Llanwern Annual Waste Report 2016

27th January 2016

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

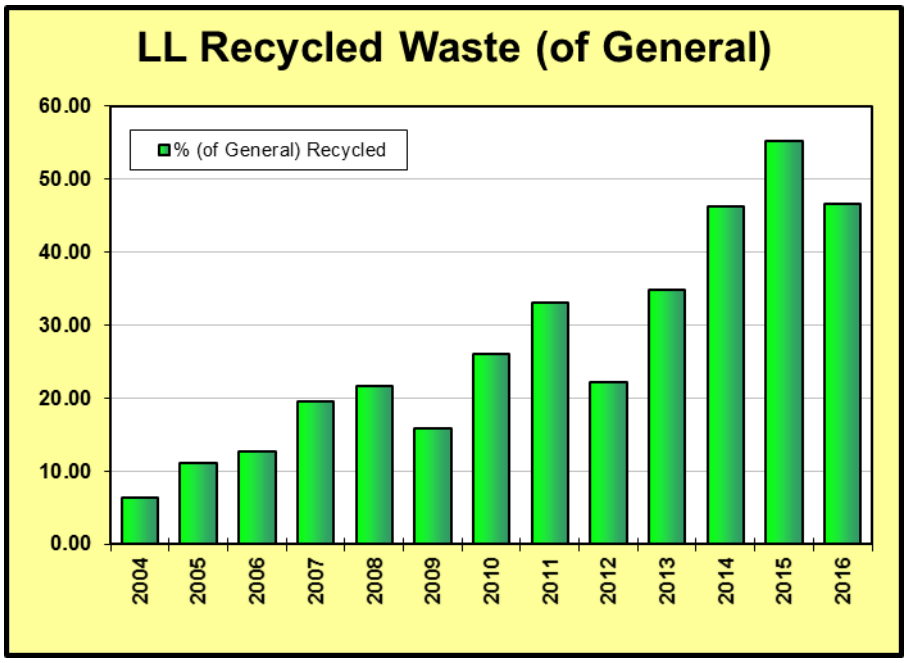
The site waste management contract has been in operation for the fourth year. Continuity of the same site waste management group has enabled us to sustain and improve on our waste segregation, thus optimising our waste recycling rates and disposal routes, in-line with the established waste management hierarchy.

One of the main KPI's is % material recycled. Our annual performance was 46.61% of material being recycled. This was disappointing following a drop of 4% from the previous year. Our target from Jan – Mar was 45%, however, annual plan set us a target of 50% for the remainder of the year. The trend can be seen as a graphical representation below.

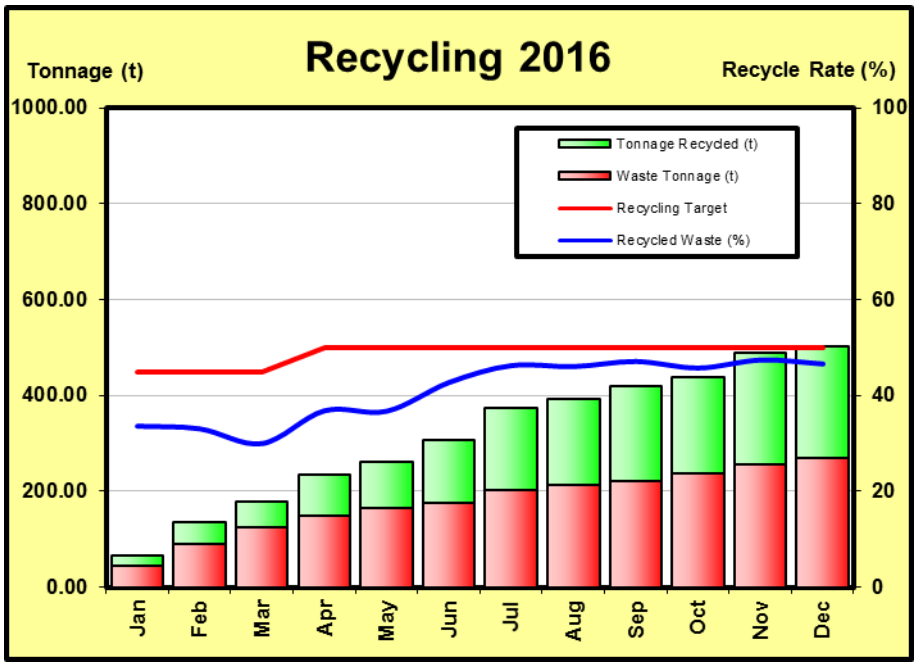
A significant proportion of our general waste stream has been diverted from landfill, to an energy recovery process. This being in-line with a high-level company objective to eliminate waste from landfill.

We have seen a reduction in general waste produced from site. As a result 268t (reduction of 115t on previous year) of general waste was taken from site. 107t (40%.....6% increase on previous year) was sent to an energy recovery facility and 161t (reduction of 91t on previous year) was sent to a waste transfer station for further segregation and landfill.

