

Llanwern Annual Waste Report 2019

**EPR Permit Ref: BS3905IP. Tata Steel Strip Products UK, Llanwern Works
Re: PPC Permit Condition 9.7 – “The Operator shall conduct a waste minimisation audit that analyses the use of raw materials, assess the opportunities for the reduction in generation of wastes and provides an action plan for achieving the identified improvements. The review shall assess the current disposal techniques to ensure that the disposal of wastes meets the requirements of the Landfill Directive. A report shall be provided to the Agency. Timescales shall be agreed with the Agency (Natural Resources Wales).”**

Introduction

The following report briefly summarises: i) waste performance over the previous year, and details some of the main waste management activities ii) raw materials vs production measures and iii) an overview of some of the process waste types and associated disposal arrangements and opportunities

[1] Site Waste Management

The site waste management contract has been in operation for the seventh year. Continuity of the same site waste management Company has enabled us to optimise recycling rates and disposal routes, in-line with the established waste management hierarchy. The working relationship with site Waste Management Service provider remains positive.

General waste is sent to an energy recovery process. This being in-line with a high-level company objective to eliminate waste from landfill.

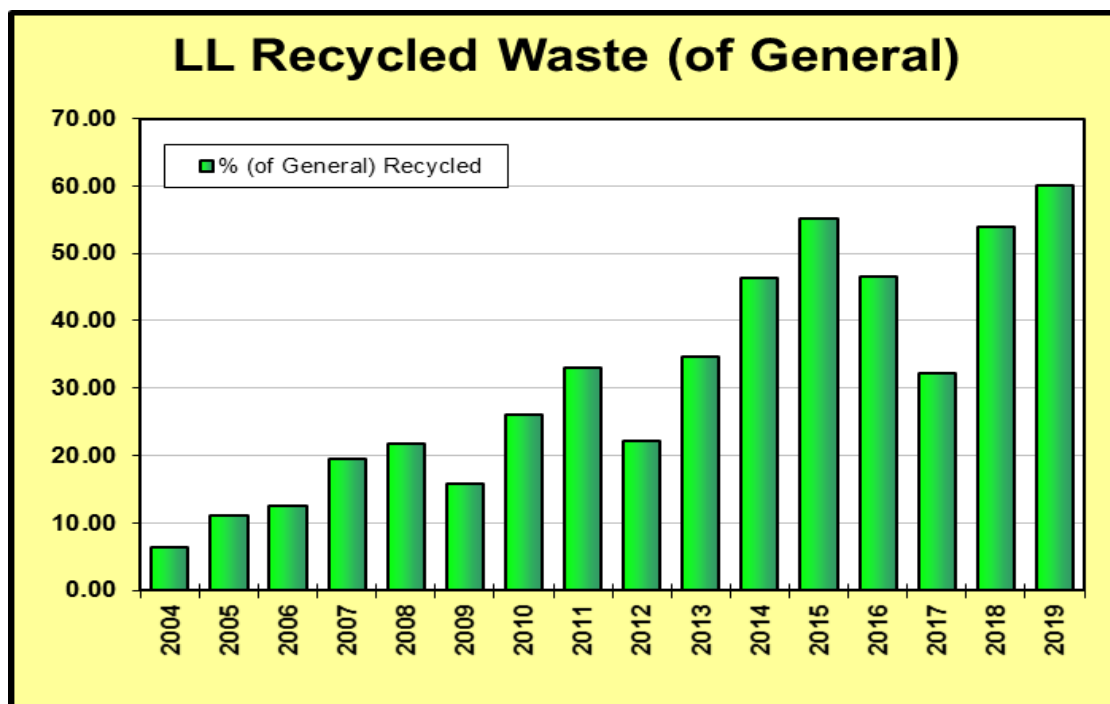
We have seen a decrease in general waste and increased recycling for 2019.

The annual (non-steel) waste recycling target was set at 50%. Our annual performance resulted in a 6% increase compared with 2018, with 60% being recycled for 2019. We saw a decrease of 50t in general waste for 2019, compared with 2018.

