



# Glenair

## *Energy Savings Opportunity Scheme Compliance Report*

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# Contents

|   |           |
|---|-----------|
| <b>CONTENTS.....</b>                                    | <b>1</b>  |
| <b>ESOS COMPLIANCE SUMMARY .....</b>                    | <b>3</b>  |
| Director Level Sign Off .....                           | 5         |
| <b>ESOS COMPLIANCE REPORT.....</b>                      | <b>6</b>  |
| Total Energy Consumption - Reference period.....        | 6         |
| Energy Saving Opportunities – Building Key Points ..... | 8         |
| Organisational Energy Management - Key Points .....     | 9         |
| ESOS Compliance Next Steps .....                        | 9         |
| <b>ESOS NOTIFICATION .....</b>                          | <b>10</b> |
| <b>APPENDIX – NOTES.....</b>                            | <b>14</b> |



# ESOS Compliance Summary

This summary has been produced to aid in the dissemination of information within Glenair UK Limited and to achieve sign off on the Energy Savings Opportunities Scheme (ESOS) compliance activity. The summary and its contents should be reviewed by the relevant Board level Director who should sign off on the statements regarding compliance required by the Environment Agency.

## Energy Saving Opportunity Scheme (ESOS)

ESOS is mandatory for UK organisations with over 250 employees. Organisations included within ESOS:

- Need to measure total energy consumption (including buildings, transport and any industrial processes). At least 90% of total energy consumption must be surveyed;
- A board level director must review the ESOS report;
- The organisation must notify the Environment Agency of compliance by the stated deadline: December 5<sup>th</sup> 2019.

## Total Energy Consumption

Glenair's Total Energy Consumption (TEC) for the 2018 reference period is set out in summary in Table 1. Over 93% of the organisation's Total Energy Consumption (TEC) is from buildings with electricity at 67.4% and gas 25.9%.

**Table 1 ESOS Total Energy Consumption and conversion units**

|              | Consumption | Units  | GJ              | %     |
|--------------|-------------|--------|-----------------|-------|
| Electricity  | 2,055,136.8 | kWh    | 7,398.5         | 67.4% |
| Gas          | 790,007.2   | kWh    | 2,844.0         | 25.9% |
| Petrol       | 7,025.8     | litres | 242.0           | 2.2%  |
| Diesel       | 12,956.2    | litres | 494.6           | 4.5%  |
| <b>Total</b> |             |        | <b>10,979.1</b> |       |

## Significant Energy Consumption Assessed

The process has not excluded any energy sources. This means that significant energy consumption covered is 100% of the total consumption.

Calculating the TEC as set out in Table 1 identified the organisation's buildings as the main energy consumers.

## Energy Survey Methodology

The energy surveys have been undertaken in accordance with principles set out in ISO 16247. The energy survey methodology, set out below, has been shaped in accordance to the organisation's particular details and future aspirations for energy efficiency and energy management.

### Energy Survey Scope and Boundary

At the ESOS project kick off a review of the organisation's operations was undertaken. The energy consumption of the buildings was discussed and the energy surveying was decided to focus on them. Business Transport was also discussed but a detailed survey was not undertaken because of the organisation's current approach and management of business travel and the relatively small component it is of the total energy consumption.

## Energy Saving Opportunities

The following two tables summarises the key Energy Saving Opportunities (ESO) that could help reduce demands and manage energy consumption. The table includes an indication of the potential financial return that relevant projects could generate; more detail on all of these ESOs is contained in the body of the report and simple IRR assessments are in the appendix.



