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MARK THROWER MANAGING EDITOR



SERIES 13 | MODULE 03 | ESOS

# Complying with the Energy Savings Opportunity Scheme

Mervyn Bowden, MD at Intuitive Energy Solutions Ltd & Director at Empirical Energy Ltd

The ESOS scheme was borne out of Article 8 of the EU's 2012 Energy Efficiency Directive and, enshrined in UK law, is now a mandatory scheme for qualifying organisations. Enforced by the Environment Agency and its equivalents in Scotland and Northern Ireland, there are numerous potential penalties applicable to organisations which either fail to submit or submit late key documents and/or evidence of actions.

All detail on the contents of the scheme has been taken from the gov.uk website (which also serves as the DECC/EA website): latest guidance is from a document entitled “Comply With ESOS” issued on the 17th February 2015.<sup>1</sup> This supersedes the previous guidance issued by DECC in June 2014.

Additionally DECC have issued further guidance (not mandatory elements) on 27th March 2015. This contains many useful examples of audit methodologies.<sup>2</sup>

Its overall objective is to ensure that directors/senior managers of “large undertakings” are aware of energy saving opportunities with a view to future implementation (which is not currently mandatory) and informed by an appropriate audit-based management system.

It's worth noting that measures being implemented in individual EU member states to meet the Energy Efficiency Directive's requirements vary in both content and timescale. An update on current status is available.<sup>3</sup>

The Department of Energy & Climate change hope that the regulations will save energy worth some £1.6bn and that where organisations do not meet the governing size criteria for qualification they will still adopt the thinking and methodology behind the scheme as observing good business practice. ESOS will also assist in progress towards the 20 per cent reduction target the EU has for 2020.

A theme which runs through the regulations is the need to document and produce evidence for key data used, decisions taken and provide records of conversations and outcomes from



meetings. This means that an Evidence Pack, with all the suggested topics covered, as recommended by the ESOS Guide plus others specific to individual circumstances, should be established at an early stage and be managed jointly by the client/participant organisation and their Lead Assessor. More on this as we progress through the regulations.

It's estimated that between 9-10,000 organisations will have been subject to this scheme on the qualification date of 31st December 2014. This figure has been estimated as the configuration of some organisations is constantly changing and the figure for qualification will continue to change during the life of the scheme.

Essentially those who have qualified will be “large undertakings” which carry out a trade or business and have more than 250 employees; organisations can still qualify where they have less than 250 employees but a turnover of over €50m and a balance sheet of over €43m. (These figures need to be converted at €1.2841/£ which was the prevailing spot rate on 31st December

2014 giving turnover as £38,937,777 and balance sheet of £33,486,489).

## Detailed payroll guidelines

There are detailed guidelines on how the 250 employees should be determined, including payroll employees of UK companies based overseas.

It's important to note that the figures constituting a “large undertaking” will need to be maintained for two successive accounting periods (for organisations which are growing or contracting for any reason) which usually means financial years.

The EU has also adopted the above definition for “large undertaking” however there are, as always, some differences of interpretation.

Any significant differences between Member States are likely to result in challenges by the other states based around unfair competitive advantage, whereby any measures which reduce the cost in one Member State are likely to be seen as benefiting them at the expense of

others' competitive position.

The scheme includes "not for profit" organisations and stipulates that where there are groups of companies that the group as a whole will qualify if any individual company meets the "large undertaking" criterion.

The rules allow organisations with diverse operations, perhaps where part of a group is involved in manufacturing and another in retail, to "disaggregate" these different parts for the purposes of ESOS processes (though not to mitigate compliance or qualification).

Special rules apply to universities dependent on whether they receive the bulk of their funding through private fees.

As a general point organisations within the public sector are excluded from ESOS.

Any organisations which are in any doubt about whether they qualify for ESOS - they should have already determined this by 31st December 2014 - should contact the Environment Agency with their details and request a view on qualification from them.

The Environment Agency's help e-mail facility has, from wide feedback received, been very helpful and timely in responding to queries.<sup>4</sup>

### Make steps to compliance

The scheme covers energy used by buildings, industrial processes and transport within the control of the organisations in the United Kingdom.

Companies should, by now, have identified whether they qualify for ESOS and should be taking the requisite steps towards compliance.

