

Clean Energy Data Pack

Final Version – March 2019

NEWANGLIA

Local Enterprise Partnership
for Norfolk and Suffolk



European Union

European
Social Fund

Contents

Introduction to the Sector Data Pack	Page 3
Introduction to and Definition of the Clean Energy Sector	Page 3
Low Carbon & Renewable Energy (LCRE) Sector Definition	Page 4
National LCRE Sector Analysis	Page 7
Norfolk and Suffolk LCRE Sector Estimates	Page 19
Renewable Electricity Statistics Analysis	Page 25
Labour Insight Jobs tool sector analysis	Page 38
A Future View of the LCRE Sector in Norfolk and Suffolk	Page 49

Introduction to the Sector Data Pack

The role of the Sector Data Pack is to bring together the latest socio-economic and labour market data and present both an up-to-date, and future view, of the sector and any underlying issues within the area that could impact upon it. Data is presented in a navigable format without comment with interpretation at this stage mainly left to the reader. In most instances data has been analysed and presented down to local authority level. In some instances, and even where local authority data is available, it has not been presented in the data pack due to issues of unreliability and small sample sizes.

Introduction to the Clean Energy Sector

Defining the Clean Energy sector is particularly difficult given that it is a relatively new sector. As a result, Standard Industrial Classification (SIC) codes (which do a great job in measuring traditional sectors such as manufacturing and construction) are yet to catch up and as such do not adequately capture the sectors activity. Activity within the sector can also be hidden due to the fact that it is not always a firms main operating activity (meaning that it can get recorded against a less suitable SIC code and lost within official statistics). Further complicating matters is the fact that it also cuts across many traditional sectors.

The Office for National Statistics recognise these issues and to combat this, in recent years they have conducted a national survey of Low Carbon and Renewable Energy businesses. We have drawn on this source of sector information heavily within this data pack, with the assumption that national trends in employment and turnover will be broadly reflected at the local level. In addition, we have used this information to arrive at employment estimates for Norfolk and Suffolk, and a number of comparator areas.

Low Carbon & Renewable Energy (LCRE) Sector Definition

- ONS define the low carbon economy as ‘economic activities that deliver goods and services that generate significantly lower emissions of greenhouse gases; predominantly carbon dioxide’.
- The low carbon sectors are: offshore wind, onshore wind, solar photovoltaic, hydropower, other renewable energy, bioenergy, alternative fuels, renewable heat, renewable combined heat and power, energy efficient lighting, energy efficient products, energy monitoring, saving or control systems, low carbon financial and advisory services, low emission vehicles and infrastructure, carbon capture and storage, nuclear power, fuel cells and energy storage systems.
- These low carbon sectors are then subsequently grouped into six low carbon groups: low carbon electricity, low carbon heat, energy from waste and biomass, energy efficient products, low carbon services, and low emission vehicles etc.

LCRE Group

Low Carbon Electricity

Low Carbon Heat

Energy from waste and biomass

Energy efficient products

Low Carbon Services

Low emission vehicles, infrastructure,
fuel cells, and energy storage

LCRE Sector

Offshore wind

Onshore wind

Solar photovoltaic

Hydropower

Other renewable electricity

Carbon capture and storage

Nuclear

Renewable heat

Renewable combined heat and power

Bioenergy

Alternative fuels

Energy efficient lighting

Other energy efficient products

Energy monitoring, saving or control systems

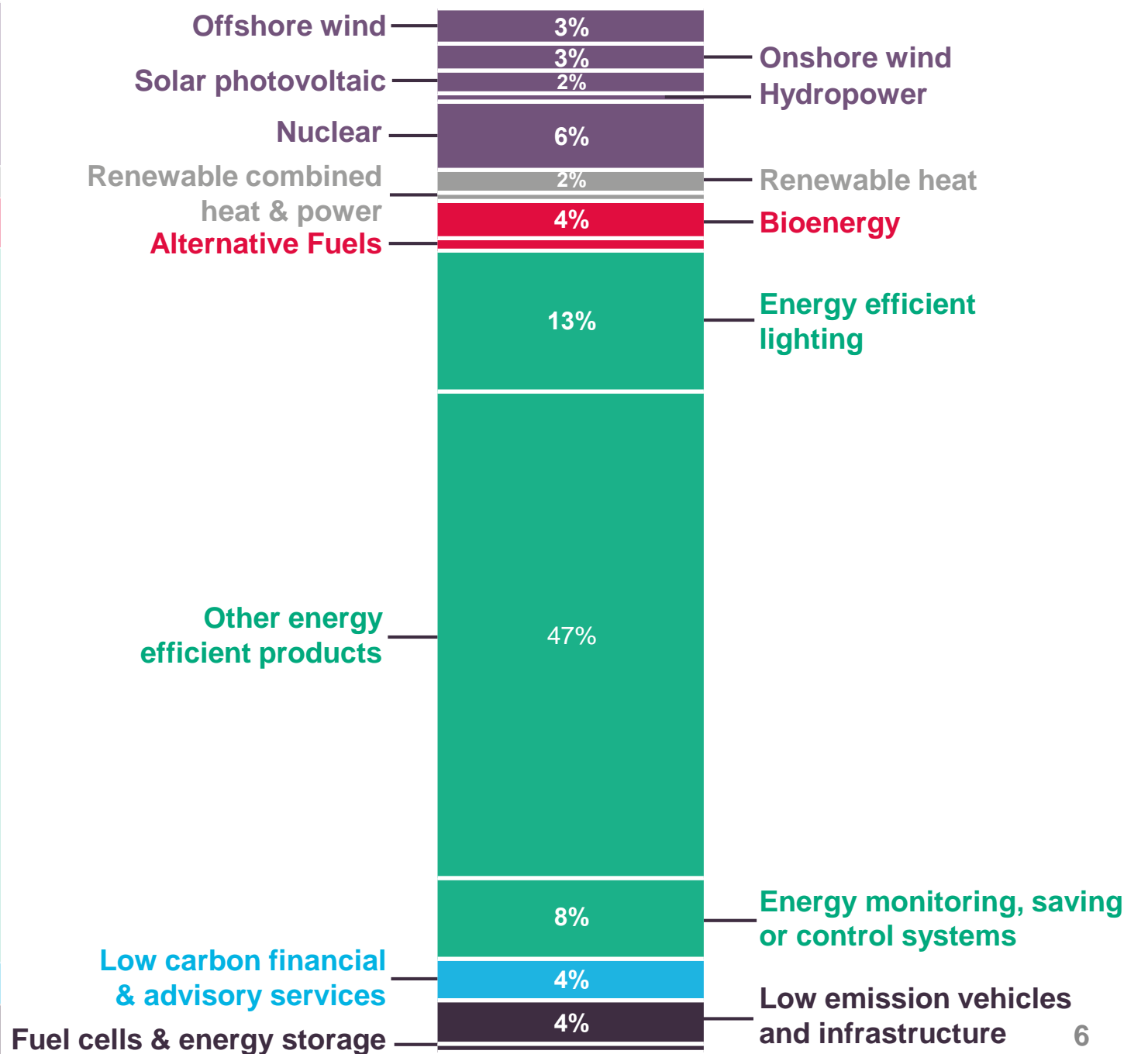
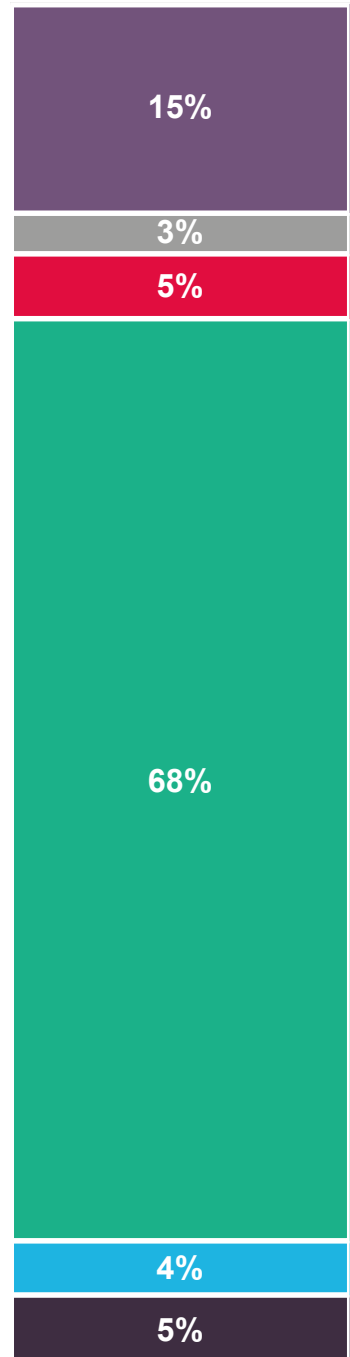
Low Carbon financial and advisory services

Low emission vehicles and infrastructure

Fuel cells and energy storage

Proportions of LCRE direct employment (FTEs) by LCRE Group and sector, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey



The following section uses the results from the latest 2017 Low Carbon and Renewable Energy sector (LCRE) business survey to show the size, shape, and direction of the sector at the national level. This information can be accessed at <https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2017>

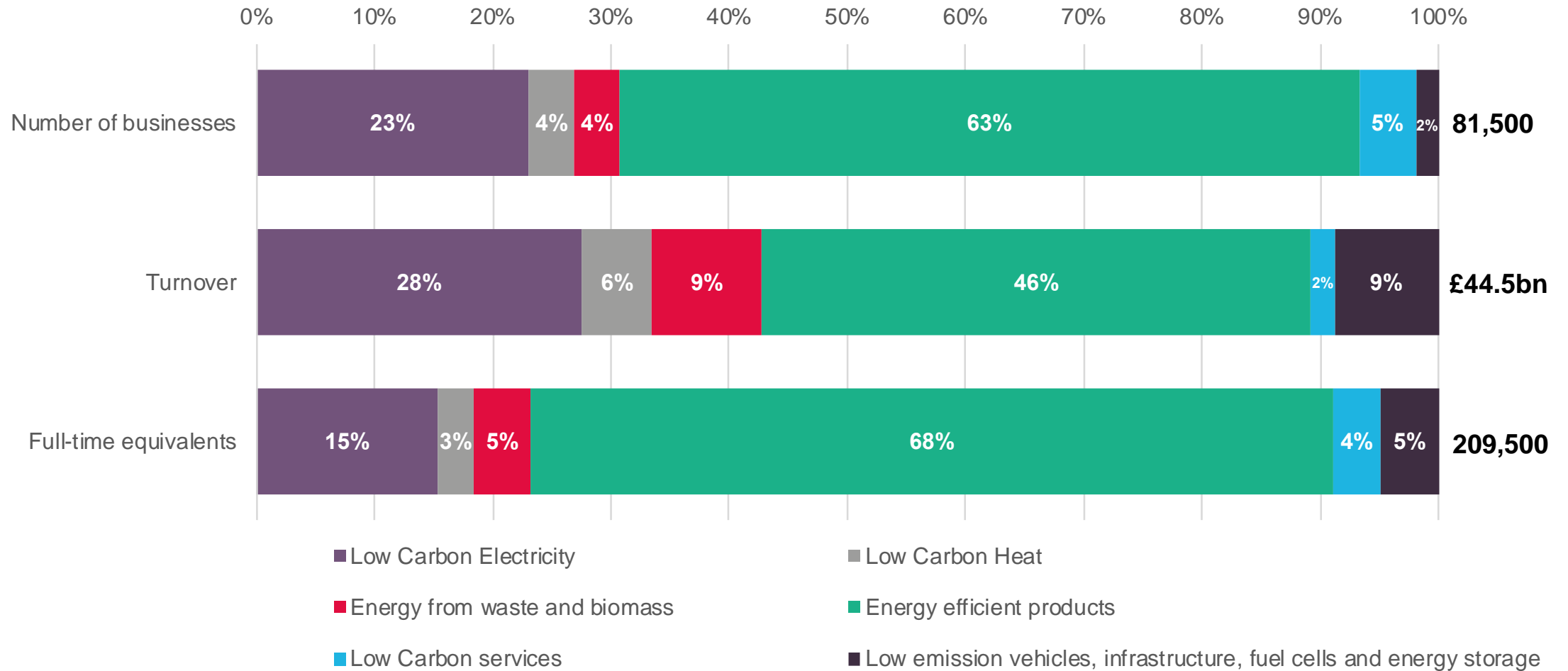
The figures provided by this Office for National Statistics (ONS) release are survey-based estimates. Surveys gather information from a sample rather than from the whole population. The sample is designed to allow for this, and to be as accurate as possible given practical limitations such as time and cost constraints, but results from sample surveys are always estimates and not precise figures. This means that they are subject to some uncertainty.

Activity in the low carbon and renewable energy (LCRE) economy is spread across a wide range of industries. Many sectors are small but growing and for many businesses LCRE activity is secondary rather than primary. For this reason, estimates of the number of businesses are subject to particular volatility.

Trends in the data are presented as far back as 2014, when the survey was first set up. A more complete picture of how the LCRE economy is changing over time will be possible once longer-term trends are available.