**Table 2 Recommended energy saving opportunities**

| Energy Saving Opportunity (ESO)  | Capital cost    | Annual Cost savings | Payback    | IRR                      |
|--|-----------------|---------------------|------------|--------------------------|
| Reduce capacity charge threshold on electrical billing contract to just above actual peak demand.                    | £0              | £5,404              | 0.0        | N/A                      |
| Improve energy management process and staff communication with clear roles and targets                               | £30,000         | £0                  | 0.0        | N/A                      |
| Investigate overnight energy consumption and put in place measures to switch off and reduce consumption              | £0              | £2,199              | 0.0        | N/A                      |
| Instigate heating and cooling controls/guidelines to reduce energy wastage and simultaneous heating/cooling          | £5,500          | £5,395              | 1.0        | N/A                      |
| Improve control of lighting out of core hours of operation - Phase 3 Production                                      | £0              | £701                | 0.0        | N/A                      |
| Improve control of lighting out of core hours of operation - Phase 1,2, 2.5 Production                               | £0              | £486                | 0.0        | N/A                      |
| Replace all fluorescent lighting with LED alternative - Phase 3 Production   | £10,050         | £2,683              | 3.7        | 40.3 %<br>- see appendix |
| Replace all fluorescent lighting with LED alternative - Phase 3 Office, Canteen and Lab                              | £2,610          | £553                | 4.7        |                          |
| Replace all fluorescent lighting with LED alternative - Phase 1,2,2.5 Production                                     | £7,200          | £1,962              | 3.7        |                          |
| Develop a programme to replace and upgrade air conditioning units to improve efficiency and reduce maintenance costs | £80,000         | £7,464              | 10.7       | 9.9%                     |
| Install Solar PV on all owned buildings  | £375,000        | £52,194             | 7.2        | 15.2%                    |
| Develop site wide heat and power network as part of new development  | £938,105        | £128,712            | 7.3        | 9.7%                     |
|  |                 |                     |            |                          |
| <b>Total - Energy efficiency projects</b>  | <b>£135,360</b> | <b>£26,846</b>      | <b>5.0</b> | <b>-</b>                 |
| <b>Total - Renewable and low carbon energy projects</b>  | <b>£938,105</b> | <b>£128,712</b>     | <b>7.3</b> | <b>9.7%</b>              |

It is estimated that the cost savings through the implementation of the identified low and no cost energy management measures would amount to a potential saving of £26,846 per year or approximately 10% of the utility costs with a 5.0 year payback.

The deployment of renewable and low carbon energy and heat technologies could deliver an income of as much as £128,712 (48% of annual energy costs) with a payback of 7.3 years.



## Transport Energy Saving Opportunities

Glenair staff business mileage is not closely monitored and it is not a priority management area for the organisation. However, future energy management work should consider vehicle fuel use and measures to avoid travel, utilise public transport modes, move to more efficient vehicle operation with lower emissions.

## Director Level Sign Off

I can confirm that:

- I have reviewed the recommendations of your organisation's ESOS assessment.
- I am satisfied, to the best of my knowledge that the organisation is within the scope of the scheme.
- I am satisfied, to the best of my knowledge, that the organisation is compliant with the scheme.
- I am satisfied, to the best of my knowledge, that the information provided in the organisation's notification is correct.

| Name | Position | Signature | Date |
|------|----------|-----------|------|
|      |          |           |      |

## ESOS Lead Assessor Sign Off

This compliance report and associated digital folder have been produced to complete Glenair UK Ltd's compliance with the ESOS energy efficiency regulation and the below digital signature confirms that the following information is recorded in Glenair ESOS evidence pack:

- Details of the method(s) used, verifiable data energy consumption and any estimation made.
- Details of the extent and the reasons why 12 months of verifiable data was not used.
- Copy of energy survey report(s), and relevant additional information with regards to methodology and data analysis.

| Name                | Organisation            | ESOS Lead Assessor No. | Date                       |
|---------------------|-------------------------|------------------------|----------------------------|
| Oliver Ingwall King | International Workplace | LCC 167916             | 10 <sup>th</sup> June 2019 |

# ESOS Compliance Report

This report presents the main information related to Glenair's compliance with the Energy Savings Opportunities Scheme (ESOS). The report provides background on ESOS, the Route to Compliance, the organisations Total Energy Consumption and Assessed Significant Energy Consumption, the Energy Survey Sampling Methodology and the Energy Saving Opportunities applicable to the offices as well as retail and transportation activities.

