

SDG Accord Reporting 2021 CASE STUDY



We recognise that as an SDG Accord signatory your institution has a greater story to tell regarding how SDGs are being integrated within your community, and as part of your institutional SDG Accord reporting, we are now asking signatories to submit one or more case studies to share good practice, celebrate and/or outline barriers of how your institution is integrating the SDGs. Please tick the relevant Case Study Themes you would be interested in providing case studies for.

Integration of SDGs in

- Institutional governance/strategic level
- SDGs in research
- SDGs in campus operations
- SDGs in curriculum development
- SDGs in student engagement activities
- SDGs into community activities
- SDGs at a whole-institution level

Focus on

- Goal 1 - No poverty
- Goal 2 - Zero hunger
- Goal 3 - Good health and wellbeing
- Goal 4 - Quality education
- Goal 5 - Gender equality
- Goal 6 - Clean water and sanitation
- Goal 7 - Affordable and clean energy
- Goal 8 - Decent work and economic growth
- Goal 9 - Industry, innovation and infrastructure
- Goal 10 - Reduced inequalities
- Goal 11 - Sustainable cities and communities
- Goal 12 - Responsible consumption and production
- Goal 13 - Climate action
- Goal 14 - Life below water
- Goal 15 - Life on land
- Goal 16 - Peace, justice and strong institutions
- Goal 17 - Partnerships for the goals

SDG Accord Reporting 2021 CASE STUDY

Over the years as the University expanded its space, the overall electricity bill shot up to **91%** of the total utility bills (Electricity, Water & Telephone). To manage the electricity consumption effectively, the following 3 projects were implemented over a period of time, from 2016 - 2020 with the aim to reduce campus electricity bills **(Refer to Figure A in the Appendix - Data taken from 2018)**

Project 1 in 2016 – Centralized Chill Water

Sunway University's campus consists of both old and new buildings. In 2016, a study conducted on the usage of electricity showed that approximately 70% of electricity was consumed by the chillers to cool the buildings. The chiller operations in the older buildings whose chillers were more than 25 years old, contributed towards a large proportion of the electricity bill. As such, an initiative was undertaken to consolidate and centralize the chiller operations by using the newer University building chillers (which were more efficient and had extra capacity) to supply to the older buildings on campus. The gains were visible during the year as electricity bills dropped for both the older buildings by **5%**. **(Refer to Figure B in the Appendix)**

Project 2 in 2018 – Solar Panels

In 2018, the University worked on the installation of solar panels on the roof tops of two main university buildings to harvest solar power that currently powers up an older building. The oldest building on the campus was chosen to be the solar powered building because the electricity tariff per kilowatt was the highest @RM0.509 per kilowatt hour; compared to the newer buildings, where the tariff was only RM0.365 per kilowatt hour. Having installed the solar panels in 2018, the savings made were reflected in the 2019 utility bill. There was a **1%** reduction on the overall utility bill & a **2%** reduction on the total electricity consumption. **(Refer to Figure C1, C2 & C3 in the Appendix)**

Project 3 in 2020 – Selling excess energy back to TNB grid

Through the success of the solar panel project, the University realised it was able to harvest excess energy compared to utilisation and so in 2020, the excess energy harvested was sold to **TNB (Tenaga Nasional Berhad)** also known as the National Electricity Board grid via **SEDA (Sustainable Energy Development Authority) / NEM (Net Energy Metering)** arrangements.

These sales amount has seen a further reduction in the bills by 71% since 2019. **(Refer to Figure D in the Appendix)**

SDG Accord Reporting 2021 CASE STUDY

Outline the barriers (if any) encountered in integrating this theme and how you overcame these.

1. High capital investment.

a) Cost of installing Solar Panels = RM921,224 + RM1,561,731 = RM 2,482,955

As the University showed commitment to advancing the Sustainable Development Goals, the Chairman of Sunway Group was willing to invest as the R.O.I. was within the acceptable range of 7 years.

2. Logistics during the installation period. Routing of cables.

Major works was carried out during after office hours and on weekends when there was less classes to minimize any major teaching and learning disruptions

3. Unpredictable weather conditions.

Prior to the installation of the solar panels, a study was conducted to identify potential risks, one of which was having very minimal efficient sunlight hours per day. Hence this was already calculated as part of the ROI.

Outline the benefits of integrating this theme.