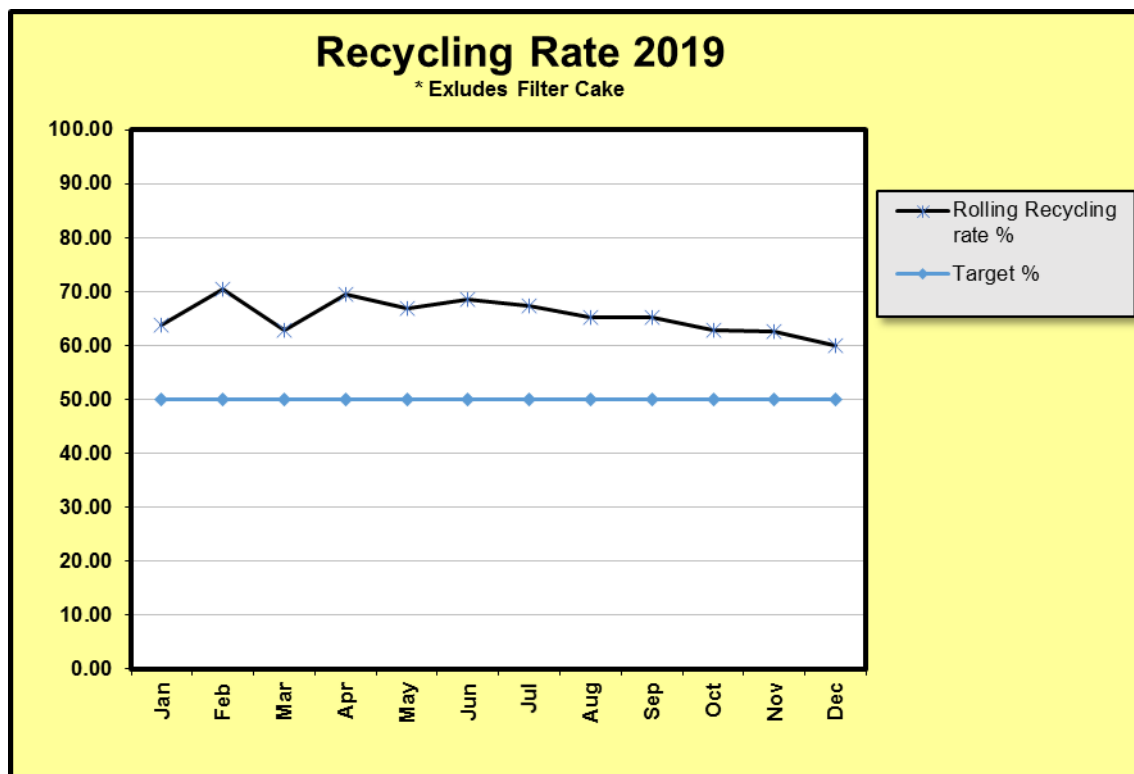
General waste was diverted from landfill, to an energy recovery process. Enhancements to internal procedures to reduce packaging waste that is normally sent for recycling contributes to recycling reduction towards the end of 2019.

The trend can be seen as a graphical representation on the next page.

