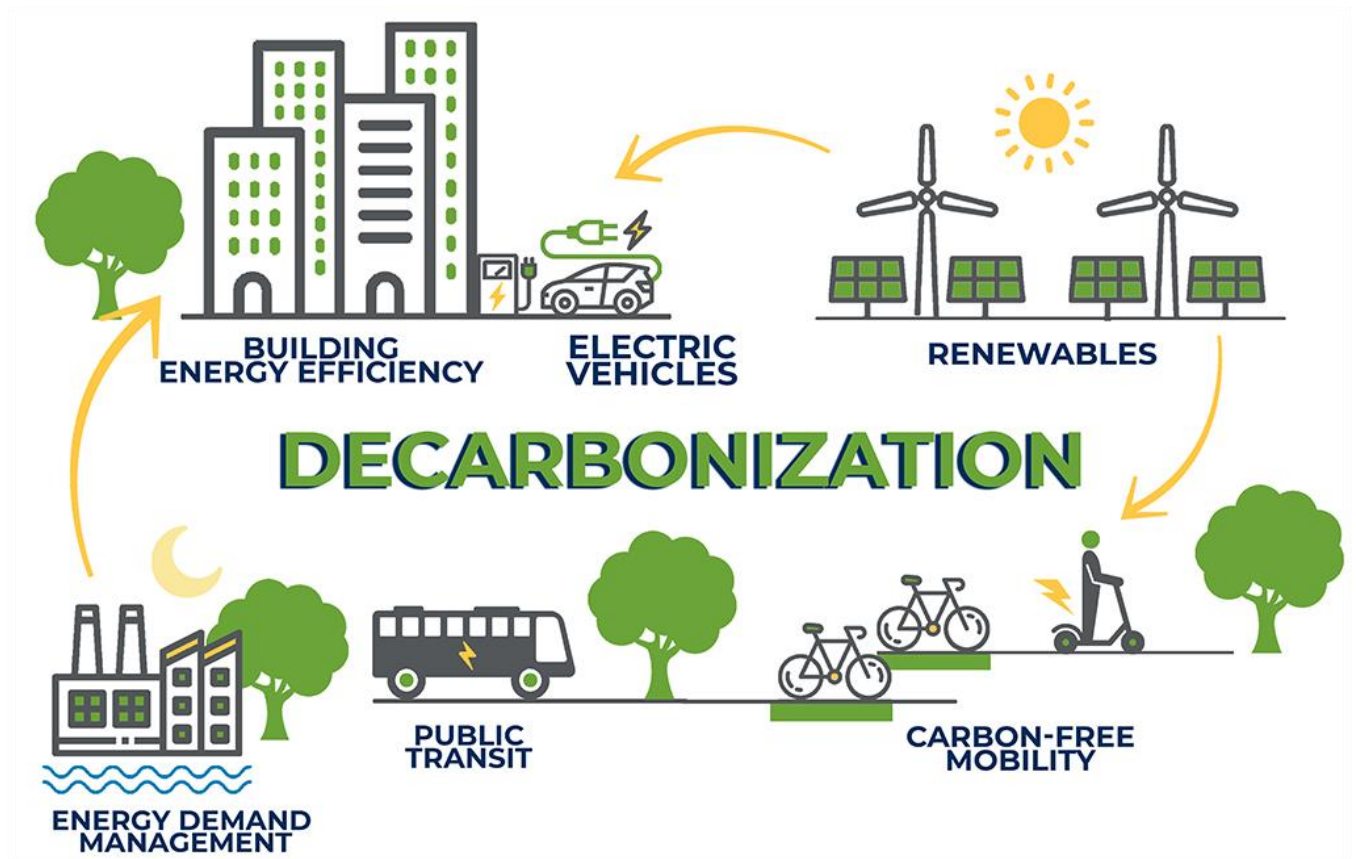
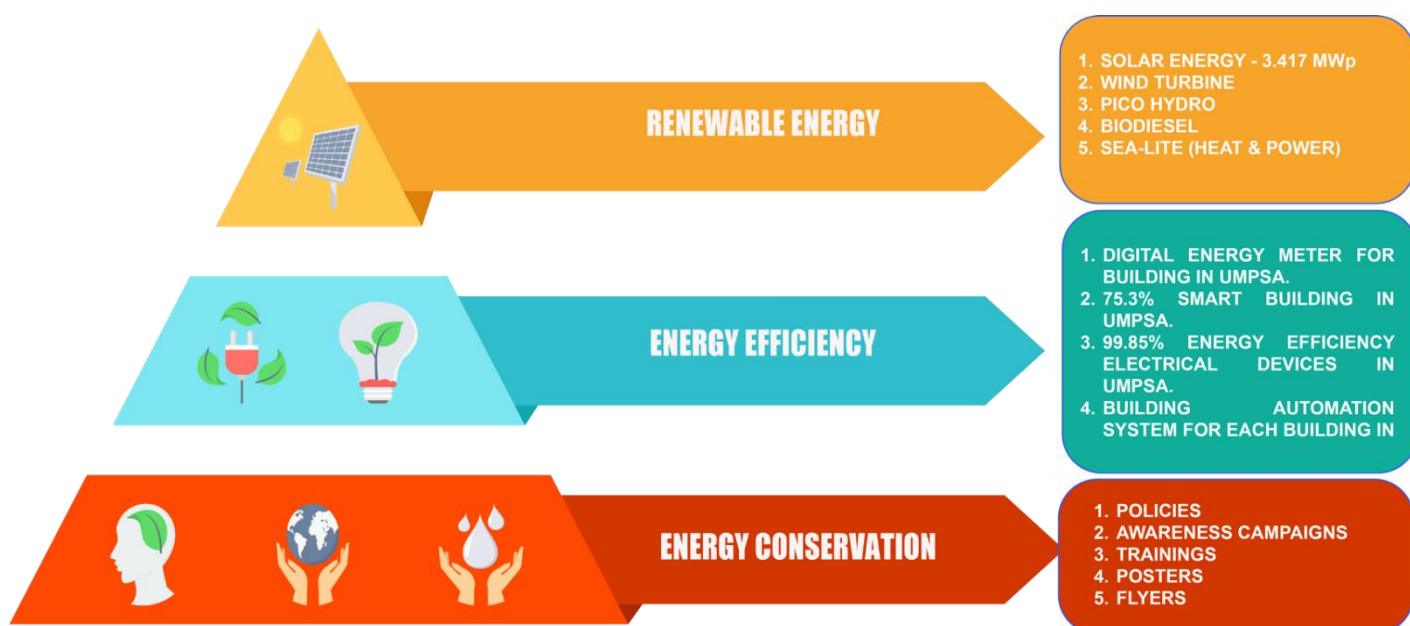


GREENHOUSE GAS EMISSION REDUCTION PROGRAM



Every year, UMPSA will allocate funds to mitigate the environmental impact of greenhouse gases. Among the programmes are the following:

1. Energy Efficiency. - All electrical equipment at UMPSA must meet with sustainable development requirements and have a star rating, with at least 4 and 5 stars being permitted in UMPSA purchases or tenders. UMPSA's facilities are 99.85% energy efficient.
2. Energy Efficiency in Buildings @ Smart Building. - Because tight criteria and methods to ensure buildings are smart buildings are expensive, UMPSA stipulates that development must comply with smart building criteria.
3. Electric automobiles - UMPSA has two electric vans and two electric buses for students to use to get to class. FTKEE and FTKMA additionally include two electric car units for learning and testing.
4. Low-Carbon Mobility - UMPSA has 20 electric bicycles for workplace use. For students, there are 200 electric scooters available for rent on campus for daily business needs.
5. Public transportation - Every hour, the Kuantan Rapid Bus visits the UMPSA campus to transport students to the city.



