GLASCOED MUNITIONS FACTORY, USK, MONMOUTHSHIRE

Annual Improvement Targets Summary Report – Reporting Year 2019

BAE SYSTEMS

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ACRONYMNS/ABBREVIATIONS IN THE TEXT

IMS	Integrated Management System
BAE Glascoed	BAE Systems Glascoed Munitions Factory
ECL	Environmental Compliance Limited
KPI	Key Performance Indicator
CHP	Combined Heat and Power
NRW	Natural Resources Wales

1. Introduction

1.1. The following report has been produced in accordance with Condition 4.2.1.(b) of Environmental Permit Reference LP3731SU. Conditions 4.2.1.(b) states:

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

1.3. The summary report below discusses the set environmental KPIs, strategies undertaken to achieve the KPIs, the observed performance against each target in 2019 and the limitations encountered.

2. KPI Performance

2.1. Gas Consumption

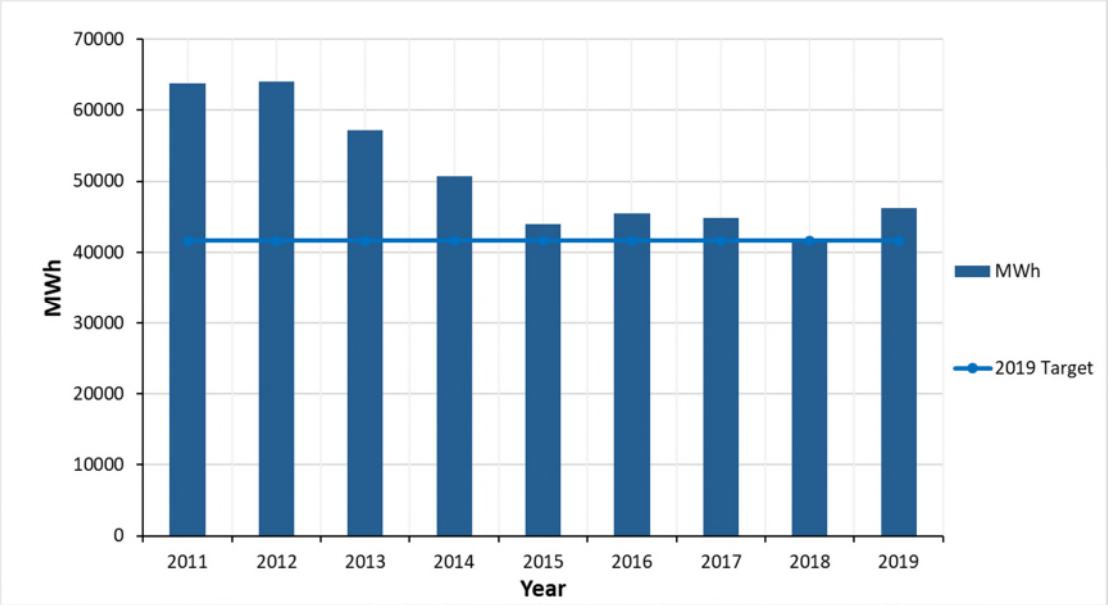
2.1.1. BAE Glascoed set a target to reduce gas consumption by 3% in 2019 compared to 2018 performance.

2.1.2. The following strategies were implemented during 2018 to reduce gas consumption at the site:

- installation of a number of steam meters integrated into the Building Management System was undertaken in 2018 and readings from the steam meters are analysed in order to identify potential targeted energy saving projects; and
- the ongoing project related to steam rationalisation on the feed to a 24 hour process building (8E13).

2.1.3. Gas consumption for the last 9 years is shown below in Figure 1, together with the target of 41,655MWh.

Figure 1: BAE Glascoed Gas Consumption – 2011-2019



2.1.4. The data in Figure 1 shows BAE Glascoed did not meet the 3% target set for 2019. The actual gas consumption in 2019 of 46,214,399 kWh compared to 41,624,324 kWh in 2018 shows an increase of 10%.

2.1.5. BAE Glascoed did not achieve the set KPIs for its 2019 gas consumption due to the various production issues mainly centred around 24 hour processing that was not on the original production schedule which resulted in tighter humidity controls.

