



# ESOS & Energy Opportunity Assessment Taking an Industry Approach

# ESOS & Energy Opportunity Assessment - Taking an Industry Approach

Carbon Architecture and the British Beer and Pub Association are running an industry wide ESOS compliance scheme for the UK brewing and pub industries

- Based on the InMetriks methodology
- Meets basic requirements of compliance
- Delivers comparative metrics & benchmarking
- Trends longer term performance
- Identifies significant cross industry opportunities for the uptake of energy efficiency measures
- Reduces cost of compliance and increases cost savings to businesses

# About Carbon Architecture

- We develop and implement sustainable cost saving strategies, solutions & benchmarks for energy intensive business and industry.
- Core focus is waste, energy and water efficiency solutions for the FMCG industry.

— Some partners...



# WHY DOES ESOS MATTER TO BUSINESS?

# Existing Challenges & Objectives of ESOS

## Challenges identified by the Government

- Increasing energy security risks
- Requirement to reduce greenhouse gas emissions in a cost effective manner

ESOS requires qualified entities in the UK to undertake a mandatory assessment, every four years, of **energy use** and **efficiency opportunities** across the organisation and its UK locations.

The objectives of the ESOS policy are:

1. to promote the take up of cost effective energy efficiency measures
2. whilst minimising the cost to business of complying with the mandatory auditing requirements.

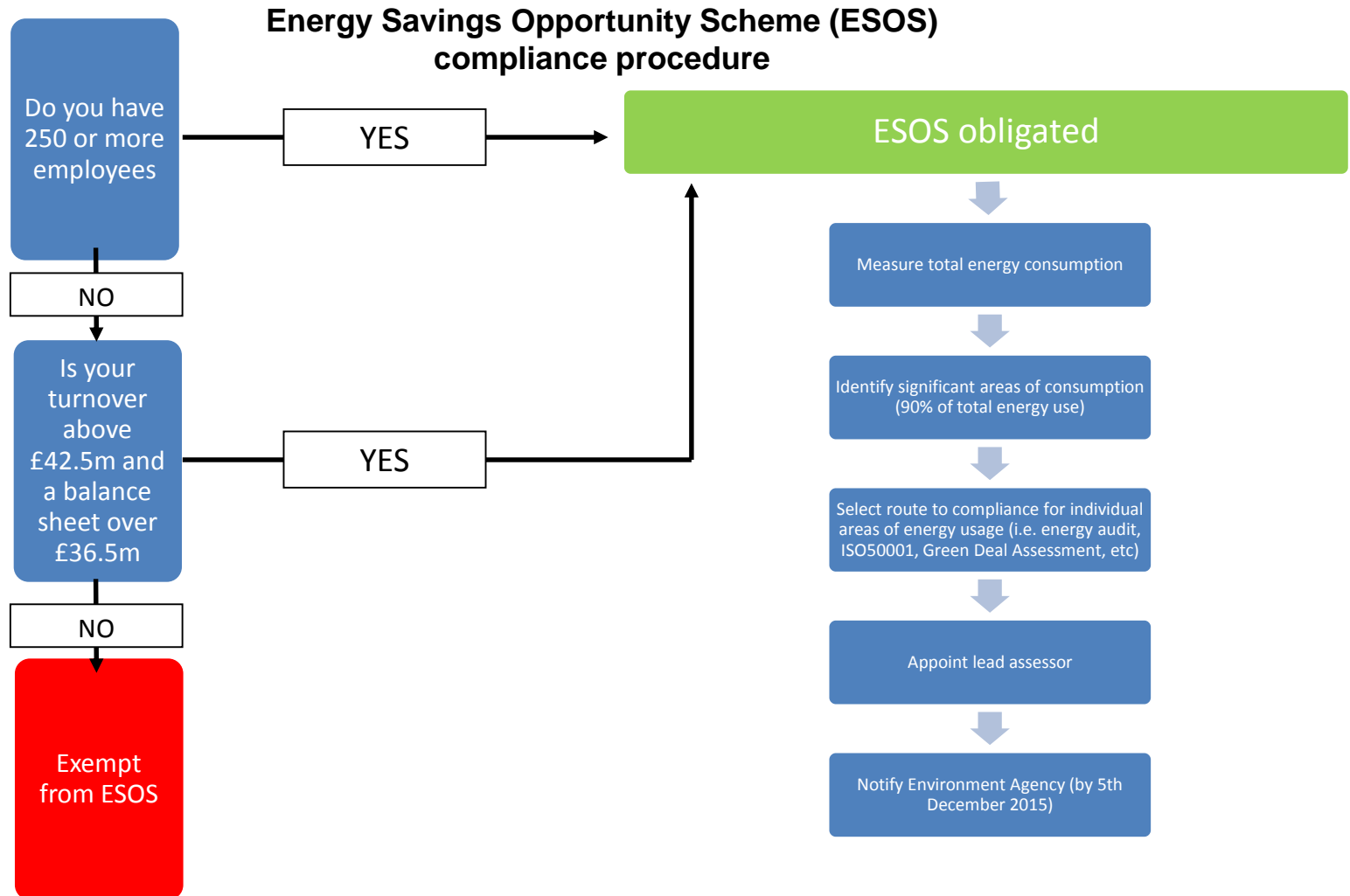
# Deadline & Penalties on Non Compliance?

