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# REDEVELOPING BROWNFIELD SITES

**WITH HOUSE PRICES YET AGAIN ON THE RISE AND THE UK SUFFERING FROM AN ACUTE HOUSING SHORTAGE, THE REDEVELOPMENT OF BROWNFIELD SITES WILL PLAY AN IMPORTANT ROLE AS THE GOVERNMENT AIMS TO BUILD 200,000 STARTER HOMES BY 2020**

A brownfield site is defined in the UK as “previously developed land” that has the potential for being redeveloped. The lack of available green spaces for housing developments means that redeveloping these brownfield sites is now a key priority.

In the government’s Housing Bill, a new register of brownfield land was announced to help fast track the construction of new homes on previously used sites near existing communities.

As outlined in the ‘Fixing the foundations’ plan, the government will also seek to implement legislation that will ‘grant automatic permission in principle on brownfield sites identified on those registers.’ On brownfield sites in England this will create a zonal system that will reduce unnecessary delays and uncertainty when developing on these sites.

It is hoped these measures will help to deliver the government’s aim to put local development orders, which will allow housing developments without a planning application, on 90% of suitable brownfield sites.

Additional plans are also proposed that will modernise the compulsory purchase system that will ‘allow local authorities and others to drive forward and shape brownfield development, and will not alter the principle of Secretary of State sign-off on compulsory purchase orders’.

Barriers preventing building on brownfield sites can come in terms of the financial undertaking required to carry out environmental assessments and site remediation, with developers more much likely to choose land that is cheaper and more efficient to build on. In an effort to alleviate this issue, the government have made funds available to local authorities to accelerate the preparation of brownfield sites for the development of starter homes.

Some 20 new housing zones in London have been awarded £400M of funding from the Government and the Greater London Authority to help supply new housing on brownfield land. There has also been an award of £200M of additional government funding for 10 housing zones outside the capital.



Housing Minister Brandon Lewis said: *“This government has been very clear that when planning for new buildings, protecting our precious green belt is paramount. Local people don’t want to lose their countryside to urban sprawl, or see towns and cities lost to unnecessary development.*

*“We have put local plans at the heart of the reformed planning system, so councils and local people can now decide where development should and shouldn’t go.*

*“Support for new housing is growing, because communities welcome development if it is built in the right place and does not ignore their needs. That’s why planning permission for 230,000 homes was granted by councils in the last year alone, while official statistics show that green belt development is at its lowest rate since modern records began in 1989.”*

The UK is at the forefront of the regeneration and management of brownfield sites, with companies offering a wide range of technologies and processes to clients domestically and internationally.

Much of this expertise is due to the nation’s industrial heritage, with over 400,000 hectares of contaminated land currently in the UK. The diversity of contamination problems that can be faced has led to a number of specialist companies providing a multitude of integrated services to help develop and regenerate brownfield sites ready for development.

Before any redevelopment can take place, all brownfield developments must undergo site assessment by an

environmental consultant to check soil, groundwater and surface water for hazardous materials and to ensure these risks are being managed correctly. Given a site’s history, it is possible for the area to be contaminated with industrial pollutants such as asbestos, sulphuric acid, oil, lead, and hydrocarbons from fuel storage.

Usually, an extensive desktop study would be performed to review a site’s history and its geographical/geological content, with checks also made against the contaminated land register held by local authorities and for any landfill sites located nearby.

Site investigations with borehole drilling to obtain samples form around the site will then be made. These will be sent away for laboratory analysis to determine the levels of contamination.

Most commonly, a brownfield site will require remediation including asbestos removal, demolition and infrastructure works before any construction can take place.

Brownfield site redevelopment is essential not only in terms of cleaning up potential environmental health hazards and also unsightly disused land but also in unlocking regeneration of areas. The sites, in addition to making space for more affordable housing, can create opportunities for employment, investment, leisure and play areas, and a sense of community. It also means that more greenbelt areas can remain protected and not come under increasing pressure to make way for more housing developments.







# ENERGY SAVINGS OPPORTUNITY SCHEME – ESOS

## NEW GUIDANCE PUBLISHED

February saw the Environment Agency publish updated ESOS guidance on behalf of the scheme compliance bodies; Natural Resources Wales, Scottish Environment Protection Agency, Northern Ireland Environment Agency and Department of Energy & Climate Change (DECC) Offshore. The guidance helps to clarify a number of issues raised with the helpdesk, in particular with the scope of ESOS and qualification criteria with respect to overseas undertakings and UK establishments. Furthermore with:

- The application of ESOS to trusts
- Determination of corporate groupings
- Calculation of total energy consumption
- Auditing approach for the construction sector
- Notification requirements
- The approach to site visits
- The treatment of assets purchased or disposed of after the qualification date and before the compliance date
- The extent of inclusion of transport energy
- Liability for compliance in cases of disaggregation, and
- What records to keep in evidence packs.