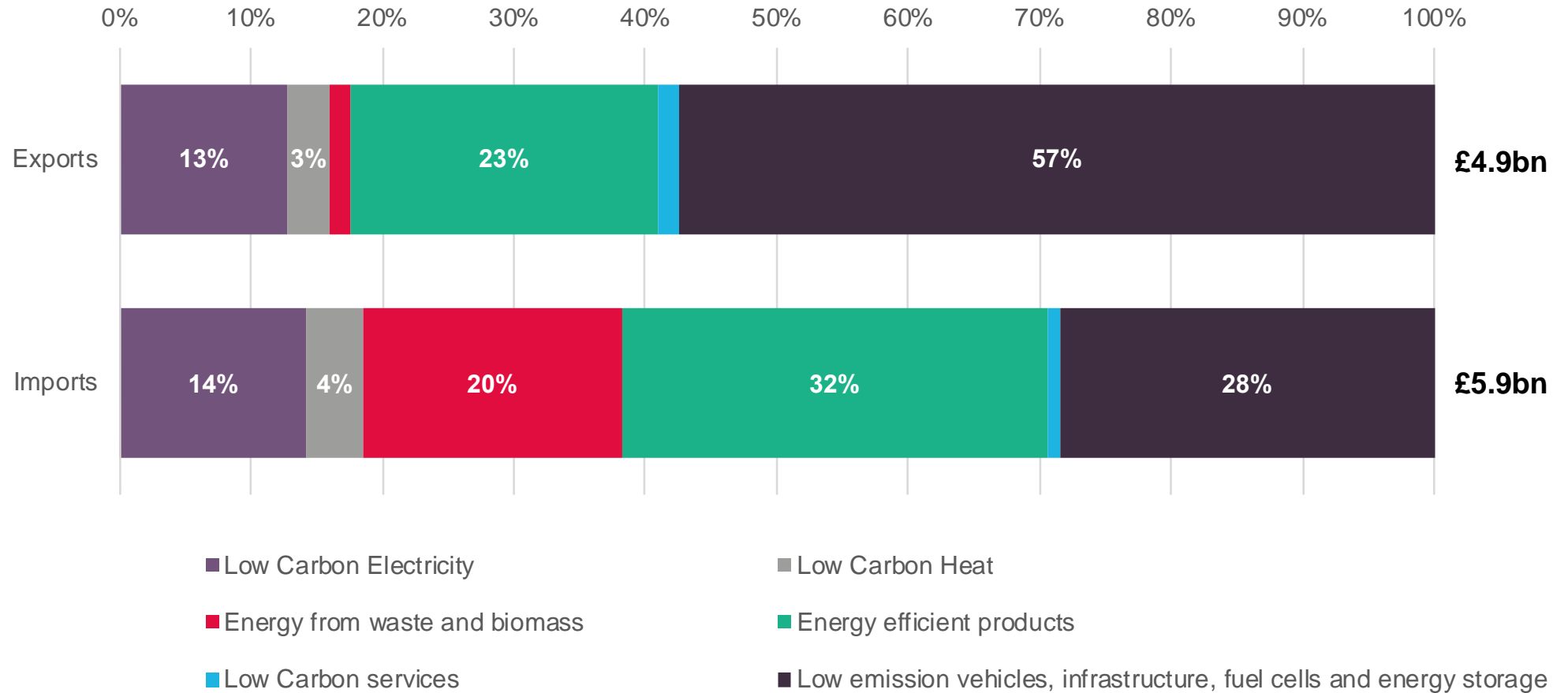
Estimates rely on businesses self-reporting their activity. Where a business is active in the low carbon services sector, if they provide services entirely in relation to another low carbon sector then they may choose to report their estimates there. For example, a business that provides financial services to the onshore wind sector may report their estimates under onshore wind only. Estimates of low carbon financial services may therefore be an underestimate.

National LCRE Sector businesses, FTEs, and turnover by LCRE Group, 2017



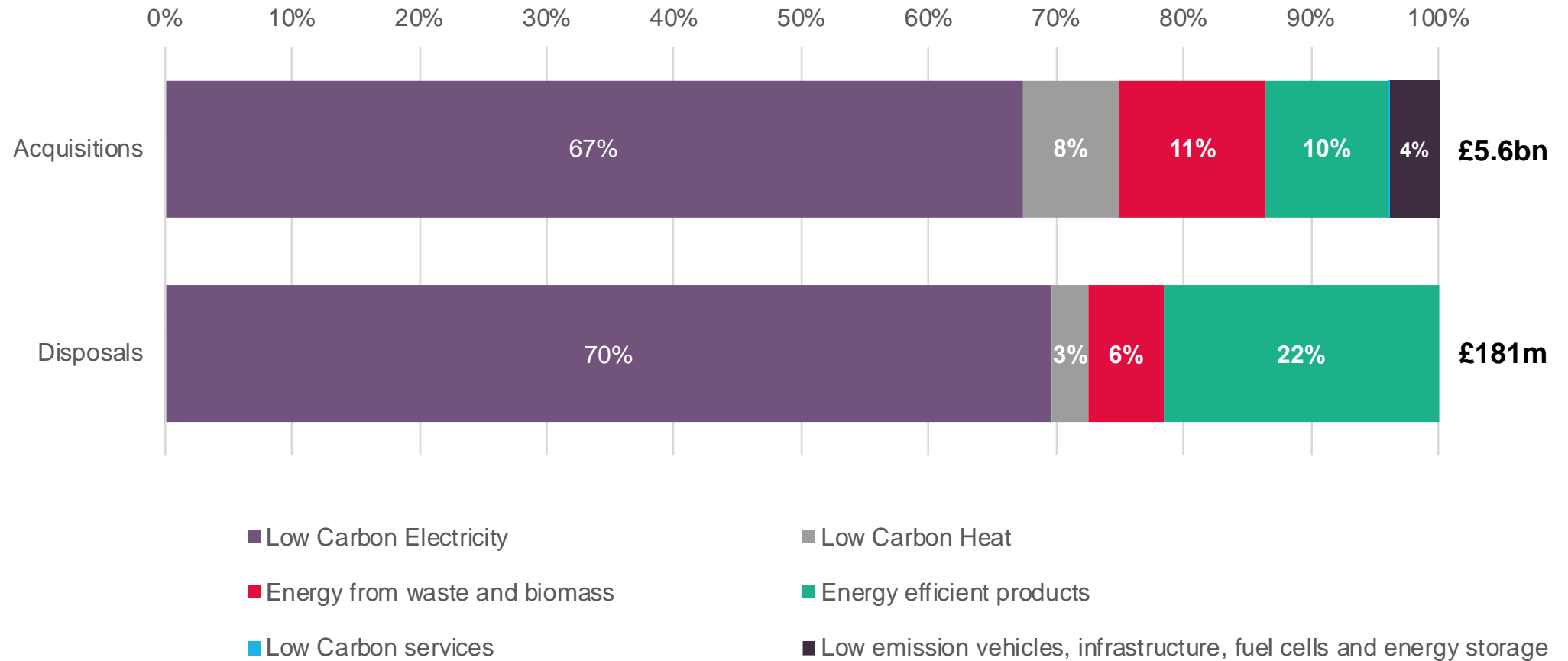
Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

National LCRE Sector Exports and Imports by LCRE Group, 2017



Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

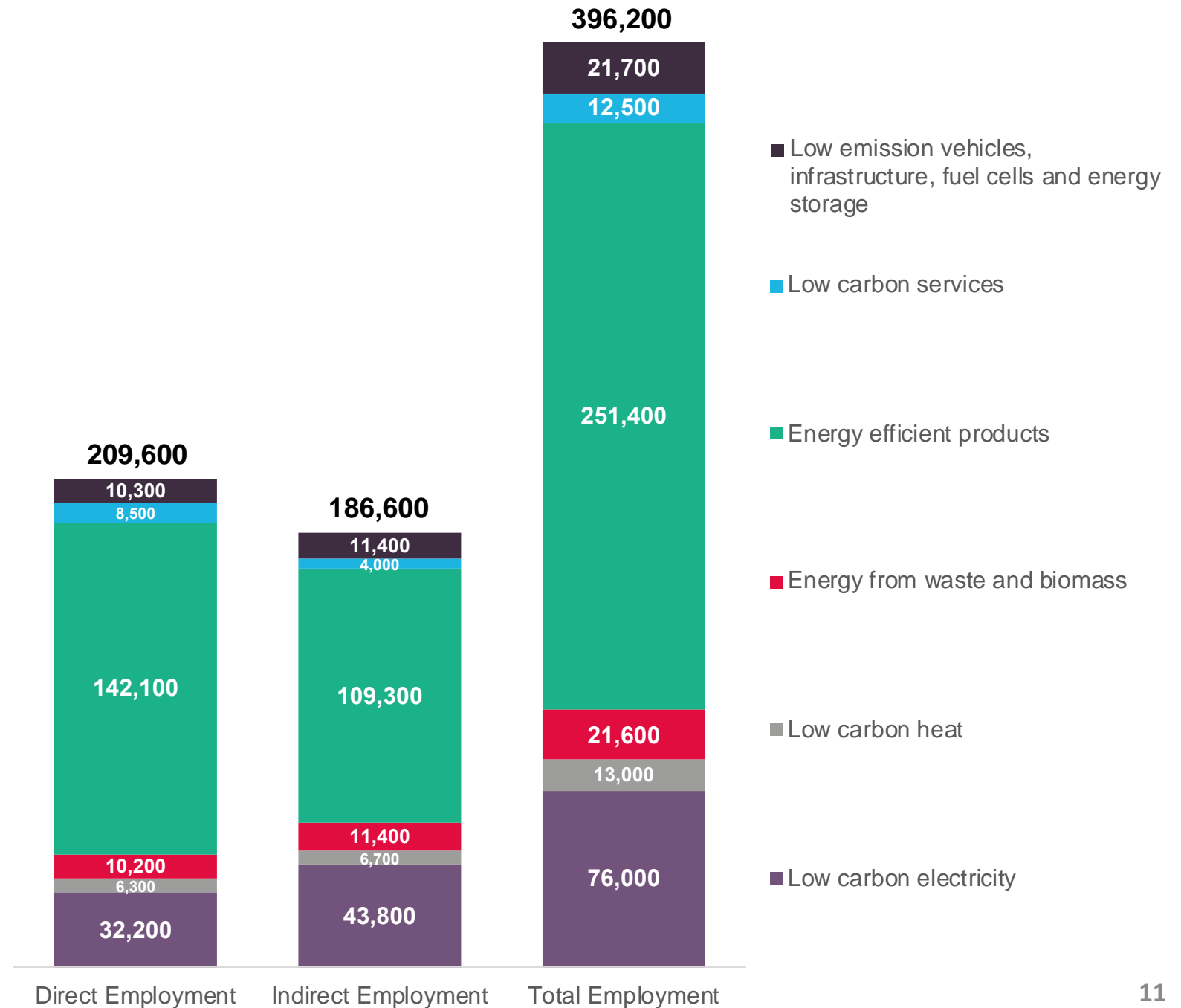
National LCRE Acquisitions and Disposals by LCRE Group, 2017



Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

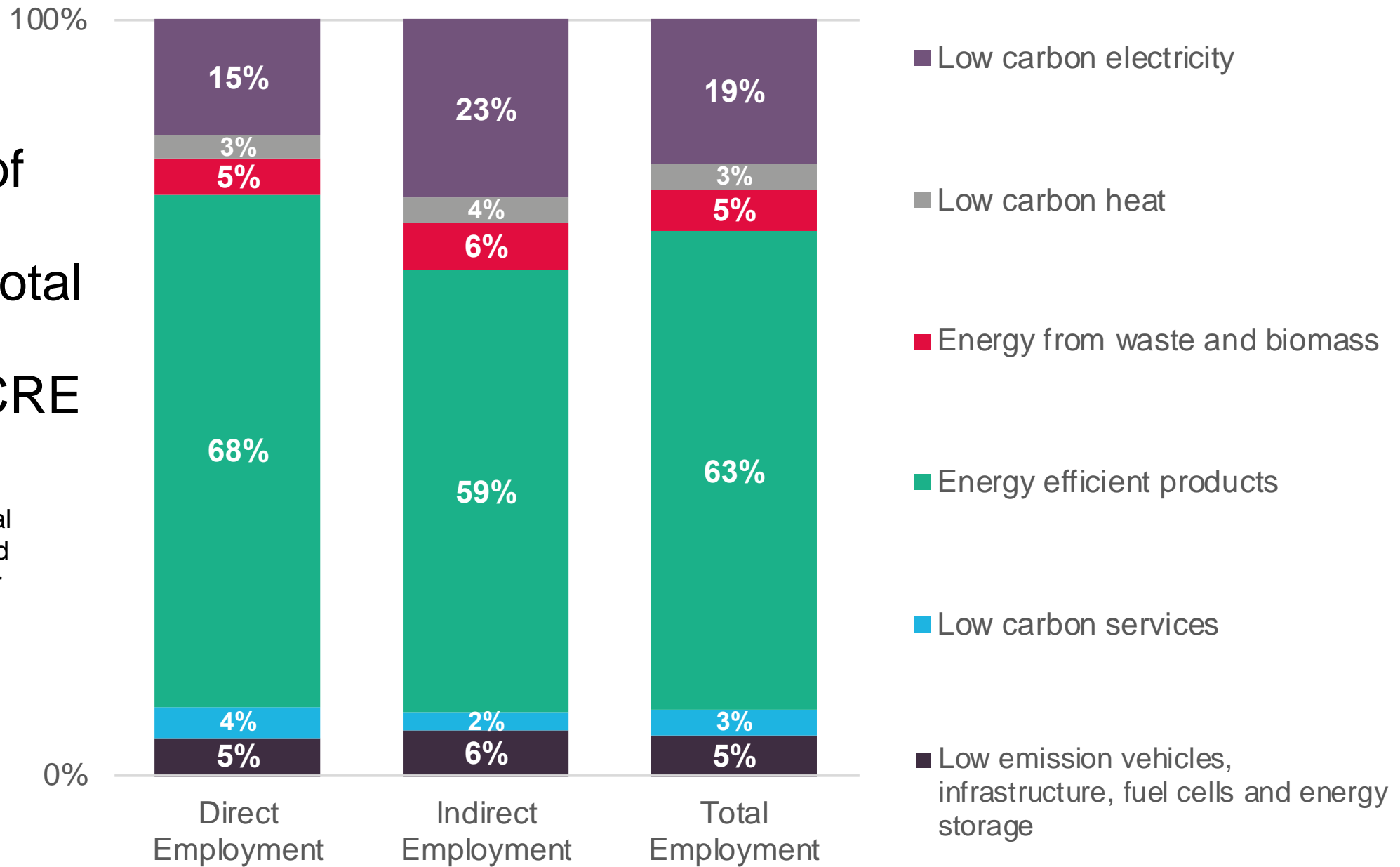
National LCRE direct, indirect and total employment (FTEs) by LCRE Group, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