Deadline date for notification to the Environment Agency is  
December 5<sup>th</sup> 2015

– Independent Audit & Submission required

- What are the penalties for non-compliance?
  - A fixed penalty of up to £5,000.
  - An additional £500 per day starting the day after non-compliance subject to 80 day maximum (£40,000)
  - Your business name published for non-compliance to the scheme.

# ESOS Overview & Compliance Procedure



# WHY THE BREWING INDUSTRY COMPLIANCE SCHEME?



# Why an Industry Compliance Scheme?

CA and BBPA identified a sector wide approach could improve ESOS outcomes for sector members

- Provide a scalable service to suit each company's specific requirements
- Reduced compliance costs
- Provide Industry and cross-industry benchmarks and comparatives

# Background - Brewing industry best practice survey

In 2010 CA was instructed by Carbon Trust and industry to run the 'Industrial Energy Efficiency Accelerator' (IEEA) programme to identify where step change reductions in energy use could be achieved in the Brewing sector.

The primary focus was on

- Energy efficiency best practice & process optimisation
- Opportunities on the horizon / the future

Key outcome - a best practice survey completed by a small number of sites in the industry.

In 2012 we fully developed the survey, ran it industry wide and used it as a basis to renegotiate the 2019/20 climate change agreement target from 27% down to 13.5%.

In 2014 we were requested to re-survey the industry in the form of **InMetriks (Best Practice) Survey**.

The main objectives were to enable a site by site and cross industry view of

- Changes in the implementation of energy efficiency measures
- A comparison between actual energy consumed and the energy efficiency measures implemented  
(The hypothesis is that the two are correlated).

This survey methodology, as previously accepted by DECC, and now called InMetriks, forms the backbone of the Brewing Industry ESOS Compliance Scheme.

# Industry Compliance Scheme Benefits

- Industry technical expertise
- Reduces complexity with an DECC acknowledged InMetriks energy survey framework
- Reduces cost of compliance
- Flexibility in amount of client input
- Milestones to manage submission on time.
- Approved lead assessors experienced in the industry sector.
- Partnership with accreditation bodies to provide approved lead assessors with guaranteed experience in your sector.
- Industry and cross-industry benchmarks and comparatives
- Provides tailored information about making cost-effective savings.

