



University : Universiti Malaysia Pahang
Country : Malaysia
Web Address : <http://www.ump.edu.my/> and <http://mygreen.ump.edu.my/>

[2.8] [The ratio of renewable energy production divided by total energy usage per year]

Renewable Energy Project Name: Solar system FKM

Location: FKM Admin

Capacity: 10kW + 10kW

Total Generated year 2022

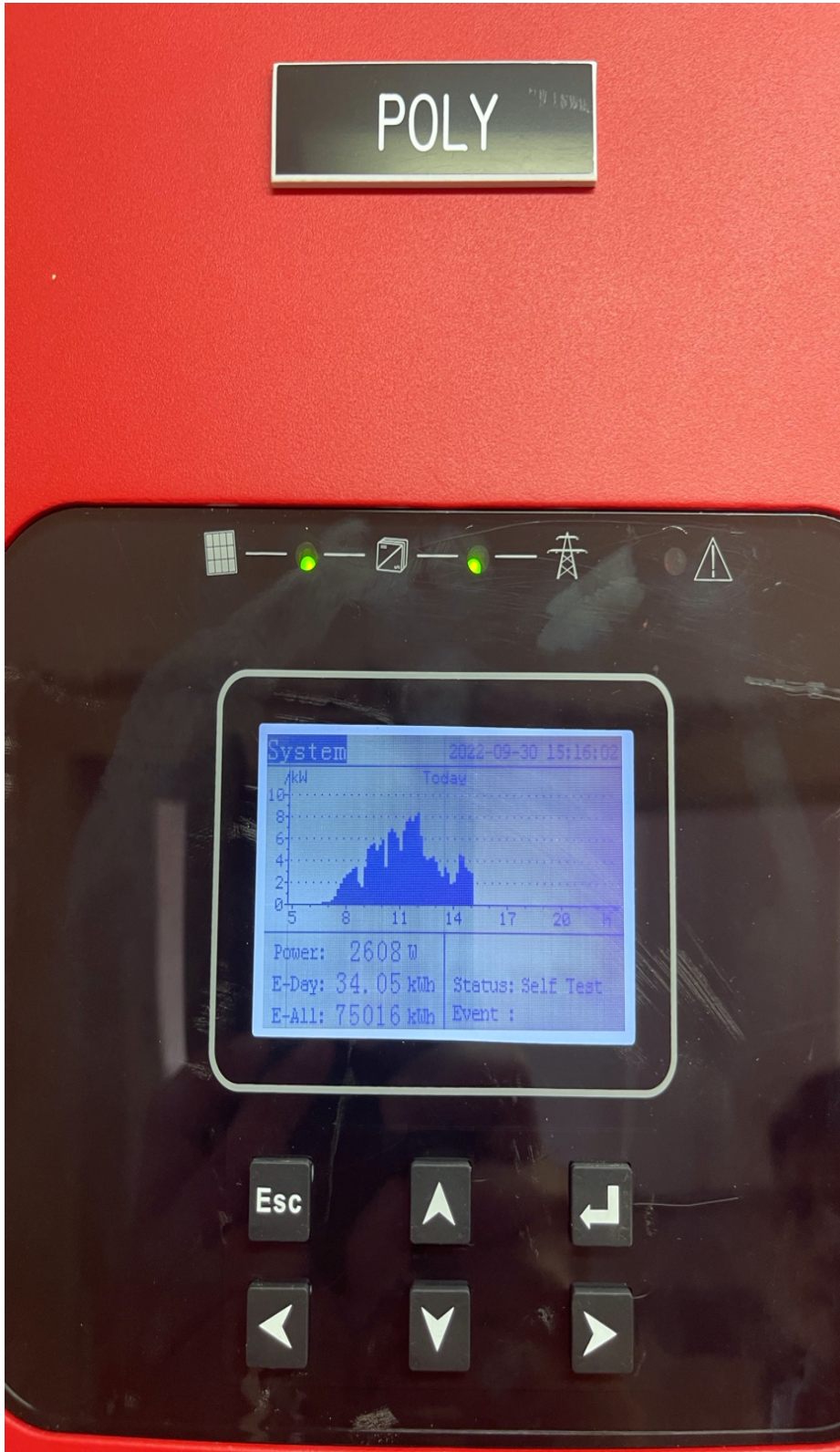
- a. Mono : 83,150 kWh
- b. Poly : 75,016 kWh