1. Lowering of the overall electricity bill.

2. Contributing towards the reduction of carbon footprint by using a low carbon power source.

3. Excess power harvested from solar panels have been re-channelled into the national grid, ±10,000 kilowatt.

4. Using alternative energy source in various applications and to power up various appliances – Lighting, power sockets, water heater, water boiler, air conditioners.

SDG Accord Reporting 2021 CASE STUDY



Solar Panels on Sunway University Building Roofs



Centralized Chiller at Sunway University

Please outline your conclusions and recommendations to others – max 200 words

Conclusion:

By implementing the above initiatives, The University is not only consuming affordable & clean energy, but also contributing towards SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action)

Recommendation:

1. To consider District Cooling system. One chiller plant to supply chilled water to several buildings in the Sunway township.
2. To consider larger space for Solar Farm in order to harvest significantly large amount of solar power.

SDG Accord Reporting 2021 CASE STUDY

APPENDIX

Figure A

Sunway Campus Utilities Bill Summary, 2018 (Before Solar Panel Installation)

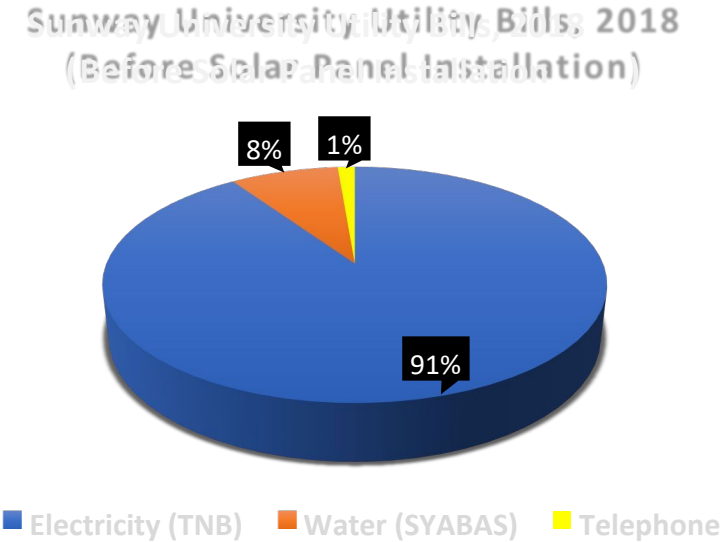


Figure B

Reduction of electricity (TNB) bill after chillers were centralized.

Period covered	RM
Jun 2017 - May 2018	7,353,661
Jun 2016 - May 2017	7,739,867
Variance	-386,206
Savings	-5%

SDG Accord Reporting 2021 CASE STUDY

Figure C1

Sunway Campus Utilities Bill Summary, 2019 (After Solar Panel Installation)

Sunway University Utility Bills: 2018
(After Solar Panel Installation)

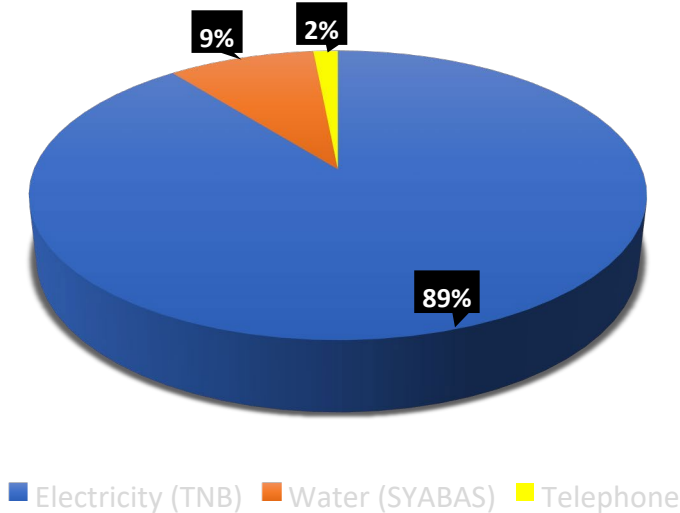


Figure C2

Sunway University Utility Bill Summary, 2018 - 2019

YEAR	RM
2018	8,461,180
2019	8,395,420
Variance	65,760
Savings	1%

Figure C3

Sunway University Electricity (TNB) Summary, 2018 - 2019

UTILITY	RM
2018	7,653,357
2019	7,500,087
Variance	153,270
Savings	2%

SDG Accord Reporting 2021 CASE STUDY

***NOTE: 2% Savings is contributed by Solar Panels.**

Figure D

SEDA / NEM Savings

Period covered	South Building (RM)
2021	56,567
2019	196,353
Variance	-139,786
Savings	-71%