The scheme is aimed at identifying energy saving opportunities within United Kingdom operations only - operations in other parts of the EU will be managed in their respective member state under that state's rules; operations in other parts of the world are effectively excluded but may be used as good business practice and to achieve commonality of systems and processes.

It may be appropriate at this early stage to consider drafting an ESOS plan which features all the key elements of the requirements, who will be addressing them and what costs will look like, to form the basis for the required ongoing Evidence Pack which needs to capture and evidence the key actions, rationales for decisions made, sources of data, people involved, audits undertaken, company structures, building portfolios, etc.

For large and complex organisations the scope and scale of information involved will most likely mean that the Evidence Pack is itself organised in such a way that it will demonstrate all the key issues underpinning compliance.

It also needs to be sufficiently intuitive to outlive any churn of personnel, and particularly the Lead Assessor, during the life of the scheme.

Organisations are required to retain records for a minimum of two compliance periods, meaning a likelihood of eight to 12 years or longer.

There are defined processes which need to be followed once an organisation determines that it qualifies under ESOS.

If an organisation has fully certified ISO50001 for its buildings, industrial processes and transport operations it will be deemed to be compliant with ESOS as the requirements are largely covered by the systems and processes required to be initiated and maintained under the ISO standard. Equally, some organisations may be able to evidence compliance by virtue of holding up-to-date Display Energy Certificates or Green Deal Assessments, though these will be restricted to the building and building services elements so will not usually be suitable for those with industrial processes or transport.

Those parts of an organisation not covered by the above will need to be subject to an ESOS assessment, in many it will mean the whole organisation is subject to ESOS assessment.

The initial stage is to identify the Total Energy Consumption for an organisation. By definition this will mean all energy

used in buildings, industrial processes and transport.

It is permissible to use financial information, from energy/fuel invoices, to help identify Total Energy Consumption. A range of energy units can be used to identify consumption however it should be noted that financial information cannot be used as the basis for ESOS compliant audits - more on this later.

The guidelines specify that the Total Energy Consumption should be calculated over a "Reference Period" - a continuous period of 12 months which must include, and overlap with, the 31st December 2014.

They also allow for a de minimus figure of up to 10 per cent of total energy consumption which an organisation may decide it will disregard for ESOS purposes.

The next stage is to identify its areas of significant energy consumption. For many organisations this may be quite straightforward, for example those occupying standard office premises may have to consider a relatively small number of key elements such as heating, cooling, lighting, I.T. and lifts, whereas some industrial applications will be far more complex.

It is worth considering at this point that landlords need wherever possible to identify any "unconsumed energy" for example that which is used by their tenants and may be unmetered or

charged out on a square-area-occupied basis. Where no metering exists, landlords and tenants may need to agree a reasonable split and document the rationale used within their respective evidence packs. If this isn't done it's likely that the landlord will need to account for the energy used by the tenant(s).

Organisations are required to understand their significant areas of energy consumption which in turn will enable them to identify a list of energy saving opportunities.

### Appropriate audit standards

There are suggestions as to the types of audits standards which may be appropriate for use in different environments and situations.

For fairly straightforward building services this may mean using ISO50002 or BS EN 16247.

Audits must be compliant with ESOS requirements in respect of the data they use - 12 months continuous verifiable data, which should not start before 06/12/2011 (the start of the compliance period). These measures are aimed at ensuring data used is as current and as accurate as possible. Data used for audits shouldn't be more than two years old at the start of the audit.

Where audits, or indeed the base data, are non-compliant it may be possible to "refresh" them to bring them into



compliance.

It is suggested that use of data from other schemes, such as the Carbon Reduction Commitment, GHG, GDA, Carbon Trust Standard, can be used as appropriate to help prevent duplication of effort. Similarly Display Energy Certificates or Green Deal assessments may have already identified some worthwhile energy saving opportunities.

Appointing a suitable Lead Assessor is the next step; though more enlightened organisations may well have chosen to involve one right at the outset of the process. There is the option of employing a Lead Assessor within an organisation, this person would normally be a suitably qualified energy manager/head of energy management or there is the option to use an external, consultancy-based, individual. For both there is a heavy focus on energy auditing experience aligned to a range of other technical and managerial skills.