The Environment Agency is keen for companies to understand ESOS as a benefit, not an onerous burden, and how compliance will deliver benefits to both companies and the environment through a flexible scheme.

According to the government, businesses could save £1.9Bn on energy bills, citing calculations that investing £15,000 a year on energy efficiency measures as recommended by the assessment could lead to bill savings of more than £56,000 per year.

Under the new EU legislation, member states are required to implement a mandatory programme of energy audits for 'large enterprises'. Over 9,000 companies in the UK are required to comply, with initial audits due to be undertaken by 5th December 2015.

These large organisations (employing more than 250 people or a turnover in excess of €50M), are required to review total energy use, from building energy use,





to transport energy use and industrial processes; thus calculating the amount of energy used per employee, and identifying measures that could save energy.

A number of energy managers have replied to surveys stating that getting 'Board-level buy-in' is proving difficult, finding it hard to lift energy efficiency from the bottom of the agenda despite its proven cost savings.

*"Three quarters of businesses have yet to start their mandatory energy audits which must be completed by the end of the year."* - EnergyLive News, March 18th 2015-05-20

This is the surprising news that numerous businesses, who must comply to the ESOS scheme are ignoring the fact that, by December, the scheme will be up and running and companies could be fined up to £50,000 plus extra charges of £500 per day for up to 80 days.

Jo Scully, ESOS Project Manager, says: *"The Environment Agency, DECC and the other UK regulators have been raising awareness of ESOS over the last year. This has involved sending letters to more than 14,000 organisations, holding workshops, speaking at conferences and trade associations, publishing detailed ESOS guidance on our website and setting up a dedicated helpdesk. We encourage organisations covered by ESOS to begin assessments now if they haven't already done so. The deadline is only seven months away so acting now is important to ensure compliance."*

If businesses want to know more, they should consult the ESOS guidance at [www.gov.uk/energy-savings-opportunity-scheme-esos](http://www.gov.uk/energy-savings-opportunity-scheme-esos) or email the helpdesk: [esos@environmnet-agency.gov.uk](mailto:esos@environmnet-agency.gov.uk)





# energyDECK

The UK's Energy Savings Opportunity Scheme (ESOS) is a new regulation to comply with Article 8 (4) of the European Energy Efficiency Directive. In recent months we have seen a lot of coverage of ESOS in the energy efficiency industry, but implementation and compliance levels among qualifying organisations has been very low to date. This article aims to help organisations to understand what is required to comply with ESOS and how they can turn this process into a positive business case that generates benefits well beyond the compliance due date.

## What is ESOS

ESOS requires more than 10,000 qualifying organisations (classified as 'large undertakings') to conduct energy audits that include 12 months of verifiable data. A business qualifies if it has more than 250 employees or annual revenues of at least Euro 50M and a balance sheet total of at least Euro 43M. If the organisation is fully covered by ISO 50001 certification, it is exempt from the ESOS reporting requirement. The deadline for compliance is December 5th 2015, and ESOS energy efficiency audits have to be repeated at least every 4 years thereafter. The Government estimates that about 170,000 buildings in the UK will be affected by ESOS.



## Compliance requirements

With less than three months to go, qualifying organisations need to cover a range of tasks before the deadline, including:

1. Conduct an ESOS assessment to understand whether they qualify
2. Identify and collect data for at least 90% of the organisation's energy consumption
3. Conduct energy audits
4. Identify energy savings opportunities
5. Use a lead assessor to either do or sign off points 1 to 3 above
6. Get a director (two directors in the case of a company internal assessor) to sign off that they have seen the recommendations of the work
7. Notify the Environment Agency - the scheme administrator - of ESOS compliance

Given the range of tasks required to complete by the due date, and the fact that by August 2015 only 100 organisations had submitted their ESOS notifications, companies can no longer delay their ESOS activities. In the case of non-compliance, penalties of up to £90,000 per company can be applied.

Performance analytics firm IES and energy management platform provider EnergyDeck have formed a partnership that will allow EnergyDeck customers to link the platform with IES' ESOS Auditor to enable a simpler route to ESOS compliance, and then manage an ongoing energy efficiency programme.



## How to make the most of ESOS

Each participating organisation needs to build an evidence pack for their ESOS compliance assessment. In practical terms, this means that participants need to think about how they gather, validate and store data related to their total energy consumption, areas of significant energy reduction, and ESOS audits, along with details of energy saving opportunities identified.

ESOS audits will provide valuable insights to help companies reduce energy and save money. While there is no commitment to implement any of the measures identified, the intention of the Government is to highlight the savings opportunities that companies can benefit from, and to provide specific and tangible examples for how to implement them through the audit reports.