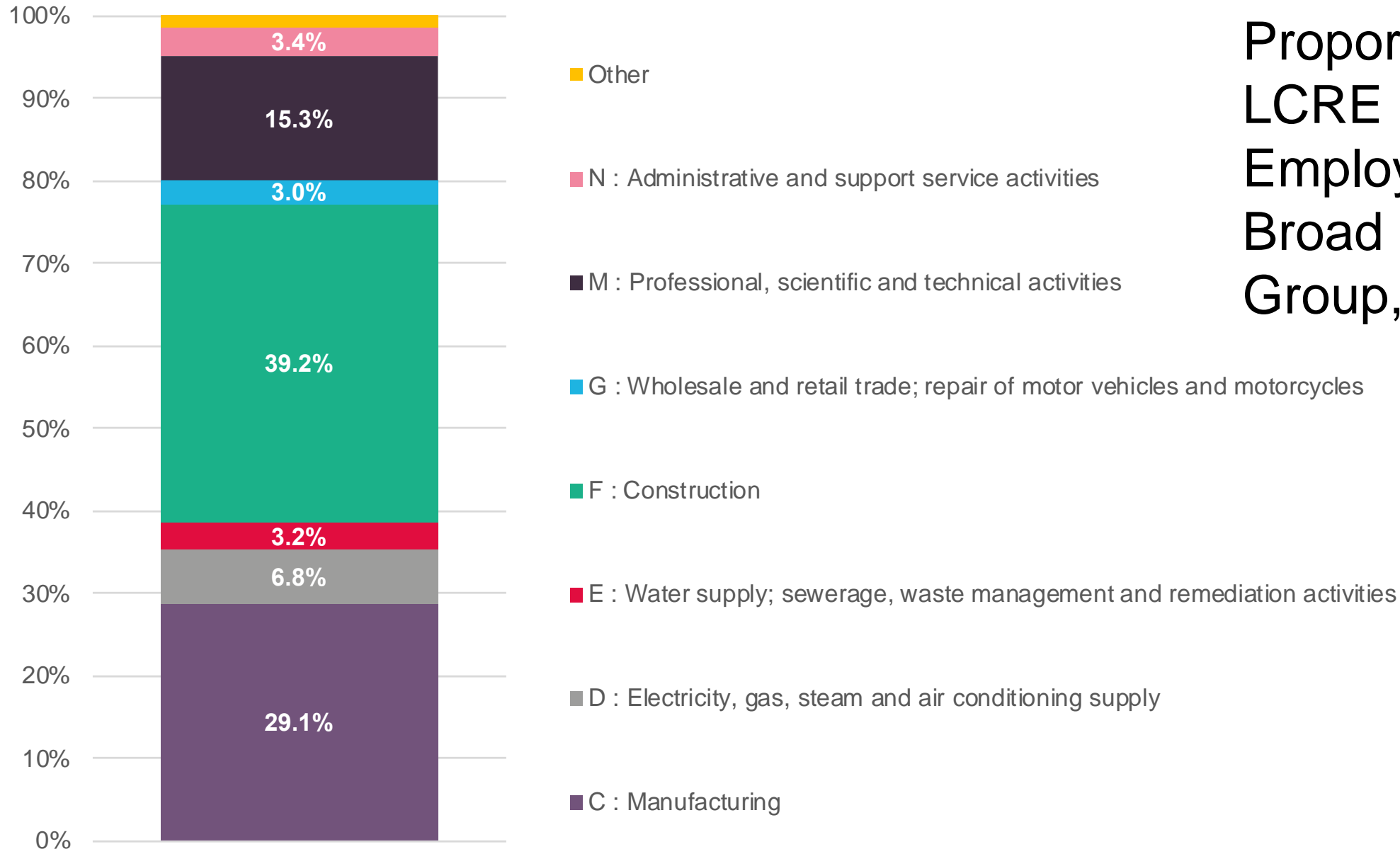


Proportions of LCRE direct, indirect and total employment (FTEs) by LCRE Group, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

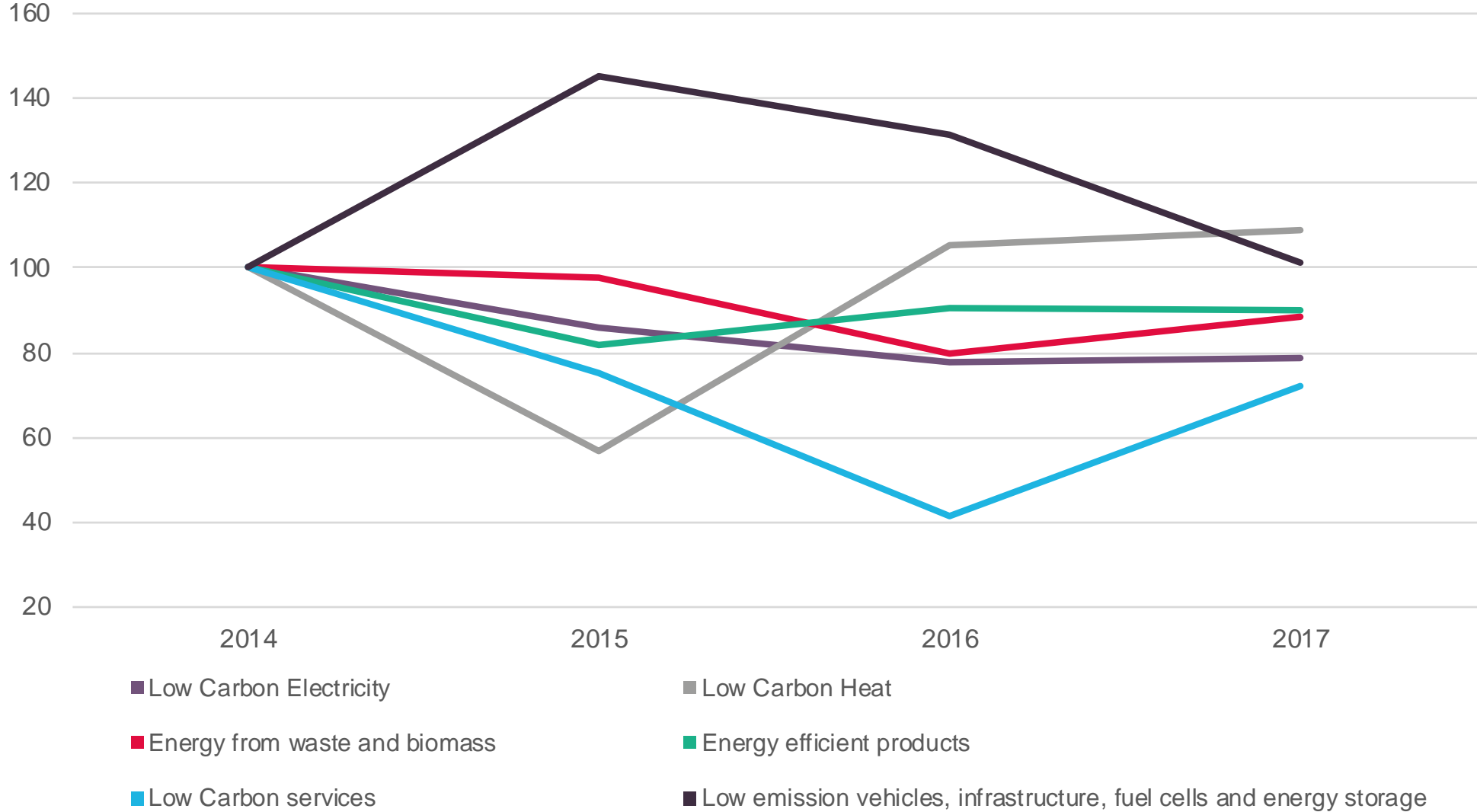


Proportion of LCRE Direct Employment by Broad Industrial Group, 2017



Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

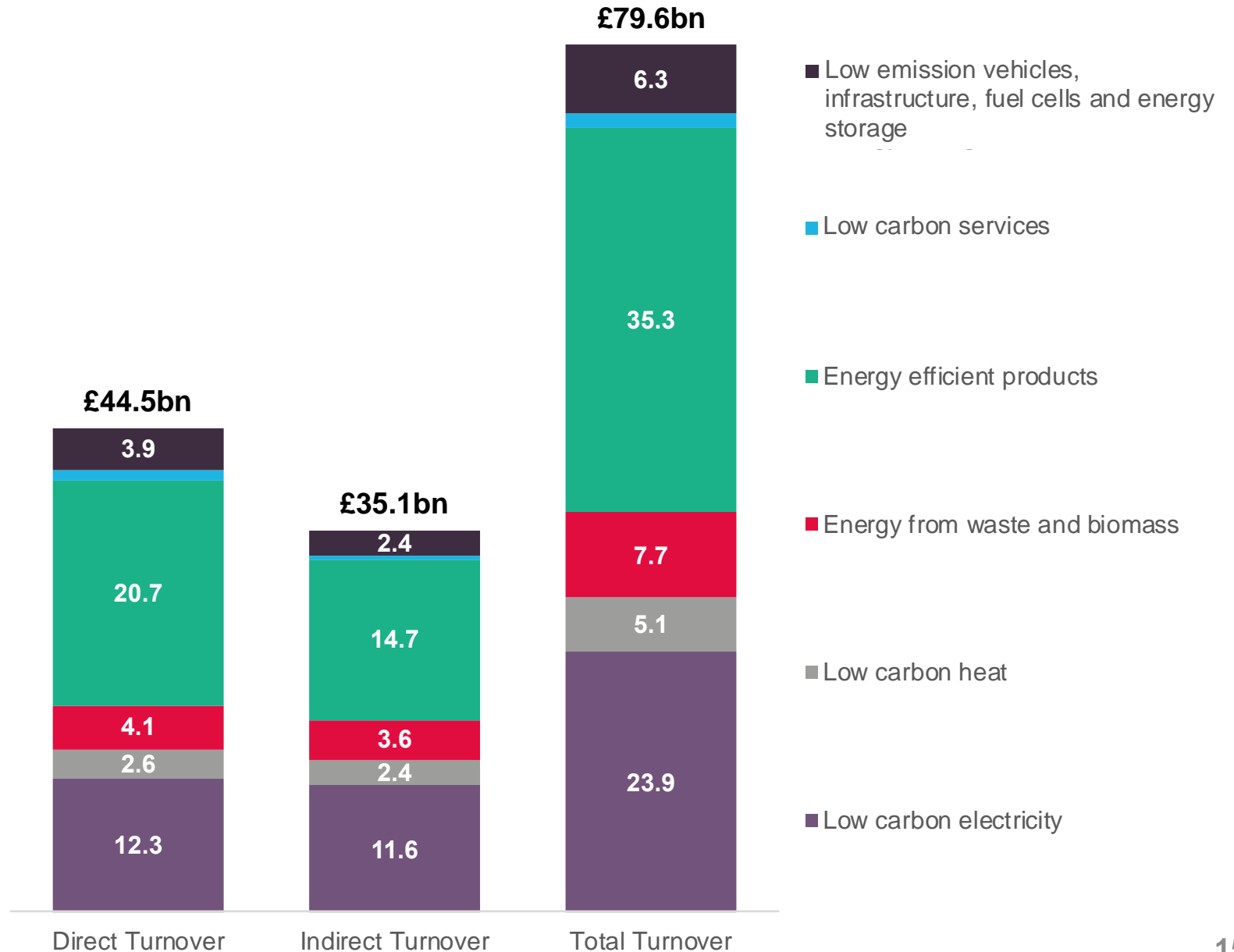
Direct employment (FTEs) over time by LCRE Group



Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

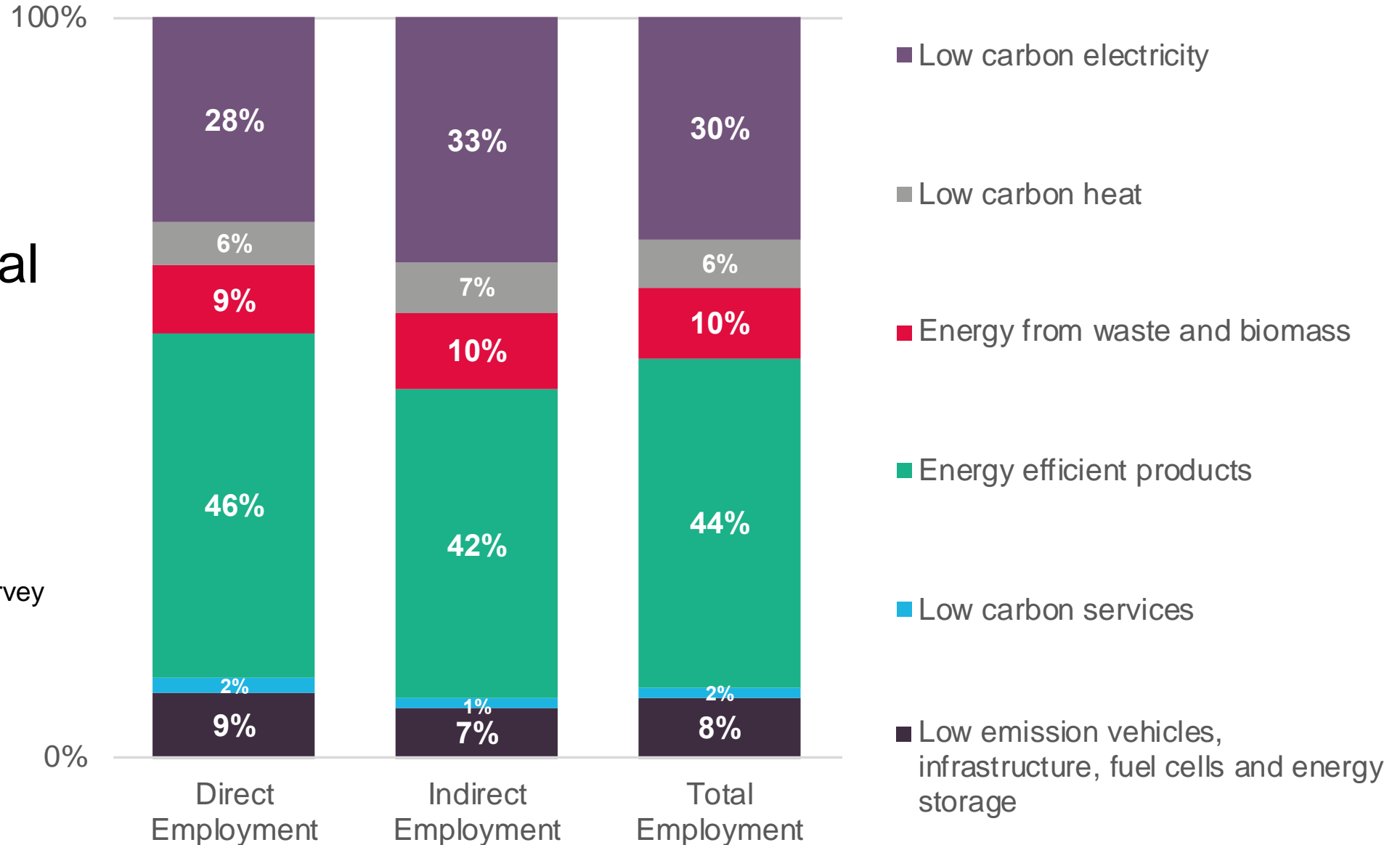
National LCRE direct, indirect and total turnover (£bn) by LCRE Group, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