2.1.6. A gas consumption target of 47,588,200 kWh has been set for 2020 to improve on the environmental performance observed in 2019. This figure is a 3% reduction on the forecast of 49,060,000 kWh. The forecast for 2020 has increased compared to the actual 2019

consumption to take account of the anticipated increase in production. In 2020, BAE Glascoed will be able to continue utilising the use of the steam metering to establish targeted energy saving projects with the aim to achieve a gas consumption reduction in 2020.

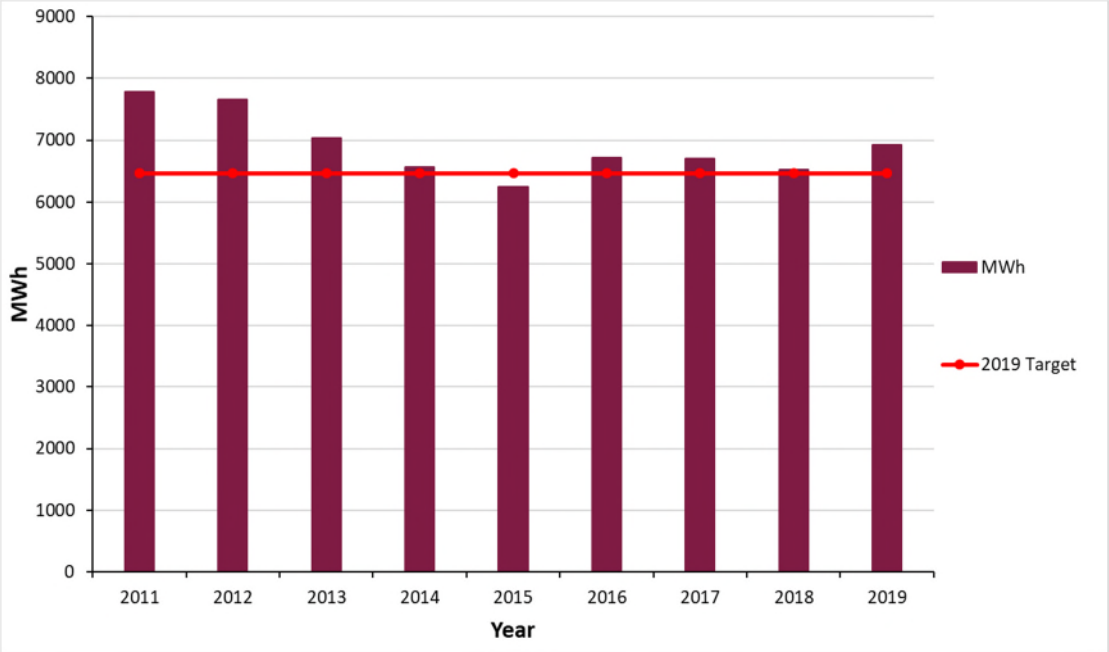
2.2. Electricity Consumption

2.2.1. BAE Glascoed set a target to reduce electricity consumption by 3% in 2019 compared to 2018 performance.

2.2.2. In order to reduce electricity consumption at the site, BAE Glascoed continued to install energy efficient lighting as identified by analysis of metered data.

2.2.3. Electricity consumption for the last 9 years is shown below in Figure 2, together with the target of 6,465 MWh.

Figure 2: BAE Glascoed Electricity Consumption – 2011-2019



2.2.4. The data in Figure 2 shows BAE Glascoed did not meet the 2019 target. The actual electricity consumption in 2019 of 6,927,809 kWh compared to 6,518,513 kWh in 2018 shows an increase of 6%, therefore, not meeting the set KPI. BAE Glascoed did not achieve the set KPIs for its 2019 electricity consumption. The reason for the electricity increase in consumption is the same as that related to gas consumption in that it was due to the various production issues mainly centred around 24 hour processing that was not on the original production schedule which resulted in tighter humidity controls.

2.2.5. An electricity consumption target of 6,700,081 kWh has been set for 2020 to improve on the observed environmental performance achieved in 2019. This figure is a 3% reduction on the forecast of 6,907,300 kWh.

2.2.6. BAE Glascoed will also continue to roll out the installation of energy efficient lighting as identified from analysis of metered data.