## Energy Saving Opportunity Scheme (ESOS)

ESOS is mandatory for UK organisations with over 250 employees, or which have an annual turnover of 50m Euros and a balance sheet greater than 43m Euros. Organisations included in the scope of ESOS will be those that meet these criteria on 31 December 2018. Organisations included within ESOS:

- Need to measure total energy consumption (including buildings, transport and any industrial processes).
- At least 90% of total energy consumption must be covered by: ESOS compliant energy audits, Display Energy Certificates (DECs), Green Deal Assessments, or an ISO 50001 accredited energy management system.
- ESOS assessments must be conducted or reviewed by a qualified ESOS Lead Assessor.
- A board level director must review the ESOS report.
- The organisation must notify the Environment Agency of compliance with the scheme and maintain a compliance pack demonstrating the ESOS activities carried out (to be presented upon request).
- Submit ESOS returns on 5 December. ESOS will work on four yearly cycles following the initial implementation of the regulations so the next compliance period will be from 2015-2019 and so forth.

## ESOS Compliance Route

Glenair does not currently have a certified ISO 50001 energy management system in place but has a quality management processes in place that includes environmental management. This is not a formal or externally audited management process but issues and options for improvement are discussed at management level.

## Total Energy Consumption - *Reference period*

Glenair occupy four buildings on the Oakham Business Park with a fifth (Phase 6) due to come online within the year. Details of the energy supply arrangements and consumption were provided for the three sites.

Over 93% of the organisation' Total Energy Consumption (TEC) is from buildings with electricity at 67.4% and gas 25.9%.

The reference period has been set as 2018 calendar year and no building energy data has been estimated.

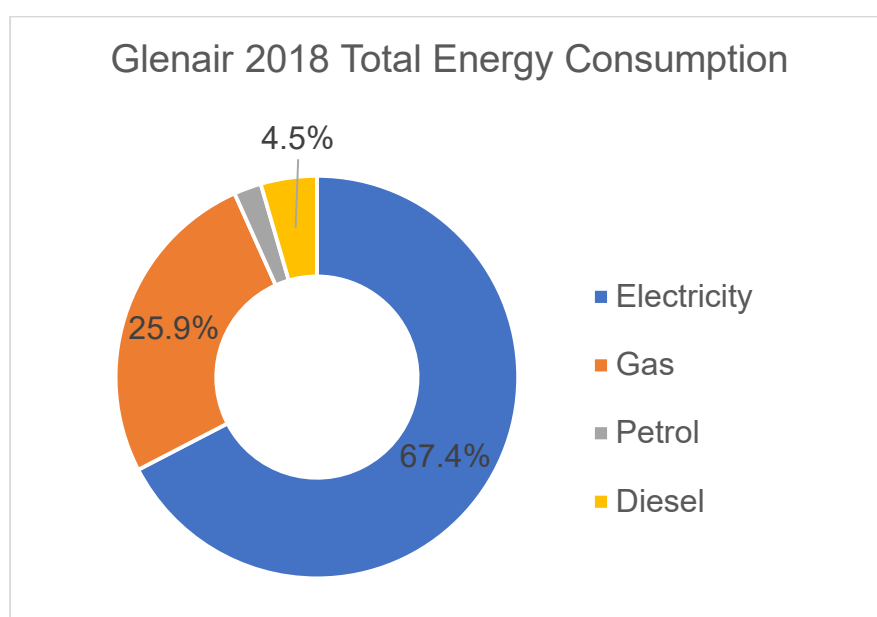
Transport energy comprises grey fleet business miles. Litres of fuel have been calculated based upon the average diesel/petrol price for 2018.



Utilising this information, it has been possible to establish the total energy consumption of the organisation, see Table 5 and shown in Figure 2 on the following page.

**Table3 Total Energy Consumption in detail**

|                           | Consumption | Units         | Conversion factor <sup>i</sup> | Definition          | GJ/t  | GJ              | %             |
|---------------------------|-------------|---------------|--------------------------------|---------------------|-------|-----------------|---------------|
| <b>Fuel</b>               |             | <b>litres</b> |                                | <b>Litres/tonne</b> |       |                 |               |
| Electricity <sup>ii</sup> | 2,055,136.8 | kWh           | 0.0036                         | kWh/Gj              |       | 7,398.5         | 67.4%         |
| Gas <sup>iii</sup>        | 790,007.2   | kWh           | 0.0036                         | KWh/Gj              |       | 2,844.0         | 25.9%         |
| Petrol                    | 7,025.8     | litres        | 1340.3                         | Litres/tonne        | 46.16 | 242.0           | 2.2%          |
| Diesel                    | 12,956.2    | litres        | 1192.0                         | Litres/tonne        | 45.50 | 494.6           | 4.5%          |
| <b>Total</b>              |             |               |                                |                     |       | <b>10,979.1</b> | <b>100.0%</b> |



**Figure 1 Shows the % energy split for the organisation in 2018**

### Significant Energy Consumption

The process has not excluded any energy sources. This means that significant energy consumption covered is 100% of the total consumption.