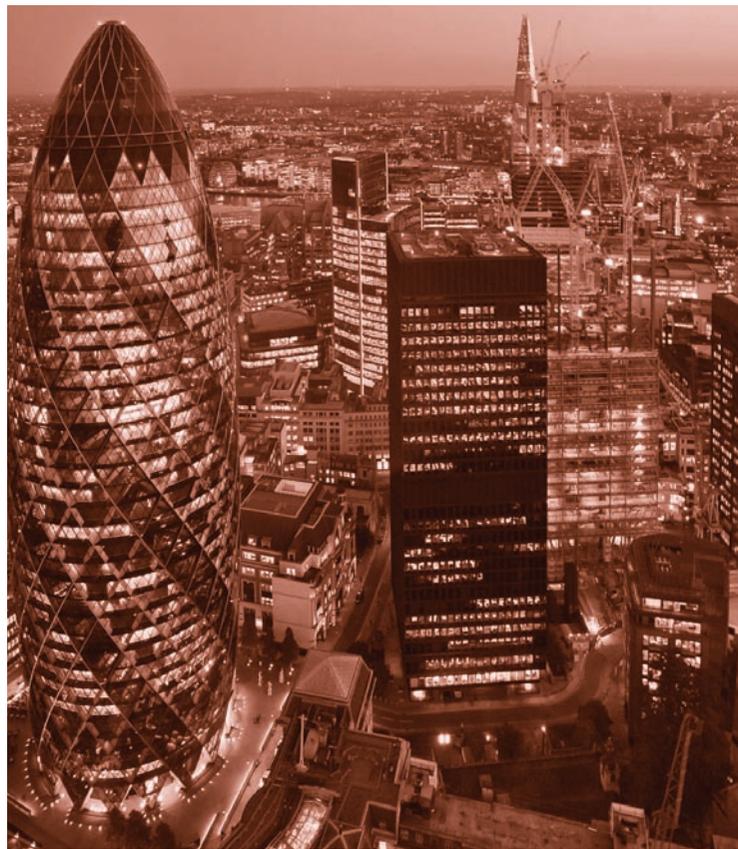
The chosen person will need to be on a register with an Environment Agency-approved professional body. These bodies, and their registers of individual consultants, can be found via a link on the ESOS website.

The professional bodies will have had to meet the requirements of the Publicly Available Specification (PAS) 51215:2014 which deals with the assessment of energy efficiency and the required competences of Lead Assessors.

### Understand responsibility

It's important to have a good, clear understanding of who is responsible for doing what, especially between the client/participant and the Lead Assessor. In the main, the client retains ownership of areas which require decisions on expenditure or long-term continuity, e.g. the number & scope of audits, the number of days a Lead Assessor is likely to be needed, maintaining the Evidence Pack, whilst the Lead Assessor is more concerned with the ongoing management of compliance – ensuring the audits are compliant and that a picture of the organisation's energy consumption is built; this along with the core task, which is to build a list of energy saving opportunities.

It has to be said that there are many areas of discretion in the management of ESOS where a good working relationship will be needed between the client/client representative and the Lead Assessor. A specific example surrounds forming a representative and proportionate view of the number of audits needed to maintain an understanding of at least 90 per cent of the client's energy consumption – this will apply particularly where there are significant numbers of buildings within a client portfolio. Similar



buildings, and "similar" can mean many things – size, hours of operation, age, geographic location – though the intention is to use clustering and selection of a representative sample based on evidence of similarities on energy consumption profile where the energy performance of one or more buildings can be used as indicative of a much wider population without the need to visit all as part of the assessment process. Many organisations will view the requirement differently and a consensus view will ultimately need to be established between the client and Lead Assessor which meets the client needs to preserve cost-effectiveness whilst delivering an accurate picture of buildings' energy performance based on the sample selected. The basis ultimately agreed on will need to be documented and the rationale used included within the evidence pack.

So what will this list of energy saving opportunities look like?

Well, it will have to be made up of items/schemes which have been costed and provide a quantifiable benefit. It may be that the energy auditor is able to provide some cost guidance or it may be necessary to engage the services of a specialist in the specific technology

or measure. Cost effectiveness is an important feature and it may be most indicative to gauge savings through Life Cycle Cost Analysis rather than Simple Cash Payback. Most organisations have access to accountants/finance specialists who can help with discount rates and Net Present Values which are parts of the calculation.