Renewable energy program is one of the CO₂ emissions reduction initiatives by reducing the dependency on conventional fossil fuel energy sources. List of the Renewable Energy Sources in Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA) Campus, in placed by 2023.

| No. | Building/Area | Type of Renewable Energy | Year Installed | Capacity, kW | kWh produce year 2022-2023 |
|-----|------------------------------|--------------------------|----------------|---|----------------------------|
| 1 | FTKMA & FTKEE | Solar system | 2016 | 21kW | 184,396 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 | 10,150 |
| 5 | Walkaway (Canseleri to Kafe) | Solar System | 2019 | 2.4kW- off grid | 4,964 kWh |
| 6. | Wakf Hut | Solar System | 2021 | 2kW | 4,928 kWh |
| 7. | Sea-Lite | Combine heat and power | 2022 | 0.02kW | 262.8 kWh |
| 8. | Pico Hydro | Hydro Power | 2022 | 0.39kW | 854.1 kWh |
| 9. | FTKMA & FTKEE | Wind Power | 2021 | 250W 250W 800W | 9,490 kWh |
| 10. | FTKEE | Solar System | 2022 | 1.5kW | 2,094.2kWh |
| 11. | UMPSA PEKAN & GAMBANG | Solar Lighting | 2017 - 2022 | 4kW | 17,520 kWh |
| 12. | UMP GAMBANG | Solar Lighting | 2023 | 100W, 12.8V, 60Ah | 3,363.84 kWh |
| 13. | FTKEE | Solar System | 2019 | 2.5 kWp | 6,205 kWh |
| 14. | FTKMA | Solar System | 2016 | 1.5 kWp | 2,094.20 kWh |
| 15. | Wakf Hut | Solar System | 2023 | 1.05 kWp | 686.78 |
| 16. | Electric Fencing | Solar System | 2023 | 0.5 kWp | 294.34 |

| | | | | | |
|-----|--------------|--------------|------|----------|----------------|
| 17. | Pusat Kompos | Solar System | 2019 | 3.0 kWp | 7,446 kWh |
| 18. | FTKKP | Solar System | 2018 | 10.0 kWp | 10,150 kWh |
| | | | | TOTAL | 269,318.14 kWh |

| No. | Name | EFFICIENT EFFICIENT EQUIPMENT | | | |
|-------------|---|-------------------------------|------------|-------------|--------|
| | | Total Number | Total (T5) | Total (LED) | SENSOR |
| UMP PEKAN | | | | | |
| 1 | FTKMA | 2600 | 454 | 2146 | 22 |
| 2 | FTKEE | 2500 | 895 | 1605 | 20 |
| 3 | RP5, ASRAMA 648 (3 BLOCKS) | 3762 | | 3762 | |
| 4 | RP5, ASRAMA 1400 (6 BLOCKS) | 8389 | | 8389 | |
| 5 | CTAR | 2300 | 855 | 1445 | 24 |
| 6 | DEWAN SERBAGUNA | 1520 | | 1520 | |
| 7 | PUSAT PEMBANGUNAN & PENGURUSAN HARTA | 345 | 265 | 80 | 13 |
| 8 | RUMAH KAKITANGAN (40) | 295 | 270 | 25 | |
| 9 | TAPAK SEMAIAN | 83 | | 83 | 2 |
| 10 | PENCAWANG 11kV | 202 | | 202 | |
| 11 | LIBRARY | 1255 | 217 | 1038 | 36 |
| 12 | FTKPM | 2520 | 125 | 2320 | 24 |
| 13 | PTMK & PBM | 3610 | 3426 | 184 | 32 |
| 14 | PUSAT KESIHATAN UNIVERSITI | 45 | | 45 | 8 |
| 15 | MENARA JAM | 130 | | 130 | |
| 16 | RUMAH KAYAK | 20 | | 20 | |
| 17 | SURAU | 6 | | 6 | 6 |
| 18 | LAKE B JOGGING TRACK | 80 | | 80 | |
| 19 | MAIN ROAD STREET LIGHTING | 372 | | 372 | |
| 20 | MAIN ROAD & COMPOUND LIGHTING HOSTEL | 178 | | 178 | |
| 21 | FKOM | 3120 | | 3120 | 20 |
| 22 | TEACHING FACTORY | 370 | | 370 | 10 |
| 23 | GUARD POST (PANTAI LAGENDA) | 48 | | 48 | |
| 24 | GUARD POST (MAIN) | 5 | | 5 | |
| UMP GAMBANG | | | | | |
| 1 | T8 TO T5 BLOCK A1-A3, B1, B5, C1-C8, C9-C15 | 12,850 | | 12,850 | |
| 2 | MAKMAL FKKSA | 77 | | 77 | |
| 3 | PBM | 245 | | 245 | |
| 4 | MAIN ROAD STREET LIGHTING | 45 | | 45 | |
| 5 | FKKSA | 1520 | | 1520 | |
| 6 | FIST | 44 | | 44 | |
| | TOTAL | 48,536 | 6,507 | 41,954 | 217 |
| | % EFFICIENT APPLIANCES | 99.85% | | | |

Replacement of energy efficient or energy saving, Light Emitted Diodes, **LED** lights in UMPSA campuses. As per today UMPSA have replaced or installs **99.85%** of energy efficient lights and equipment's in our campus.

For EE, UMPSA manage to reduce **7,312,789.52 kWh/year** equivalent **4,673 tonne CO₂**.

Date of Issuance : 16 August 2023
SEDA LCB Certificate No: SEDA-LCB 2023/No. 119 (2)

CERTIFICATE 2022

SEDA MALAYSIA SUSTAINABLE ENERGY LOW CARBON BUILDINGS ASSESSMENT GREENPASS OPERATION



It is hereby awarded to
UNIVERSITI MALAYSIA PAHANG
Kompleks
Pekan, Pahang

DIAMOND RATING:



Successfully achieved emission reduction of

37.82 %

Equivalent to

4,236.92 tonne CO₂ / year
6,105,074.0 kWh / year

Baseline year : 2016 Reporting year : 2022 (absolute reduction)
Assessment boundary : Operational Energy (Energy only) based on
Common Carbon Metric & GreenPASS assessment method

(Dato' Hamzah bin Hussin)

Chief Executive Officer
Sustainable Energy Development Authority
(SEDA) Malaysia

*This certificate is a voluntary initiative by SEDA Malaysia to promote energy saving & carbon reduction and does not intended for any other purposes

Certificate from Sustainable Energy Development Authority, Malaysia. UMPSA Pekan manage to save **37.82%** electric energy and reducing CO₂ production.

List of plants in UMPSA Gambang & Pekan campus, in total **13,944** numbers of plants in both campus, that can reduce CO₂ production around **418.32 tonne CO₂**.