Poly Crystalline

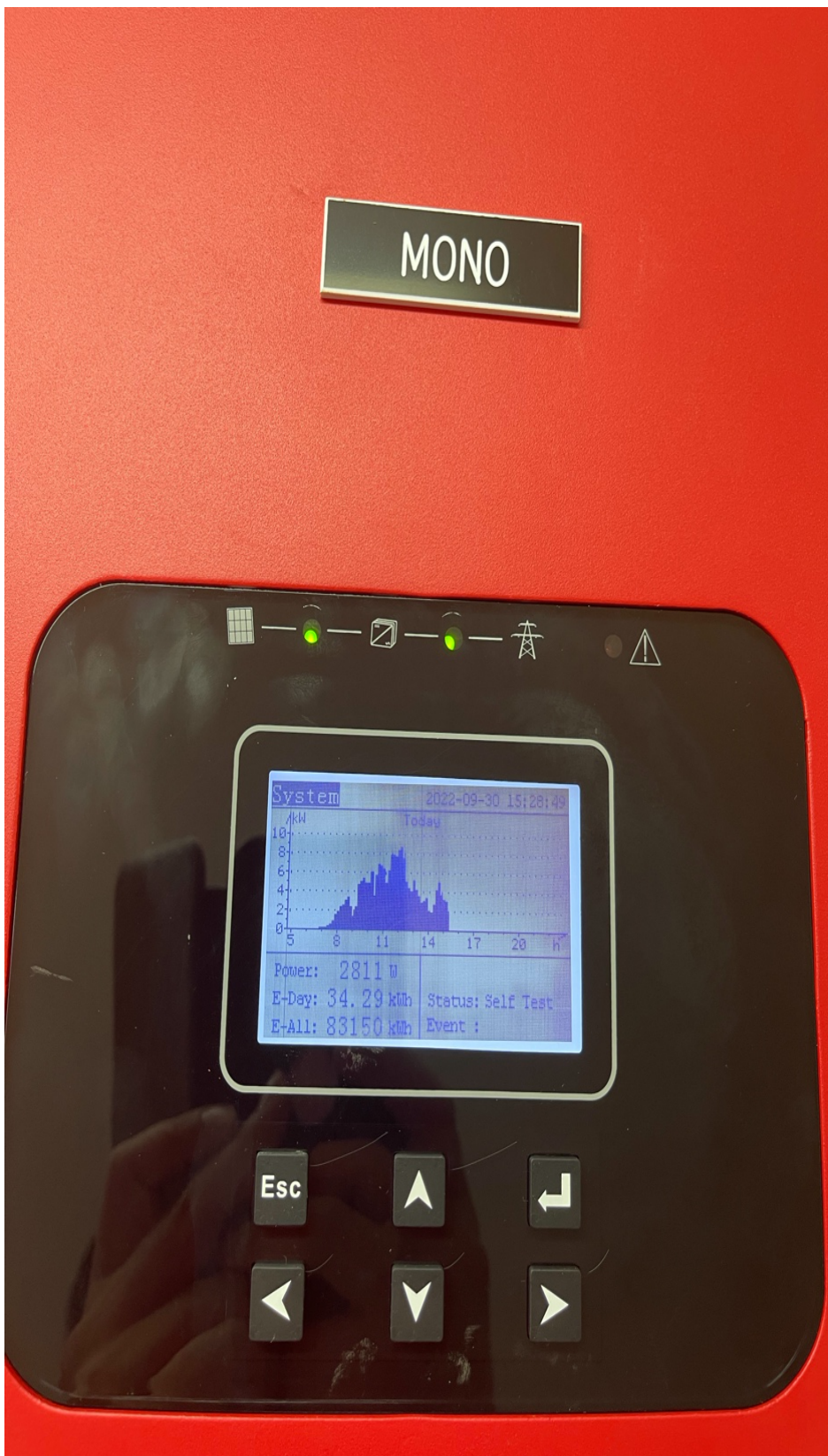
Data recorded on 2022



Mono System



Data recorded on 2022





No.	Building/Area	Type of Renewable Energy	Year Installed	Capacity, kW	kWh produce year 2021-2022
1	FTKMA & FTKEE	Solar system	2016	21kW	158,166 kWh
2	Solar KP House	Solar system	2018	5kW	5,400 kWh
3	Entrance Guard House	Wind power	2012	22kW	-
4	FKKSA	Biodiesel	2007	30 Litre Biodiesel per 50 Litre cooking oil	-
5	Walkaway (Canseleri to Kafe)	Solar System	2019	2.4kW- off grid	4,380 kWh
6.	Wakf Hut	Solar System	2021	2kW	3,650 kWh
7.	Sea-Lite	Combine heat and power	2022	0.02kW	175.2 kWh