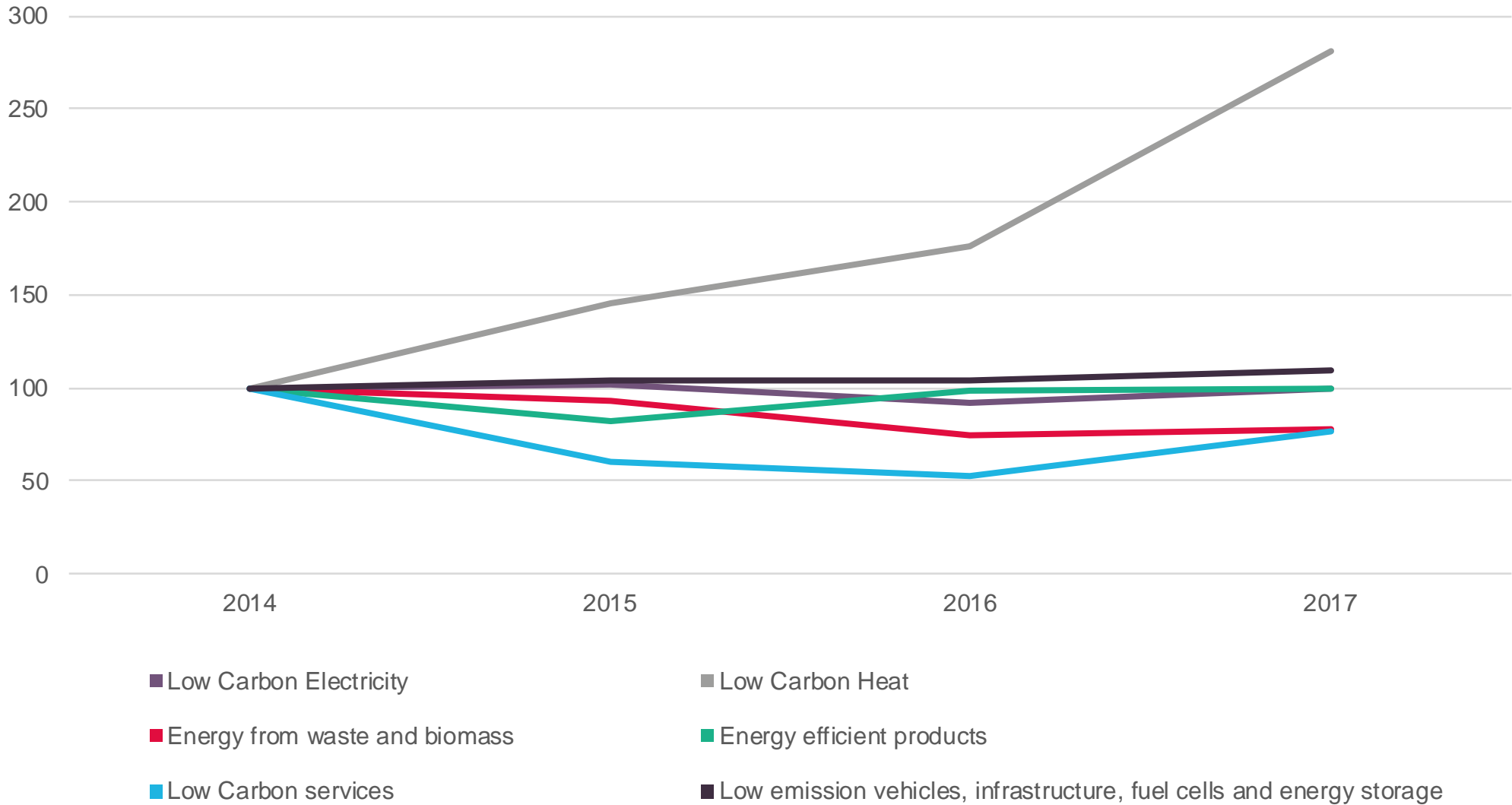


Proportions of LCRE direct, indirect and total turnover by LCRE Group, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey



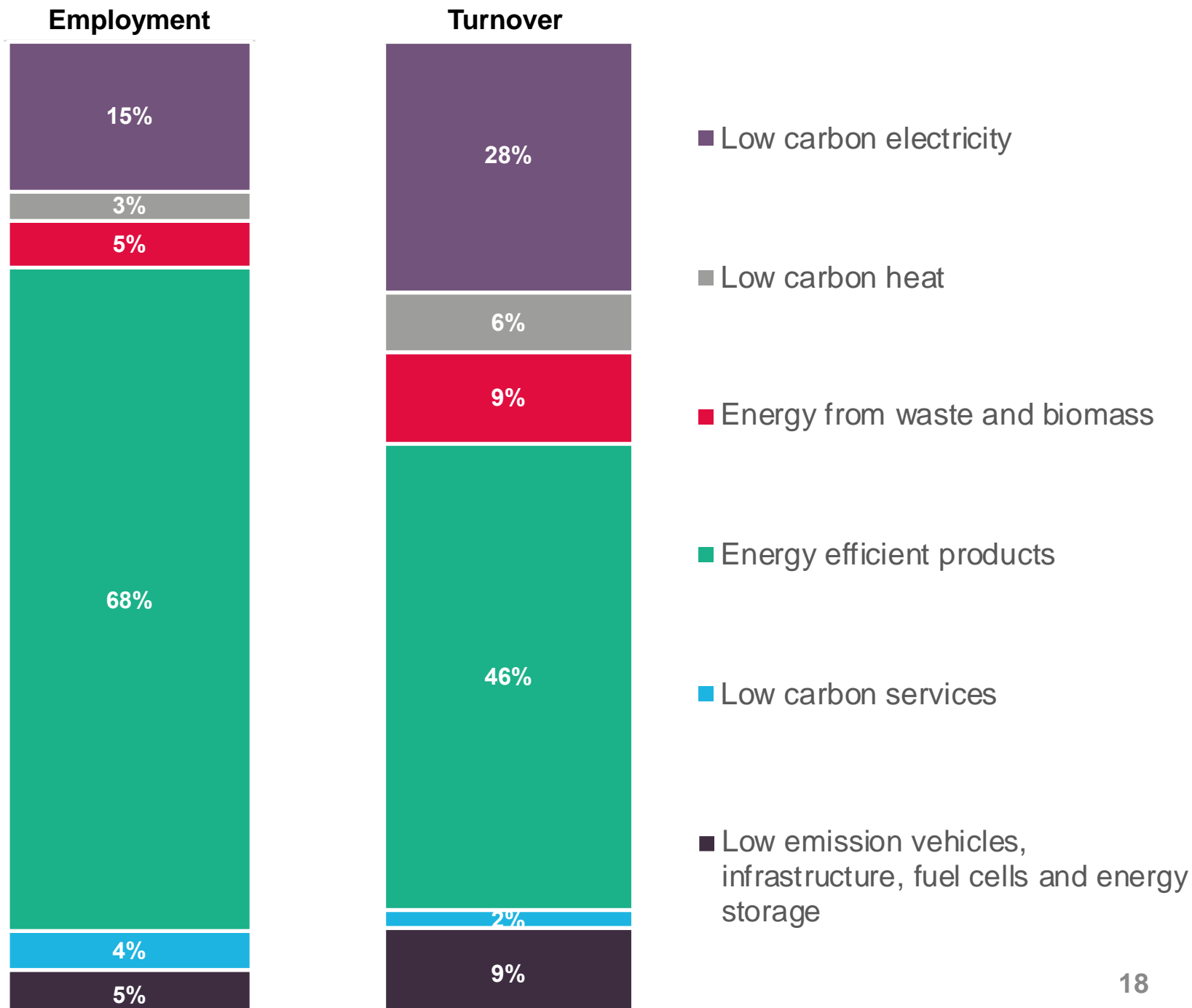
Direct turnover over time by LCRE Group



Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey

Comparison of LCRE direct employment and turnover by LCRE Group, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey



The following section builds on the national data previously covered, and using estimates for LCRE activity across the economy by Broad Industrial Group, presents estimates (produced by SkillsReach) for LCRE direct, indirect, and total employment (FTE) for Norfolk and Suffolk, and LCRE direct employment for a number of comparator LEP areas.

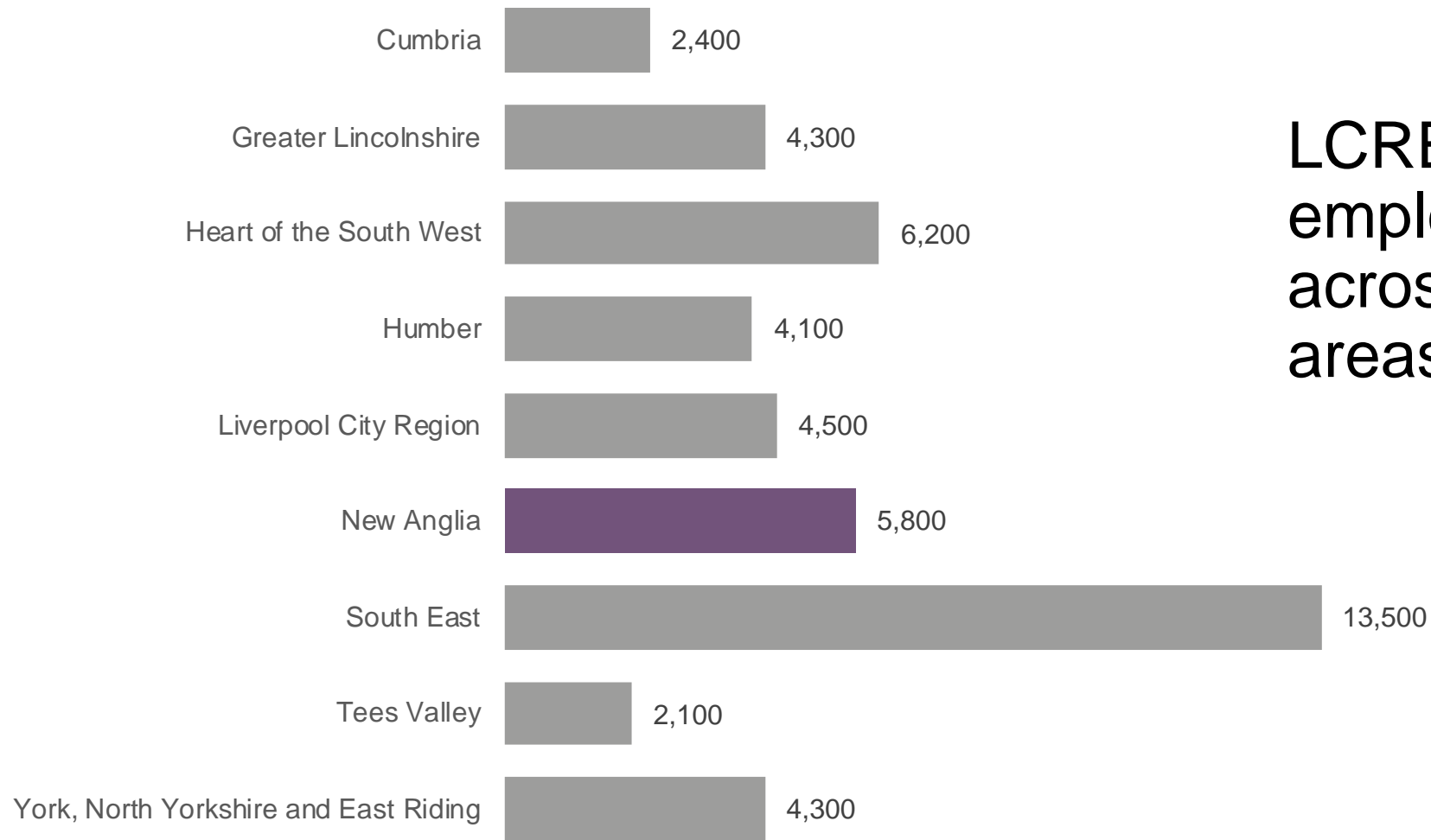
Slide 23 presents work that was previously undertaken by New Anglia LEP as part of the evidence base for its Strategic Economic Plan, and is presented here to provide estimates for value and business numbers.