BORANG INVENTORI

DISELIA OLEH : UMP SERVICES SDN BHD
KAWASAN SELIAAN : UMP GAMBANG
TAHUN : 2022

JUMLAH POKOK MENGIKUT JENIS DAN LOKASI

| BIL | NAMA POKOK | JENIS POKOK | LOKASI | JUMLAH |
|---------------------------|--|-------------|---------------|-------------|
| 1 | WEeping FIG (FICUS BENJAMINA) | TREE | RP 1 DAN RP 3 | 30 |
| 2 | YELLOW POINCIANA (PELTOPHORUM PTEROCARPUM) | TREE | RP 1 DAN RP 3 | 9 |
| 3 | CACAO TREE (THEOBROMA CACAO) | TREE | RP 1 DAN RP 3 | 16 |
| 4 | TROPICAL ALMOND (TERMINALIA CATTAPA) | TREE | RP 1 DAN RP 3 | 10 |
| 5 | FLAME OF THE WOOD (IXORA COCCINEA) | SHRUBS | RP 1 DAN RP 3 | 125 |
| 6 | CHINESE HIBISCUS (HIBISCUS ROSA-SINERIS) | SHRUBS | RP 1 DAN RP 3 | 150 |
| 7 | CHINESE FAN PALM (LEVISTONA CHINENSIS) | PALM | KPS | 12 |
| 8 | FOXTRAIL PALM (WODYETIA BIFURCATA) | PALM | KPS | 9 |
| 9 | NORTHERN CATALPA (CATALPA SPECIOSA) | TREE | KPS | 13 |
| 10 | ARECA PALM (ARECA CATHECHU) | PALM | KPS | 9 |
| 11 | LADY PALMS (RHAPIS EXCELSO) | PALM | KPS | 40 |
| 12 | FLAME OF THE WOOD (IXORA COCCINEA) | SHRUBS | KPS | 10 |
| 13 | BUDDHIST PINES (PODOCARPUS MACROPHYLLUS) | TREE | KPS | 10 |
| 14 | JOSEPH COAT (CODIAEUM VARIEGATUM) | SHRUBS | KPS | 15 |
| 15 | ORANGE JASMINE (MURAYYA PANICULLATA) | SHRUBS | KPS | 15 |
| 16 | PAMPANO (CALATHEA LATEA) | SHRUBS | KPS | 40 |
| 17 | ARROW BAMBO (PSEUDOSASA JAPANICA) | GRASS | KPS | 70 |
| 18 | COCONUT PALM | PALM | KPS | 5 |
| 19 | NARROW ASH LEAVES | TREE | BLOK X,Y,Z,M | 7 |
| 20 | CUBAN ROYAL PALM | PALM | BLOK X,Y,Z,M | 7 |
| 21 | WEeping FIG (FICUS BENJAMINA) | TREE | BLOK X,Y,Z,M | 12 |
| 22 | ARECA PALM (ARECA CATHECHU) | PALM | BLOK X,Y,Z,M | 10 |
| 23 | NORTHERN CATALPA (CATALPA SPECIOSA) | TREE | BLOK X,Y,Z,M | 7 |
| 24 | KELAT PAYA (EUGENIA OLEINA) | SHRUBS | JALAN UTAMA | 2879 |
| 25 | FICUS GOLD | TREE | JALAN UTAMA | 89 |
| 26 | BUNGA KERTAS (BOUGAINVILLEA) | SHRUBS | JALAN UTAMA | 30 |
| 27 | WEeping FIG (FICUS BENJAMINA) | TREE | JALAN UTAMA | 50 |
| 28 | WOMAN TONGUE (ALBIZIA LEBBECK) | TREE | JALAN UTAMA | 140 |
| 29 | NORFOLK ISLAND PINE (ARAUCARIA HETEROPHYLLA) | PINE | JALAN UTAMA | 18 |
| 30 | BUCIDA VARIEGATED | TREE | MAKMAL BIO | 20 |
| 31 | BEACH SPIDER LILY (HYMENOCALLIS LITTORALLIS) | SHRUBS | MAKMAL BIO | 60 |
| 32 | TROPICAL ALMOND (TERMINALIA CATTAPA) | TREE | MAKMAL BIO | 23 |
| 33 | KELAT PAYA (EUGENIA OLEINA) | SHRUBS | KSU | 15 |
| 34 | KELAT PAYA (EUGENIA OLEINA) | SHRUBS | CANSELERI | 60 |
| 35 | TROPICAL ALMOND (TERMINALIA CATTAPA) | TREE | CANSELERI | 17 |
| 36 | ARECA PALM (ARECA CATHECHU) | PALM | CANSELERI | 14 |
| 37 | CABBAGE TREE (CORDYLINE AUSTRALIS) | TREE | CANSELERI | 6 |
| 38 | ITALIAN CYPRESS (CUPRESSUS SEMPERVIRENS) | TREE | CANSELERI | 14 |
| 39 | BEACH SPIDER LILY (HYMENOCALLIS LITTORALLIS) | SHRUBS | KPU | 100 |
| 40 | CUBAN ROYAL PALM | PALM | KPU | 23 |
| 41 | FLAME OF WOOD (IXORA COCCINEA) | SHRUBS | KPU | 80 |
| 42 | WHIPPING WILLOW (SALIX BABILONICA) | TREE | KPU | 10 |
| 43 | YELLOW BUTTERFLY PALM (DYPsis LUTESCENS) | TREE | KPU | 35 |
| 44 | WEeping FIG (FICUS BENJAMINA) | TREE | KPU | 10 |
| JUMLAH KESELURUHAN | | | | 4324 |

DISEDIAKAN OLEH,


MUHAMMAD AZIZ ASYRAF BIN AHMAD
Supervisor Landscape
UMP Services Sdn Bhd

DISAHKAN OLEH,


HAIRUDDIN BIN IDRIS
Senior Executive
UMP Services Sdn Bhd

INVENTORI POKOK TEDUHAN LANDSKAP DI SEKITAR KAMPUS UNIVERSITI MALAYSIA PAHANG, PEKAN.