Calculating the TEC as set out in Table 3 identified the organisation's buildings as the main energy consumers.

### Energy Survey Methodology

The energy surveys have been undertaken in accordance with principles set out in ISO 16247. The energy survey methodology, set out below, has been shaped in accordance to the organisation's particular details and future aspirations for energy efficiency and energy management.

#### Energy Survey Scope and Boundary

The ESOS project kick off began with a briefing of the company, their environmental management work and the previous ESOS work and energy surveying that has been undertaken. The key issues





for the energy survey scope and boundary and determination of energy saving opportunities listed were:

- The organisation is operating profitably in a market with limited competitors and does not currently report publicly.
- The organisation is looking to expand and develop a new site in close proximity to the current buildings.
- Energy efficiency is being implemented as new developments and refurbishment projects are implemented.
- The organisation has issues in managing and controlling energy consumption and has installed a lot of direct expansion air conditioning heating/cooling units.

#### Building Energy Survey

Energy surveys were undertaken at the five buildings on the business park in Mansfield. These are five buildings with a sixth due to be occupied later this year.

Building energy surveys were undertaken to deliver data in accordance with BS EN 16247. An initial meeting was held with the primary contact to review energy data and details of the relevant sites including historical activities to refurbish or improve the energy efficiency of the sites.

The on-site energy survey procedure included the following stages:

- Preliminary contact to begin data gathering process including establishing sites and energy supply arrangements;
- Energy survey process – start up meeting held with the Primary Contact;
- Data analysis – supported by wider ESOS data analysis;
- Evaluation of energy consumption performance – as relevant to organisation and energy data;
- Identifying energy saving opportunities – including cost/benefit;
- Energy report for the main site;
- Final telephone meeting.

Energy surveys collected relevant information from, as far as was practicable, the main energy consuming plant and equipment and its operation. This information was utilised to develop the profile charts and energy data analysis.

#### Building Energy Data

Building energy data has been provided for the reference year as monthly information per site. The monthly energy data has been utilised to undertake chronological profiling and normalisation. The energy consumption data was double checked against billing to ensure accuracy.

#### Transport Energy Data

The transport data provided was petrol and diesel cost information from the organisation's accounting system. The information was then converted to energy units using average cost assumptions (£/litre) on diesel and petrol.

#### Measuring the benefits of energy saving opportunities

The cost/benefit information provided in the energy survey reports is based upon good practice guidance information and industry data on the performance of energy efficient technologies. The ESO have utilised simple payback for the energy management opportunities and IRR over a 10-20 year periods to illustrate the return on investment.

### **Energy Saving Opportunities – Building Key Points**

Using the data gathered on site it has been possible to determine the key energy saving opportunities that can be applied to the buildings. Key points noted from the energy surveys of buildings were:

- The amount of energy used on site out of hours should be investigated with a project to ensure that things are switched off and better controlled when the buildings are not occupied. This is an easy way to reduce consumption and should be prioritised.





- The company needs to reflect on its energy consumption, future energy costs and risks and then agree its energy management approach for the next 2 years.
- There are a number of low/no cost energy saving opportunities that will be easily implemented once agreed and resourced that could save 10% of annual energy costs.
- Glenair should see energy management and low and zero carbon energy as an investment opportunity that will provide the organisation with positive returns on investment.

Full details of the energy saving opportunities can be found in the appropriate energy survey report. It is estimated that the cost savings through the implementation of the identified low and no cost energy management measures would amount to a potential saving of £26,846 per year or approximately 10% of the utility costs with a 5.0 year payback.

The deployment of renewable and low carbon energy and heat technologies could deliver an income of as much as £128,712 (48% of annual energy costs) with a payback of 7.3 years.