8.	Pico Hydro	Hydro Power	2022	0.015kW	32.85 kWh
9.	FTKMA & FTKEE	Wind Power	2021	250W 250W 800W	9,490 kWh
10.	FTKEE	Solar System	2022	0.5kW	912.5 kWh
11.	UMP Pekan & Gambang	Solar System	2021	4 kW	17,520 kWh
TOTAL					199,727 kWh

As for others renewable energy initiatives there is no individual meter to record the reading, but by calculations, there will be power productions by the initiatives. As for waqf hut the usage of it are everyday by the students.

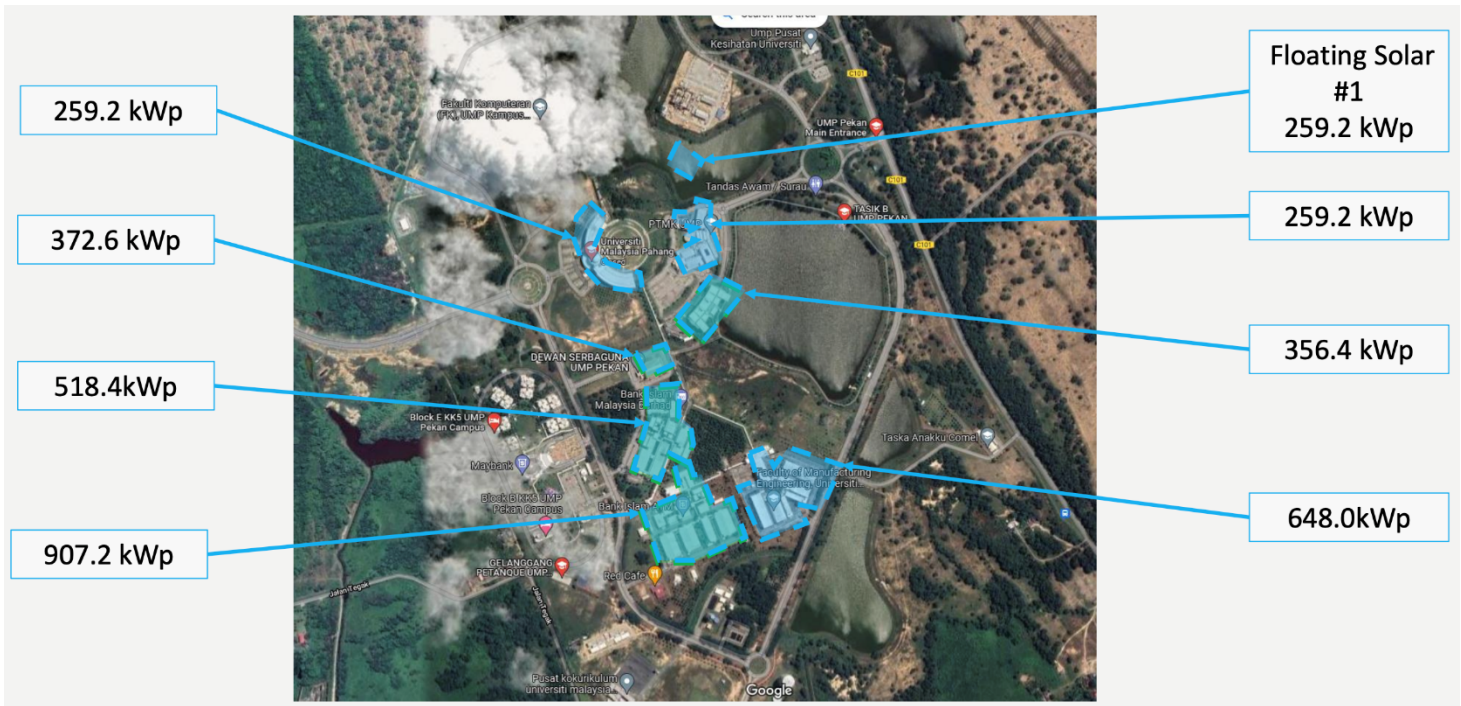
The detail calculated data as per table above, in Malaysia the are irradiations all over the year, for the peak of solar function it will takes 5 hours daily.