PETUNJUK

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POKOK TEDUHAN
POKOK BUAH
POKOK HUTAN
POKOK NADI

| BIL. | TAHUN | TAJUK/SEBUT HARGA | JENIS POKOK | KUANTITI | LOKASI |
|------|------------|---|--|----------|-----------------|
| 1. | 2009 | Projek pembangunan awal FREE & FKM (GREEN EFFECT SON- BHD.) | POKOK HUJAN-HUJAN@Samanea saman | 580 | LALUAN UTAMA |
| | 2015 | Kerja-kerja penanaman pokok di sepanjang kawasan Universiti boulevard serta kerja-kerja berkaitan di Universiti Malaysia Pahang, Pekan) | BATAI LAUT@Peltophorum pterocarpum | 21 | |
| | | | POKOK KHAYAL@Khaya sonchensis | 59 | |
| | | | TAMALANG Dattergia latifolia | 49 | |
| | | | TAMALANG Dattergia latifolia | 51 | |
| | | | POKOK DOA@Suaeda rostrata | 13 | |
| | | | MAMBU@Azadirachta indica | 44 | |
| | | | BATAI LAUT@Peltophorum pterocarpum | 29 | |
| | | | POKOK RHU@Casuarina equisetifolia | 17 | |
| | | | POKOK PINES@Pinus caribaea | 13 | |
| | | | BUCIDA TRUS@Coccythia latifolia | 5 | |
| | | | MEMPARI@Pongamia pinnata | 19 | |
| | | | MAMBU@Azadirachta indica | 20 | |
| | | | POKOK SELAM@Malesia coarctata | 11 | |
| | | | CEMPAKA PUTIH@Michelia ado | 97 | |
| | | | EUCALYPTUS@Eucalyptus | 9 | |
| 3. | 2009 | Projek pembangunan awal tasik (JKR) | PENAGA LILIN@Mussa fmea | 23 | ROUND ABOUT (1) |
| | | | PENAGA LILIN@Mussa fmea | 23 | |
| | | | POKOK RHU@Casuarina equisetifolia | 30 | ROUND ABOUT (2) |
| | | | POKOK KELAPA@Cocos nucifera | 20 | |
| | | | BERUS BOTOL@Calotropis chinensis | 15 | |
| | | | PENAGA LILIN@Mussa fmea | 8 | |
| | | | BATAI LAUT@Peltophorum pterocarpum | 15 | |
| | | | BUNGORA@Lagerstronia | 25 | |
| | | | ARA BERINDING@Ficus cinnia | 25 | |
| | | | BULUH HUSAN@Bambusa vulgaris | 20 | |
| | | | POKOK HUJAN-HUJAN@Samanea saman | 10 | |
| | | | POKOK SAPU TANGAN@Mikellia grandiflora | 10 | |
| 4. | 2017 | Kerja-kerja penanaman pokok dan menterasi landscaped kawasan laluan masuk kolej kodaman 5, fakulti, tasik, sarseni Tun Abdul Razak, wetland di Universiti Malaysia Pahang, Pekan. (UMPPHSH2017 (37) | JANDA MERANA@Lantana camara | 15 | TASIK WETLAND |
| | | | MEMPARI@Pongamia pinnata | 15 | |
| | | | TABEBUA@Tabebuia pallida | 15 | |
| | | | BATAI LAUT@Peltophorum pterocarpum | 15 | |
| | | | POKOK SELAM@Malesia coarctata | 10 | |
| 5. | 2022 | (Bekal biji benih kelapa pondon untuk Pembangunan Kampus Haju) (UMP.08.11/11.2023/0022(36) | POKOK KELAPA@Cocos nucifera(Melay) | 30 | TASIK C |
| | | | POKOK KELAPA (PANDAN) | 398 | |
| 6. | 2009 -2014 | Projek pembangunan awal tasik (JKR) | POKOK HUJAN-HUJAN@Samanea saman | 28 | TASIK D |
| | | | POKOK RHU@Casuarina equisetifolia | 15 | |
| | | | MAMBU@Azadirachta indica | 2 | |
| | | | MERANTI TEMBAGA | 117 | |
| 7. | 2018 | Kursus penanaman pokok hutan bernama FRIM dan membekal pokok hutan (UMPSEND/RT/2018(0) | MERANTI TEMAK NIPIS | 248 | RIMBA LESTARI |
| | | | KETAPANG | 25 | |
| | | | PELANGI (MERAH) | 25 | |
| | | | JELUTONG | 50 | |
| | | | BERUAS | 50 | |
| | | | RUJUM | 49 | |
| | | | SUNGAI | 50 | |
| | | | KANDIS | 48 | |
| | | | KALUMPANG | 10 | |
| | | | RELAPAN | 133 | |
| | | | CEKAL | 56 | |
| | | | MERSAU | 50 | |
| | | | KARAS | 50 | |
| | | | BUNGA TANJUNG@Mimosa elengi | 158 | |
| | | | POKOK PELURU | 1 | |
| | | | RAMBAI | 54 | |
| | | | BUNGORA | 50 | |
| | | | DILLENA RETICULATA@DIFFRUTICOSA | 52 | |
| | | | TONGKAT ALI | 25 | |
| | | | SENTUL | 15 | |
| | | | MERANTI KEPONG | 49 | |
| | | | MERANTI RAMBAI DAUN | 50 | |
| | | | KUNDANG | 36 | |
| | | | TULANG DAMANG | 16 | |
| | | | EUCALYPTUS | 51 | |
| | | | SELAM | 1518 | |

| | | | | | |
|--------------------------------|-------------|--|--|------|-------------------|
| 23. | 2012 | Projek pembangunan awal (JKR) | BATAI LAUT@ <i>Polkophorum plerocarpum</i> | 148 | KOLEJ KEDAMAMAN 6 |
| | | | SEMARAK API@ <i>Dalbergia regle</i> | 4 | |
| | | | POKOK SAPU TANGAN@ <i>Marilia grandiflora</i> | 62 | |
| | | | MAMBU@ <i>Asodrachna holca</i> | 96 | |
| | | | KORNA PAYUNG@ <i>Ficus decapens</i> | 80 | |
| | | | BUNGA TANJUNG@ <i>Mimosa elang</i> | 61 | |
| | | | JAMBU LAUT@ <i>Eugenia grandis</i> | 88 | |
| | | | TAMALANG@ <i>Dalbergia oliveri</i> | 17 | |
| | | | GOLDEN SHOWER@ <i>Cassia fistula</i> | 21 | |
| | | | POKOK RHU@ <i>Cassipoua equisetifolia</i> | 8 | |
| | | | POKOK RHU BERNED@ <i>Gymnosclera nobilis</i> | 1 | |
| | | | GOLDEN PENDA@ <i>Xanthoxylon chrysanthus</i> | 18 | |
| | | | PALMA EKOR MUSANG@ <i>Wodyetia bifurcata</i> | 82 | |
| | | | PALMA MANILA@ <i>Vatica merrill</i> | 29 | |
| | | | PALMA PAU@ <i>Hydnoraceae regle</i> | 14 | |
| | | | MERAWAN SIPUT JANTAN@ <i>Roses odorata</i> | 14 | |
| | | | AFRICAN TULIP@ <i>Spethodes campanulata</i> | 1 | |
| | | | BERUS BOTO@ <i>Calistemon citrinus</i> | 2 | |
| | | | TECOMA@ <i>Tabebuia rosea</i> | 45 | |
| | | | BUNG DRS@ <i>Lagerstronia</i> | 2 | |
| | | | POKOK DELAN@ <i>Melaleuca cajuputi</i> | 7 | |
| | | | JACARANDA@ <i>Jacaranda nicotiana</i> | 17 | |
| | | | POKOK DUA@ <i>Cassia alba conata</i> | 41 | |
| 24. | 2012 | Projek pembangunan awal (JKR) | POKOK DUA@ <i>Bucida molle</i> | 124 | PKP |
| | | | LEOPARD TREE@ <i>Cassipoua Fernex</i> | 46 | |
| | | | POLA@ <i>Azadirachta indica</i> | 88 | |
| | | | POKOK KAYU MANIS@ <i>Cinnamomum spp.</i> | 10 | |
| | | | PALMA SERDANG@ <i>Leitonia rotundifolia</i> | 44 | |
| 25. | 2012 | Projek pembangunan awal (JKR) | MERAWAN SIPUT JANTAN@ <i>Roses odorata</i> | 94 | FREE |
| | | | JAMBU LAUT@ <i>Eugenia grandis</i> | 46 | |
| | | | BINTANGOR LAUT@ <i>Calophyllum inophyllum</i> | 115 | |
| 26. | 2012 | Projek pembangunan awal (JKR) | MAMBU@ <i>Asodrachna holca</i> | 4 | FKM |
| | | | POKOK HULAH-HULAN@ <i>Samanea saman</i> | 5 | |
| | | | JAMBU LAUT@ <i>Eugenia grandis</i> | 86 | |
| | | | BINTANGOR LAUT@ <i>Calophyllum inophyllum</i> | 82 | |
| | | | MAMBU@ <i>Asodrachna holca</i> | 10 | |
| | | | BLACK OLIVE@ <i>Bucida buxifolia</i> | 20 | |
| 27. | 2020 | Projek Penanaman Pokok Landskap FKDM UMP/PPH/SH2020 (18) | BATAI LAUT@ <i>Polkophorum plerocarpum</i> | 3 | FKDM |
| | | | POKOK DUA@ <i>Bucida molle</i> | 28 | |
| 28. | 2016 | PROJEK PEMBINAAN KILANG GELATIN HALAL - KERJASAMA MAHA | POKOK DUA@ <i>Bucida molle</i> (Variegated leaf) | 11 | GELETIN HALAL |
| | | | BATAI LAUT@ <i>Polkophorum plerocarpum</i> | 23 | |
| 29. | 2017 | PROJEK PEMBINAAN BANGUNAN TEACHING FACTORY | POKOK DUA@ <i>Bucida molle</i> | 3 | TEACHING FACTORY |
| | | | BATAI LAUT@ <i>Polkophorum plerocarpum</i> | 17 | |
| 30. | PEMBANGUNAN | PROJEK RUMAH 40 | TAMALANG@ <i>Dalbergia oliveri</i> | 18 | KEDAMAMAN 40 |
| | | | MERAWAN SIPUT JANTAN@ <i>Roses odorata</i> | 182 | |
| 31. | | PROJEK PEMBANGUNAN CTAR - JABATAN KERJA RAYA | BUNGA TANJUNG@ <i>Mimosa elang</i> | 152 | CTAR |
| | | | PALMA EKOR MUSANG@ <i>Wodyetia bifurcata</i> | 49 | |
| | | | CEMPAKA PUTIH@ <i>Mitella alba</i> | 50 | |
| | | | CEMPAKA KUNING@ <i>Mitella champaka linn.</i> | 30 | |
| | | | GOLDEN PENDA@ <i>Xanthoxylon chrysanthus</i> | 15 | |
| | | | PALMA EKOR MUSANG@ <i>Wodyetia bifurcata</i> | 5 | |
| 32. | | PROJEK PEMBANGUNAN DEWAN SERBAGUNA | PALMA SERDANG@ <i>Leitonia albensis</i> | 8 | DEWAN SERBAGUNA |
| | | | TAMALANG@ <i>Dalbergia oliveri</i> | 8 | |
| | | | BATAI LAUT@ <i>Polkophorum plerocarpum</i> | 30 | |
| | | | PENAGA LILIN@ <i>Messia fernex</i> | 5 | |
| | | | POKOK SENAI@ <i>Pterocarpus indicus</i> | 24 | |
| 33. | | ROJEK PEMBANGUNAN Jim & jhp | KELAT JAMBU LAUT | 280 | JIM & JHP |
| | | | PUTAT | 140 | |
| | | | KETAPANG | 100 | |
| 34. | 2023 | PENANAMAN POKOK GAHARU | GAHARU@ <i>Albizia leonensis</i> | 280 | TAPAK GAHARU |
| JUMLAH POKOK KESELURUHAN (NOS) | | | | 9620 | |