### **Organisational Energy Management - Key Points**

The priority should be to establish the Glenair's ambition for energy management. The company should consider the following:

- Is aspiring to achieve a 10% energy saving over the next two years achievable or is this too stretching a challenge compared to other company priorities?
- Is a potential £50,000/year increase in electricity costs in the next five years a concern, will this impact on profitability/competitiveness?
- Could Glenair make capital provision to invest in energy projects if they will achieve a specific hurdle rate? If Glenair can make more money from solar photovoltaic systems or LED lighting than another investment, could Glenair ensure funds are available for such projects?
- Could improving energy management and reducing greenhouse gas emissions have other benefits for the business? Other companies state that performance in these areas affects staff retention, provides a competitive advantage and improves company image.

Once these issues have been discussed, Glenair should decide on their preferred approach to energy management and ensure it is resourced properly. Although switch off projects are no cost and easy, they do require a lot of effort from the project lead and their success rests on the support of the organisation from CEO to cleaner.

It is recommended that Glenair agree a plan, targets, resources for a 2 year campaign and commit to providing the required support. If done correctly, the company will save money and energy and greenhouse gas emissions. The lessons learnt and progress made will then inform the decisions about how to progress from two to five years and five to ten years.

### **ESOS Compliance Next Steps**

This report and the data provided in the digital file supporting this report should be stored in a suitable location in the event that the Environment Agency requests to audit the organisation's compliance.

A signed copy of the Directors Declaration shown in the ESOS Summary of this document must be retained.

## ESOS Notification

This section sets out the required Notification information by the Environment Agency for compliance with the Energy Saving Opportunity Scheme.

You can access the notification by clicking the link here - <https://en0044a.snapsurveys.com/siam/surveylanding/interviewer.asp>.

The link is also available from this webpage - <https://www.gov.uk/guidance/energy-savings-opportunity-scheme-esos#submit-your-esos-notification-of-compliance>

### **Q1 Registered name of the organisation \***

Glenair UK Limited

### **Q2 Trading name or other name by which your UK organisation is commonly known \***

Glenair

### **Q3 Is your UK organisation registered at Companies House? \***

Yes - 01198102

### **Q4 Which of the following statements applies as to why your organisation is submitting this notification? \***

Our organisation qualifies for ESOS and is therefore required to comply with the ESOS regulations

### **Q5 Sector that your organisation belongs to \***

C – Manufacturing

### **Q6 Is the ESOS notification on behalf of a franchise group? \***

No, we are not a franchisor or franchisee

### **Q7 Is the ESOS notification on behalf of a trust for which the UK organisation making this notification is responsible? \***

No

### **Q8 Registered office or principal place of activity (where no registered office exists) of the UK organisation making this notification \***

Glenair, 40 Lower Oakham Way, Oakham Business Park, Mansfield, NG18 5BY

### **Q9 Location of registered office or principal place of activity \***

England

### **Q10 Do you have an overseas global parent company? \***

Yes we do



**Q13 Details of the individual who is the primary contact regarding details submitted in this notification \***

Gordon Hartley, European Group Quality Assurance Manager – [ghartley@glenair.co.uk](mailto:ghartley@glenair.co.uk), +44 (0) 1623 638 100

**Q14 Primary contact address \***

Same address as the registered office or principal place of activity (where no registered office exists)

**Q15 Details of the individual who is the secondary contact regarding details submitted in this notification**

Sara Johns, [SJohns@glenair.co.uk](mailto:SJohns@glenair.co.uk)

**Q16 Secondary contact address**

Same as the address of the primary contact

**Q17 Contact details (for general information queries to your organisation) \***

[sales@glenair.co.uk](mailto:sales@glenair.co.uk) and +44 (0) 1623 638 100

**Q18 Number of UK organisations (i.e. legal entities) that this notification covers? \***

Just one UK organisation

**Q19 Have any UK organisations ceased to be part of your group since the qualification date, 31 December 2014? \***

No

**Q21 Are you the highest UK parent company in your group or does this notification include the highest UK parent for your group? \***

Yes, this notification covers the highest UK parent company in the group

**Q22 Are there any UK organisations (i.e. legal entities) which are part of your group that have decided to make separate notifications for ESOS compliance purposes? \***