Norfolk and Suffolk LCRE direct, indirect and total employment (FTEs) estimates by LCRE Group, 2017

Figures rounded to the nearest 100; totals may not sum due to rounding

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey; Business Register and Employment Survey 2017





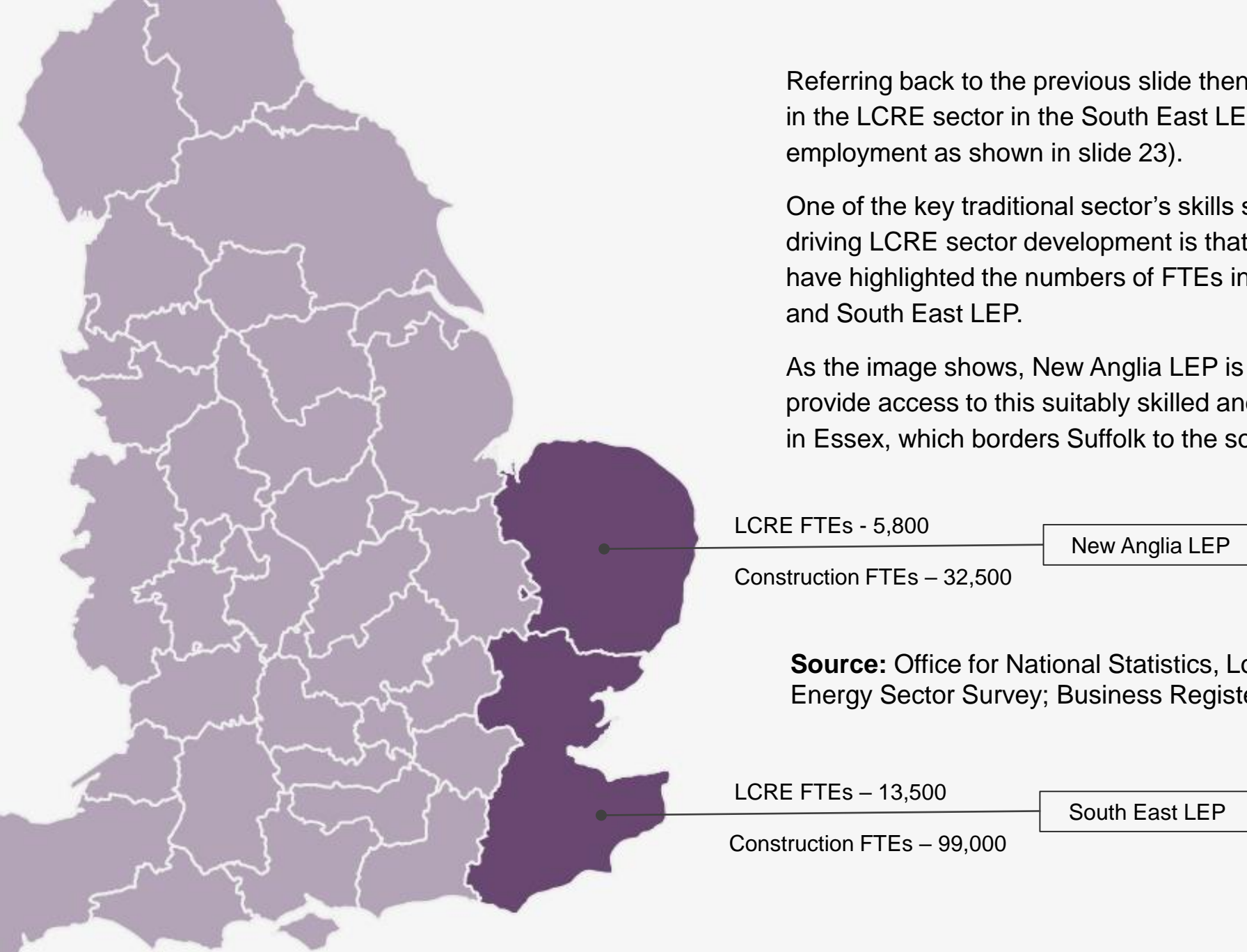
LCRE direct employment (FTEs) across comparator areas, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey; Business Register and Employment Survey 2017

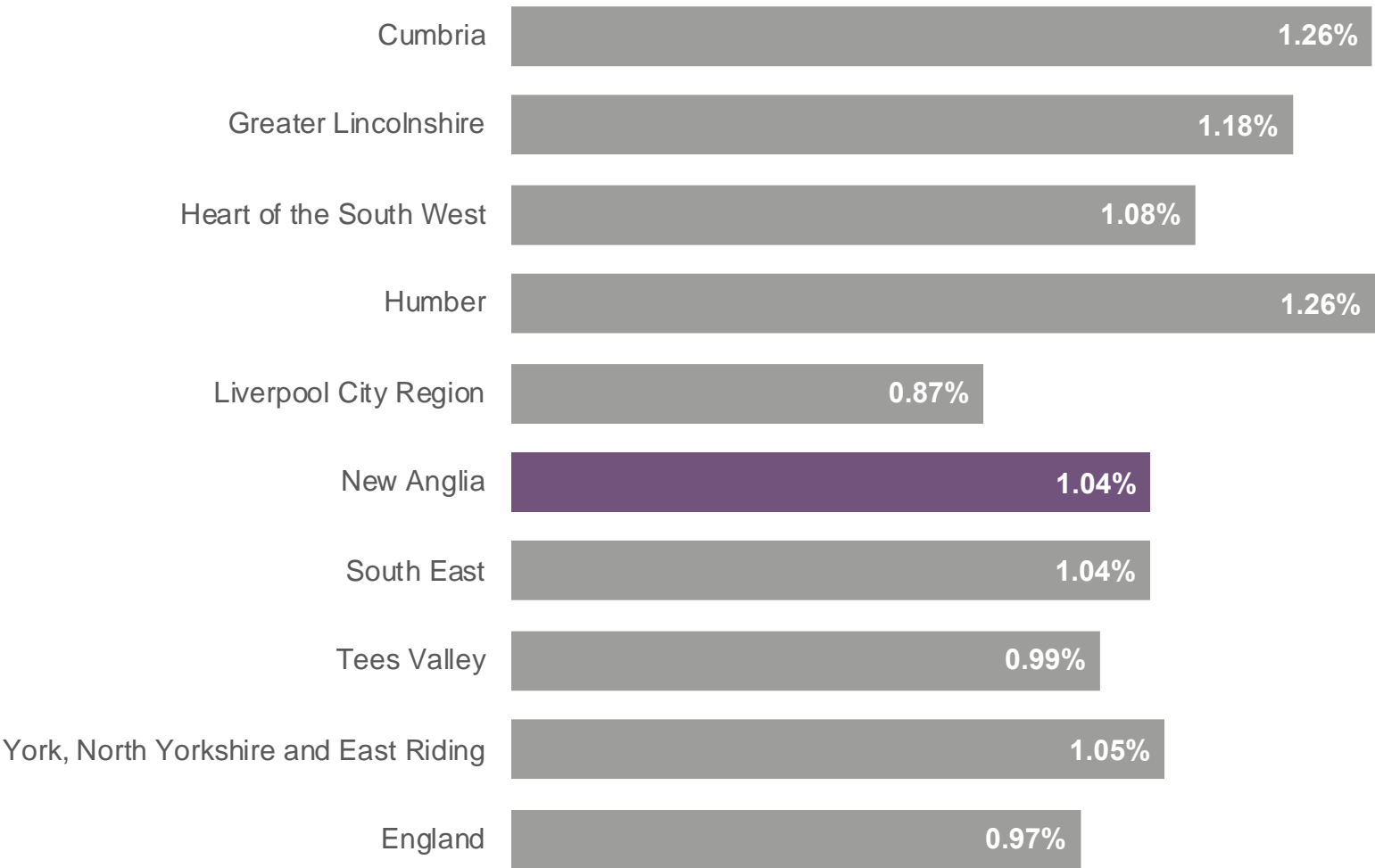
Referring back to the previous slide then we note the high level of employment in the LCRE sector in the South East LEP (though this is proportional to overall employment as shown in slide 23).

One of the key traditional sector's skills sets that plays a significant role in driving LCRE sector development is that of Construction, and in this image we have highlighted the numbers of FTEs in the sector for both New Anglia LEP and South East LEP.

As the image shows, New Anglia LEP is perfectly positioned geographically to provide access to this suitably skilled and experienced workforce, particularly in Essex, which borders Suffolk to the south.



Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey; Business Register and Employment Survey 2017



LCRE direct employment (FTEs) as a % of total employment (FTEs) across comparator areas, 2017

Source: Office for National Statistics, Low Carbon and Renewable Energy Sector Survey; Business Register and Employment Survey 2017

Extract from New Anglia LEP produced Energy sector comparator datapack

In-depth look - low carbon and renewable energy (2016)



The following section considers the latest release of Department for Business, Energy and Industrial Strategy (BEIS) Renewable Electricity Statistics covering the period 2014 to 2017.

For the first time this data has been made available at local authority level and so we have been able to present figures for capacity, generation, and sites for each of New Anglia LEPs local authority areas. This information is also summed up to present LEP level analysis alongside a national comparator.

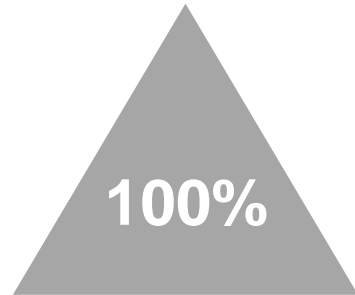
The statistics can be accessed at <https://www.gov.uk/government/statistics/regional-renewable-statistics>

Renewable Electricity Capacity

Between 2014 and 2017, renewable electricity capacity has doubled in Norfolk and Suffolk

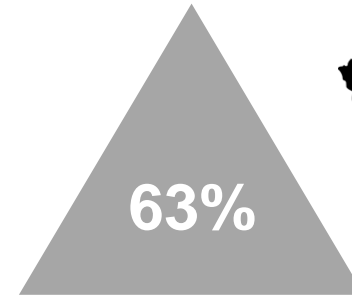


3,000 MW
(2017)



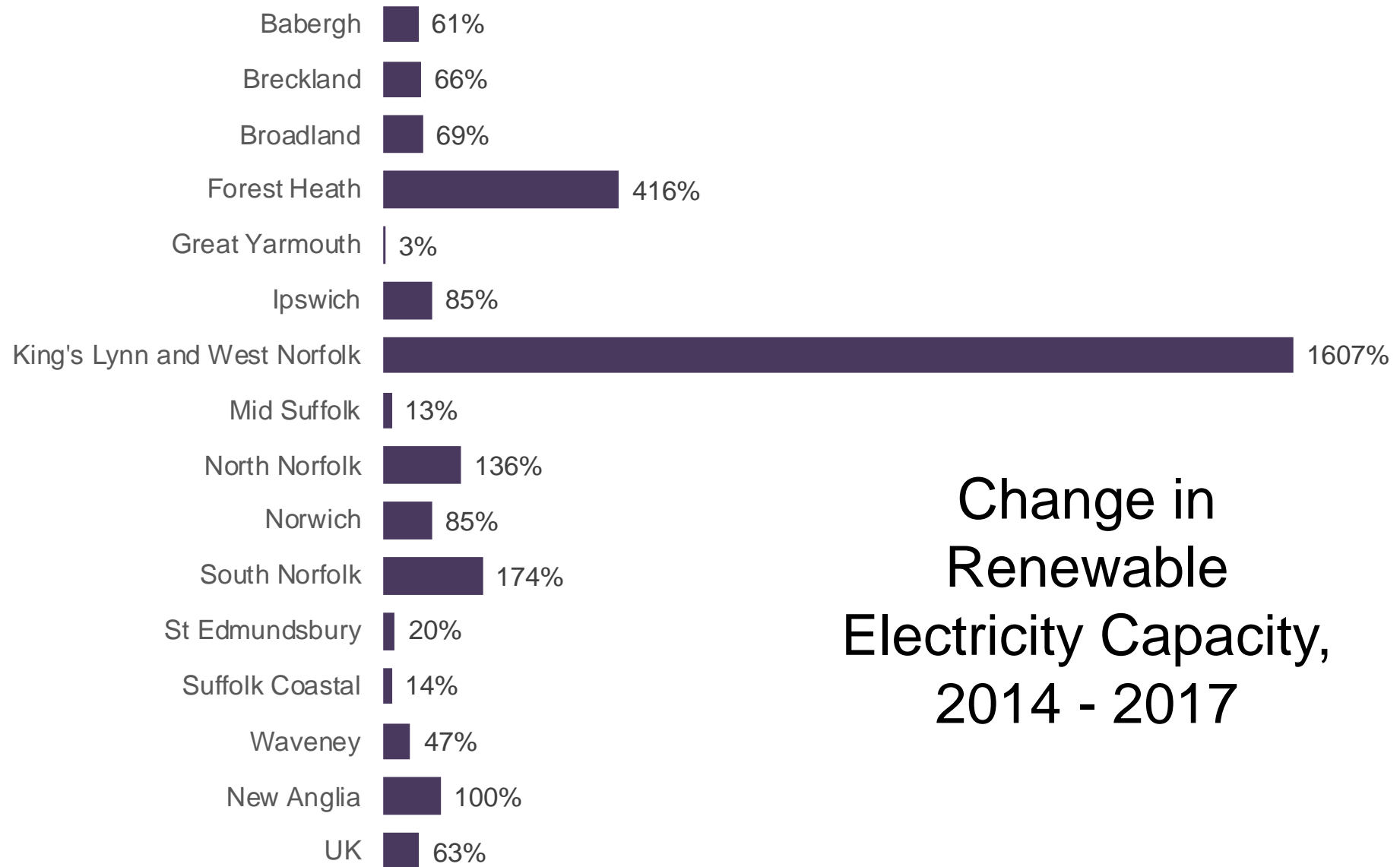
1,499 MW
(2014)

40,630 MW
(2017)



24,914 MW
(2014)