In practical terms, ESOS should merely be the first step towards an ongoing performance improvement effort within the organisation. In a typical building, 10-20% of annual energy and resource consumption can be saved relatively easily and often with zero or very low-cost measures. However this requires a good understanding of how the building operates, and continuous monitoring of performance vs. the baseline and targets. The good news is that once an effective energy data management system and processes are in place, this task will not be very time consuming and quickly yield net benefits for the organisation as a whole.

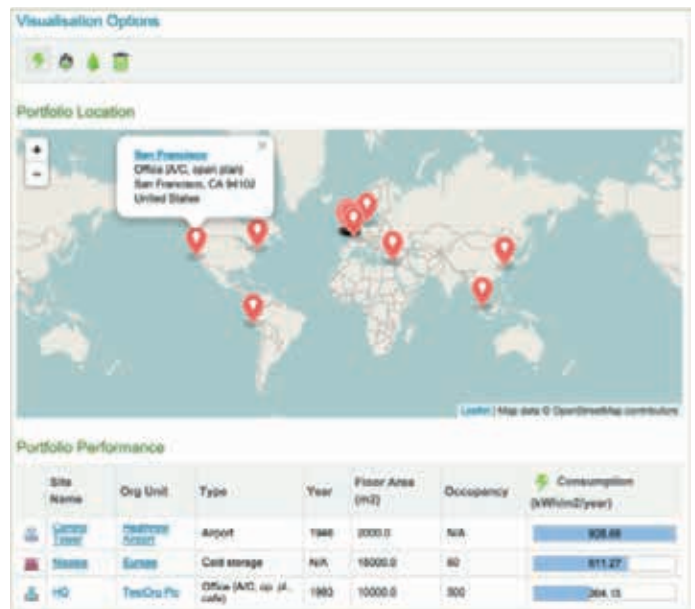
## Enabling the business case for ESOS and beyond

EnergyDeck can help ensure that the business case for ESOS is a positive one. This is achieved by providing a central platform to collect and manage all the relevant data (energy, asset data and more) in one place. In addition, EnergyDeck makes it easy to give access to specific data and insights to different stakeholders - from energy auditors and consultants to company directors. Last but not least, the platform can be used to identify savings measures, and track their implementation and impact.



Given the ESOS compliance requirements listed above, here is how EnergyDeck and our partners can help facilitate the process and turn a compliance driven activity into a net positive exercise for the organisation:

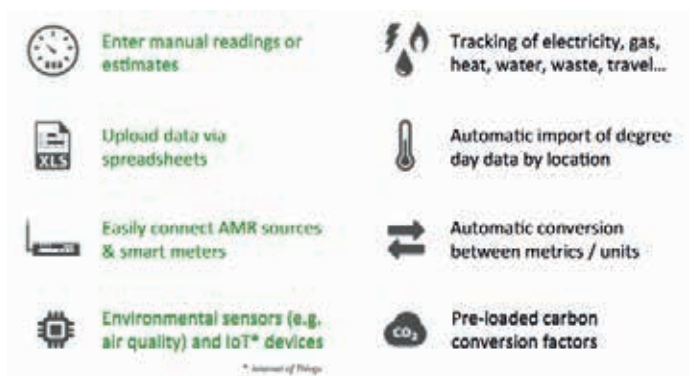
Thanks to its flexible data acquisition and management platform and a powerful, yet easy to use user interface, EnergyDeck is accessible to a range of users with different backgrounds and doesn't require specific training or experience.



EnergyDeck automatically generates insights such as building consumption over time, benchmark (how does the building perform compared to similar ones in the organisation's portfolio or the EnergyDeck database) and also analyses the impact of measures recommended by the ESOS audit.

## Deployment and Pricing

EnergyDeck is easy to deploy within the organisation (due to it being a hosted solution) and requires minimal if any training. In order to complete the business case, it is important to know that EnergyDeck is inexpensive, with a dynamic pricing model that is based only on the number of buildings and data feeds required.



EnergyDeck is fully hardware agnostic, and accepts input from a wide range of meters and metering systems, all the way to internet enabled sensors. In addition, data can be entered manually (e.g. taken from meter reads or invoices) and uploaded via spreadsheets.

## Summary

ESOS might initially appear as a burden to many organisations and seen as a mere compliance exercise. But if done right, it provides an opportunity to identify and implement significant energy and cost savings opportunities across the organisation. Technology and service providers like EnergyDeck and IES can help enable the business case for ESOS and ensure not only compliance, but also an ongoing improvement process that will yield net benefits for many years to come.

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IES - [info@IES.com](mailto:info@IES.com)**



# THE DANGERS OF INVASIVE WEEDS

The three most common non-native plants found in Britain are Japanese Knotweed, Giant Hogweed and Himalayan Balsam, all of which continue to cause difficulties for the construction sector and other associated industries.

