



**GLASCOED MUNITIONS FACTORY,
USK, MONMOUTHSHIRE**

**Annual Improvement Targets
Summary Report –
Reporting Year 2018**

BAE SYSTEMS

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TABLE OF CONTENTS

1.	INTRODUCTION	3
2.	KPI PERFORMANCE	4
2.1.	Gas Consumption	4
2.2.	Electricity Consumption	5
2.3.	Water Consumption	6
3.	CONCLUSION	7

LIST OF FIGURES

Figure 1:	BAE Glascoed Gas Consumption – 2011-2018	4
Figure 2:	BAE Glascoed Electricity Consumption – 2011-2018	5
Figure 3:	BAE Glascoed Water Consumption – 2011- 2018	6

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 2018 and the successes and limitations encountered.

2. KPI Performance

2.1. Gas Consumption

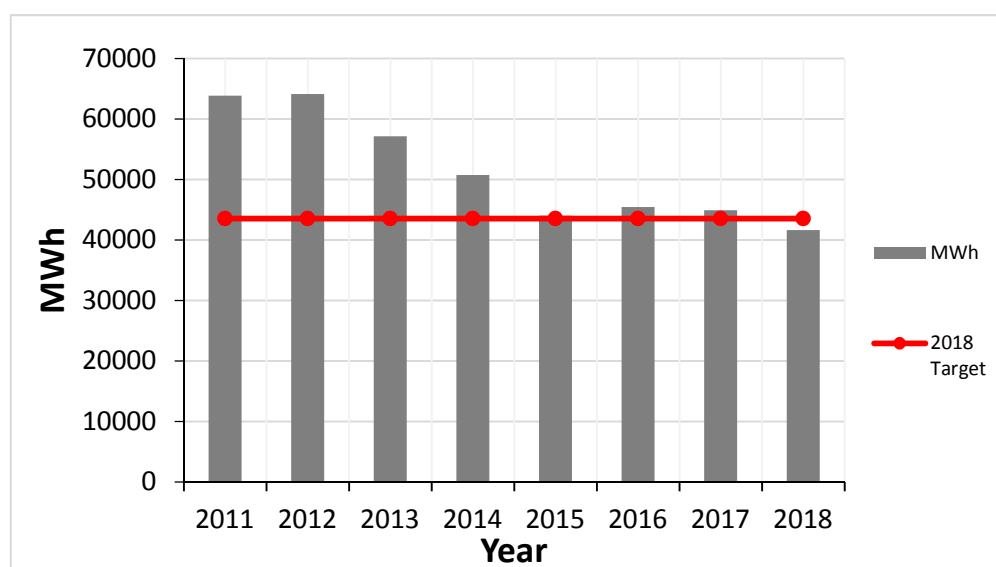
2.1.1. BAE Glascoed set a target to reduce gas consumption by 3% in 2018 compared to 2017 performance.

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 has been undertaken in 2018 and is now in the final commissioning stage. The readings from the steam meters will be 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 8 years is shown below in Figure 1, together with the target of 43,543 MWh.

Figure 1: BAE Glascoed Gas Consumption – 2011-2018



2.1.4. The data in Figure 1 shows BAE Glascoed met the 3% target set for 2018. The actual gas consumption in 2018 of 41,624 MWh compared to 44,890 MWh in 2017 shows a decrease of 7% greatly exceeding the 3% target.

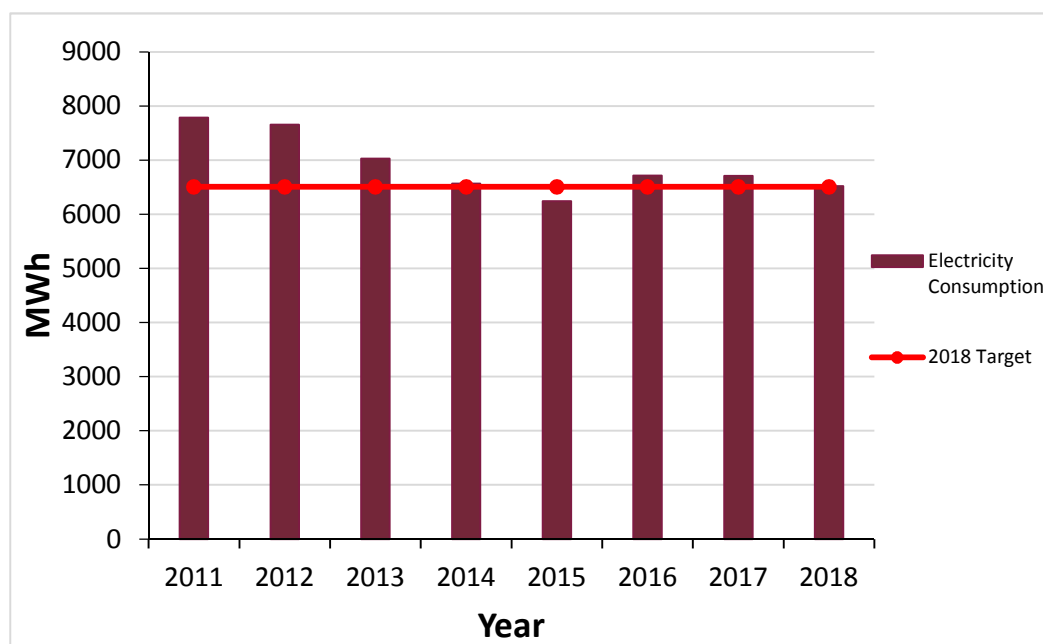
2.1.5. A gas consumption target of 41,655 MWh has been set for 2019. BAE Glascoed is forecasting an increase in production and consequently, an increase in observed gas consumption in 2019. The predicted gas consumption for 2019 is 42,505 MWh. Therefore, BAE Glascoed has set a 2% reduction on this figure to ensure the KPI remains realistic whilst also challenging.