No

**Q23 How many highest UK parent companies in the group are covered by this notification?\***

Just one highest UK parent company in the group (you will jump to Q25)

**Q25 Are you responsible for any energy under ESOS? \* (See Section 3.3 to 3.5 for details of the energy you need to consider)**

Yes (you will jump to Q30)

**Q30 To what extent are the UK organisations/sites/energy supplies in this ESOS notification covered by ISO 50001? \***

None of the UK organisations/sites/energy supplies in this ESOS notification are covered by ISO 50001



**Q31 Details of the Lead Assessor who has signed off your ESOS assessment \* Lead Assessor Email address**

Oliver Ingwall King, loveeco@alskaeco.org

**Q32 Professional body or approved register of which the lead assessor is a member \* Lead Assessor body Membership number**

Chartered Institute of Building Service Engineers (CIBSE), LCC 167916

**Q33 Has your Lead Assessor determined that your assessment meets the requirements of ESOS \***

Yes

**Q34 Enter the percentage of your total energy consumption that is covered by each of the following ESOS compliance routes or included in the ESOS de minimis \***

You must enter a percentage figure in the first 5 boxes. Enter 0% where you have not used that method of compliance. The total figure in the 6th box must add up to 100%.

| ISO 50001                                | 0   | % |
|--|-----|---|
| Display Energy Certificate               | 0   | % |
| Green Deal Assessment                    | 0   | % |
| Energy audits compliant with ESOS        | 100 | % |
| Not audited (de minimis) ( $\leq 10\%$ ) | 0   | % |
| Total                                    | 100 | % |

**Q35 Did you have to estimate any of the data to calculate your total energy consumption or energy spend? (i.e. you didn't have 12 months actual data for all supplies) \***

Yes

**Q36 Confirmation that the following information is recorded in your ESOS evidence pack - Details of the method(s) used and the extent to which, and the reasons why, verifiable data was not used \***

I confirm that these are all recorded in our ESOS evidence pack

**Q37 Did you use 12 months verifiable data for the purpose of all your ESOS energy audit(s)?\***

Yes (you will not answer Q38)

**Q39 Did you use energy consumption profiling for the purpose of analyzing your energy consumption for all your ESOS energy audit(s)? \***

Yes (you will not answer Q40)

**Q40 Confirmation that the following information is recorded in your ESOS evidence pack -**

I confirm that these are all recorded in our ESOS evidence pack

**Q41 Confirm that a board director (or, in the absence of a board director, an individual with management control) –**



To be completed once the final information has been reviewed (tick boxes)

- has reviewed the recommendations of your organisation's ESOS assessment or alternative routes to compliance (e.g. ISO 50001)
- is satisfied, to the best of their knowledge, that the organisation is within the scope of the scheme
- is satisfied, to the best of their knowledge, that the organisation is compliant with the scheme
- is satisfied, to the best of their knowledge, that the information provided in this notification is correct

Note that leaving any of the above boxes unticked means that you are non-compliant with the requirements of ESOS. We recommend that you keep a record of any evidence to support any omission in your ESOS evidence pack.

**Q42 Contact details for the board director (or, in the absence of a board director, an individual with management control) who has confirmed the points above \***

Gordon Hartley

**Q43 Board director address \***

Same as the address of the primary contact

**Q44 ESOS Assessment recommendations were reviewed by the board director above \***

**Contents of this report and the subsequent suggested actions have been evaluated during the June management meeting and those which will be taken forward will be added to the organisation continuous Sustainable Improvement Plan also known as CSIP**

**Q45 Was your Lead Assessor internal or external to your organisational group? \***

External (you will jump to the 'Voluntary Questions' page)

## Appendix – Notes

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### **Total Energy Consumption**

All data relating to energy, calculations and estimations is contained in the ESOS Energy Data Folder.

i **Conversion of energy units** have utilised the Government conversion factors for company reporting to help you measure energy consumption in common units

ii **Electricity consumption** – this has utilised AMR data accessible from online portal. Electricity cost is based upon new unit price of £0.13/kWh.

iii **Gas consumption** – this has utilised AMR data accessible from online portal. Gas cost is based upon new unit price of £0.018/kWh.