Type: Solar System, UMP Pekan

Location: 1. Faculty of Mechanical Engineering
2. Faculty of Electrical & Electronic Engineering

Description:

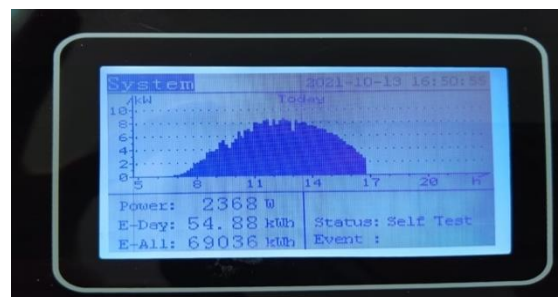
Solar power technology has been installed in UMP since 2016. The system consists of 20 kW solar panels on the top of the walkway to supply electricity to the Faculty of Mechanical Engineering's administration blocks.

In 2021, installation of 2.5 kW solar panels in Faculty of Electrical & Electronic Engineering for the education & research purposed. The supply from the solar panel divert to grid supply for the Block 1 FTKEE, UMP Pekan.

This project is one of the CO₂ emissions reduction initiatives by reducing the dependency on conventional fossil fuel energy sources.

Publicly Evidence Link:

<https://mygreen.ump.edu.my/index.php/solar-panels>



Type: Solar System

Location: Solar KP House, UMP Green Office in Maran, Pahang

Description:

This house is UMP's Community One Stop Centre, where the local community get training and classes including religious and academic tuition from UMP staff and students.

The system installed is a system connected off grid where the energy generated, produced, delivered, and distributed directly from the solar power to electricity.

This solar energy system can generate 5kW of electricity directly and 15kW as a reserve to be used during the night time. The electricity generated at the KP House is able to power all electrical appliances in the house.

Publicly Evidence Link:

<https://mygreen.ump.edu.my/index.php/kp-house>

**Type: Wind Power**

**Location: 1. Entrance Guard House, UMP Pekan
2. Faculty of Mechanical Engineering
3. Faculty of Electrical & Electronic Engineering**

Description:

In 2012, a project to test sustainable energy was conducted in Malaysia under the purview of MOSTI and SIRIM Berhad. UMP Pekan Campus, due to its strategic location, was selected as one of the test-site for four wind turbines with the power of 2 kW, 4 kW, 5.8 kW and 10 kW. The campus which is situated near coastal area provides the windy condition which enables the turbine to convert the kinetic energy into electrical power efficiently. Total 22kWh.

In 2020 & 2021, UMPSA has diversified the study of wind turbines as renewable energy and as a backup



supply for the data collection system. At FKM 800W Windturbine has been install and 500W at FTKEE.

Publicly Evidence Link:

<http://mygreen.ump.edu.my/index.php/iniciative1/93-ump-s-wind-turbine>



Type: Biodiesel

Location: Faculty of Chemical & Natural Resources Engineering, UMP Gambang

Description:

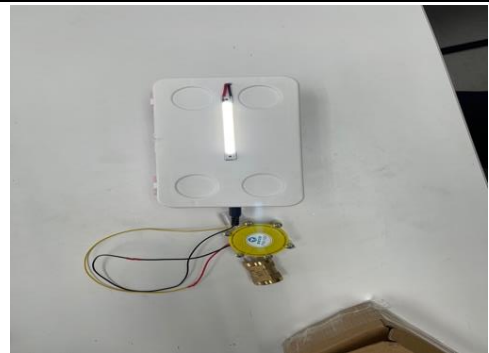
The Faculty of Chemical & Natural Resources Engineering has been producing biodiesel since 2007, based on years of research. On the average, for every two days the faculty collects 50 litres of used cooking oil, to produce 30 litres of pure biodiesel. In one month UMP is therefore capable of producing 450 litres, totaling to 5,400 litres in a year. Taking note that 1 litre of biodiesel weighs 0.875 kg, the total mass of biodiesel produced by UMP in a year is 4,725 kg. The calorific content of the produced biodiesel is 34 MJ/kg, hence ideally generate yearly $160,650 \text{ MJ} = 44,625 \text{ kWh} = 44.625 \text{ mWh}$. Based on the installed 10 kW generator, the amount of the biodiesel needed is 2.6 L/h. Hence, the actual (useful) amount of generated electricity is 20,770 kWh (= 10kW X 2077 hours).



