



**REGENERIS**

Executive Summary -  
Midlands Energy *Sector Research:*  
*Powering a New Energy Future*

An Executive Summary by Regeneris Consulting  
November 2017

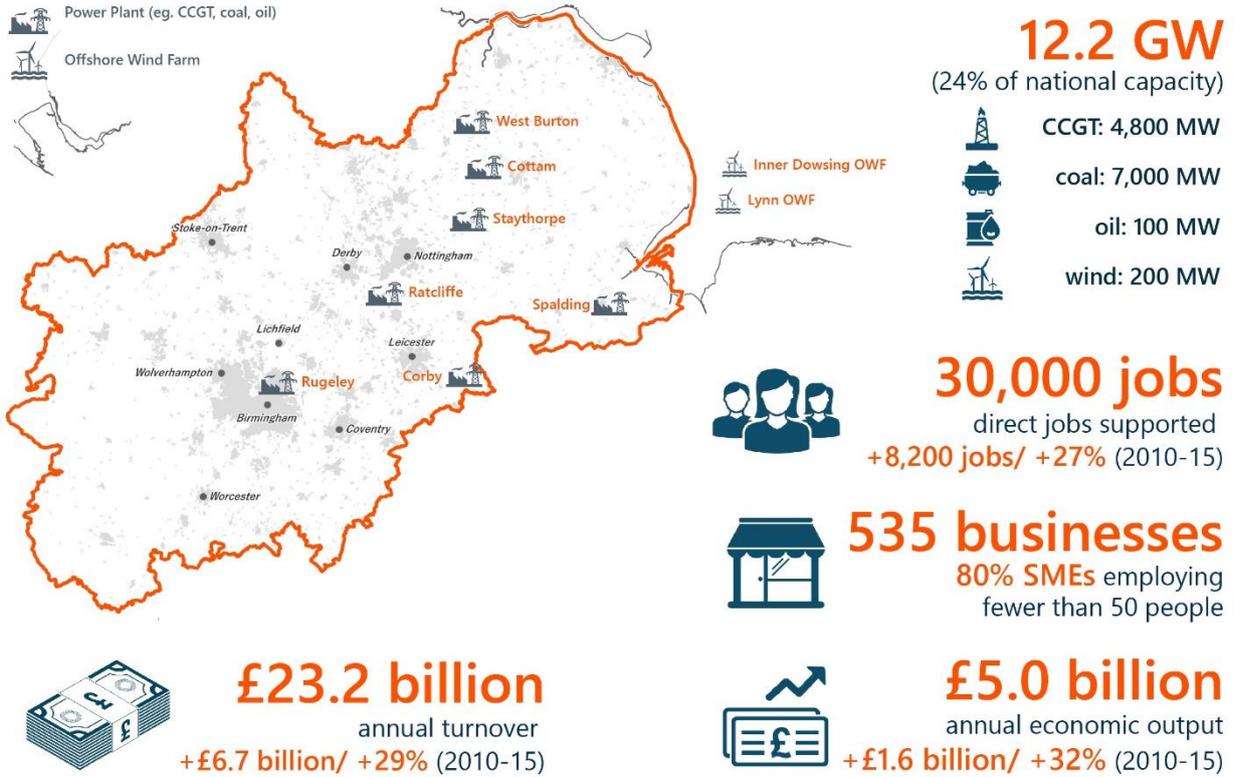
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## Powering a New Energy Future

### Economic footprint of the Midlands Energy Sector



### Wider benefits of Energy Sector to the Midlands economy



**162,500 jobs**  
direct, supply chain & induced jobs



**£14.0 billion**  
direct, supply chain & induced annual economic output

### The Midlands Energy Sector in context



**1-in-3 jobs**  
in energy sector Nationally



**£698**  
per adult (16-64)  
economic output  
**Midlands Engine**

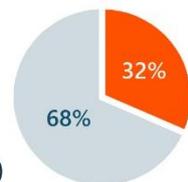


**£472**  
per adult (16-64)  
economic output  
**Nationally**



annual (gross) median salary of **£39,800** for Midlands Engine  
£27,600 national (gross) median salary

