

**ANNUAL IMPROVEMENT TARGETS SUMMARY
REPORT PREPARED IN COMPLIANCE WITH
CONDITION 4.2.1b. OF PPC PERMIT LP3731SU**

**BAE SYSTEMS LAND SYSTEMS
(MUNITIONS & ORDNANCE) LTD.
GLASCOED MUNITIONS FACTORY**

Prepared for:

BAE SYSTEMS (GLASCOED)

FEBRUARY 2018

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1. INTRODUCTION

- 1.1.** The following report has been produced in accordance with Condition 4.2.1(b). of Permit number LP3731SU. Condition 4.2.1.(b) is as follows:

"A report or reports on the performance of the activities over the previous year shall be submitted to the Agency [now Natural Resources Wales ("NRW")] by 31st January (or other date agreed in writing by the Agency each year. The report shall include as a minimum:

(b) where the operator's management system encompasses annual improvement targets, a summary report of the previous year's progress against such targets."

- 1.2.** BAE Glascoed Munitions Factory ("BAE Glascoed") has an Integrated Management System ("IMS") which includes the setting and monitoring of key environmental performance indicators ("KPIs") to achieve continual environmental improvement.

- 1.3.** The summary report below discusses the environmental KPIs set, strategies undertaken to achieve the KPIs, the observed performance against each target in 2017 and the successes and limitations encountered during the year.

2. KEY PERFORMANCE INDICATOR PERFORMANCE

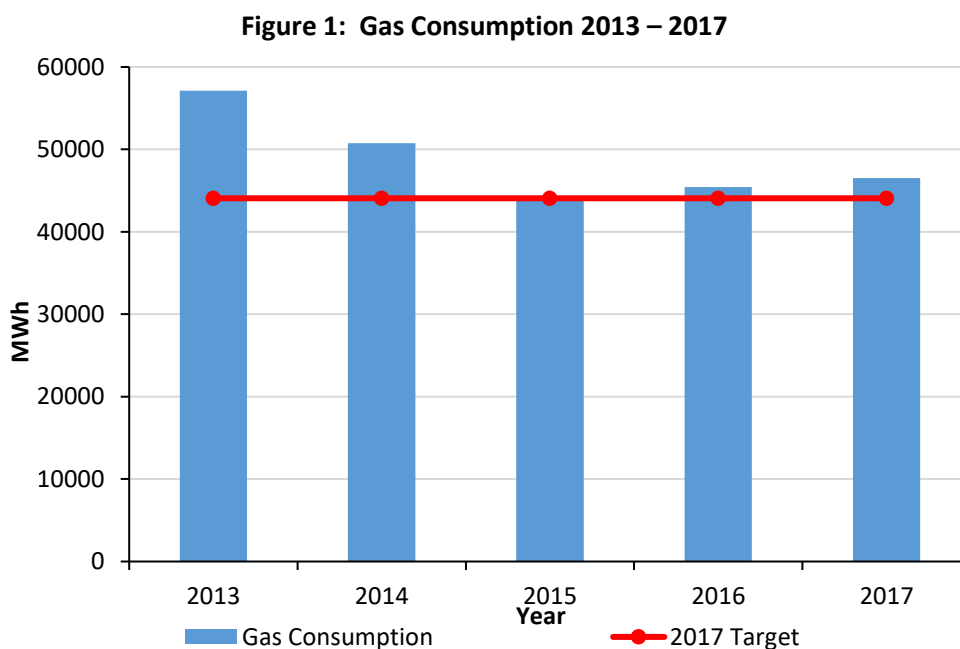
2.1. Gas Consumption

2.1.1. BAE Glascoed set a target to reduce gas consumption by 3% in 2017 compared to 2016 performance.

2.1.2. The following strategies were implemented during 2017 to reduce gas consumption at the site:

- replacement of a number of steam control valves prompted by valve failures resulting in steam distribution when not required;
- installation of a number of steam meters across site, with integration into the Building Management System, to be completed in 2018; and
- investigations into the feasibility of localised control on areas of high steam demand, limiting the area of distribution to specific requirements.