# HOW WILL THIS BE ACHIEVED?

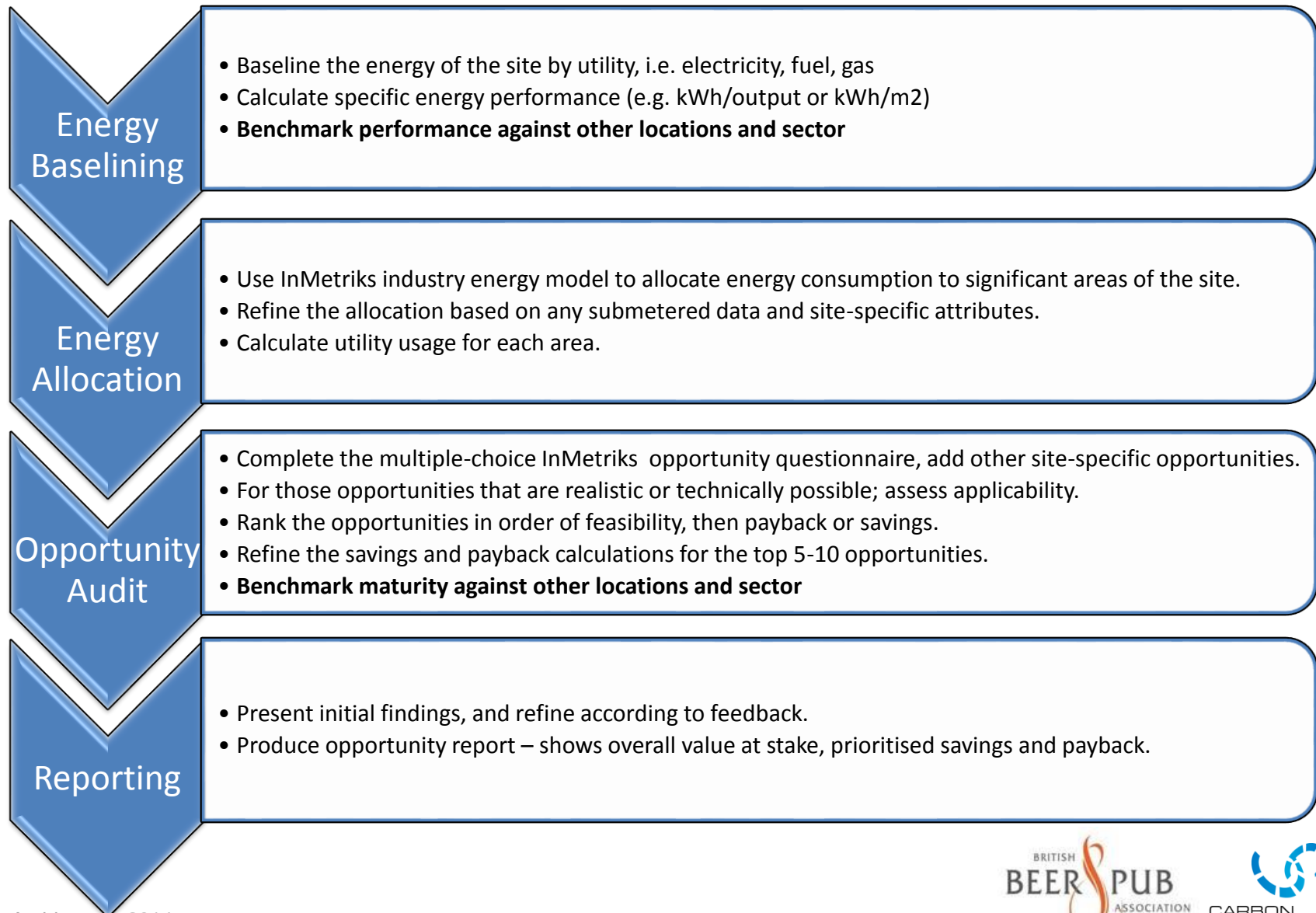
# Phased approach to compliance



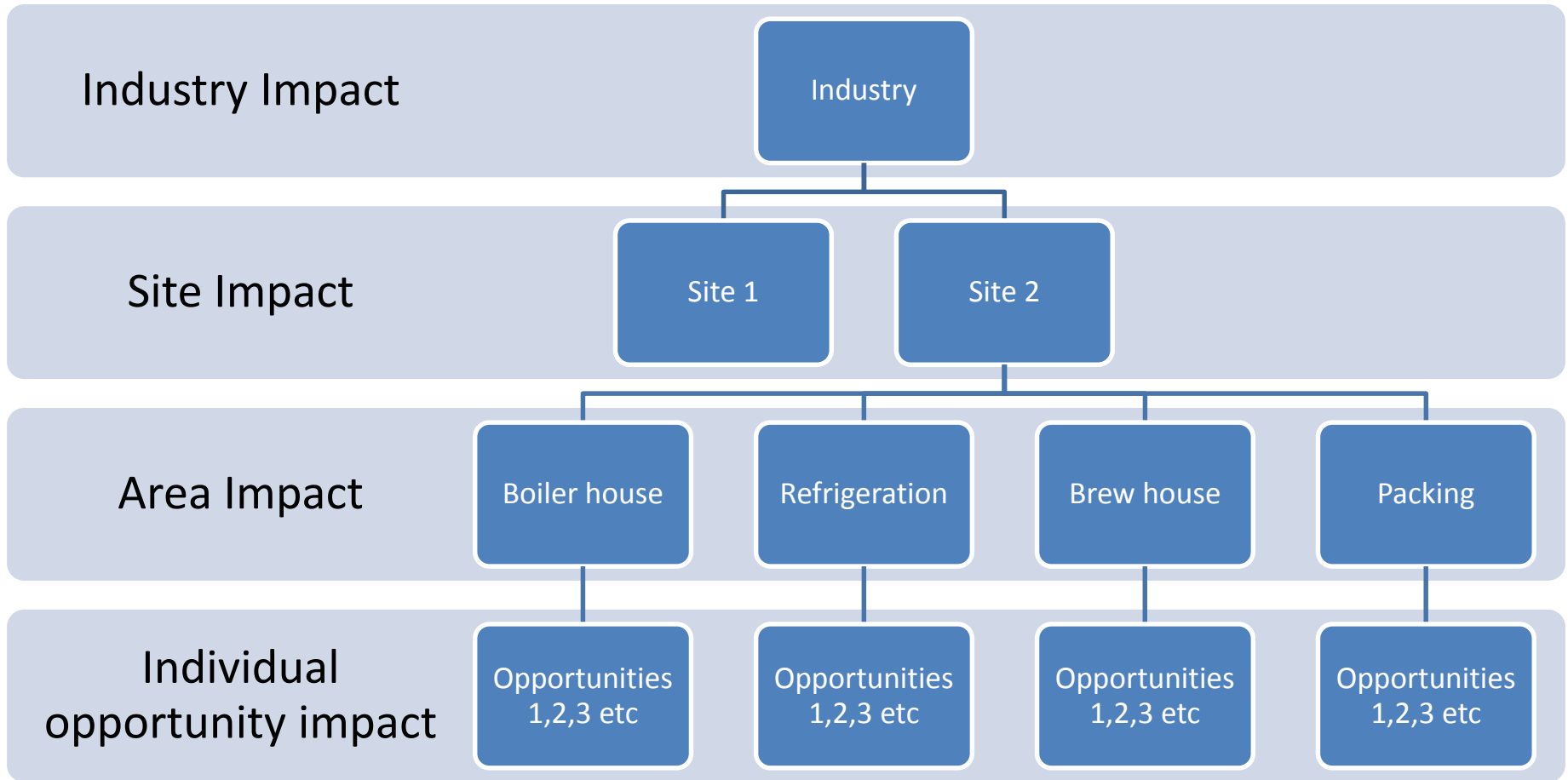
# The principles behind InMetriks audit approach

