

Annual Review of Environmental Business Objectives for 2017

In 2017 the following top level environmental objectives were identified as drivers for the company's management systems covering Environmental issues. These were:

- 1. No environmental compliance issues – zero breaches in 2017.
- 2. Successfully vary sites environmental Permit to version V005 by working with NRW and then implement new emissions monitoring in line with new permit requirements.
- 3. 14001:2015 Audit September 2017. Gap analysis with transition to new requirements.
- 4. Fugitive emissions reduction across site to improve conformance with BAT Conclusions 5 and 6.
- 5. Energy reduction projects – Engineering projects across both sites & employee energy behaviour training.
- 6. Resource use, waste hierarchy and lean/EOS (EnerSys Operating System) - Beneficial from environmental, health and safety and business perspectives.

Objective 1. Zero legal compliance breaches in 2017

Two breaches of air emissions occurred in January and April 2017. Both were on the grey oxide blower, A4 and both were against the very tight, original 0.25mg/Nm³ limit. This limit was elevated to 0.75mg/Nm³ when the permit was varied. Since the variation no further breaches have occurred.

Objective 2. Vary site permit to V005 and implement new monitoring regime

The permit was varied in May 2017 with new air emissions limits of 0.75 or 1.0mg/Nm³ introduced on all stacks for lead. Particulate limits of 5.0mg/Nm³ will come into force in June 2020 and will need to be tested annually.

Two improvement conditions were included:

IC17: To reduce the occurrence of fugitive emissions of lead by June 2020 and report on the progress of this annually by May 31st.

IC18: To monitor the accuracy of the continuous monitors on the oxide mills against the stack lead emissions tests with the aim of reducing the frequency of testing from once per month to once per quarter as completed on the other stacks on site. This piece of work will be submitted by May 31st 2018.

Objective 3. Address Gap Analysis actions to achieve 14001:2015

ISO14001 audit was completed in October 2017 to the 2015 standard. This had not been previously planned and therefore a gap was identified that needed to be addressed re the completion of a lifecycle assessment. This has now commenced and the actions Newport can control from the assessment will be implemented over 2018.

Objective 4. Reduce fugitive emissions of lead across site (ties in with Objective No. 2)

Projects in each lead area have been started with opportunities for improvement identified. Progress will be reviewed in 2018 prior to the annual report being submitted to NRW on May 31st.

Objective 5: Energy reduction projects with RUMM.

As production increased over 2017 the opportunities for equipment switch off across site became limited and the Company made the decision in December to progress with RUMM (Energy Consultants) on a data provision basis only in 2018. The sub metering remains in place and all data from the metering will be accessible for EnerSys use.

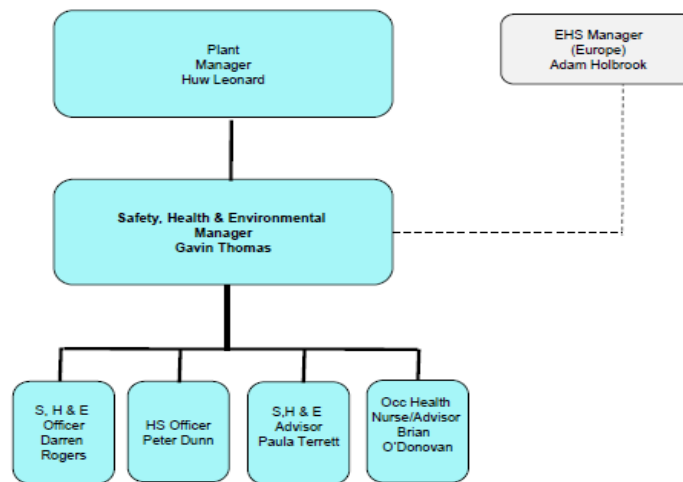
Objective 6: Resource use reduction, implementation of waste hierarchy, implementation of EOS/Lean projects.

The lean initiative at Newport started in October 2017 with one project per month in manufacturing areas initially. As these spread across site the opportunities to remove waste from the business will be identified in all areas giving good environmental benefits. Each lean project has to provide two EHS benefits in addition to the main productivity project goals.

Annual Review of Environmental Issues 2017

1. **Environment, Health and Safety Department Roles, Responsibilities, Structure and Resource**

The EHS department merger with Quality carried out in 2016 was reversed. EHS is now a standalone Department with five members of staff. Structure as below:



As of December 31st 2017 there were 460 EnerSys employees across the Stephenson St and Nashmead sites. An upturn in Production volumes towards year end means that site is now running a five shift hybrid pattern across the majority of Production areas with battery manufacture volumes increasing to an average of 17000 per week.

2. **Training** – New EHS Officer attended Foundation IEMA training in March 2017. The EHS Advisor attends IEMA Wales meetings, best practice visits and webinars.

New starters receive environmental training as part of their induction. This is currently delivered via an Environmental Awareness video with question and answer sessions followed by more localised knowledge regarding waste separation, energy reduction and resource management when they reach their place of work.

