

# POST GE2017 BRIEFING FOR PARLIAMENTARIANS

## THE UK'S RENEWABLE ENERGY & CLEAN TECH ECONOMY



### A BRIEFING ON JOBS, INNOVATION AND POST-BREXIT GROWTH

The global energy sector is in a period of extraordinary change. Rapidly falling costs, growth in supply chains, and improvements in our scientific, technical, and on-the-ground understandings of renewable energy and clean technologies is driving significant economic growth.

We believe that Britain has the technology, skills, and experience to thrive as a 21st century trading nation in this new era of international decarbonisation. Here is what you need to know to be up-to-speed on the opportunities and challenges facing this remarkable economic shift.

#### JOBS

- 1. Renewable energy means jobs.** There were 125,900 full-time equivalent jobs in renewable energy in the UK in 2015/16, spread across the length and breadth of the UK. Additionally, there are already over 16,000 in energy storage and electric vehicles.
  - See page 4 for jobs and turnover in your region.
- 2. Renewable energy jobs are everywhere.** Anaerobic digestion and biofuel facilities provide new income sources and revenue streams for farmers and the rural economy. Clean tech jobs in wind, solar, and marine create additional high-skilled engineering and construction roles in locations ranging from Wales to Scotland and from Newcastle to London.
- 3. Renewable energy jobs are diverse.** There are roles in the industry for almost every skill set; from welder to electrician, data analyst to geoscientist, marketing to materials handling. More women work in renewables and clean tech compared to the fossil fuel industry (women make up 17% of the workforce in power and renewables compared to 7% in oil and gas, according to WISE campaign).

#### AFFORDABILITY

- 1. Renewable energy can provide some of the cheapest power to the grid.** Technologies such as onshore wind, solar, and biomass are now arguably cost-competitive with gas, with costs still falling.
- 2. Many renewable technologies are cheaper and faster to deploy than nuclear.** Onshore wind, solar, and the conversion of existing coal plants to biomass, can typically be constructed in under a year (subject to the right conditions).
- 3. Continuing to support renewable energy can maximise existing public investments.** The value of public money spent to date on developing new technologies can be maximised by seeing through development of technologies such as marine and advanced waste to energy.
- 4. Bills are falling.** A recent Committee on Climate Change report states that; household bills in 2016 were below 2008 levels as higher prices resulting from low-carbon and network costs were more than offset by reductions in energy use [efficiency].

#### THE ENERGY MIX

- 1. Renewable electricity is delivering in the UK.** Almost 25% of our electricity needs in 2016 were derived from renewable sources, including wind, solar, and biomass. This is up from around 7% in 2010.

- Solar panels have been deployed on approximately 900,000 homes and businesses in the UK.
  - This technological shift has in turn opened the door to new technologies - the number of companies operating in energy storage, in demand-side response, and offering low-carbon energy supplies is growing rapidly.
- 2. There is an urgent need to build new power capacity.** Renewables can fill the gap. Ageing coal and nuclear sites are closing yet electricity demand is set to increase. In fact, the National Audit Office (NAO) estimates that we need to deploy 81 GW of new electricity generation capacity by 2035, close to the entirety of our current power generation capacity.
  - 3. Major opportunities are present for transport.** By supporting biofuels and electric vehicle growth we can grow our domestic manufacturing and export bases.
    - Nearly 37,000 new electric cars were registered in 2016, a growth of over 28% on 2015. Bloomberg New Energy Finance reports that by 2020 there will be over 120 models of EVs globally.
    - Around 5% of diesel and petrol at the pump is renewable. The vast majority of this is domestically manufactured from waste, largely in the North East. We have capacity to increase the proportion of renewable diesel and petrol in the mix.
  - 4. Heat is becoming lower carbon.** Nearly 6% of UK heating in 2015 was renewable.
    - Biomass boilers, largely replacing dirty coal or heavy fuel oil boilers off the gas grid, have to-date delivered over 50% of the domestic and over 80% of the non-domestic renewable heat in Great Britain under the RHI, the Governments' flagship heat decarbonisation scheme.

