



ENERGY MONITORING AND TARGETING

GS Yuasa Battery Manufacturing UK Ltd (GYMUK) has improved its energy efficiency by 57% since its energy monitoring and improvements started in 2004.

In 2021, the company continued with its programme of internal monitoring of energy usage, we have full confidence in the readings being obtained. GYMUK is now monitoring the power used each week and ensuring shut down procedures are implemented correctly utilising the data supplied by our metering company.

In 2022, the company will use up to 4% of its energy from PV panels installed on the roof of factory No.2, 4 & 5 and additionally late in the year a potential 9% from a wind turbine which will be sited on land nearby. The turbine project build will commence in late 2022. Both projects will be funded by a WEFO grant and the supply will be via a third party.

GYMUK continues to strive to push energy uses even lower through improved efficiency procedures and more controlled management. The company's main objectives are to raise awareness, improve efficiency levels & reduce costs.

At the beginning of 2015 the company received confirmation that the site would become exempt from the Climate Change Levy as it is now classified as a metal smelter, and we continue to remain exempt from CRC.

At the end of 2015 the first ESOS report was submitted in line with our legal obligation which was followed with an ESOS2 report in 2019.

During 2017 we were accepted into the Intensive Users scheme through the Department for Business, Energy & Industrial Strategy, and received confirmation in June 2021 that this will continue for another 12 months.

The two lists below indicate some of the projects which were undertaken in 2020, as well as proposed further actions for 2021. These projects were identified in order to further drive down costs and improve environmental management and monitoring.

Improvements completed in 2021:

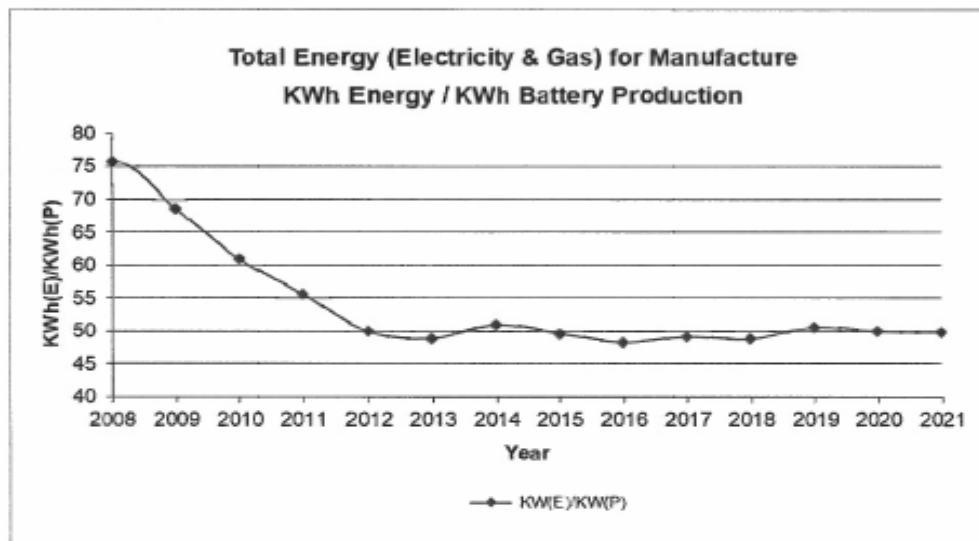
- Completion of LED lighting retro fitting on the shop floor.
- Installation completed of PV panels on factory 2, 4 & 5, power generation commenced in October.
- Removal of less efficient old gas fired ovens and replacement with new efficient oven with modern gas burner.

In addition, the following is planned in 2022:

- Replacement of the remaining high bay tube fittings with LED lamps

- Monitoring efficient shutdowns.
- Commence an offsite wind turbine installation, expected late 2022.
- Plan for a solar installation on factory 1 roof after repair of the roof.

The graph below shows the reduction in KWh of energy used to manufacture a KWh of production (Battery capacity measurement). Over the last 15 years, we have reduced by 50% the energy required to manufacture 1KW of battery power. Next year with a significant amount of renewable energy being used we may not see a reduction in this metric but we will see a reduction in the CO2 emissions.



Item No.	Environmental Objective
1	Repeat the 2020 KWh of energy per KWh of production in 2021. 2021 target = 48.6KWh energy per KWh of production. Actual result is 50.3KWh
2	Reduce the amount of CO2 generated by manufacturing, from the 2020 level of 11.847 to 11.256KgCO2/KWh (Battery. Actual result is 10.97KgCO2/KWh (battery
3	Reduce the scrap level from the 2020 figure of 0.47% to 0.40% in 2021. Actual 2021 result is 0.64%
4	In 2021, repeat the 2020 performance indicator of 4.1400267 m ³ /T prod for total water per unit output by the end of 2021. YTD we are at 3.96 m ³ /T. Therefore the target has been met.
5	Maintain monthly Lead levels in ground/surface waters at the end of the site at below the 2020 BAT-AEL of 0.5 mg/l, throughout 2021. All surface water results taken in the year are satisfactory.
Item No.	2021 Environmental Tracking Items
1	In 2021, maintain the 2020 performance indicator for waste 0.0648250 T waste/T prod. For the year our result is 0.0885, therefore the target has been missed

Item No.	Environmental Objective 2022
1	Improve the 2021 KWh of energy per KWh of production in 2022. 2021 target = 50.3KW energy per KWh of production.
2	Repeat the amount of CO2 generated by manufacturing, match 2021 level of 11.97 KgCO2/KWh (Battery)
3	Reduce the scrap level from the 2021 figure of 0.64% to 0.4% in 2022.
4	Repeat the 2020 performance indicator of 3.96 m ³ /T prod for total water per unit output by the end of 2022.
5	Maintain weekly Lead levels in ground/surface waters at the end of the site at below the 2020 BAT-AEL of 0.5 mg/l, throughout 2022.
Item No.	2020 Environmental Tracking Items
1	In 2022 improve the 2021 performance indicator of 0.00885 T waste/T prod.