- Many energy improvement opportunities are repetitive across different factories
- InMetriks embeds expert industry energy knowledge and common opportunities in a tool
- The toolkit is used for opportunity audits of factories, pubs, buildings, transport etc
- Data capture and reporting are all done using a web tool and online survey
- It is structured and self service
- Reporting is automatically generated

# Audit Methodology



# How it works at many levels





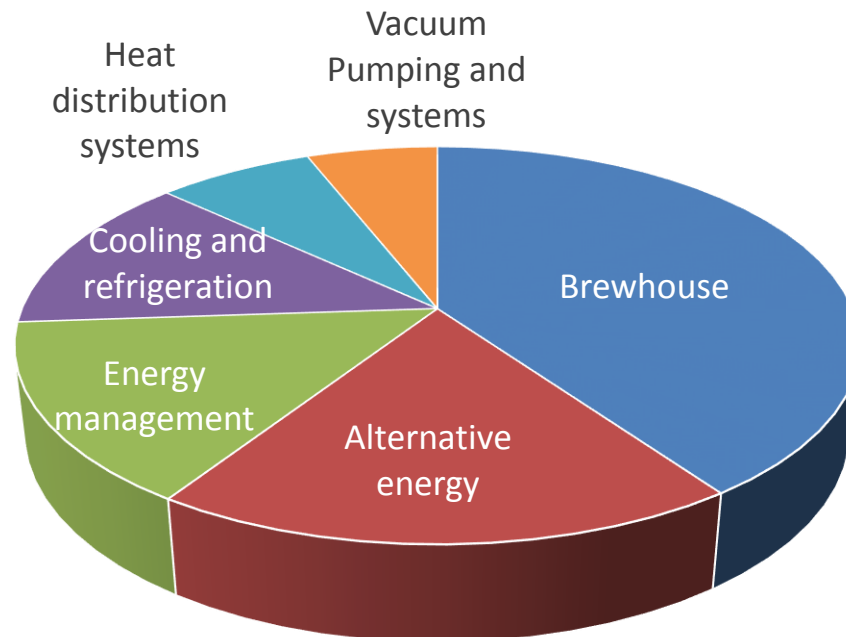
# What happens after December 2015

- Specific and sector findings will be used to engaging businesses in implementation
- Sector engagement events to enable sharing & uptake of
  - Best available techniques (BAT)
  - Cross industry technology opportunities
- Annually updated year on year performance and maturity comparators