Type : Picohydro

Location : Toilet in Pusat Pembangunan & Pengurusan Harta, UMP Pekan.

This project is the result of the efforts technical teams in this department for the purpose of energy sustainability programmes. Picohydro use as a backup supply for toilet lighting and there is a addition function for phone charging.



Type : Sea Lite

Location : Entrance Guard House, UMP Pekan

Sea-Lite is a portable lamp that uses seawater as an electrolyte source. This device is called Sea-Lite referring to the sea that gives light (light or lite). It has a small design, easy to carry and maintain. This device is able to provide light and electricity and is able to last for a long time.



Type : Solar

Location : UMP Pekan & UMP Gambang

There are 20 waqfs huts inside UMP Pekan & UMP Gambang equipped with solar systems. This 100W solar produces electricity for lights, phone chargers and there is also a Power Delivery Charger, PD for laptop charging and other electronic devices range 5V - 12V. For phone charging there is 2 options of charging mechanism:

1. Using usb type cable
2. Wireless charging, UMP developed in house.



Wafq Hut (7 units handicapped friendly UMPSA)

There are 7 waqfs huts inside UMP Pekan are handicapped friendly equipped with solar systems. This 100W solar produces electricity for lights and phone. For phone charging there is 2 options of charging mechanism:

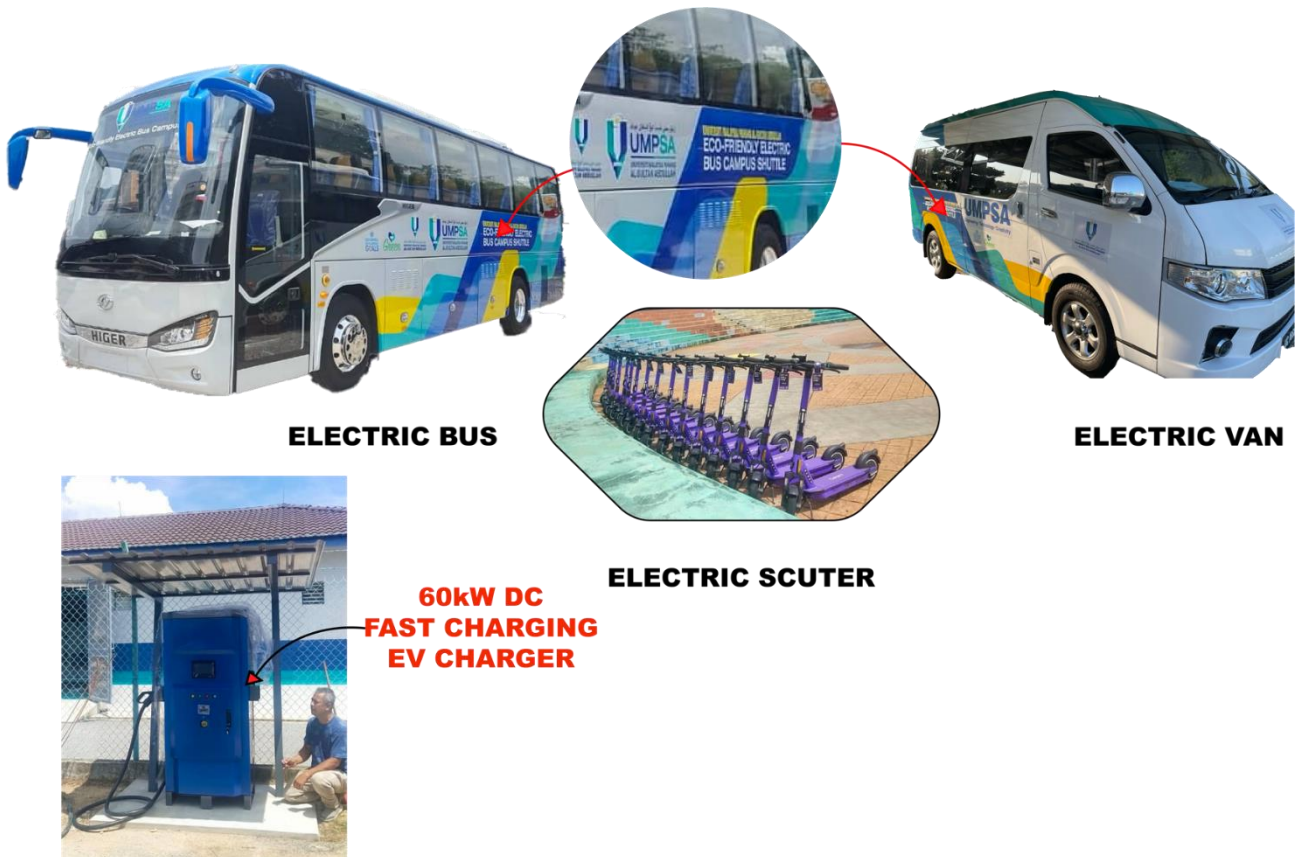
1. Using usb type cable
2. Wireless charging.



Electric Vehicles, EV.

UMPSA continues to make gains in empowering campus sustainability programmes with the purchased of two electric buses and two electric vans for student mobility on campus.

Furthermore, UMPSA residents can rent electric scooters from the BEAM concession firm at a reasonable price. This effort can reduce carbon emissions to the environment, conserve nature, and is also one of UMPSA's measures in promoting EVs throughout Malaysia, particularly in the state of Pahang.



Local community outreach for energy efficiency

Provide programmes for local community to learn about importance of energy efficiency and clean energy

KUALA PAHANG HOUSE EQUIPPED WITH SOLAR SYSTEM



Kuala Pahang House, KP House





Program conducted at KP House in 2019

Description:

Kuala Pahang House or KP House in short is a transformational centre for the Kuala Pahang community. There are 66 houses been selected based on strict criteria for the programme. The houses been renovated and all of the electrical appliances have 5 stars energy saving rating installed in the houses. The installation was conducted in 2018 by UMP and the solar system is well monitored by UMP. **Till now, KP house is a one-stop-centre for all kinds of activities that brings benefits to the community in Kampung Kuala Pahang.**

This house is the first “Green House” in Pahang, in which the energy is fully generated using green technology from solar. The 5kW Off Grid System is retrofitted to the roof of the KP House. The 25mm ventilation distance is to ensure that the system will not be overheated. This solar energy system can generate 5kW of electricity directly and 15kW as a reserve to be used during the night time. The electricity generated at the KP House is able to power all electrical appliances in the house.

KP House is also equipped with the energy-saving LED lights, new technology fan operating fully using DC electrical current, which can save electricity more efficiently and also the usage of inverter technology air conditioner with the environmentally friendly R410A gas. The house is also equipped with motion sensors to activate the bathroom lights.

1. Massive Open Online Course (MOOC) on Sustainability Campus.
MYSUN: Bringing Future Campus Today



Figure 2. Promotion of MYSUN MOOC Courses

2. Sustainability Campaign



Campaign on Tree Planting

3. Sustainability Workshop



MYSun Sustainability Workshop & Management Meeting

4. MYSUN National Conference & Workshop





Figure 8. MYSUN 1st National Conference

UMPSA Green Awareness Initiatives :

GREEN & SUSTAINABLE



Universiti
Malaysia
PAHANG





SAVE WATER

- » USE DUAL-FLUSHING SYSTEM FOR TOILETS.
- » MONITOR YOUR WATER USAGE.
- » ENSURE TAP ARE TURNED OFF TIGHTLY.
- » REPAIR LEAKAGES IMMEDIATELY TO AVOID WASTAGE.