**32%**  
of annual national turnover (£73,476 billion)



# Executive Summary

## Welcome

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- i. The Midlands is a proud region with a strong industrial heritage and a bright manufacturing-led future.
- ii. The fuel and power industries have long had a positive and mutually fruitful relationship with the industrial and manufacturing sector, and today's energy industry in the Midlands Engine is booming.
- iii. As the low-carbon transition gathers pace, and the energy system becomes increasingly smart and flexible, the Midlands Engine is poised to make a powerful contribution. To support this, the Economic Footprint of the Energy industry in the Midlands Engine has been mapped for the first time in this report.
- iv. The pages that follow demonstrate the strength of the sector in the region together with the depth of its heritage; and highlight the assets the people and businesses of the Midlands Engine will be as it drives a new energy landscape for the UK.
- v. This is just the beginning. This document outlines the sector and its assets today. However, industry leaders and policy makers must align as we build future capabilities and turn the sector's national challenges into regional opportunities.

## The UK Energy Transition

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- vi. The UK is undergoing a fundamental change in the way in which energy is generated, managed and consumed. The centralised model of large-scale, 24-hour baseload generation is moving towards a new world order in which a flexible, decentralised system of low-carbon power flexes and peaks with changing patterns of supply and demand.
- vii. This creates challenges, as we are still largely constrained by the rules and reasoning from the existing system – but there is also enormous opportunity:
  - a growing need for flexibility, due to an increasing share from intermittent renewable generation and technology-driven changes to consumer demand;
  - questions about the nature of baseload power and what this looks like in a future energy system;
  - the economic, environmental and social commitment to decarbonise the power grid;
  - the need for a highly-skilled workforce to manage and deliver these changes.

## The Midlands Energy Sector in Context

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- the Midlands region supports 1-in-3 jobs in the energy sector nationally
- the region supports 30,000 direct jobs in the energy sector and 77,900 jobs in the supply chain
- it has a high level of job specialisation – 1.6 times the national average
- the sector's contribution to the regional economy of £5.0 billion represents c. 30% of the sector's total national output
- output per working age resident in the Midlands (£698) is around 50% higher than the equivalent output at the national level (£472)
- median salary for jobs in the energy sector in the Midlands (£39,800) is higher than the national median (£27,600)

## Economic Footprint of the Midlands Energy Sector

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- viii. The Midlands region has a long industrial heritage, and an economy that is characterised by high value manufacturing. The region was at the forefront of the industrial revolution the legacy of which is still visible in the landscape, especially in energy generation.
- **Businesses:** Businesses trading in the energy sector include not only power plants, but other businesses (eg. in the trade and transmission of electricity). The Midlands is home to c. 535 businesses, 80% of which employ fewer than 50 people.
  - **Turnover & Output:** It is estimated that the Midlands region supports around £23.2 billion in turnover and generates £5.0 billion to the national economy. Overall, both turnover and output have increased by around a third between 2010-15.
  - **Jobs:** The sector directly employs around 30,000 people within the Midlands region, and despite representing a small proportion of total employment (<1%), it shows a high level of specialisation when compared with the national average.
  - **Wider impacts:** These direct activities generate additional impacts through supply chain spend and the induced effects created by their earning being reinvested in the UK economy. It is estimated that, in total, the Midlands energy sector supports around 162,500 jobs and c. £14.0 billion to the UK economy annually through direct, indirect and induced impacts.

### Local Strengths

- ix. Employment in the energy sector in the Midlands is concentrated within several areas within the region, especially the Greater Birmingham and Solihull Local Enterprise Partnerships (LEPs), the Leicester and Leicestershire (LLEP) and the Derby, Derbyshire, Nottingham and Nottinghamshire (D2N2) LEPs. D2N2 and LLEP both have over 7,000 jobs in the sector and see high levels of concentration compared to the national average. Furthermore, D2N2 is home to over 200 energy businesses, which together contribute around £1.5 billion to the national economy.
- x. The role of the energy sector as an integral component of the economy is recognised in policy across the Midlands region. Each of the Midlands LEPs acknowledge the sector's importance within their strategic plans, and set out a range of initiatives and investments to support its growth and evolution.

## Looking Ahead: Drivers and Challenges

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- xi. There are many challenges the energy sector is expected to face over the next 20-30 years. Many of the challenges within the Midlands are expected to be similar to the challenges the sector will be facing nationally.
- xii. Of primary importance is the need for the sector, together with government and other partners, to deliver a flexible, low carbon energy system that can cope with ever-changing demand.