2.1.6. In 2019, BAE Glascoed will be able to fully utilise the use of the steam metering to establish targeted energy saving projects with the aim to achieve further gas consumption reduction in 2019.

2.2. Electricity Consumption

- 2.2.1. BAE Glascoed set a target to reduce electricity consumption by 3% in 2018 compared to 2017 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 8 years is shown below in Figure 2, together with the target of 6,507 MWh.

Figure 2: BAE Glascoed Electricity Consumption – 2011-2018

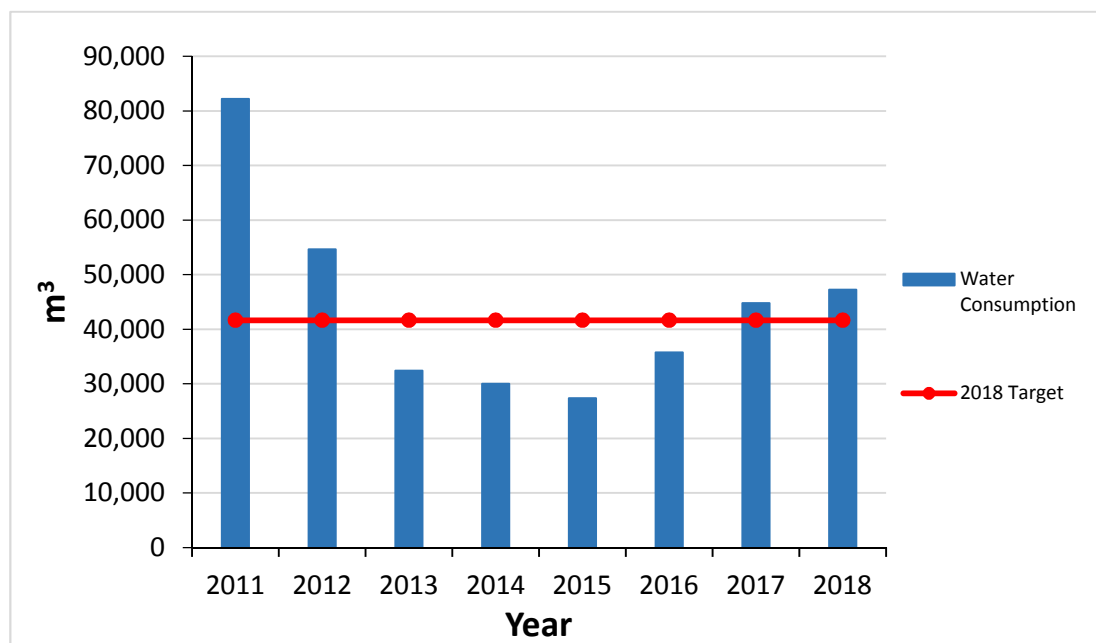


- 2.2.4. The data in Figure 2 shows BAE Glascoed met the 2018 target. The actual electricity consumption in 2018 of 6,522 MWh compared to 6,708 MWh in 2017 shows a decrease of 3%, therefore, meeting the set KPI.
- 2.2.5. An electricity consumption reduction target of 2% compared to the 2019 electricity consumption prediction, which equates to an annual consumption of 6,452 MWh, has been set. An increase in production is expected in 2019 and therefore, the target has been adjusted to ensure it remains achievable whilst also challenging.
- 2.2.6. BAE Glascoed is in the process of developing proposals for a Combined Heat and Power ("CHP") plant. This project is in its infancy; however, a CHP plant would integrate the production of usable heat and power (electricity) in one single, highly efficient process.
- 2.2.7. 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 7% in 2018 compared to 2017 performance. The target of 7% was established due to the identification and repair of a significant water leak in 2017 resulting in a lower base load expected in 2018.
- 2.3.2. The following strategies were implemented during 2018 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 8 years is shown below in Figure 3, together with the target of 41,644 m³.

Figure 3: BAE Glascoed Water Consumption – 2011- 2018



- 2.3.4. The data in Figure 3 shows BAE Glascoed did not meet the 2018 target. The observed water consumption in 2018 of 47,261m³ compared to 44,779m³ in 2017 demonstrates an increase of 5.5%.
- 2.3.5. Water leaks in 2018 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 realistic but still challenging target of a 2% reduction compared to 2018 consumption has been set for 2019. This equates to an annual consumption of 46,316m³ in 2019.

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 2018 related to gas, electricity and water consumption, aiming to achieve a reduction of 3% for gas and electricity and 7% for water in comparison to 2017 performance.
 - 3.1.1. BAE Glascoed successfully achieved two of the set KPIs for 2018 related to a 3% reduction in gas and electricity consumption. This was due to the implementation of on-going energy strategies, such as the installation of steam meters integrated into the Building Management System to identify potential targeted energy saving projects and also the installation of energy efficient lighting as identified by metered data.
 - 3.1.2. It should also be noted that BAE Glascoed is in the process of developing proposals for a CHP plant which would integrate the production of usable heat and power (electricity) in one single, highly efficient process.
 - 3.1.3. Unfortunately, BAE Glascoed was 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.
 - 3.1.4. Following evaluation of the performance in 2018, new KPIs have been set for 2019. A reduction of 2% has been set for gas and electricity consumption against the 2019 forecast to take account of the predicted increase in production, whilst a reduction of 2% has been set for water consumption compared to 2018 performance.