# SOME FINDINGS FROM THE 2014 BENCHMARKING

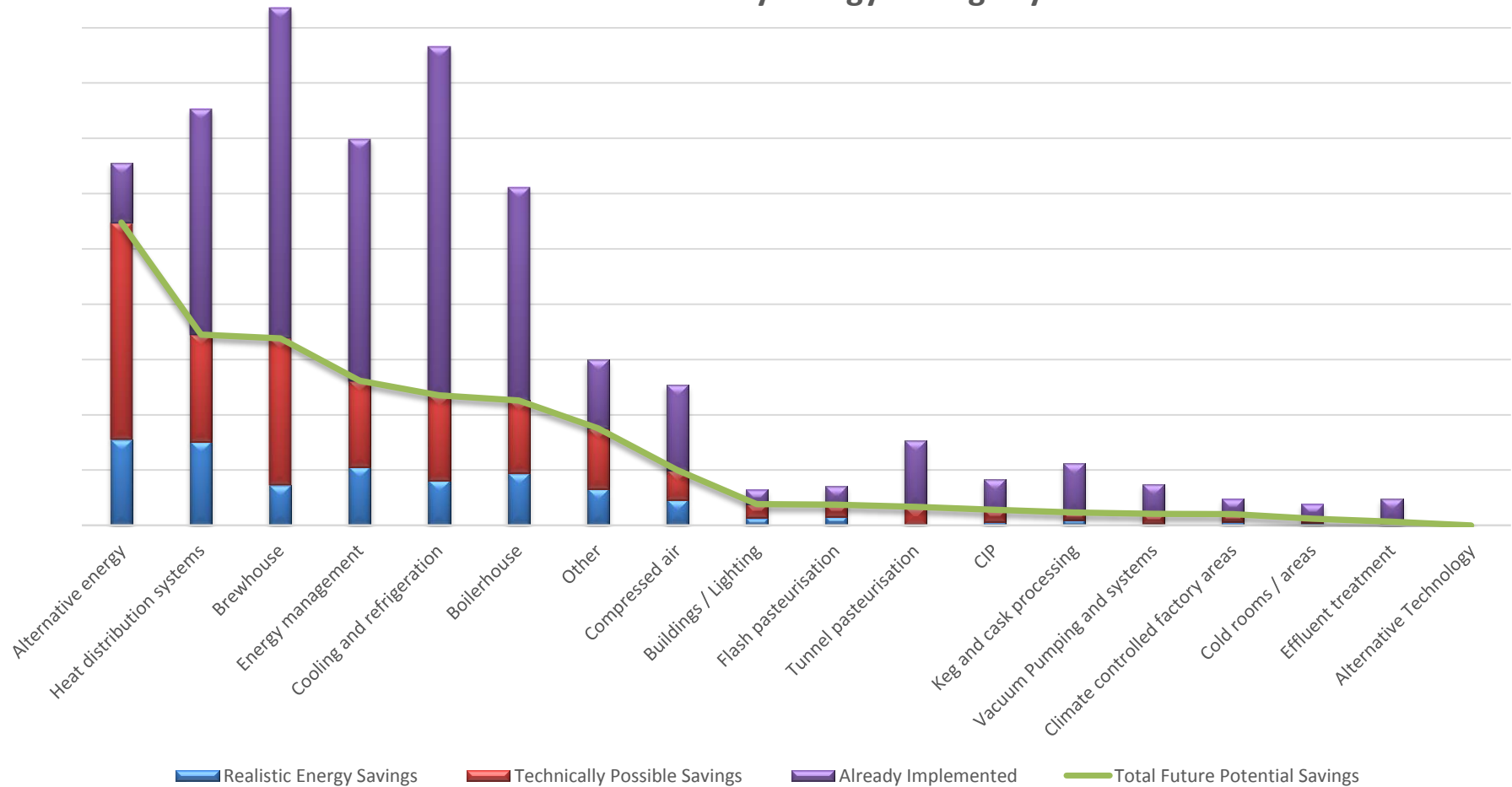
## At an industry level

- We found a correlation!
  - Between 2008 and 2014 industry energy reduced by a similar amount to that predicted by the survey
- Top impacting areas since 2008

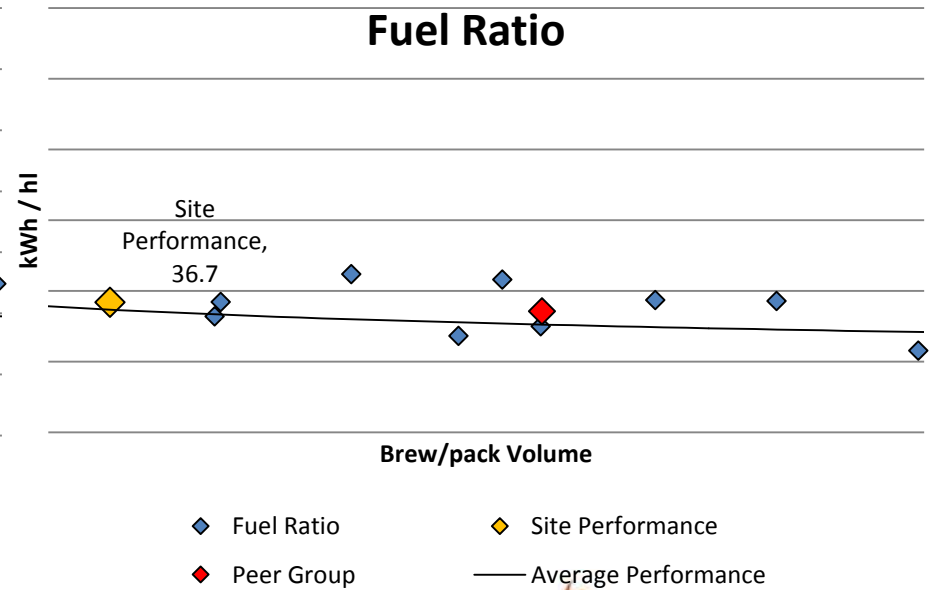
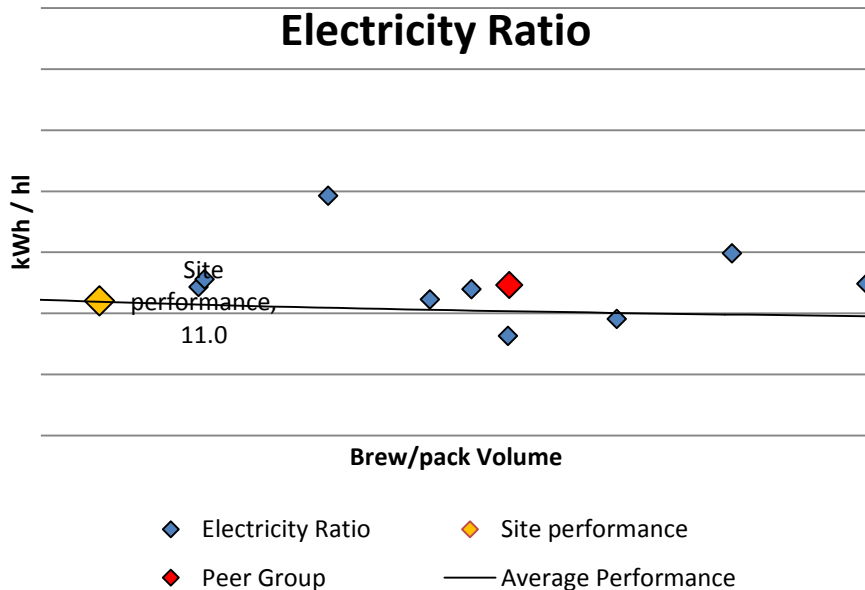
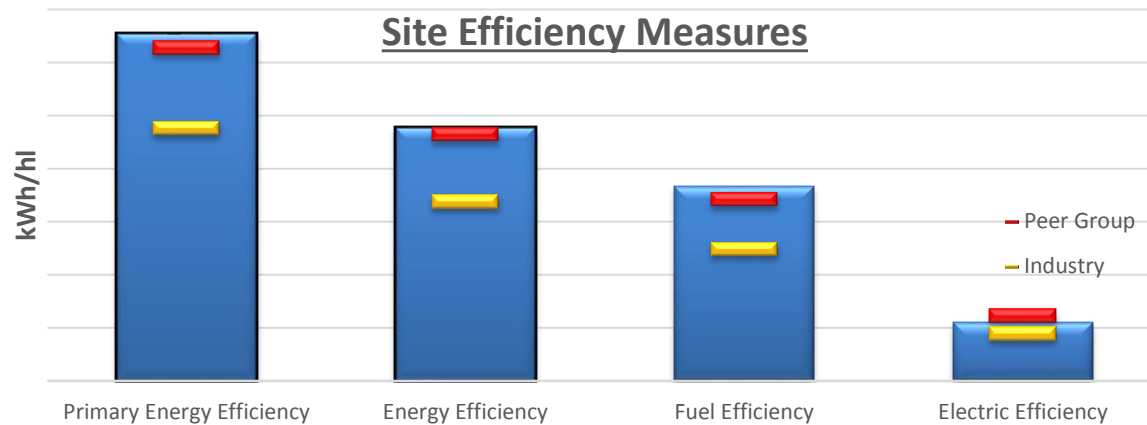