## **JAPANESE KNOTWEED**

Japanese Knotweed was introduced from Japan in 1825 as an ornamental plant and has become a significant problem for the construction industry, gaining a reputation for pushing its way through hard surfaces and growing at excessive rates.

The plant has become widespread everywhere across the country, especially in urban areas, riverbanks and derelict land.

Without treatment, the plant will invade sensitive wetlands and drive out native wildlife, making further inroads as time passes.

Other problems arising from Japanese Knotweed can include the blocking of footpaths, damage to concrete, tarmac, flood defences and the stability of riverbanks. For the construction industry, damage to buildings is

most likely to be caused by the plant's underground stems exploiting weaknesses in poorly constructed buildings or those with shallow foundations.

The problems caused by Japanese Knotweed may not only be structural.

In financial terms, property or sites suffering from the invasive plant can receive adverse publicity and find its value seriously decreased; financial companies may also be discouraged from providing policies, and sales of such buildings could be seriously impeded.

The weed does not produce seeds but is spread when small pieces of the plant or rhizomes – which are the underground root-like stems – are broken off, creating a new plant. It can be spread further by via topsoil movement or water, if located near a river.

Japanese Knotweed is classed as controlled waste under the Environmental Protection Act 1990 and requires disposal at licensed landfill sites. Due to the risk and seriousness of the problem, companies who specialise in managing Japanese Knotweed are being called upon in increasing numbers.







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### **GIANT HOGWEED**

Giant hogweed has made the headlines this summer with multiple cases of people suffering horrific burns to their skin after coming into contact with the plant. This non-native plant has become a major cause of concern for professionals in the construction, land remediation, property, surveying and local authority professionals.

Originating from Southern Russia and Georgia, Giant Hogweed (*Heracleum mantegazzianum*) is a close relative of cow parsley and can reach over 10ft in height. It was introduced to Britain in 1893 and planted in ornamental gardens throughout Britain. The plant escaped from cultivation and has since spread to many areas of wasteland, riverbanks, streams, roadsides and railways.

Its appearance is similar to that of a tall cow parsley-like plant with thick stems covered in bristles that are often purple blotched.

Its sap contains a toxic chemical, which sensitises the skin, causing severe blistering when exposed to sunlight with effects lasting for many years. The effects of the toxin can vary but children are known to be particularly sensitive to it.

Victims are often unaware of the damage they are doing to their skin as touching the plant does not cause any pain but any sap or cut material present on the skin can remain active for several hours after initial contact.

Giant Hogweed can suppress the growth of native plants, displace species and have a negative impact upon ecologically sensitive and vulnerable habitats by forming dense colonies.

Like Japanese Knotweed, the plant is a controlled waste, and so if taken offsite must only be disposed in licensed landfill sites with the necessary documentation. The other alternative is disposal by incineration.





### **HIMALAYAN BALSAM**

Himalayan or Indian Balsam, was introduced into Britain in 1839 and, as with Japanese Knotweed and Giant Hogweed, began as an ornamental garden plant. Once it escaped from cultivation, the plant spread rapidly and continues to thrive in moist and partially shaded damp areas, mostly watercourse banksides and wasteland.

The plant grows to between 6 and 10ft in height and between June and October will produce clusters of purple/pink helmet shaped flowers. Subsequently, seedpods follow the flowers, with each plant capable of producing up to 800 seeds. The seeds are dispersed over a wide area, as the seedpods are capable of shooting their seed up to 22ft away.

The plant is most commonly spread via watercourses, as seeds fall in and can remain viable for two years, and also distribution between people who pass the seeds on to others through attachment to vehicles, clothing and footwear.

Although representing a lesser threat than Japanese Knotweed and Giant Hogweed, a Himalayan Balsam infestation has a number of potentially negative effects.

These include suppressing the growth of native plants who grow in similar habitats; riverbanks can be exposed to erosion following winter dieback, and also presenting a significant flood risk by constricting water flow.

Also, the removal of Himalayan Balsam from certain areas runs the risk of exposing the area to the greater threat of invasion from the more harmful non-native weeds, Japanese Knotweed and Giant Hogweed. It is therefore advisable, that any cleared areas be re-vegetated as soon as possible with suitable native species.

A management plan to remove Himalayan Balsam would need to include the killing of existing plants and eradicating the remaining seed bank. This can be done by hand pulling, machinery or by cattle grazing. Alternatively, for immediate removal, excavation can be undertaken. The removed waste should carefully handled and disposed of to prevent further infestation.

Herbicidal control is also an option and should be undertaken in periods of active growth. An herbicidal application can also be used as follow up to the other methods of removal to deal with any potential regrowth or missed areas.





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