3. **Communication** We have not made or received any external complaints during 2017.

Environmental communication within the Company is undertaken at a number of levels.

- On Newport site an Environmental Powerpoint Report is issued monthly which is displayed on all noticeboards for employees to read.
- The report is also presented at the monthly EHS Plant Meetings which are attended by operators from all over site and by Senior Management.
- Environmental matters are discussed at Sub Committee meetings that take place in all Departments. Any issues that cannot be resolved in a Sub Committee meeting are fed upstream to the Plant Meeting.
- Review of EMS effectiveness takes place annually in March.
- Reporting from Newport to EnerSys Group (EMEA) and EnerSys Head Office (USA) takes place monthly.
- EnerSys EMEA conference calls between the factories take place every month and an annual meeting is held in changing factory venues to discuss joint ventures, best practice and changing requirements.

4. Changing Circumstances – legal, business, ISO etc

Permit varied to V005 in May 2017.

Transition to the new ISO14001:2015 standard was completed by January 31st 2018.

Company conformance with legal changes is carried out by external consultants. This is completed biannually with the next in May 2018. Three minor non-conformances and five improvement opportunities were raised in 2016 against the environmental management system. The three non-conformances were actioned in 2016 and the observations are being assessed and put in place as deemed necessary.

5. EHS Sub-Committee Performance – The plant EHS committee met on 10 occasions in 2017. The sub committees in all the Departments meet monthly and feed the issues they are unable to resolve up to the Plant Meetings. Senior Management attend the Plant Meeting and therefore decisions can be taken quickly and actioned where items have become 'stuck'.

The sub-committees complete a fortnightly walk inspection using a high level audit sheet that covers 30 areas of EHS. The senior management team also complete audits in each area using the same format. The results of the two poorest scoring high level audits are discussed at the plant meeting. The target score for all audits is >90%.

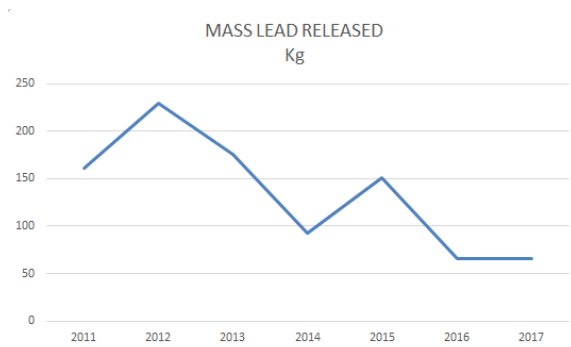
6. Non Conformance

ISO Audit Actions – An ISO14001 audit was completed by NSAi in October 2017. Gaps were identified regarding lifecycle assessment, assessing risk and context as the transition to the 2015 standard was carried out earlier than expected. In summary the auditors raised one category 1 finding on the ISO14001:2015 change areas, 4 CAT 2s and 1 CAT 3 observation. All of these were closed out by the end of January 2018 and will be reviewed when the next audit is completed in September 2018.

7. Permit 4.2.2 Reporting – review of EnerSys annual performance

Form A1: Air Emissions

There were two breaches in 2017 from stack emissions both on stack A4 grey oxide blower and prior to the emissions limit being increased from 0.25mg/Nm³ to 0.75mg/Nm³ when the permit was varied. Since the introduction of the 0.75 and 1.0mg/Nm³ limits no breaches have occurred. Form A2 no longer needs to be completed as the annual emissions limit has now been removed from the permit.



The amount of lead released to the environment from our on site stacks has declined significantly over the past six years and this improved performance has driven our request to reduce Mill stack testing from every month to once a quarter (Improvement Condition 18 on the new permit.)

Lead in Air Emissions at Site Fenceline

The annual ambient lead in air for the downstream monitor of the site over 2017 was $0.12\mu\text{g}/\text{m}^3$ - well within the consent limit of $0.25\mu\text{g}/\text{m}^3$. The upstream monitor measured an average of $0.03\mu\text{g}/\text{m}^3$ over 2017.

The upstream ambient monitor failed in January 2018 (NRW have been informed) and we are currently applying for capital expenditure in order to replace both fenceline monitors with up to date models.