# Which areas will have most impact for the industry?

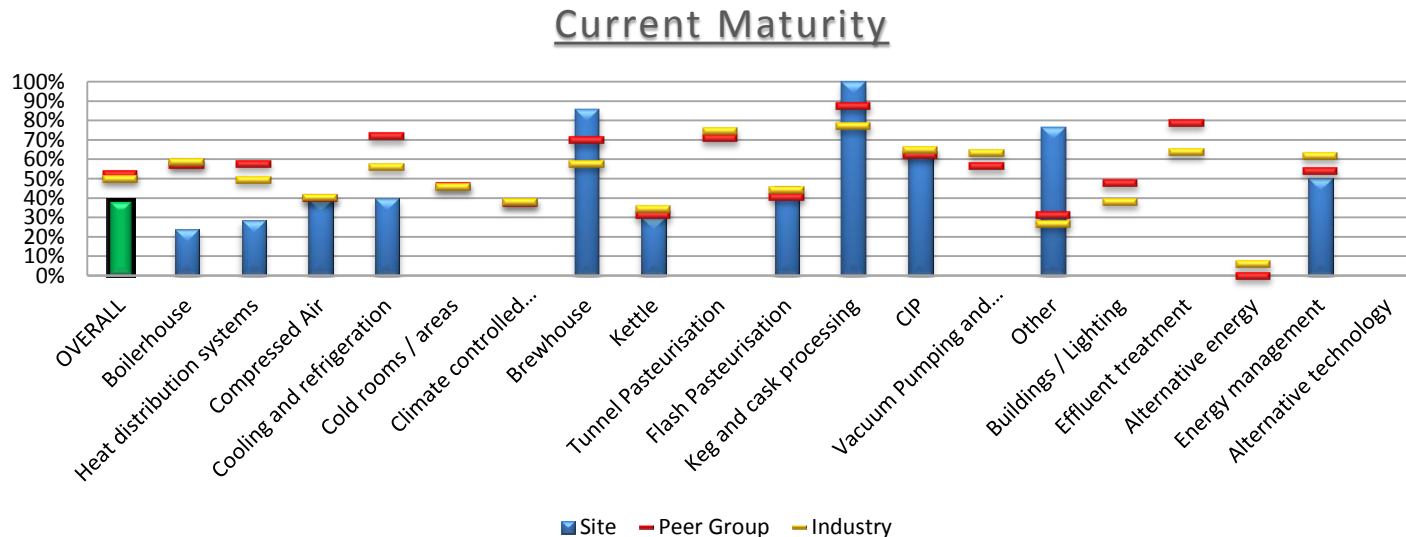
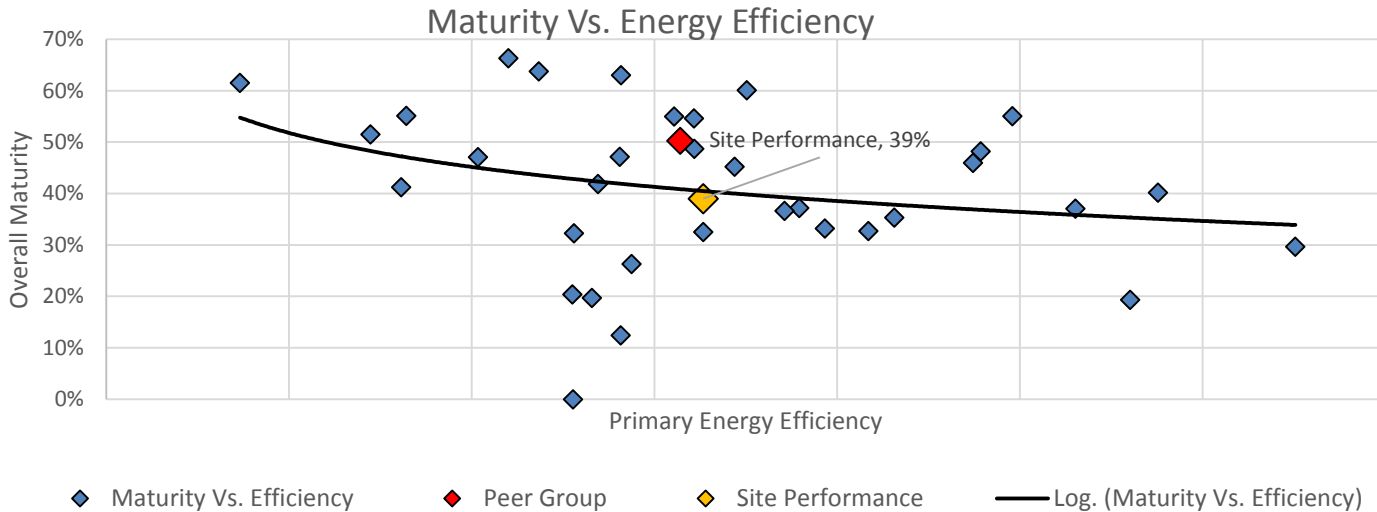
Future Potential Primary Energy Savings by Area