3R : REDUCE – REUSE – RECYCLE

- » PRINT OR MAKE A COPIES ONLY WHEN NECESSARY AND USED BOTH SIDES OF PAPER.
- » PRINT DRAFT COPIES ON USED PAPERS.
- » RE-USED ENVELOPS AND OLD FILES.
- » USED RECYCLE BINS CORRECTLY.
- » ORDER FOOD FOR MEETINGS/EVENTS AS NEEDED.
- » SPARE A THOUGHT. THINK BEFORE DISPOSING.



TRANSPORTATION

- » USED PUBLIC TRANSPORT OR CAR-POOL.
- » USE PARK-AND-RIDE FACILITIES TO REDUCE PARKING CONGESTION.



ENVIRONMENT – FRIENDLY PRODUCTS

- » USED BIODEGRADABLE CLEANING PRODUCTS OR DETERGENTS.
- » ENCOURAGE GREEN PROCUREMENT.
- » AVOID USING PLASTIC WATER BOTTLES.
- » SET THE TEMPERATURE OF AIRCOND BETWEEN 24°C – 26°C
- » USED ENVIRONMENT – FRIENDLY FOOD WRAPPERS/CONTAINERS.



SAVE ENERGY

- » TURN OFF ALL UNNECESSARY LIGHTS.
- » USE STAIRS
- » SWITCH YOUR PC TO “SLEEP” MODE WHEN UNUSED.
- » USE ELECTRICAL PRODUCT WISELY.
- » KEEP WINDOWS SHUT WHEN THE AIR-CONDITIONER IS SWITCHED ON.
- » ENSURE ALL ELECTRICAL ITEMS ARE TURNED OFF BEFORE LEAVING THE OFFICE.
- » USE ENERGY-EFFICIENT LIGHTS/BULBS.

mygreen.ump.edu.my

KEMPER EKSA

Go Green Tips



LESS PLASTICS



BIOFUEL



RECYCLE



KEEP CLEAN



2-SIDED PRINTING



Research & Innovation Department 2018

AUDIT

SUHU PERSEKITARAN YANG SELESA



PT. INDIKA OF COMFORT
INDONESIA



**Penggunaan satu (1) unit
lampu kalimantang
36Watt selama 24Jam
sehari selama sebulan
menggunakan tenaga
sebanyak**

 **30.24 kWh**
bersamaan

\$RM 15.39 Sebulan



Pesanan Ikhlas: Unit Tenaga Pengurusan Fasiliti UMPH

Untuk mengira anggaran penggunaan tenaga bulanan, maklumat yang diperlukan adalah kuasa bagi setiap peralatan, tempoh penggunaan setiap peralatan dan bilangan hari penggunaan. Bagi mengurangkan kos penggunaan tenaga, perancangan tempoh penggunaan sesuatu barangan elektrik memainkan peranan penting. Dengan mengurangkan tempoh penggunaan barang elektrik tersebut hanyalah mengikut keperluan dan mengelakkan pembaziran, ia akan mengurangkan kos penggunaan tenaga elektrik.

Dilampirkan bersama, kaedah pengiraan untuk penggunaan tenaga elektrik:

E-COMM
KAMPUS
START

ZULKIFLI BIN MAT YAHYA

HOME PERSONAL POLICIES COLLABORATION DIRECTORY HYPERLINKS LOGOUT

September 2023

| | | | | | | |
|----|----|----|----|----|----|----|
| S | M | T | W | T | F | S |
| | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |

Announcement

External User Information

Name : ZULKIFLI BIN MAT YAHYA

communityump.edu.my/eecomstaff/cms/announcement/entry/...

communityump.edu.my/eecomstaff/cms/announcement/entry/view.j...

Close Printable

Announcement

[UMPH] Tahukah anda berapa penggunaan tenaga elek

Category: Announcement

Tahukah anda berapa penggunaan tenaga elektrik bagi lampu?

| Title | Url | Date | Edit | Delete |
|---|--|----------|--------------------------|--------------------------|
| [UMPH] Tahukah anda berapa penggunaan tenaga elektrik bagi lampu? | https://www.youtube.com/watch?v=8tRdK9k_ss | 29/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Elektrik Cekap Tenaga | https://www.youtube.com/watch?v=8tRdK9k_ss | 29/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Utdara | https://www.youtube.com/watch?v=8tRdK9k_ss | 29/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Kanal BI Elektrik Ande | https://www.youtube.com/watch?v=8tRdK9k_ss | 29/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tahukah anda berapa penggunaan tenaga elektrik bagi lampu? | https://www.youtube.com/watch?v=8tRdK9k_ss | 28/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Elektrik Cekap Tenaga | https://www.youtube.com/watch?v=8tRdK9k_ss | 28/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Utdara | https://www.youtube.com/watch?v=8tRdK9k_ss | 28/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Kanal BI Elektrik Ande | https://www.youtube.com/watch?v=8tRdK9k_ss | 28/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tahukah anda berapa penggunaan tenaga elektrik bagi lampu? | https://www.youtube.com/watch?v=8tRdK9k_ss | 25/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Elektrik Cekap Tenaga | https://www.youtube.com/watch?v=8tRdK9k_ss | 25/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Utdara | https://www.youtube.com/watch?v=8tRdK9k_ss | 25/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Kanal BI Elektrik Ande | https://www.youtube.com/watch?v=8tRdK9k_ss | 24/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tahukah anda berapa penggunaan tenaga elektrik bagi lampu? | https://www.youtube.com/watch?v=8tRdK9k_ss | 24/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Elektrik Cekap Tenaga | https://www.youtube.com/watch?v=8tRdK9k_ss | 24/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Tips Perawatan Utdara | https://www.youtube.com/watch?v=8tRdK9k_ss | 24/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |
| [UMPH] Kanal BI Elektrik Ande | https://www.youtube.com/watch?v=8tRdK9k_ss | 18/09/23 | <input type="checkbox"/> | <input type="checkbox"/> |



6-COMM

ZULKIFLI BIN MAT YAHYA

HOME PERSONAL POLICES COLLABORATION DIRECTORY HYPERLINKS LOGOUT

community.ump.edu.my/ecomstaf/announcement/entry/view.jsp?ref=818990 - Google Chrome

community.ump.edu.my/ecomstaf/announcement/entry/view.jsp?ref=818990

Min | Au

[UMPH] Tips Peralatan Elektrik Cekap Tenaga

Genggry - Announcement

Tip Peralatan Elektrik Cekap Tenaga

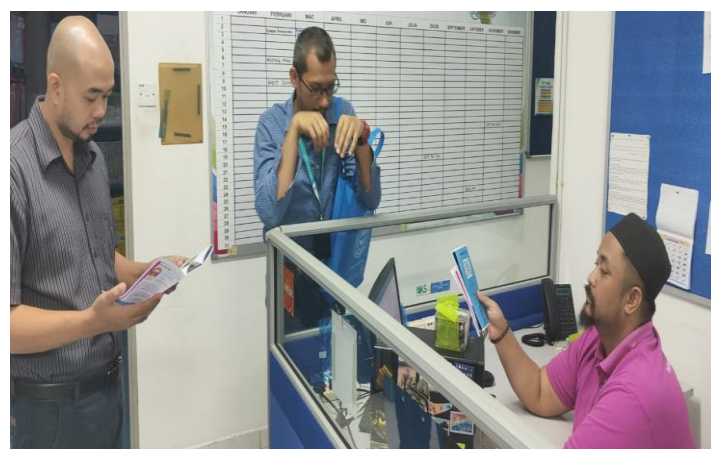
Nak tahu macamana nak cam peralatan elektrik cekap tenaga?