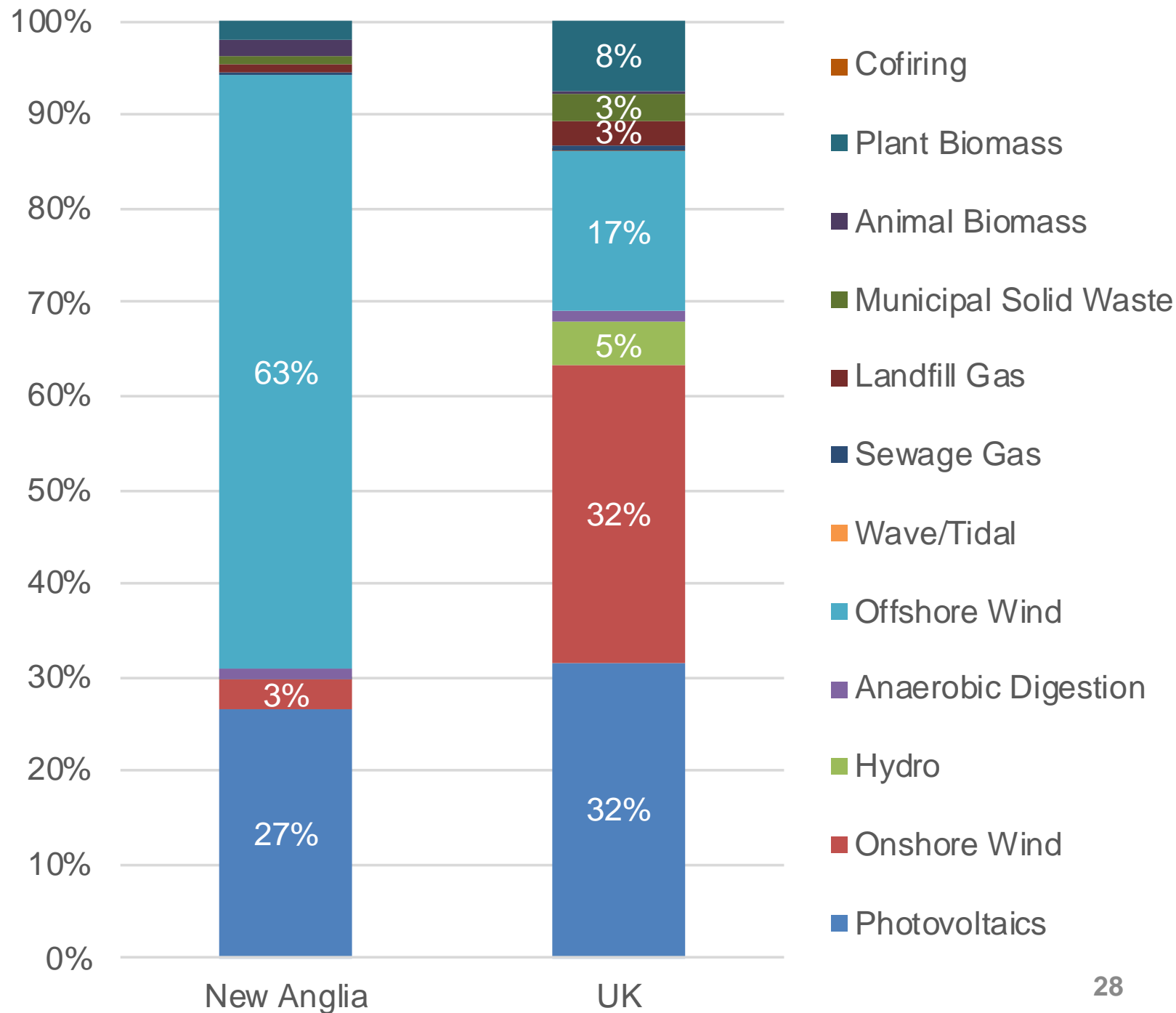


Change in Renewable Electricity Capacity, 2014 - 2017

Renewable Electricity Capacity by Type, 2017

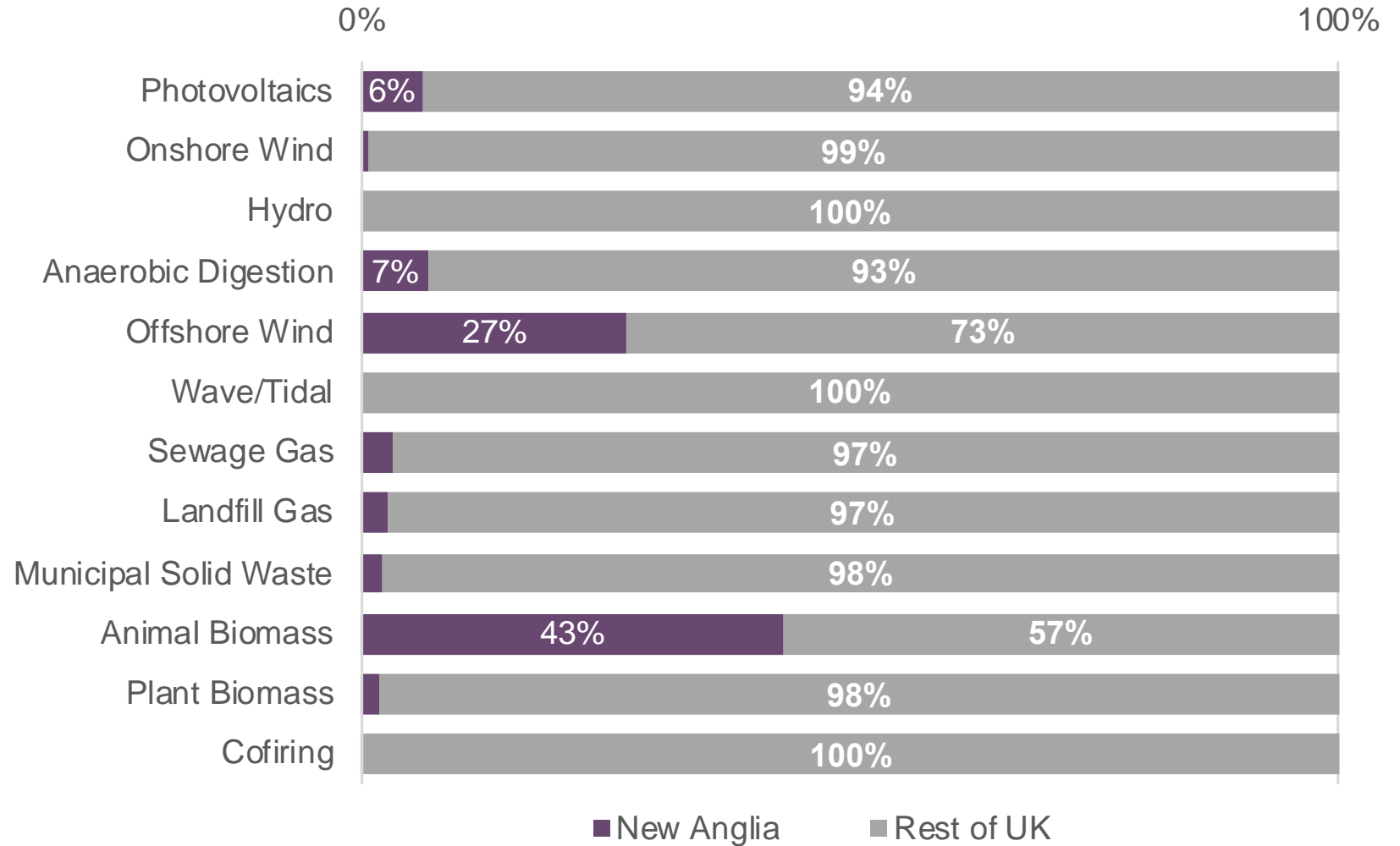
Offshore wind makes up nearly two thirds of Norfolk and Suffolk's renewable electricity capacity

Source: Renewable Electricity Statistics, Department for Business, Energy and Industrial Strategy



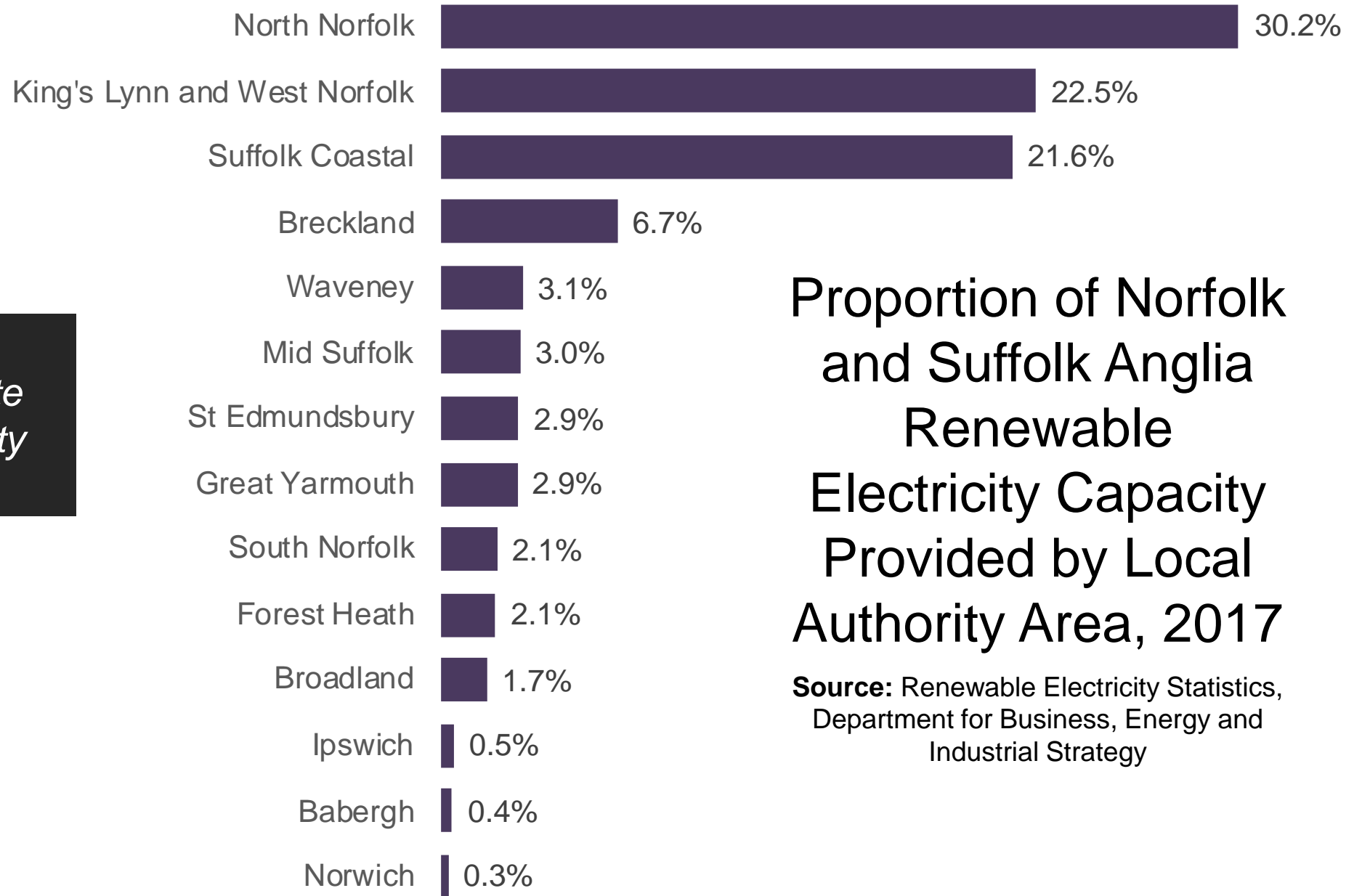
Proportion of UK Renewable Electricity Capacity Provided by Type in Norfolk and Suffolk, 2017

Norfolk and Suffolk are responsible for over a quarter of the countries offshore wind generated renewable electricity capacity, and over two fifths of that resulting from animal biomass



Source: Renewable Electricity Statistics, Department for Business, Energy and Industrial Strategy

Coastal local authorities dominate renewable electricity capacity

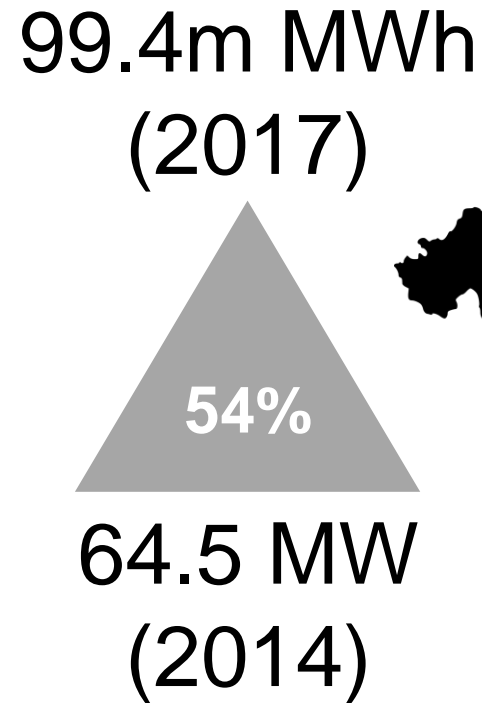
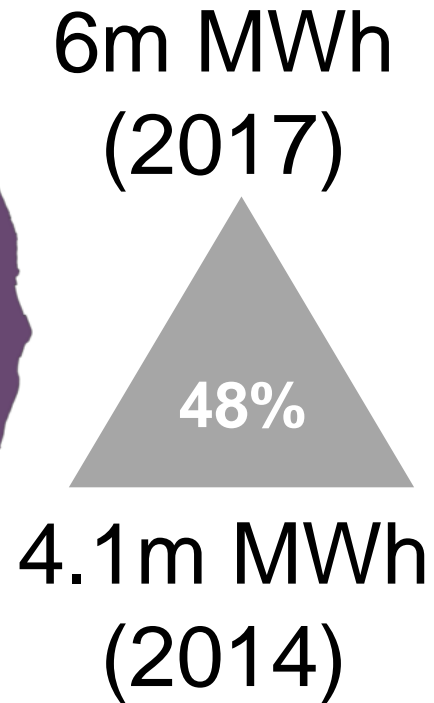