LL Recycled Waste (of General) 2016



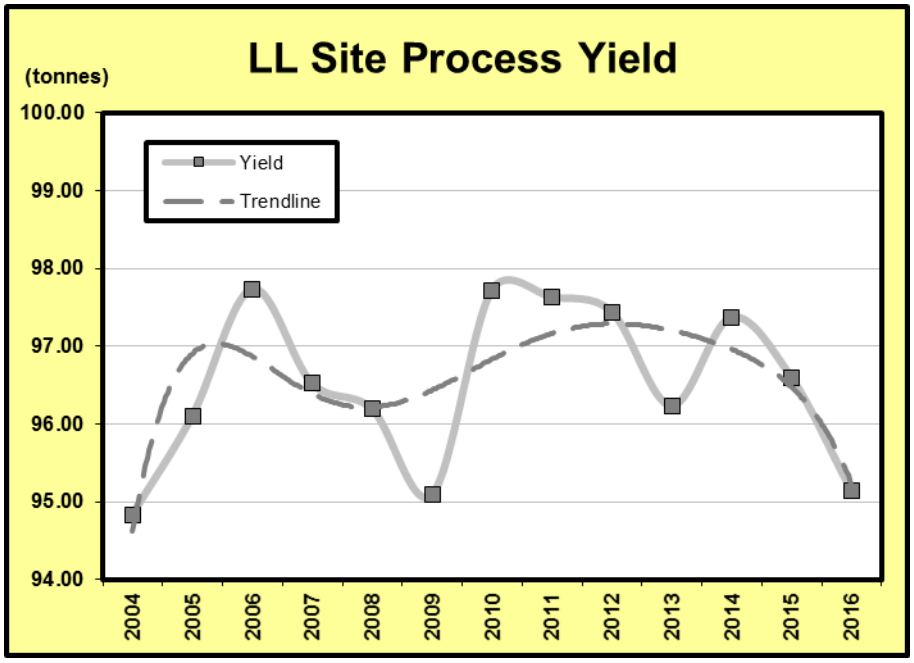
Recycling 2016



[2] Raw Materials

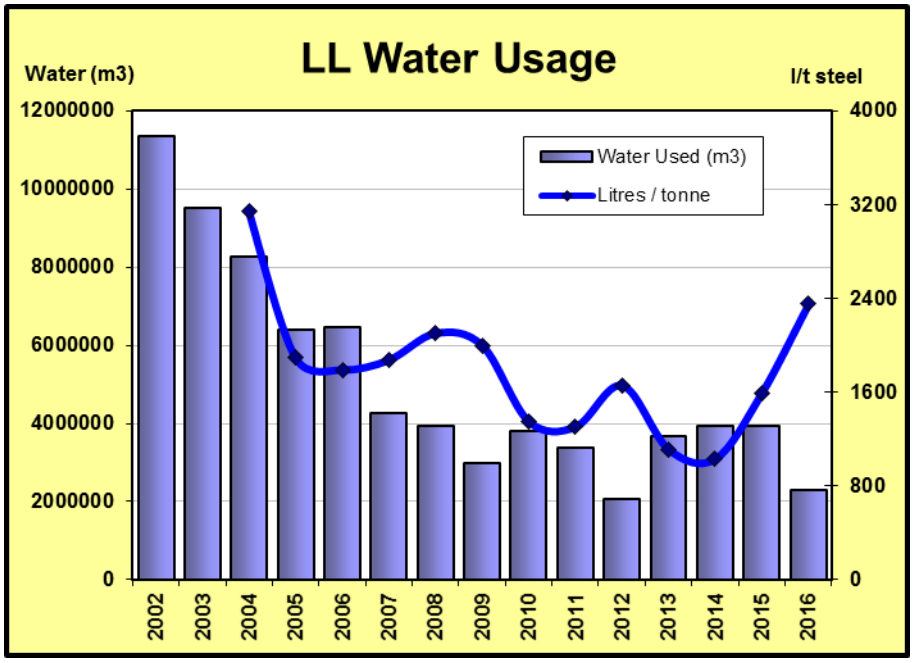
For an indication of raw materials usage & performance, the graphs in this section show each of the main raw materials (acid, oil, steel, water, zinc) expressed in a 'unit / tonne' format, for a year on year comparison of usage efficiency. This serves to give a good broad overview of performance in relation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

LL Site Process Yield 2016



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 2016



There is a general downward trend for water usage in 2016. Mainly due to reduced production output from previous year with the hot mill remaining in mothball status. A number of domestic water systems have been isolated due to the restructuring of the business and amenity buildings closing, thus relocating people remaining to maximize

other amenity buildings. 'Flushing' of systems continue, for the purpose of helping prevent bacterial growth (such as legionella) in various process & domestic 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

Ferrous Chloride Solution [By-Product]
$FeCl_2$ is a by-product of the pickling process, and is formed by the reaction between steel and hydrochloric acid. The solution is collected & stored by a third party, and is subsequently used in the water treatment industry

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

Chromate Waste [Disposal]
Chemical used for the passivation of galvanized steel coil (which include chromic acid), are collected in a waste tank for removal by a specialist Hazardous Waste contractor for off-site treatment & disposal

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 – Transfrontier 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.