LL Recycled Waste (of General) 2019



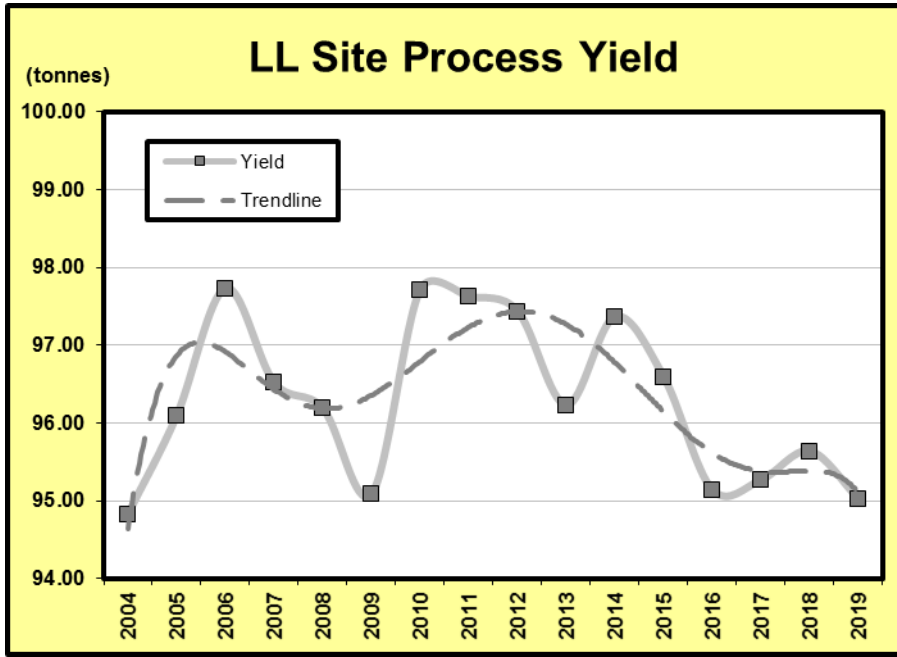
Recycling 2019



[2] Raw Materials

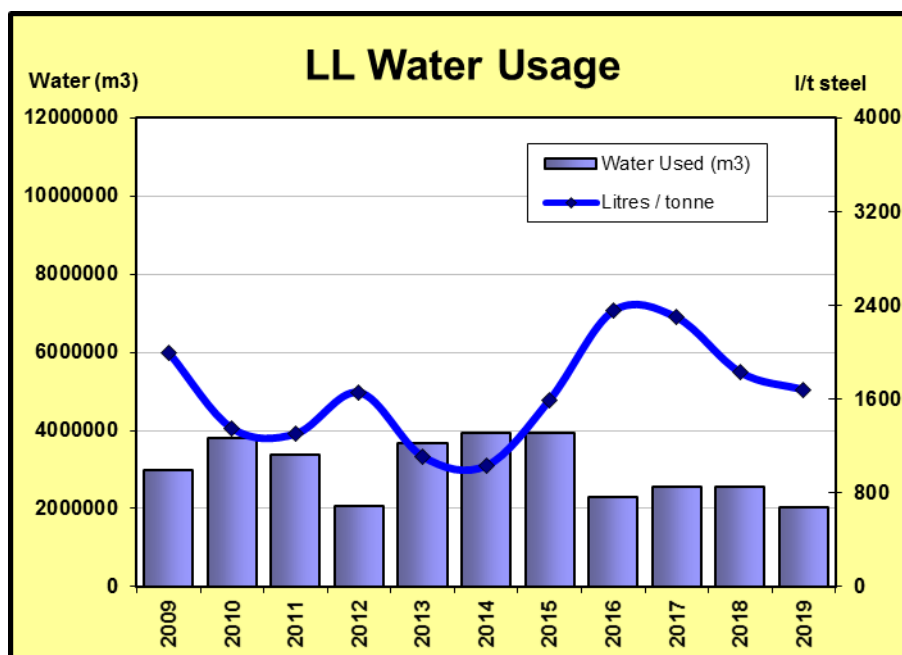
For an indication of raw materials usage & performance, the graphs in this section show the main raw materials, expressed in a 'unit/tonne' format, for a year on year comparison of usage efficiency. This serves to give a good broad overview of performance in relation to each parameter

LL Site Process Yield



With regards to yield, the graph depicts overall site production yield, calculated from scrap arisings Vs production tonnage. Whilst there are many factors that can affect yield performance, there is a trending improvement in this broad performance measure. Specifics aside, there is appreciable site focus on yield performance due to cost implications, and from an environmental perspective, this also means less energy & material usage in the up-stream processes.

LL Water Usage



There is a general downward trend for water usage in 2019. Partly due to the Hot Mill remaining in mothball status. There has also been a continual focus on detecting and fixing leaks in water systems.

[3] Process Waste Streams

This section details the specific process waste streams, and outlines the disposal / recycling route of each

Liquid Waste Oil [Recycle]

Waste oil arisings come from a number of sources, either directly from processes, or indirectly from oil separators & interceptors. Such arisings undergo a variety of processing, including: gravity separation, chemical & thermal treatment, centrifuge, magnetic separation etc. in order to achieve an oil specification that can be sold to a third party for re-use as lubrication oil following further off-site re-processing or for re-use in PT morfa coke ovens.

Ferrous Hydroxide [Disposal – 3 point test met]

During the Pickling process, the rinse waters used in the final stages of the process are collected & treated by a dedicated effluent treatment plant. The product of this process is a FeOH Ferrous Hydroxide filter cake. Despite it having a high Fe content, the recycling options are limited due to presence of small concentrations of Cl, which negates the option to recycle into steelmaking via the Sinter Plant process. As there are no other viable treatment options, the material is dispatched for Non-Hazardous landfill

Zinc Dross [Recycle]

In the Zodiac galvanisation process, Zinc dross is skimmed from the surface of the molten zinc-coating bath, and is then bulked-up into an adequate quantity for dispatch to a metal re-processor based elsewhere in the EU for recycling – Trans frontier Shipment of Waste protocols therefore apply

[4] Improvement Plan

Aside from routine activities that endeavour to achieve improvements, the setting of specific project objectives & targets is integrated into the site ISO14001 management system.