Description:

(Please describe your evidence)

- a. Renewable Energy production : 199,727 kWh
- b. Total Energy Usage per year : 18,296,937 kWh
- c. Ratio = a/b = 1.09%

By the end of 2022, the installation of the solar system is expected to begin at UMP Pekan. 3.58MW solar will be installed on the roof top of the UMP Pekan buildings. Electricity generation from solar is expected to be up to 4,467,117 kWh per year.



- 1 **KERJASAMA DIANTARA UMP, TNB DAN GSPARX SDN.BHD**
- 2 **KAPASITI PEMASANGAN 3.58MWATT**
- 3 **PENJIMATAN :**
TAHUN 1-20 : RM 57,083/BULAN & RM 685,000/TAHUN
TAHUN 21-25 : RM491,700/BULAN & RM 5,900,00/TAHUN
- 4 **PERJANJIAN SUPPLY AGREEMENT OF RENEWABLE ENENGY, SARE DIBAWAH SELIAAN TNB MALAYSIA**
- 5 **PENGURANGAN CARBON CREDIT SEHINGGA 47%**



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NAIB CANSOLOR

SURAT NIAT

Rujukan Kami : UMP.01/11.21/2/1 JILID 8 (64)
Tarikh : 26 September 2022

GSPARX SDN. BHD.
(1266412-K)
Annexe Building
No. 129, Jalan Bangsar
59200 Kuala Lumpur
(u.p : Encik Elmie Fairul bin Mashuri)



Tuan,

PROJEK PEMASANGAN SISTEM SOLAR MELALUI PAKEJ PEMASANGAN TANPA MODAL DI UNIVERSITI MALAYSIA PAHANG

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Mesyuarat Lembaga Perolehan Universiti Bil. 5 Tahun 2022 bertarikh 5 Ogos 2022 berhasrat untuk melantik syarikat tuan bagi kontrak di atas dengan harga

PEMASANGAN SISTEM SOLAR PV DI UMP MELALUI PAKEJ PEMASANGAN TANPA MODAL (3,580.75kWp)

RPVI	:	GSPARX SDN BHD		
Start Date	:	20/01/2023		
Target Completion Date	:	25/10/2023		
Appointed SPSI	:	FYF ENGINEERING SDN BHD		
Overall Progress	:	% Planned	:	52%
	:	% Actual	:	46%
	:	% Ahead/Delay	:	-6%
Current Status	:	<p>Update Works:</p> <ul style="list-style-type: none"> a) ST Application status <ul style="list-style-type: none"> - ST Submission on 27/06/2023 - Awaiting approval from ST b) Procurement of material after design confirmation. <ul style="list-style-type: none"> - Procurement of Material Completed. c) FKOM Progress Installation <ul style="list-style-type: none"> - Mounting Structure (100%) & PV Panel (67%) d) PPPH Progress Installation <ul style="list-style-type: none"> - Structure Installation e) FKP Progress Installation <ul style="list-style-type: none"> - Solar Module Installation f) Inverter Installed Locations <ul style="list-style-type: none"> - FKOM, CTAR, FKEE, FKM (BLOK PENTADBIRAN), DEWAN 		

CANSELERI TUN ABDUL RAZAK (253.00 kWp)