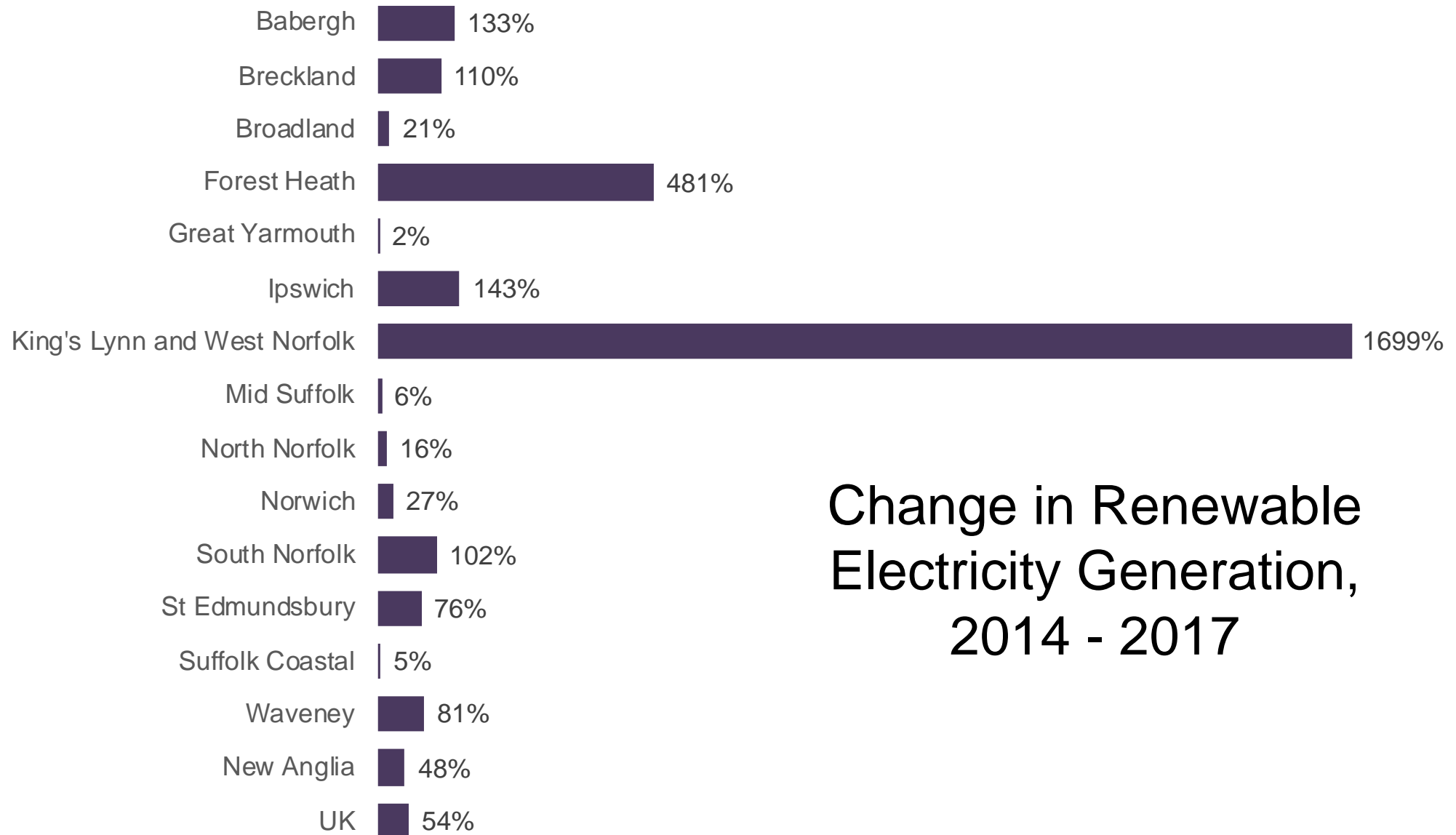
Proportion of Norfolk and Suffolk Anglia Renewable Electricity Capacity Provided by Local Authority Area, 2017

Source: Renewable Electricity Statistics, Department for Business, Energy and Industrial Strategy

Renewable Electricity Generation

In Norfolk and Suffolk between 2014 and 2017, renewable electricity generation has increased by nearly 50%



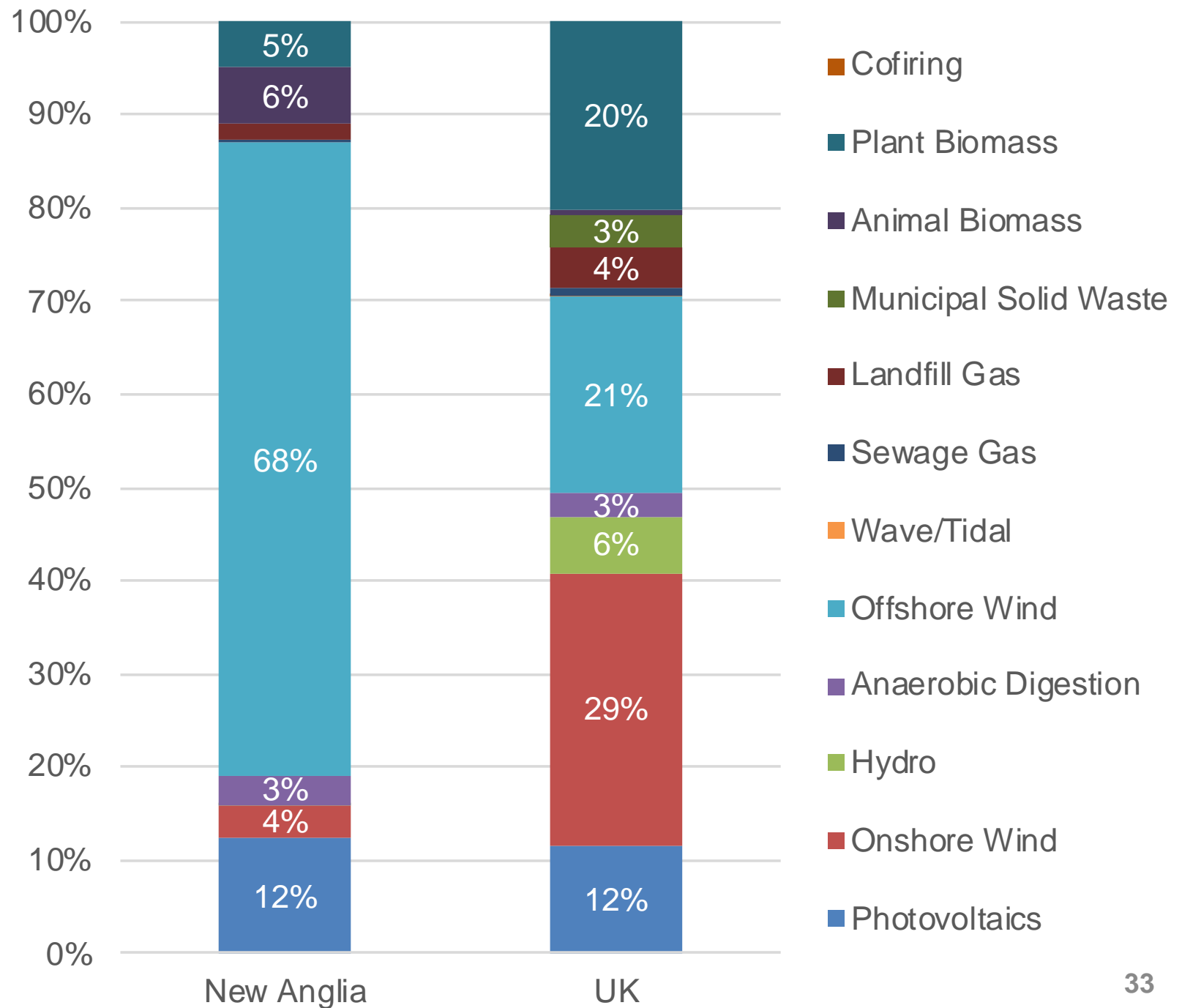


Change in Renewable Electricity Generation, 2014 - 2017

Renewable Electricity Generation by Type, 2017

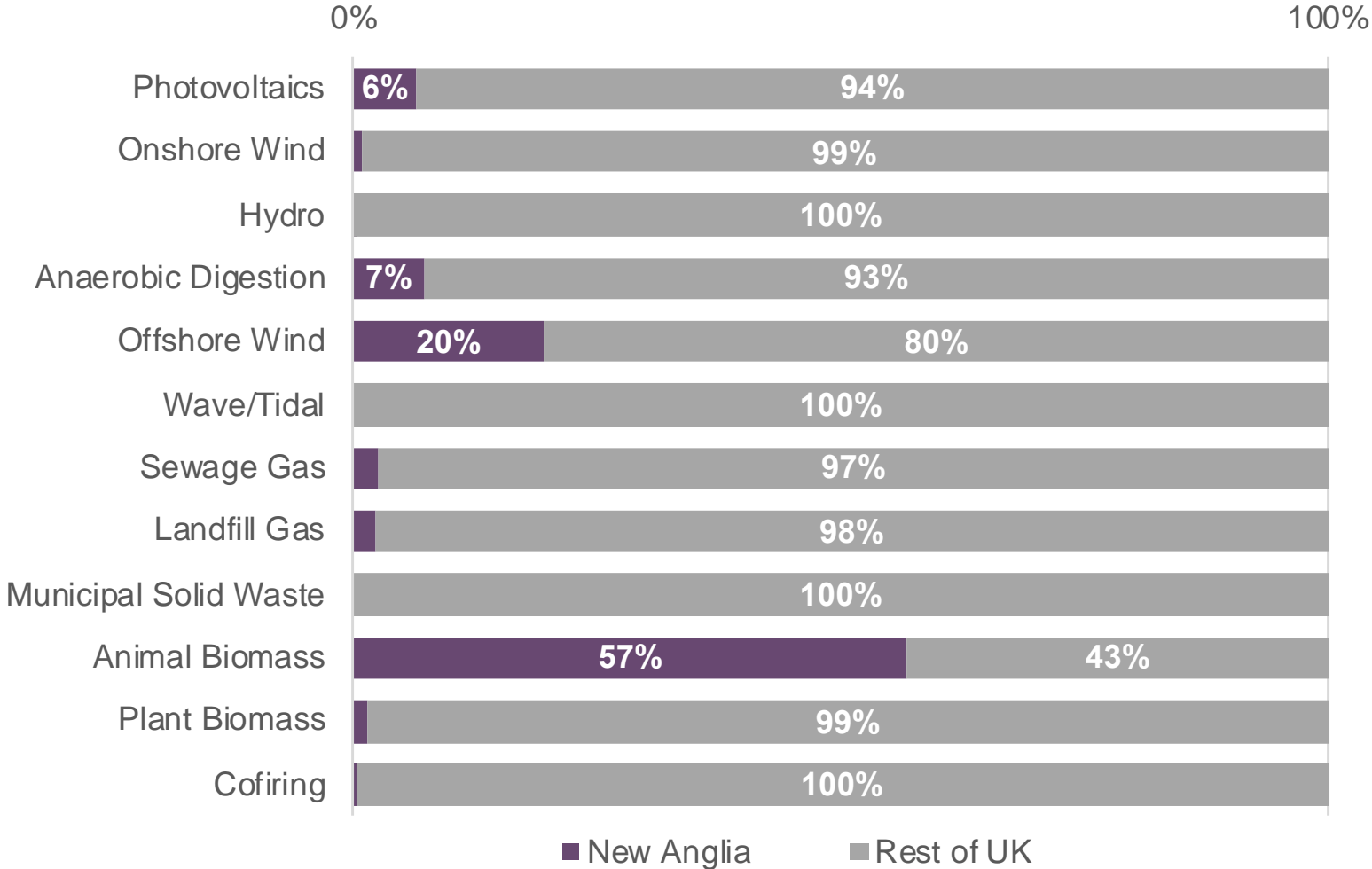
Over two thirds of renewable electricity generated in Norfolk and Suffolk in 2017 was via offshore wind, compared to only a fifth nationally

Source: Renewable Electricity Statistics, Department for Business, Energy and Industrial Strategy

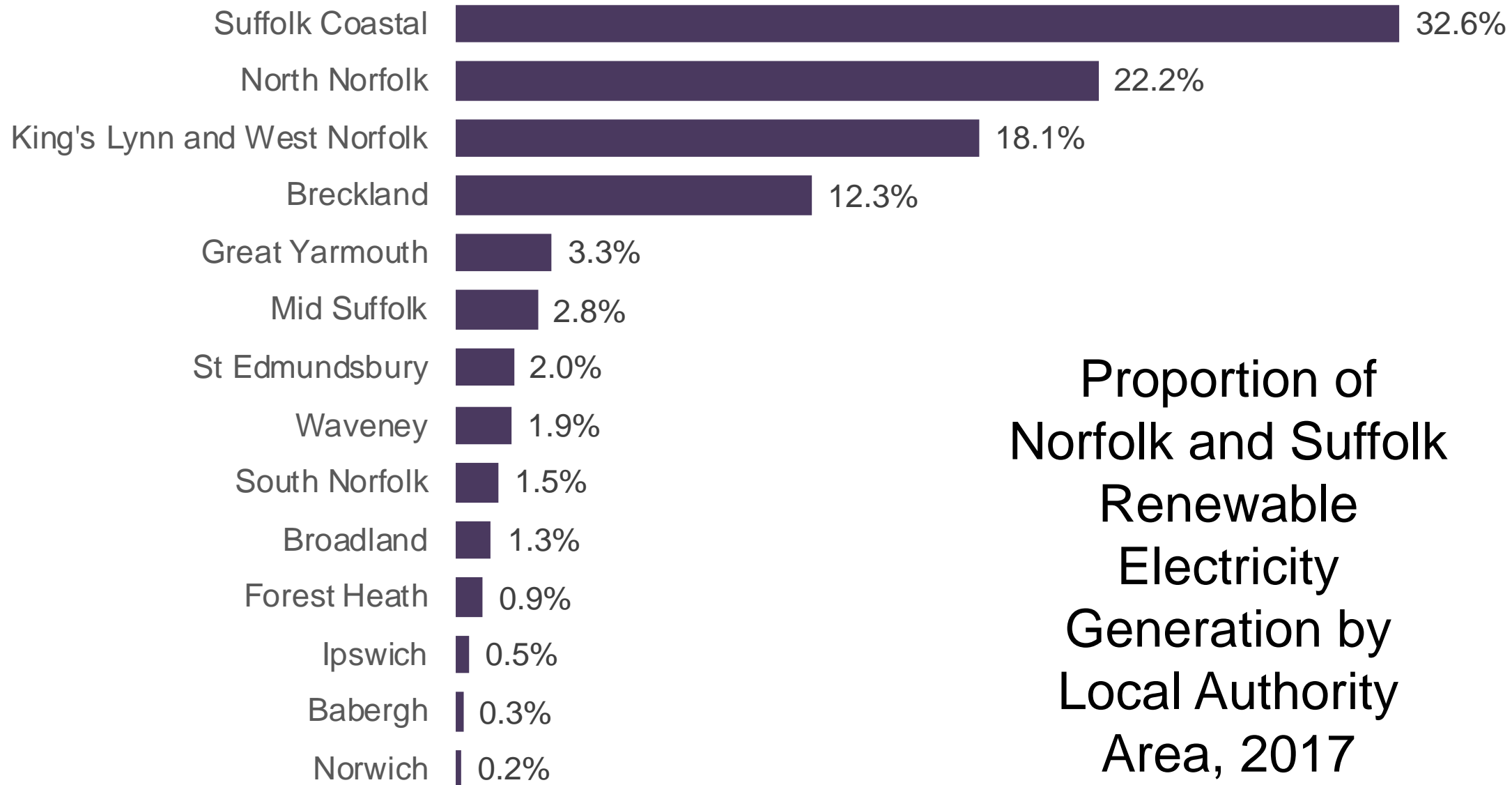


Proportion of UK Renewable Electricity Generated by Type in Norfolk and Suffolk, 2017