### Resource Constraints

- xiii. Resource constraints for the energy sector revolve around skills needs and demands for additional baseload generation capacity (primarily in the form of large-scale energy infrastructure projects), often requiring significant subsidies in order to be delivered.
  - **Skills:** The UK is suffering from a shortage of technical-level skills. The Industrial Strategy places the country 16th overall within the OECD's top-20 countries in terms of skills levels. This highlights the country's need for more graduates in STEM subjects if it is to compete globally.
  - **Lack of appetite for large infrastructure projects:** A key challenge for the energy ensure security of supply whilst dealing with a fall in overall generation capacity. This issue has recently gained momentum as more questions are asked about the public's desire to support and subsidise large-scale infrastructure project (eg. nuclear and CCGT).

## Investment Challenges

- xiv. There are several investment challenges the sector needs to address over the next 20-30 years, not least balancing demand for new ways to generate, store and distribute energy, with the need to reduce CO2 emissions and providing affordable energy for all.
- **Revolution in energy generation, storage and distribution:** Affordable energy and clean growth are two of the Industrial Strategy's ten pillars. The need for upgrading the energy infrastructure is highlighted at a time when a number of plants have ceased operation with no plans for replacement generation in place. The sector is also seeing a shift towards more smaller players, often located closer to where demand is.
  - **Introducing flexibility:** In addition to changes how energy is generated and stored, new technologies (eg. electric cars) and industrial practices (eg. increased automation) mean that the way and locations energy is used will also change. This will require additional flexibility in power generation.

## Regulatory Uncertainty

- xv. The nature of the regulatory context is characterised by constant change in both the wholesale and consumer markets.
- **Consumer regulation:** Earlier this year the government launched a review of the consumer energy market to identify ways how prices could be improved and made more competitive for all consumers.
  - **Changing nature of regulatory environment:** Over the years, different governments have introduced several policies which although aimed at reforming the regulatory framework have created confusion and reduced certainty. Traditionally each problem is addressed on its own, however this highlights the need for a simplified and transparent approach towards an integrated regulatory framework.
- xvi. With current uncertainties and the likelihood that these will not be resolved in the near future, the challenge for the energy generation sector is to ensure security over the longer-term, and incentivise investors by instilling confidence and encouraging growth.

## A Foundation for the Future

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- xvii. With the sector challenges outlined above, there are good opportunities for growth and diversification in the Midlands Engine.
- xviii. There are many growing companies already sited in the region, capitalising on the rise of the UK's clean economy, and organisations such as the Sustainable Energy Association are choosing to base their headquarters in the region. Its workforce is diverse and flexible. The breadth of companies located in the Midlands Engine means a wide range of existing skills that can be built upon and retrained in order to alleviate the UK's shortage of technical-level skills.
- xix. Furthermore, the region has wide geographical pull – with good transport links from the North, South and Wales – bringing a larger workforce closer to Midlands enterprise. The lower cost of living relative to the South also bring an attractive benefit to a relocating workforce.
- xx. Many of the regional political bodies are already starting to align, realising the potential that the energy sector's changes can bring to the Midlands. The recognition of the sector by all Local Enterprise Partnerships within the region underpins its clean energy growth and provides a foundation for exponential, and politically-supported growth.

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### Leading the Midlands Clean Growth Economy

- **Vaillant**, a Derby-based manufacturer of domestic and commercial boilers, has been trading for more than 140 years and now sees its future firmly in the green space, with sustainable heating central to the Vaillant Group and its operations.
- **UK Power Reserve**, the leading provider of flexibility to the UK energy system, has been growing its national fleet of decentralised assets from its Solihull base since 2010 – including 120 MW portfolio in battery storage, the linchpin technology of the flexible energy future.
- **Ecuity** provides energy policy advice to commercial businesses and has grown its headcount three-fold in the past five years. Founded in 2012 and choosing Solihull as its base, this year the company was awarded the contract to deliver events and produce publications for the Heat Networks Investment Project of behalf of BEIS.
- **Encraft** is helping to deliver low carbon buildings, energy-related digital technologies and local energy systems from its base in Leamington Spa. Its activities are driving carbon reduction in building and construction, one of the UK's highest-polluting industries.



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