# An example brewery – Energy Efficiency



# An example brewery – Opportunity



## Now and next

- 5 year collaboration with CA & BBPA
- Currently signing up brewing sector members
- Currently engaging with other sectors
- Currently engaging others on a business by business basis

# CONTACT & NEXT STEPS



# Going forward with Carbon Architecture

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Contact for Initial telephone discovery / On site assessment

# WHAT IS ESOS?

# The Energy Savings Opportunity Scheme (ESOS)

ESOS is a mandatory **energy assessment** and **energy saving identification scheme** established by DECC for large undertakings (and their corporate groups).

The scheme applies throughout the UK & is required every four years.

In simple terms, an ESOS Assessment requires participants to do three things:

1. **Measure your total energy consumption** across your buildings, transport and industrial activities.
2. **Conduct energy audits** to identify cost-effective energy efficiency recommendations
3. **Report compliance** to the Environment Agency (as the scheme administrator) **Deadline Dec 5<sup>th</sup> 2015.**

# Why ESOS? The problem under consideration

DECC “Enterprises typically lack awareness of how to reduce costs through energy efficiency. “

The objectives of the ESOS policy are

1. Promote the take up of cost effective energy efficiency measures
2. whilst minimising the cost to business of complying with the mandatory auditing requirements.

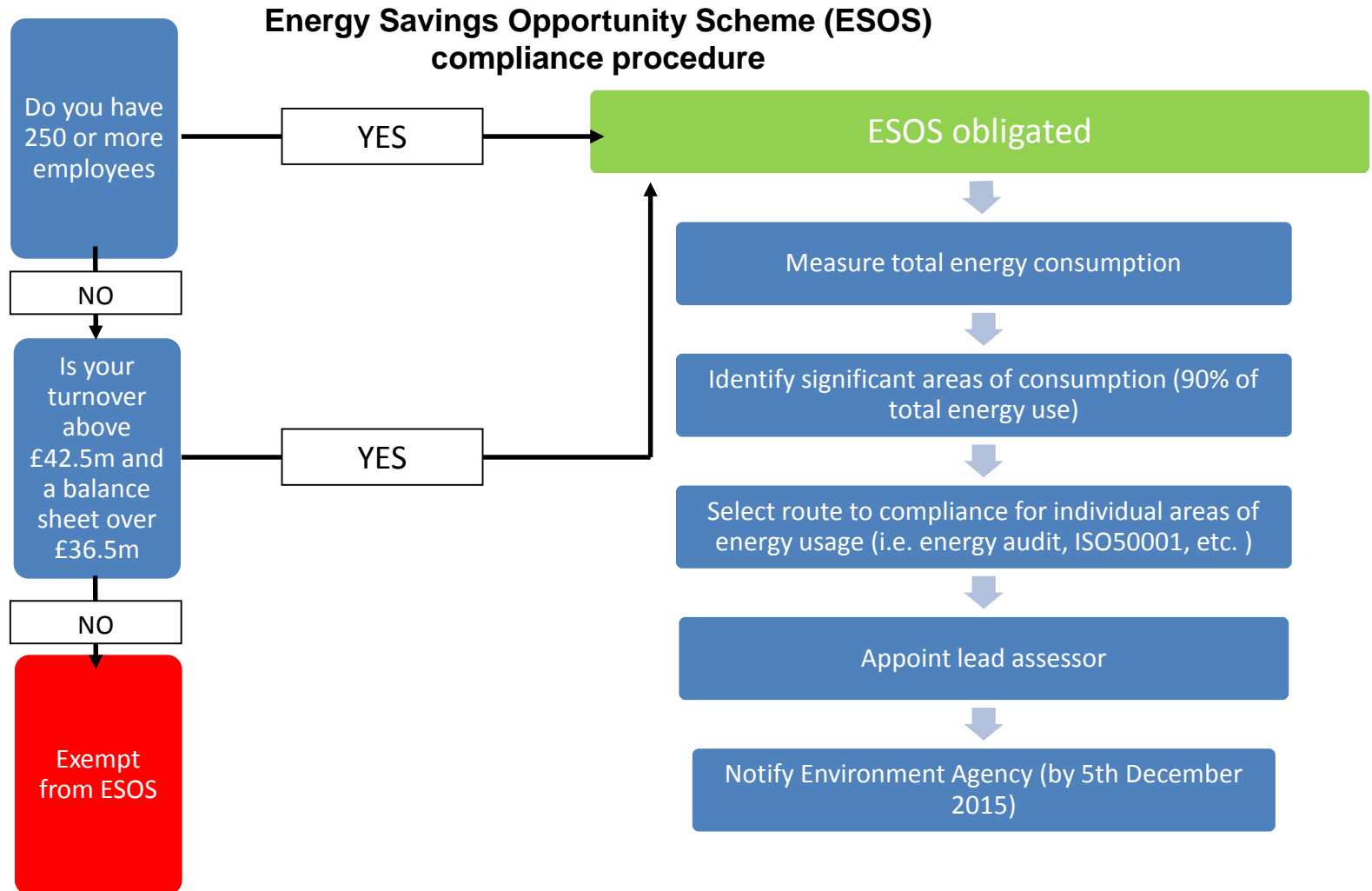
By providing enterprises with tailored information about how they can make cost-effective savings ESOS should increase the take up of cost effective energy efficiency measures.

