars, please attach annexes. Every annex shall be initialled by the above signatory.
- 2 * Delete whichever is not applicable.
- 3 **This form shall not be signed by the registered electrical energy manager for the installation.

COMPANY PROFILE	
Installation Name	Universiti Sains Malaysia - Kampus Utama
Address	11800, USM Pulau Pinang, Pulau Pinang
Licensee/Supply Authority	Tenaga Nasional Berhad
Licensee/Supply Authority Account Number	220396974502, 220396974502 (NEM), Solar PV (Net)
Installation Registration No.	
Person(s) in-charge	
Name:	EN. MOHD SALMI BIN ISMAIL
Designation:	ELECTRICAL ENGINEER
Telephone:	04-653 2327
Fax:	04-658 7688
Email:	msalmi@usm.my
Registered Electrical Energy Manager (REEM)	
Name:	A.Aziz Bin Mat Ali
Certificate:	PTE-0076-2010
Telephone:	0351618495
Email:	energyautomation@eam.com.my
Sector	Government
Subsector	College and University
Electricity tariff category	C1 - Perdagangan OPTR (diskaun)
Date of Report	13/12/2023

COMPANY INFORMATION	
Gross Floor Area [m ²]	365,482.300
Percent of Gross Floor Area That is Air Conditioned [%]	
Server Area [%]	
Parking Area That is Enclosed [%]	0.000
Net Floor Area [m ²]	365,482.300
Design Occupant Load Unit	
Design Occupant Load	
Actual Occupant Load [%]	

EFFICIENT ELECTRICAL ENERGY MANAGEMENT POLICY

1. Penggunaan tenaga sebagai kriteria pengiraan belanjawan
2. Bangunan bistari dan cekap tenaga
3. Tenaga diperbaharui sebagai satu opsyen.

EFFICIENT ELECTRICAL ENERGY MANAGEMENT OBJECTIVE

- i. Mewujudkan satu sistem pengurusan tenaga dan membudayakan kesedaran penggunaan elemen cekap tenaga di peringkat USM
- ii. Mencapai kecekapan tenaga dengan mempraktikkan penggunaan produk dan rekabentuk cekap tenaga
- iii. Mempraktikkan penggunaan tenaga diperbaharui (RE) yang praktikal, ekonomik dan lestari.
- iv. Melaksana program latihan dan kesedaran ke arah mewujudkan budaya penggunaan cekap tenaga di kalangan warga USM
- v. Memperkukuh tatacara dan proses pengurusan tenaga dalam sistem maklumat, tanda aras dan pemantauan tenaga.
- v. Mencapai tahap Building Energy Index (BEI) piawai Malaysia MS1525 dan melaksanakan secara menyeluruh program pengurusan tenaga di semua bangunan/premis dikampus USM.

EFFICIENT ELECTRICAL ENERGY MANAGEMENT COMMITTEE

- a. Dato' Prof Dr Muhamad Jantan - TNC P&I
- b. Sr Hj Aziz Che Jusoh - Pengarah Pembangunan
- c. Encik Mohd Salmi Ismail - Ketua Usmet
- d. Pengarah CETREE & GT
- e. Pengarah CGSS
- f. Pendaftar
- g. Bendahari

BASELINE

Baseline Year

2023

Baseline - Electricity

Month	Account		
	220396974502 (NEM) [kWh]	Solar PV (Net) [kWh]	Total [kWh]
1	2,013,644.000	632,015.910	2,645,659.910
2	1,620,112.000	641,521.580	2,261,633.580
3	1,841,060.000	772,523.110	2,613,583.110
4	1,731,044.000	684,625.050	2,415,669.050
5	2,163,586.000	709,297.510	2,872,883.510
6	2,118,776.000	1,052,316.290	3,171,092.290
7	1,799,081.000	1,036,330.080	2,835,411.080
8	1,521,418.000	1,090,699.920	2,612,117.920
9	1,422,521.000	988,422.430	2,410,943.430
10	1,992,261.000	1,115,094.470	3,107,355.470
11	2,190,865.000	938,571.890	3,129,436.890
12	1,857,194.000	1,046,270.300	2,903,464.300
Total	22,271,562.000	10,707,688.540	32,979,250.540

Baseline - Variables

Month	Variable	
	No. of Calendar Public Holidays	No. of Semester Break
1	3.000	0.000
2	1.000	2.000
3	1.000	26.000
4	2.000	0.000
5	2.000	7.000
6	3.000	0.000
7	2.000	7.000
8	1.000	23.000
9	2.000	31.000
10	1.000	15.000

Month	Variable	
	No. of Calendar Public Holidays	No. of Semester Break
11	0.000	0.000
12	1.000	7.000

Baseline - Regression analysis result

Regression Function	
Function	$y = -8,073.544 * [\text{No. of Semester Break}] + -43,888.715 * [\text{No. of Calendar Public Holidays}] + 2,897,151.198$
R ²	0.090
Adjusted R ²	-0.113

* Regression analysis can only be considered if the R² (Coefficient of Determination) value is equal or greater than 0.75

CURRENT REPORTING PERIOD

Reporting durations [months]	6
Reporting period	06/2023 - 11/2023

Current Reporting Period - Electricity

Year	Month	Account		
		220396974502 (NEM) [kWh]	Solar PV (Net) [kWh]	Total [kWh]
2023	6	2,118,776.000	1,052,316.290	3,171,092.290
2023	7	1,799,081.000	1,036,330.080	2,835,411.080
2023	8	1,521,418.000	1,090,699.920	2,612,117.920
2023	9	1,422,521.000	988,422.430	2,410,943.430
2023	10	1,992,261.000	1,115,094.470	3,107,355.470
2023	11	2,190,865.000	938,571.890	3,129,436.890
Total		11,044,922.000	6,221,435.080	17,266,357.080

Current Reporting Period - Building Energy Intensity

Net Floor Area [m ²]		365,482.300
Year	Month	BEI [kWh/m ²]
2023	6	8.676
2023	7	7.758
2023	8	7.147
2023	9	6.597
2023	10	8.502
2023	11	8.562

Current Reporting Period - Variables

Year	Month	Variable	
		No. of Calendar Public Holidays	No. of Semester Break
2023	6	3.000	0.000
2023	7	2.000	7.000
2023	8	1.000	23.000
2023	9	2.000	31.000
2023	10	1.000	15.000

Year	Month	Variable	
		No. of Calendar Public Holidays	No. of Semester Break
2023	11	0.000	0.000

PERCENTAGE REDUCTION

Electricity consumption percentage reduction compared to BAU scenario

Description	Value	Unit
Total electricity consumption for current period reported [a]	17,266,357.080	kWh
Total electricity consumption for current period reported in BAU Scenario based on baseline formula [b]	16,374,319.372	kWh
Percentage electricity consumption reduction or increment [c]=[a]-[b] / [b] * 100 Note: Negative value – Reduction, Positive Value - Increment	5.448	%

Building Energy Intensity in the period reported

Value	Unit
47.243	kWh/m²

ENERGY SAVING MEASURES (ESM)

List of ESM

Summary of ESM

Proposed ESM