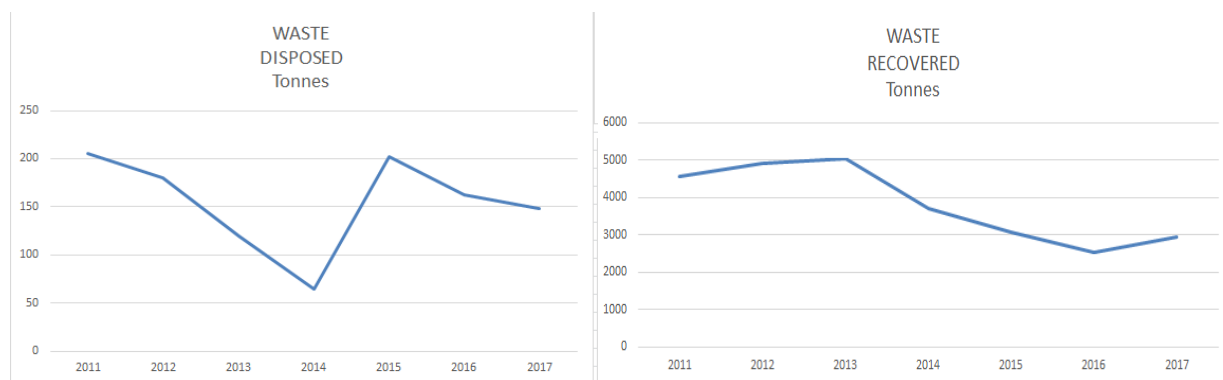
Form S1: Emissions to Sewer

The discharge to effluent was sampled and analysed weekly for lead, pH, sulphates and suspended solids. All were within their consent limits. The flow to sewer was also well within the Dwr Cymru limit. All of Dwr Cymru's separate effluent sample testing results also within consent limits.

Form W1: Emissions to Controlled Water (Reen)

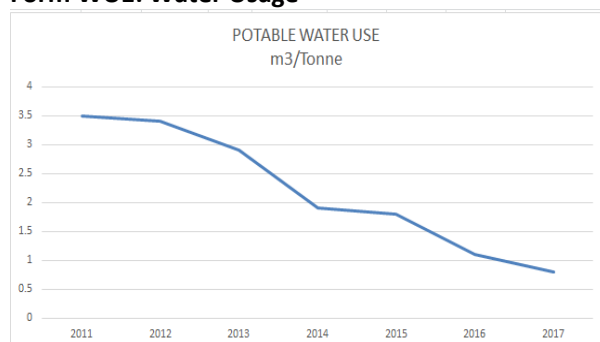
The discharge to reen was samples and analysed weekly for lead and pH. None were outside of consent limits.

Form R1: Waste Disposal and Recovery



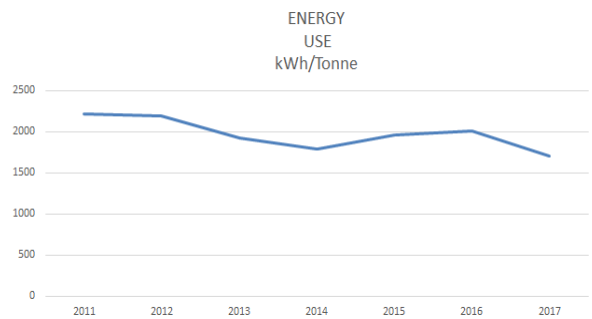
Small volumes of waste are not recovered - 148Tonnes for the year in 2017 - but the vast majority is recovered including all the manufacturing lead waste streams. The disposed waste is mainly oil and water from the manufacturing processes and acid that has been incorrectly mixed. As the lean programme is rolled out across site the amount of waste produced will decrease.

Form WU1: Water Usage



The amount of water being used on site has decreased year on year as recirculation loops have been installed via Engineering projects across site. Facilities changes such as dual toilet flushes, preset timers on showers, automated taps with inbuilt timers have also been installed.

Form E1: Energy



Both gas and electricity are consumed on site with electricity being the biggest CO₂ contributor. As the production volumes fluctuate the total amount of energy consumed changes but as the normalised data above shows overall the kWh used per tonne of batteries manufactured has declined. External consultants have been used to install sub metering across the entirety of site and a variety of energy reduction projects have taken place driven by the Consultants assessments and also from our ESOS report.

Groundwater and Soil Sampling – Groundwater testing was completed in April 2017. The results showed that lead levels above the European Quality Standard of 25ug/l in groundwater were found in only three boreholes situated at the rear of the site where lead manufacturing has been ongoing since the site was established in 1953. Groundwater testing across site is completed annually so will next be completed in April 2018.

Soil sampling was completed in November 2017 in line with the requirements of the Industrial Emissions Directive that soil sampling is done every ten years. The results will be submitted to NRW in March 2018.

8. Natural Resources Wales (NRW) Actions

The key area for improvement is control of fugitive emissions of lead in Metallics, Assembly, Maintenance and Waste Management areas. Significant progress has been made on this in recent years but in 2018 projects will continue in each of these areas focussing on further opportunities for reducing fugitive emissions of lead to escape into the environment.

9. Environmental opportunities for improvement in 2018 are:

- Fugitive emissions reduction across site to improve conformance with BAT Conclusions 5 and 6.
- Environmental benefits from EOS/Lean projects that are being carried out across site – will further reduce raw material resource use, waste and energy consumption.
- No environmental compliance issues – zero breaches against the new permit limits in 2018.
- 14001:2015 Audit September 2018. Close out the gaps identified by the 2017 audit.



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 February 27th 2018