Jom tonton video ini! [\[Sila Klik pada gambar untuk menonton video \]](#)

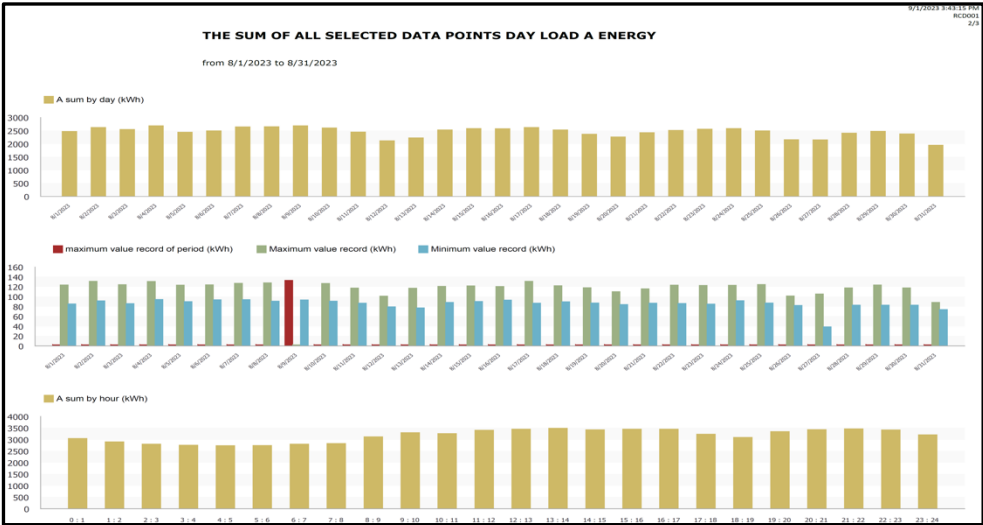
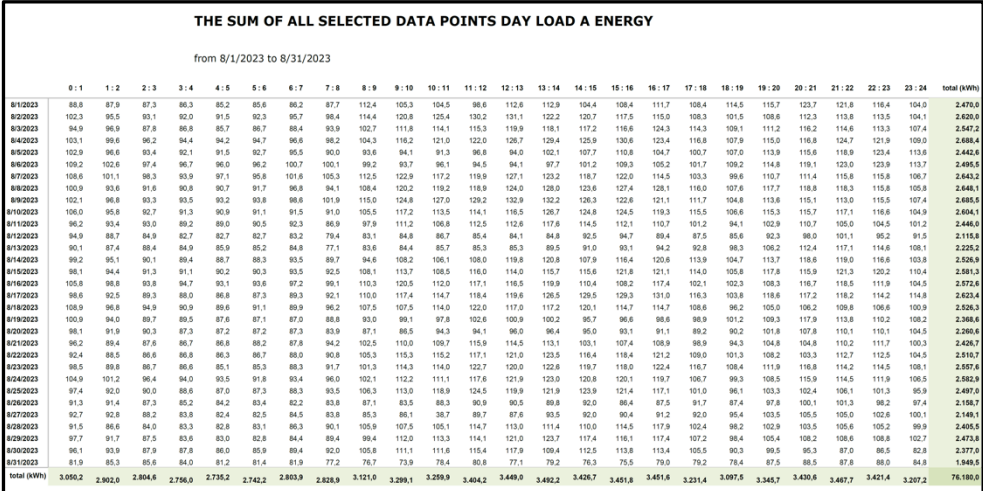
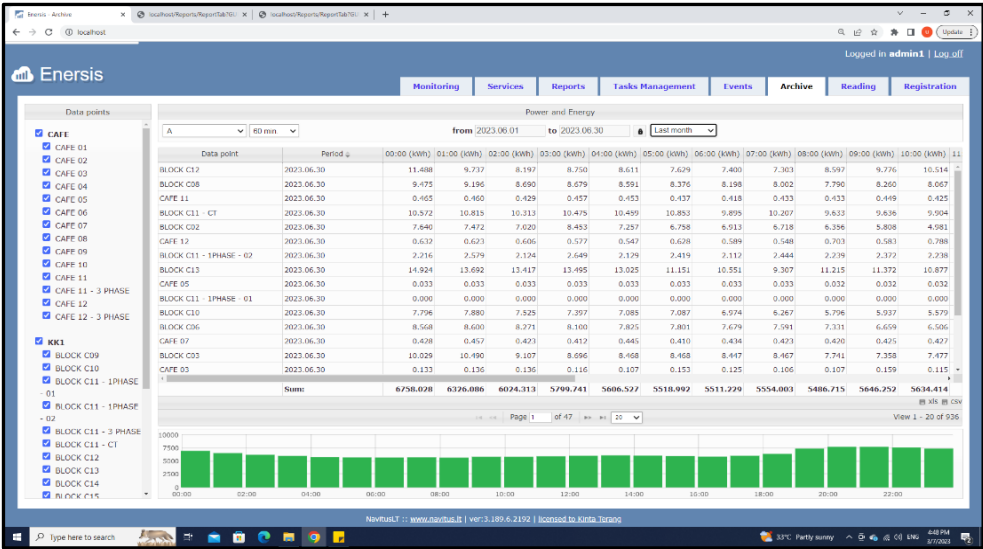


| Link | Date |
|---|-----------|
| elektrik bag | 28-AUG-20 |
| https://www.youtube.com/watch?v=129k6k_su | 28-AUG-20 |
| https://www.youtube.com/watch?v=8D-eMfD0 | 28-AUG-20 |
| elektrik bag | 28-AUG-20 |
| https://www.youtube.com/watch?v=129k6k_su | 28-AUG-20 |
| https://www.youtube.com/watch?v=8D-eMfD0 | 28-AUG-20 |
| elektrik bag | 28-AUG-20 |
| https://www.youtube.com/watch?v=129k6k_su | 28-AUG-20 |
| https://www.youtube.com/watch?v=8D-eMfD0 | 28-AUG-20 |
| elektrik bag | 28-AUG-20 |

Awareness talk/sharing to UMPSA staffs & students.



Realtime Data Smart Meter for electrical power usage monitoring.



Additional evidence link:

<https://mygreen.ump.edu.my/index.php/kp-house>

<https://news.ump.edu.my/community/kp-house-centre-attraction-among-kuala-pahang-residents>

<https://news.ump.edu.my/community/perpustakaan-mini-di-pusat-sehenti-komuniti-kp-house-pupuk-budaya-minat-membaca>

FB link :

<https://www.facebook.com/umpsamalaysia/posts/654587046701074>

<https://www.facebook.com/YayasanUMP/posts/681819910649644>

<https://www.facebook.com/umpsamalaysia/posts/663332775826501>

<https://www.facebook.com/photo.php?fbid=663327549160357&set=pb.100064493538038.-2207520000&type=3>

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<https://www.facebook.com/photo.php?fbid=657146323111813&set=pb.100064493538038.-2207520000&type=3>

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<https://www.facebook.com/umpsamalaysia/posts/650822520410860>

<https://www.facebook.com/photo.php?fbid=650817150411397&set=pb.100064493538038.-2207520000&type=3>