# Deadline & Penalties on Non Compliance?

Deadline date for notification to the Environment Agency is  
December 5<sup>th</sup> 2015

- Independent Audit Commissioned & Notification Submitted
  
- What are the penalties for non-compliance?
  - A fixed penalty of up to £5,000.
  - An additional £500 per day starting the day after non-compliance subject to 80 day maximum (£40,000)
  - Your business name published for non-compliance to the scheme.

# Are you in the scope?



# Out of Scope or ISO50001?

If you are not in scope of ESOS, you are encouraged to still consider undertaking energy audits voluntarily. Energy audits form part of good energy management practice. Audits can help to identify measures that can save energy and cut costs.

If you have an ISO50001 Energy Management covering **all your energy use** this is sufficient to constitute an ESOS Assessment. However, you will still need to notify the Environment Agency of your compliance within the time scales set

To be compliant, the system must have been certified during the compliance period, and the certification must remain valid at the compliance date.

If you do not have an ISO50001 covering all your energy use, compliance with ESOS audit is still required!

# STEPS TO DETERMINE QUALIFICATION & COMPLIANCE



# Measure total energy consumption

You are required to measure your total energy consumption across a 12-month period ('the reference period'). The scope of ESOS includes energy consumed in:

- buildings;
- transport; and
- industrial processes.

You can measure your total energy consumption in either energy units (e.g. kWh) or energy expenditure.

To ensure use of up-to-date information reflecting your assets at time of qualification, each phase must overlap with the qualification date for the phase (i.e. 31 December 2014, for the first phase of ESOS).

# Significant energy consumption

Once you have measured your **total** energy consumption you can then identify your 'areas of **significant** energy consumption'.

Your areas of significant energy consumption must account for at least 90% of your total energy consumption.

Within a phase, all of your areas of significant energy consumption must be covered either by an ESOS Energy Audit or by an alternative route to compliance.

You do not need to audit the remaining 10% - referred to as de-minimis energy use.

# Consider the routes to compliance

You must conduct compliant energy auditing assessments or energy management activity in relation **to all of your areas of significant energy consumption by the compliance date.**

Four distinct types of qualifying assessments and management activity available to you:

- 1.ESOS Energy Audits These may include any energy audit work undertaken during the compliance period under other schemes (such as activity under the Carbon Trust Standard) , provided your Lead Assessor confirms this work meets the minimum standards
- 2.An ISO 50001 certified Energy Management System;
- 3.Display Energy Certificates (DECs) and accompanying advisory reports
- 4.Green Deal Assessments.

# Audit areas of significant energy consumption

ESOS Energy Audits must be carried out by, or overseen/approved by, recognised Lead Assessors (approved by the Environment Agency).

These can be either in-house expert(s) or an external individual

**( Carbon Architecture is an Approved Lead Assessor )**

Lead Assessors can review audits carried out earlier in a compliance phase in order to confirm that these meet the minimum ESOS standards.

However, it remains your organisation's legal responsibility to ensure that **all of your areas of significant energy consumption are audited.**

# Report your ESOS compliance to EA

Once completed your company will need to notify the Environment Agency that the audit has taken place.

This must be done by **5<sup>th</sup> December 2015**. Notification will take place from the ESOS reporting webpage

[https://esos\\_notification.snapsurveys.com/siam/surveylanding/interviewer.asp](https://esos_notification.snapsurveys.com/siam/surveylanding/interviewer.asp) - and takes the format of a survey.

# In Summary

- The ESOS **audit** will need to be based on at least **12 months relevant verifiable data**
  - Analyse energy consumption and efficiency
  - Identify energy savings opportunities.
- In advance of carrying out an audit the company should consider the following:
- Engage with an ESOS Accredited Assessor ( Carbon Architecture )
  - ✓ identify work already undertaken & level of assistance required
  - ✓ agree an audit methodology
  - ✓ define the scope of the audits
  - ✓ involve relevant staff & agree a timetable
  - ✓ agree a sampling framework