2.3. Water Consumption

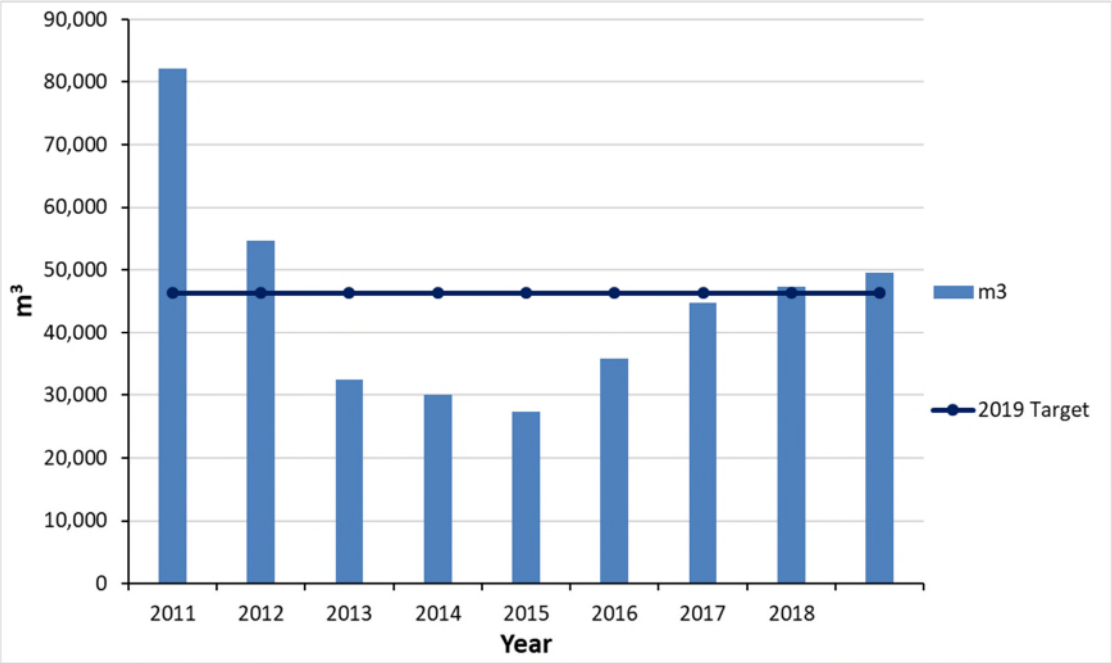
2.3.1. BAE Glascoed set a target to reduce water consumption by 2% in 2019 compared to 2018 performance.

2.3.2. The following strategies were implemented during 2019 to reduce water consumption at the site:

- continued leak detection; and
- monitoring of the base load which has been integrated in to the Building Management System.

2.3.3. Water consumption for the last 9 years is shown below in Figure 3, together with the target of 46,316 m^3.

Figure 3: BAE Glascoed Water Consumption – 2011- 2019



2.3.4. The data in Figure 3 shows BAE Glascoed did not meet the 2019 target. The observed water consumption in 2019 of 49,496m^3 compared to 47,261m^3 in 2018 demonstrates an increase of 5%.

2.3.5. Water leaks in 2019 made the target difficult to achieve. BAE has identified a water leak on site and investigations are ongoing to locate and rectify the leak to prevent any additional losses.

2.3.6. A water consumption target of 50,672 m^3 has been set for 2020 to improve on the observed environmental performance achieved in 2019. This is a slightly more ambitious target of 3% reduction on the forecast of 52,239 m^3.

3. Conclusion

3.1. As part of BAE Glascoed's IMS, annual improvement targets are set to enhance environmental performance and achieve continual improvement. The targets which were set in 2019 related to gas, electricity and water consumption aiming to achieve a reduction of 3% for gas and electricity and 2% for water in comparison to 2018 performance.

3.1.1. BAE Glascoed did not achieve the set KPIs for its 2019 gas or electricity consumption. This was due to the various production issues mainly centred around 24-hour processing that was not on the original production schedule which resulted in tighter humidity controls.

3.1.2. Unfortunately, BAE Glascoed was also unable to meet the water consumption target. A water leak has been identified and investigations are ongoing to locate and rectify the leak. BAE Glascoed are committed to the continual improvement of leak detection and the monitoring of the base load which is now integrated into the Building Management System.

3.1.3. Following evaluation of the performance in 2019, new KPIs have been set for 2020. A reduction of 3% has been set for the gas, electricity and water consumption against the 2020 forecast.

3.1.4. The performance of 2020 will be discussed and interpreted based on the actual performance data for gas, electricity and water as part of next year's annual returns reporting.