Many imagine that the list will only be about schemes requiring investment though this is absolutely not the case. For many organisations that are taking their first steps into energy efficiency there are a huge range of cost-free changes which can be made to systems and contracts which will produce significant energy-saving benefits. Equally there are many low-cost changes to maintenance frequencies and services scope which will also pay dividends. In many cases it is only once these opportunities have been captured that provision needs to be made for investment.

Some measures link all elements, e.g. changing to LED lighting will need to be costed under a Life Cycle benefit analysis as there are significant maintenance savings from not having to re-tube/re-lamp every year in addition to the actual energy cost savings – together they

produce a far better picture and scope for a robust Business Case than viewing each element in isolation.

The saving opportunities list will ultimately be informed by those carrying out audits in the clients' buildings and operations making it very important that both they and the Lead Assessor are provided with all relevant information to produce the best results.

### Length of leases

There are many links with property issues, not least the length of leases on buildings. These will often inform the level of action, or indeed investment, in potentially addressing savings opportunities.

Future plans for changes in any of the elements associated with energy consumption around the business will need to be factored in, plans for mergers, acquisitions, disposals, expanding production, running more vehicles – hopefully more energy efficient vehicles.

Having assembled the list of energy saving opportunities the next stage is to achieve sign-off by the required parties. This will always be the Lead Assessor, whether internal or external, plus an appropriate senior manager/director from the client (two if the Lead Assessor is internal).

They will be signing to say that they understand the steps which have been taken to:

- Identify the total energy consumption.
- Identify significant areas of energy consumption.

- Produce a clear list of energy saving opportunities informed by an appropriate audit regime.

- Appoint a Lead Assessor who is on an approved professional body register.

The organisation's compliance form can now be completed and submitted on-line through the Gov.UK website.

For the first compliance period it must be submitted by the 5th December 2015. As this is a mandatory scheme there are a long list of penalties associated with non- or late compliance of the key aspects – a full list is contained in the latest ESOS guidance document featured at the start of this article.

### References

- 1 <https://www.gov.uk/government/publications/comply-with-the-energy-savings-opportunity-scheme-esos>
- 2 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/416692/DECC\\_Approaches\\_to\\_ESOS\\_audits\\_guide\\_FINAL\\_20\\_03\\_15.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/416692/DECC_Approaches_to_ESOS_audits_guide_FINAL_20_03_15.pdf)
- 3 <http://www.esd-ca.eu/reports/national-implementation-reports#close>
- 4 [esos@environment-agency.gov.uk](mailto:esos@environment-agency.gov.uk)

**ESOS**

Please mark your answers on the sheet below by placing a cross in the box next to the correct answer. Only mark one box for each question. You may find it helpful to mark the answers in pencil first before filling in the final answers in ink. Once you have completed the answer sheet in ink, return it to the address below. Photocopies are acceptable.

**QUESTIONS**

**1. What is the compliance date for the 1st compliance period?**

- 05/10/2015
- 05/11/2015
- 05/12/2015
- 31/12/2014

**2. How many director signatories are required for an internal Lead Assessor compliance form submitted to the Environment Agency?**

- 0
- 1
- 2
- 3

**3. Which ISO counts as mitigating part or all of ESOS compliance?**

- 50001
- 50002
- 9001
- 14001

**4. On which date was the £/€ exchange rate set for turnover/balance sheet?**

- 31 December 2011
- 31 December 2013
- 31 December 2014
- 31 December 2015-06-15

**5. What was the exchange rate used?**

- 1
- 1.25
- 1.2841
- 1.4

**6. Over how many months should total energy consumption be calculated?**

- 3
- 6
- 9
- 12

**7. How many organisations are likely to have qualified for ESOS?**

- 500
- 1,000
- 5,000
- 10,000

**8. How many months data should be used for ESOS energy audits?**

- 3
- 6
- 9
- 12

**9. What does the abbreviation LCCA stand for?**

- Lower Carbon Cost Attribute
- Lower Cost Cycle Associated
- Life Cycle cost Analysis
- Life Cycle Carbon Aggregate

**10. Which of these is the Scottish equivalent of the Environmental Agency?**

- ESTA
- SEPA
- DECC
- EASA

Please complete your details below in block capitals

Name ..... (Mr. Mrs, Ms) .....

Business .....

Business Address .....

.....

.....

Post Code .....

email address .....

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Completed answers should be mailed to:  
**The Education Department, Energy in Buildings & Industry,**  
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