## EXPORTS AND MARKETS ABROAD

- 1. Renewable energy means major investment abroad.** By developing our industries at home first, and by specialising in technologies such as energy storage that all countries will need, we can grow our export base.
  - China has announced a \$361bn renewable funding programme to 2020.
  - Saudi Arabia has announced an up to \$50bn plan to 2023 to diversify away from oil using renewables.
  - India has a target of 100 GW of solar PV by 2022 (by contrast the UK has around 13 GW installed).
  - UK expertise in delivering projects is in demand world-wide.
- 2. We manufacture wind components, biogas systems, energy storage technologies and more.**
  - Lithium-ion batteries, the most popular for storage and EVs at present, are being manufactured in Sunderland by Nissan. Reuters reports that another purpose-built factory will be built for other auto companies. We expect more to come.
  - BNEF estimates that global battery prices are dropping by about 20% each year.
  - The UK was the world's fastest growing biomethane market in 2015.
  - The UK builds, tests, and conducts R&D on wind power components in places such as Hull and Newcastle.
  - The UK has additional unique expertise in advanced waste-to-energy, grid management, marine, energy storage, and more.

## CLIMATE CHANGE

- 1. Domestic law is driving the climate agenda.** In the UK there is an urgent need to decarbonise in line with our world-leading Climate Change Act. Our Fourth and Fifth Carbon Budgets will guide

how this is done in the 2020's and 2030's. This Act has been emulated worldwide (see Mexico's use of our Act as a blueprint) and provides businesses certainty that the UK is committed to tackling climate change from the front-foot.

2. **The UK is reducing its emissions.** In 2017 the UK has enjoyed a number of "coal-free" electricity days, a first since the Industrial Revolution, due to our climate policy.
  - Following progress in decarbonising the electricity sector, the UK's largest source of greenhouse gas emissions is now the transport sector.
3. **The UK is leading the world in separating economic growth from emissions growth.** The Energy and Climate Intelligence Unit (ECIU) analysis indicates that in the quarter century since the signing of the United Nations Climate Convention at the Rio Earth Summit, British people have become richer, on average, than citizens of any other G7 nation. At the same time, we have reduced our average carbon footprint further than citizens of any other G7 nation.

## KEY ISSUES POST THE ELECTION

1. **Clarity is needed on key policies in 2017/18.** These range from laying out a clean growth plan to ensuring that there are new auctions for a wide range of renewable technologies. Prior to the election **the REA produced 10 Manifesto Recommendations to grow the low-carbon economy. Read them here.**

**If there are three things** we want all Parliamentarians to bear in mind during their work in this parliament, they are:

1. **Renewable energy isn't niche, it's delivering on a significant-scale and it's here to stay.**
2. **There's fierce competition overseas to become leaders in these technologies.**
3. **Building vibrant domestic markets is the first key step to building exports.**

**With questions or comments please contact;**

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## TURNOVER, COMPANIES AND JOBS

Renewable Energy Sub Sectors - 2015/16	Turnover £'millions	Employment Numbers	Company Numbers
Air & Ground Source Heat Pumps	1,249	9,441	473
Anaerobic Digestion	356	2,952	155
Biofuels*	1,500	10,000	608
Biomass Boilers	809	6,353	286
Biomass CHP	382	2,558	156
Biomass Dedicated Power	635	4,377	218
Energy from Waste	930	7,694	392
Hydro	639	5,778	296
Wind Energy	6,152	41,766	1,909
Solar PV	2,037	13,687	1,241
Solar Thermal	1,126	9,637	414
Wave & Tidal	118	723	41
Production of biomass including wood for fuel	1,465	10,935	626
<b>TOTALS</b>	<b>17,397</b>	<b>125,900</b>	<b>6,815</b>

\*For 2015/16 the methodology being used for calculating jobs and turnover in the biofuels sector has been amended to reflect the usage in transport fuels, rather than simply looking at unblended uses for the product. Using this revised methodology, for 2015/16 the turnover for the sector is forecast as being £1.5bn, with an estimated 10,000 people working in the sector.

# Renewable Energy MADE IN BRITAIN

Employment and turnover by region and technology 2015/16



RENEWABLE ENERGY ASSOCIATION

Made in Britain Map - employment and turnover by region 2015/16 as published in REA's Review 2017.

Report by the REA, data by Innovas.

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125,900 people employed across the UK renewable energy value chain 2015/16.