2.1.3. Gas consumption for the last 5 years is shown below in Figure 1, together with the 2017 target of 44,072 MWh.

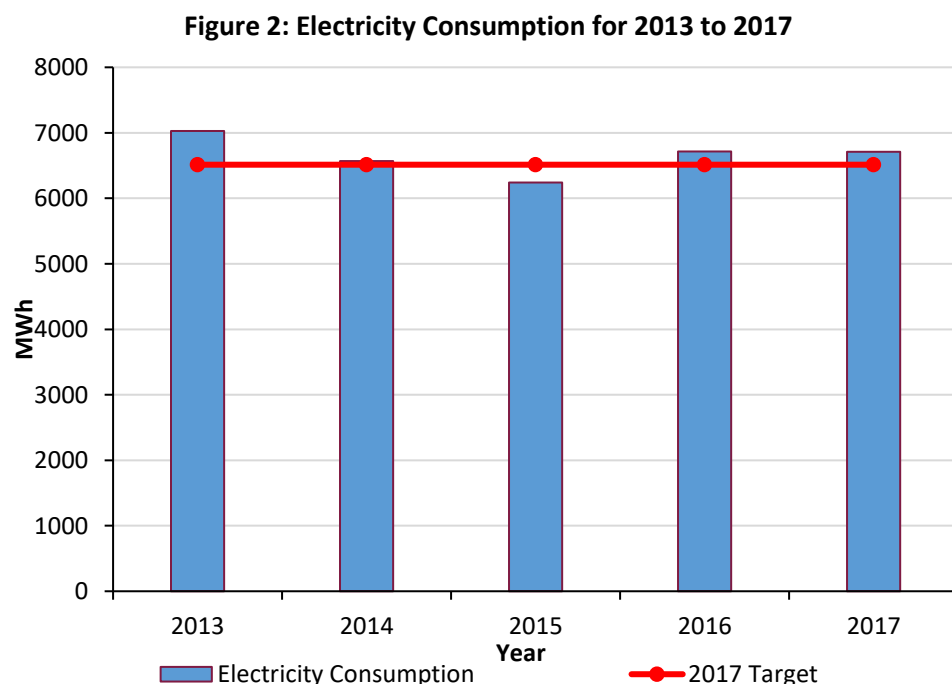


2.1.4. The data in Figure 1 shows that BAE Glascoed did not meet the 2017 target. However, during 2017 there was an increase of the number of production hours consequently gas consumption would be expected to increase. In accounting for this increase in productivity, a revised target of 44,953MWh has been calculated for 2017. Given a gas consumption of 46,535MWh, the target was still not met, although the difference is reduced.

- 2.1.5. It should be noted that there is still an overall decreasing trend in gas consumption from 2013 to 2017.
- 2.1.6. Employee engagement and participation with the gas reduction strategies increased during 2017. A gas consumption target of 45,139 MWh has been set for 2018. It is anticipated that the 2017 strategies outlined above (section 2.1.2.) will reach their maximum potential during 2018 and will assist to achieve a reduction in gas consumption at the site.