COMPLETED

- Inverter installation (2/4 Nos)
- Utilities mapping

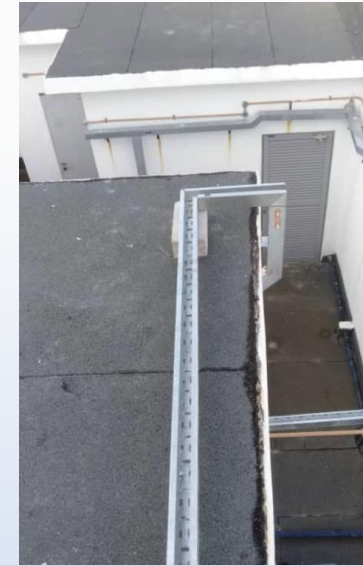


ONGOING

- Scaffold erection
- Structure installation

Remark: Subjected to safety lifeline issue to be resolved

FAKULTI KOMPUTERAN (FK/FKOM) (354.20 kWp)



COMPLETED

ONGOING

- Inverter Installation (3/3 Nos)
- Combiner Box Installation (3/3 Nos)

1. Clip Lock Mini Rail Installation (Metal Deck)

- Roof 1: (208/208) 100%
- Roof 2: (205/260) 100%
- Roof 3: (106/106) 100%
- Roof 4: (324/324) 100%
- Roof 5: (106/106) 100%
- Roof 6: (260/260) 100%
- Roof 7: (208/208) 100%

Overall = 100%

. PV Modules installation

- Roof 1: (88/88) 100%
- Roof 2: (110/110) 100%
- Roof 3: (44/44) 100%
- Roof 4: (132/132) 100%
- Roof 5: (39/44) 89%
- Roof 6: (0/110) 0%
- Roof 7: (0/88) 0%

Overall = 67%

- Trunking Installation
- DC wiring to inverter

Remark: Subjected to safety lifeline issue to be resolved

DEWAN SERBAGUNA UMP (204.70 kWp)



COMPLETED

- Inverters installation (2/2 Nos)



ONGOING

- Cat Ladder Fabrication
- DC Combiner Box Installation (0/2 Unit)
- DC wiring to inverter

FACULTY OF ELECTRICAL & ELECTRONIC ENGINEERING TECHNOLOGY (FTKEE/FKEE) (570.40 kWp)



COMPLETED

- Utilities mapping
- Inverter installation (5/5 Nos)



ONGOING

- Access door
- DC Combiner Box Installation (0/2 Unit)
- DC wiring to inverter

FACULTY OF MANUFACTURING AND MECHATRONIC ENGINEERING TECHNOLOGY (FTKPM/FKP) (1,147.70 kWp)



COMPLETED

- Mini rail Clip lock installation
- Utilities mapping

1. Clip Lock Mini Rail Installation (Metal Deck)

- Roof 1: (208/208) 100%
- Roof 2: (205/260) 100%
- Roof 3: (106/106) 100%
- Roof 4: (324/324) 100%

Overall = 100%

2. PV Modules installation

- Roof 1: (88/88) 100%
- Roof 2: (110/110) 100%
- Roof 3: (44/44) 100%
- Roof 4: (132/132) 100%

Overall = 100%

ONGOING

- Solar Module Installation
- Trees Removal
- Inverter Racking

Remark: Subjected to safety lifeline issue to be resolved

FACULTY OF MECHANICAL & AUTOMOTIVE ENGINEERING TECHNOLOGY (FTKMA/FKM) (841.40 kWp)



COMPLETED

- Utilities mapping



ONGOING

- Access Door

FLOATING SOLAR UMP (157.20 kWp)



COMPLETED

- Utilities mapping

ONGOING

- Bathymetry Study

PUSAT PEMBANGUNAN & PENGURUSAN HARTA (BIPV) (51.75 kWp)



COMPLETED

- Trees relocated
- Utilities mapping
- Foundation work

ONGOING

- Structure Assembly
- Lighting pole dismantle
- Lay Crusher Run



Picture of Roof and Solar Modules at FKP as of June 27, 2023



Picture of Roof and Solar Modules at FKOM as of June 27, 2023



Pictures of CTAR Panel Layout and Actual Roof



Picture of BIPV Structure and Light Pole at PPPH as of July 07, 2023



Access Door (FKM Blok Pentadbiran)