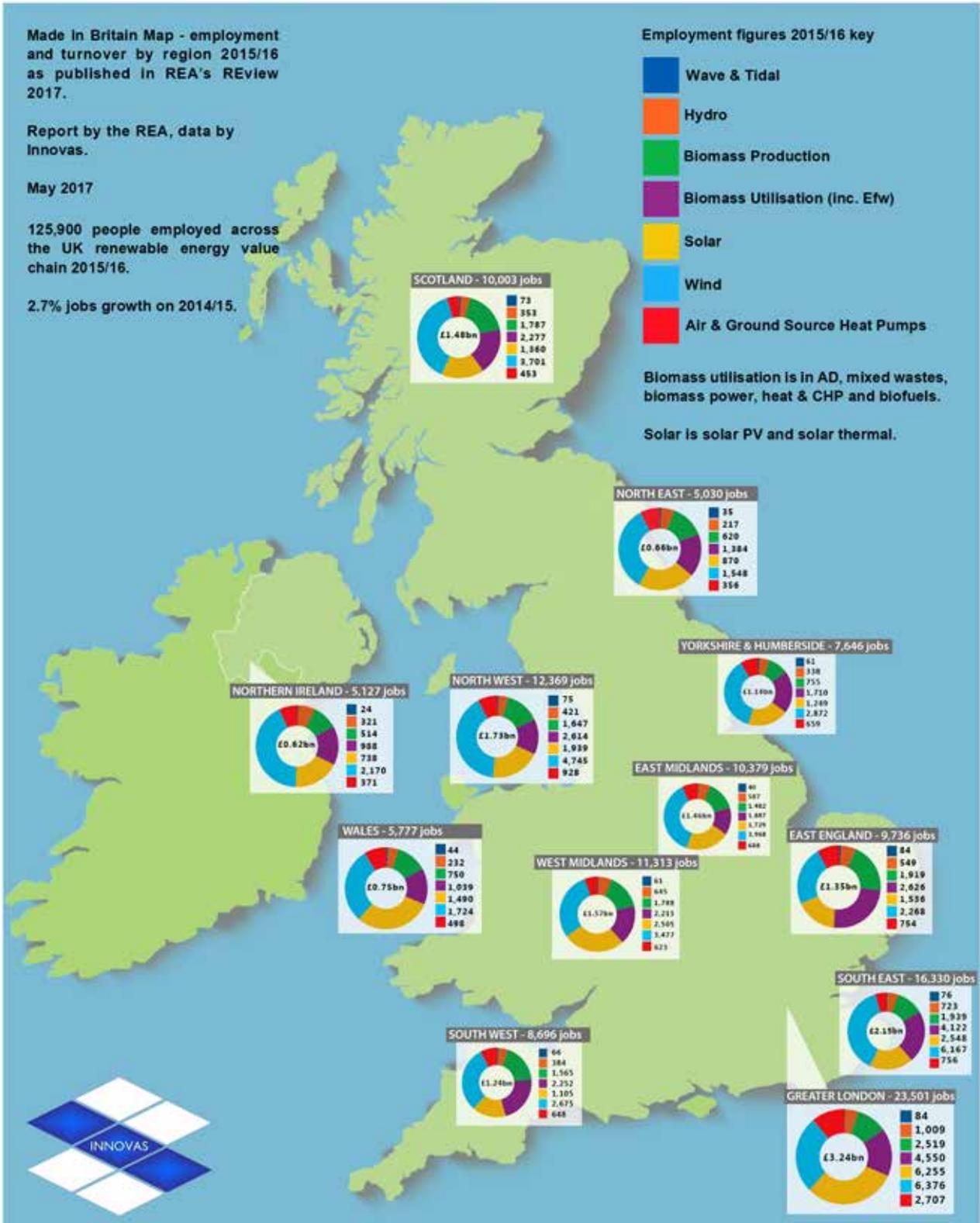
2.7% jobs growth on 2014/15.

Employment figures 2015/16 key

- Wave & Tidal
- Hydro
- Biomass Production
- Biomass Utilisation (inc. Efw)
- Solar
- Wind
- Air & Ground Source Heat Pumps

Biomass utilisation is in AD, mixed wastes, biomass power, heat & CHP and biofuels.

Solar is solar PV and solar thermal.



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