2.2. Electricity Consumption

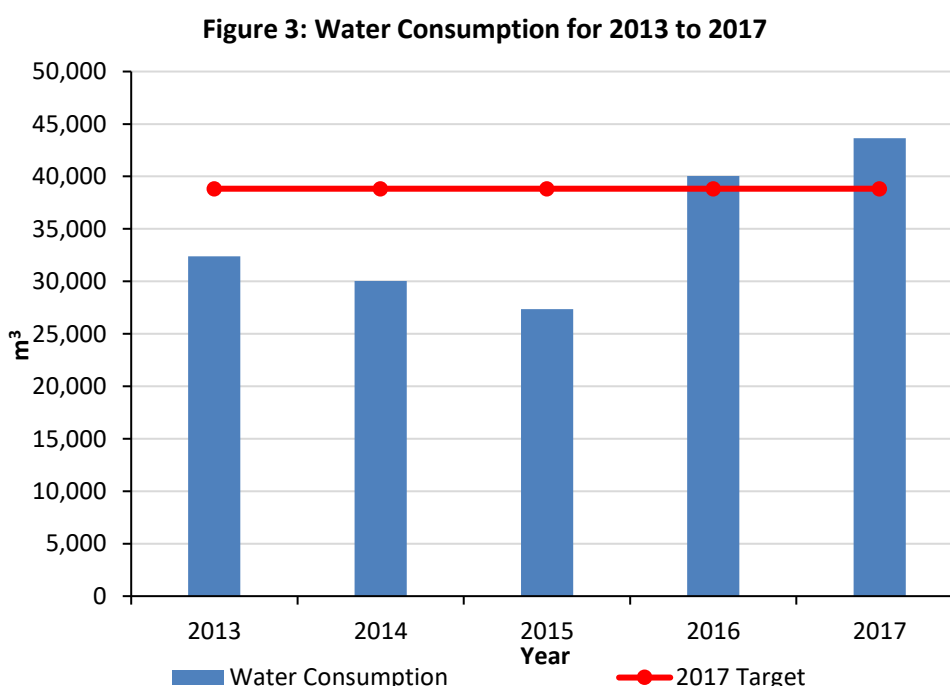
- 2.2.1. BAE Glascoed set a target to reduce electricity consumption by 3% in 2017 compared to 2016 performance.
- 2.2.2. The following strategies were implemented during 2017 to reduce electricity consumption at the site:
- investigations into the feasibility of energy efficient lighting in office, as identified by analysis of metered data;
 - leaks were repaired on the main fire water distribution to reduce electricity consumption of main fire water pump; and
 - local controlled switch off implemented on Number 1 Significant Energy User Buildgin, which is building 8E11/12.
- 2.2.3. Electricity consumption for the last 5 years is shown below in Figure 2, together with the 2017 target of 6,513 MWh.



- 2.2.4. The data in Figure 2 shows that BAE Glascoed did not meet the 2017 target. Again, as was the case for gas consumption, this was due to an increase of the production hours during 2017 compared to 2016. In accounting for this increase in productivity, a revised target of 6,643MWh has been calculated for 2017. Given an electricity consumption of 6,708MWh, the target was still not met, although the difference is reduced. A new target for 2018 has been set to reduce electricity consumption to 6,507MWh and achieve continual improvement.

2.3. Water Consumption

- 2.3.1. BAE Glascoed set a target to reduce water consumption by 3% in 2017 compared to 2016 performance.
- 2.3.2. The following strategies were implemented during 2017 to reduce water consumption at the site:
- instantaneous domestic water flow integrated into Building Management System to identify high baseload and possible leaks.
- 2.3.3. Water consumption for the last 5 years is shown below in Figure 3, together with the 2017 target of 38,832 m³.



- 2.3.4. The data in Figure 3 shows that BAE Glascoed did not meet the 2017 target. A significant water leak was identified and repaired in May 2017, which resulted in a non-process related increase in water consumption at the site.

- 2.3.5. Water pipe inspection and leak detection continues to be of high priority and a further water reduction target of 40,301 m³ has been set for 2018.

CONCLUSION

- 3.1. As part of BAE Glascoed's Integrated Management System ("IMS"), annual improvement targets are set to enhance environmental performance and achieve continual improvement. The targets which were set in 2017 related to gas, electricity and water consumption, aiming to achieve a 3% reduction in comparison to 2016 performance.
- 3.2. A number of strategies were implemented to help achieve the targets, such as system upgrades and additional analysis of metered data. Additionally, an increase in employee engagement was observed during 2017. For a number of reasons, such as increased productive hours and a water leak occurring in the earlier part of 2017, the targets were not met. However, BAE Glascoed is committed to the continued implementation and enforcement of the strategies discussed above in order to achieve 2018 targets.