Norfolk and Suffolk are responsible for two fifths of the countries offshore wind generated renewable electricity and nearly three fifths of that generated from animal biomass

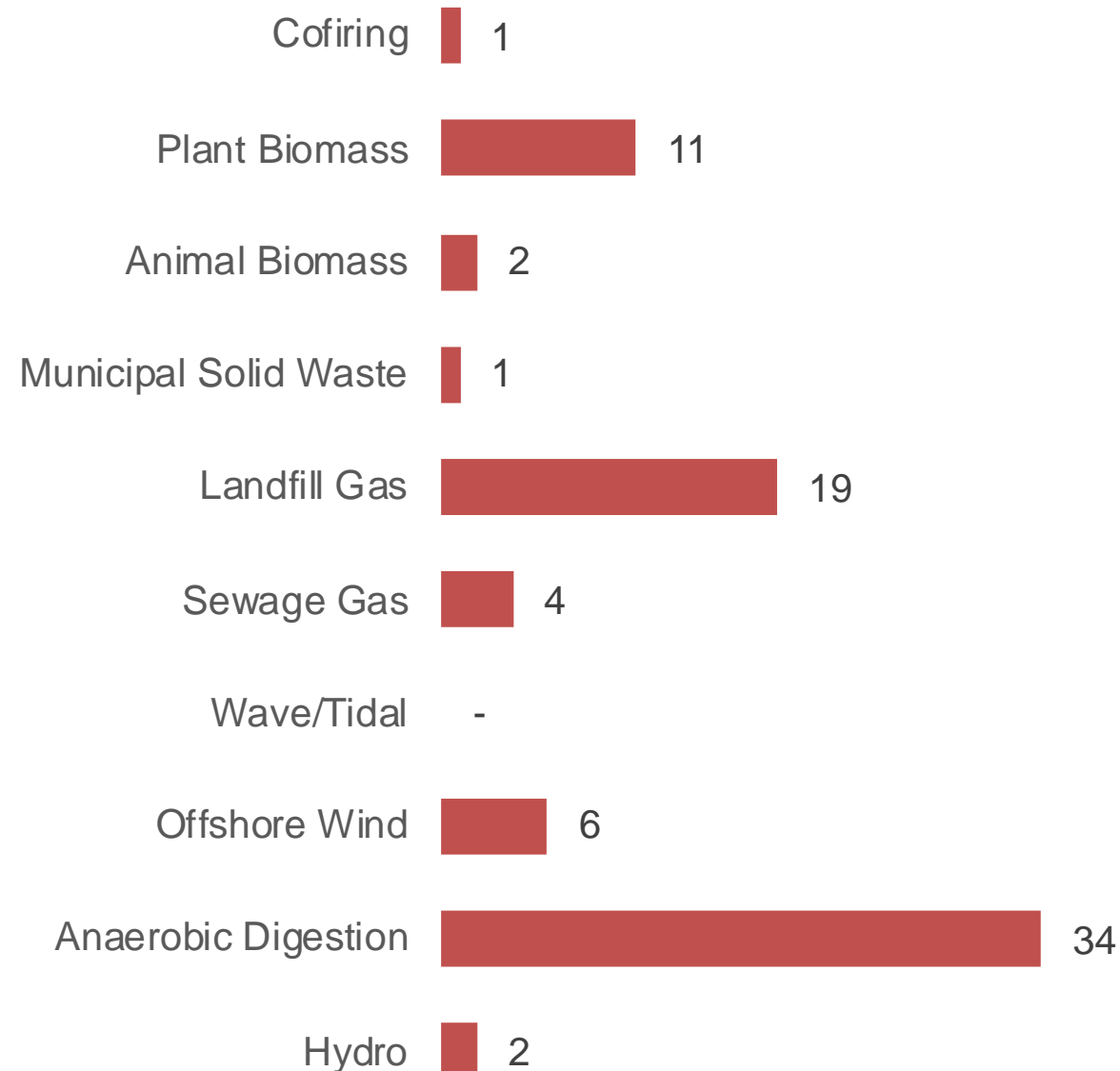


Source: Renewable Electricity Statistics, Department for Business, Energy and Industrial Strategy



Proportion of
Norfolk and Suffolk
Renewable
Electricity
Generation by
Local Authority
Area, 2017

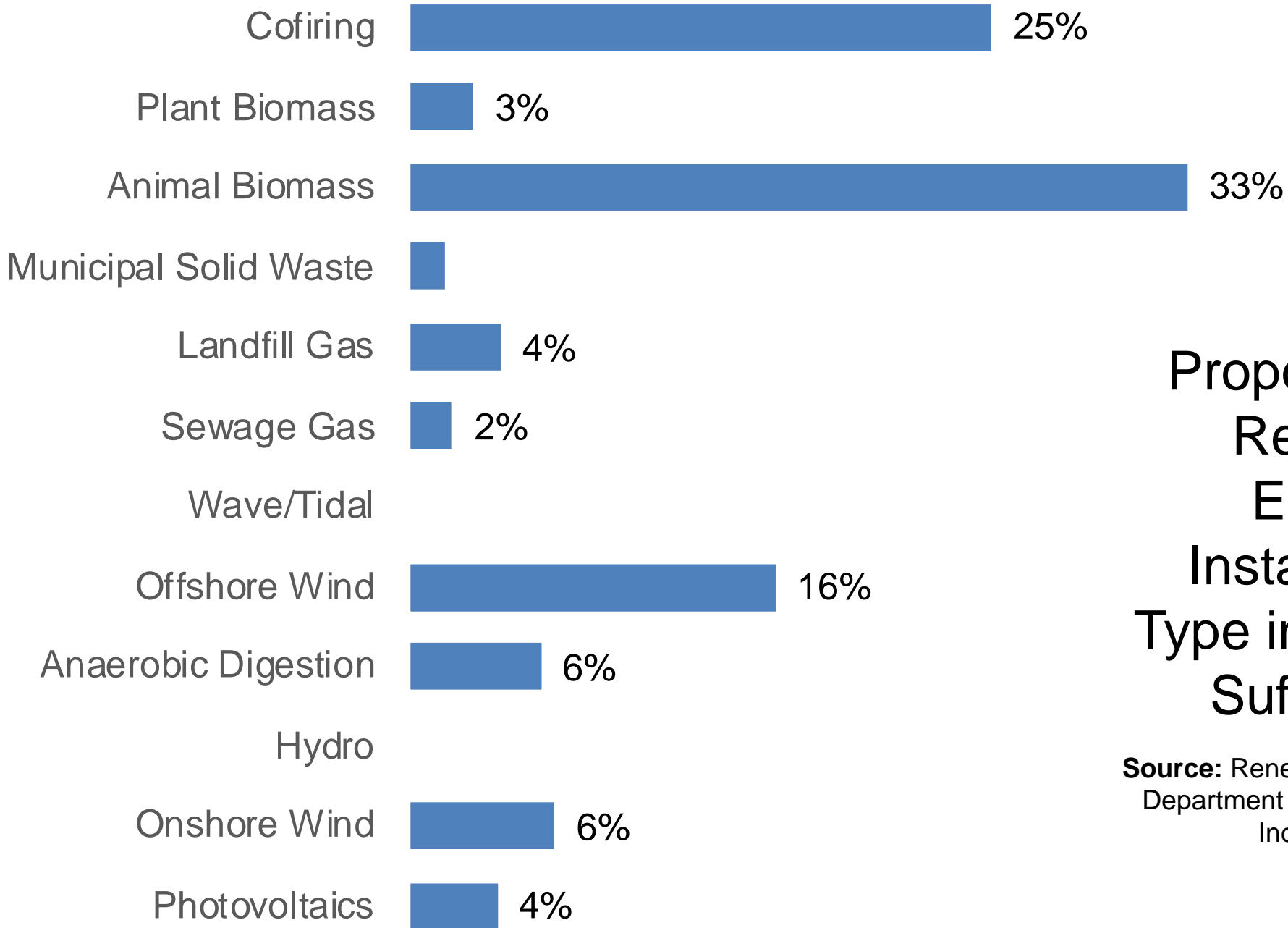
Renewable Electricity Installations



Number of Renewable Electricity Installations by Type in Norfolk and Suffolk, 2017

Not shown here are Photovoltaics (37,179) and Onshore Wind (614)

Source: Renewable Electricity Statistics, Department for Business, Energy and Industrial Strategy



Proportion of UK Renewable Electricity Installations by Type in Norfolk and Suffolk, 2017

Source: Renewable Electricity Statistics,
Department for Business, Energy and
Industrial Strategy

The following section presents data from Labour Insight, a Burning Glass analytical tool. This tool collects details of online job postings from multiple sources and enables the analysis of these postings based on specific skills, educational requirements, and job titles, for example.

Please note that whilst Labour Insight will capture more information on the jobs market than more traditional Department for Work and Pensions vacancy data, the fact that not all job vacancies are advertised means that there will still be gaps in the findings.

In terms of highlighting 'Clean Energy' occupations then we have searched for vacancies using the keywords / phrases of 'renewables' or 'low carbon' and 'energy'.

Based on this search, and according to the Labour Insight Jobs tool, there were 3,560 postings for the sector in Norfolk and Suffolk between Jan. 1, 2012 and Dec. 31, 2018.

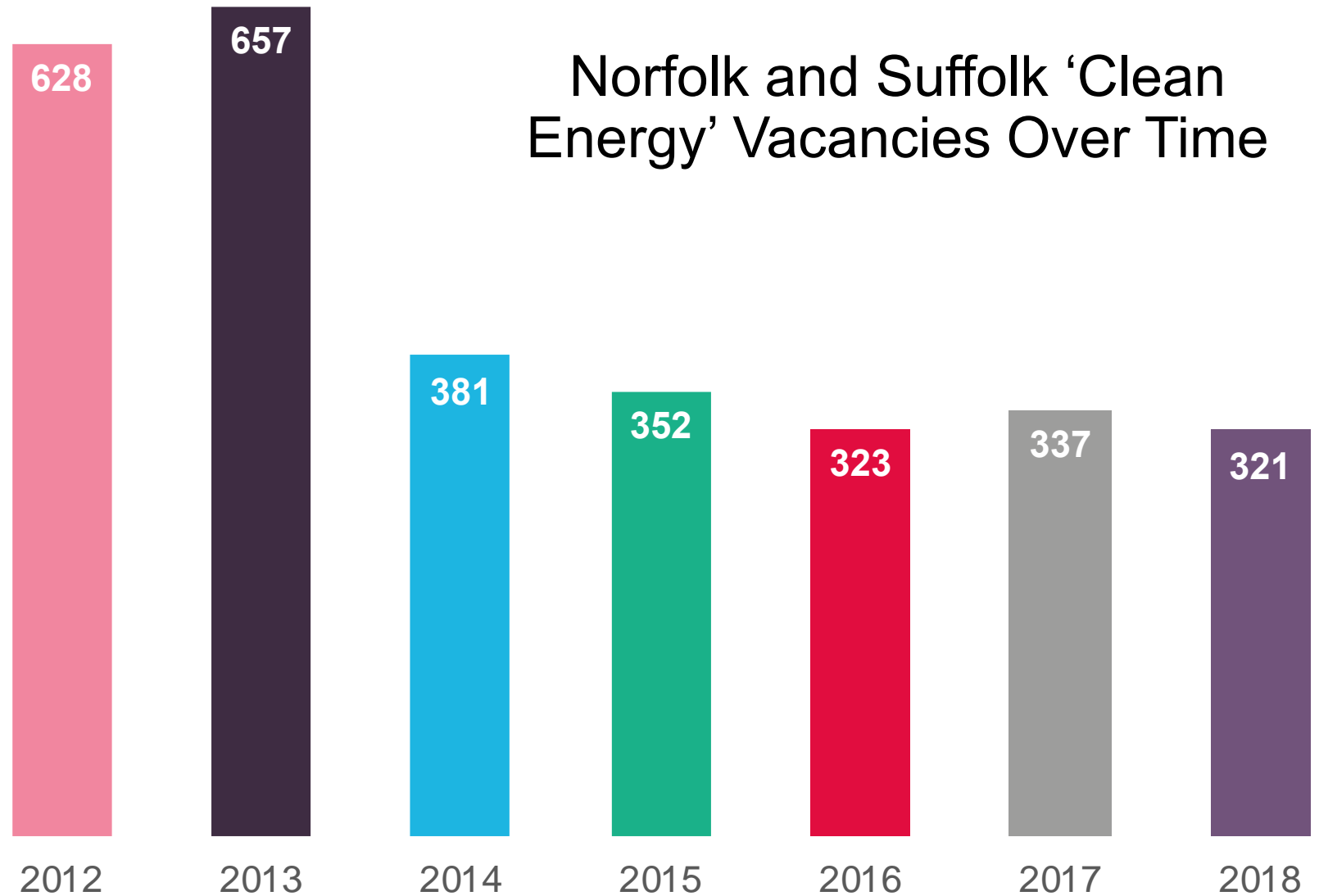
Burning Glass Labour Market Analysis of 'Clean Energy' Occupations, 2018

Work Area	Job Postings	Job Postings per 1000 people employed	Location Quotient
Ipswich	108	0.7	Average demand
Lowestoft	34	0.6	Average demand
King's Lynn	34	0.5	Lower demand than average
Norwich	80	0.4	Much lower demand than average
Bury St Edmunds	30	0.4	Much lower demand than average
Great Yarmouth	18	0.4	Much lower demand than average
Thetford & Mildenhall	16	0.3	Much lower demand than average
Cromer & Sheringham	5	0.3	Much lower demand than average

Source: Burning Glass Labour Market Analysis tool

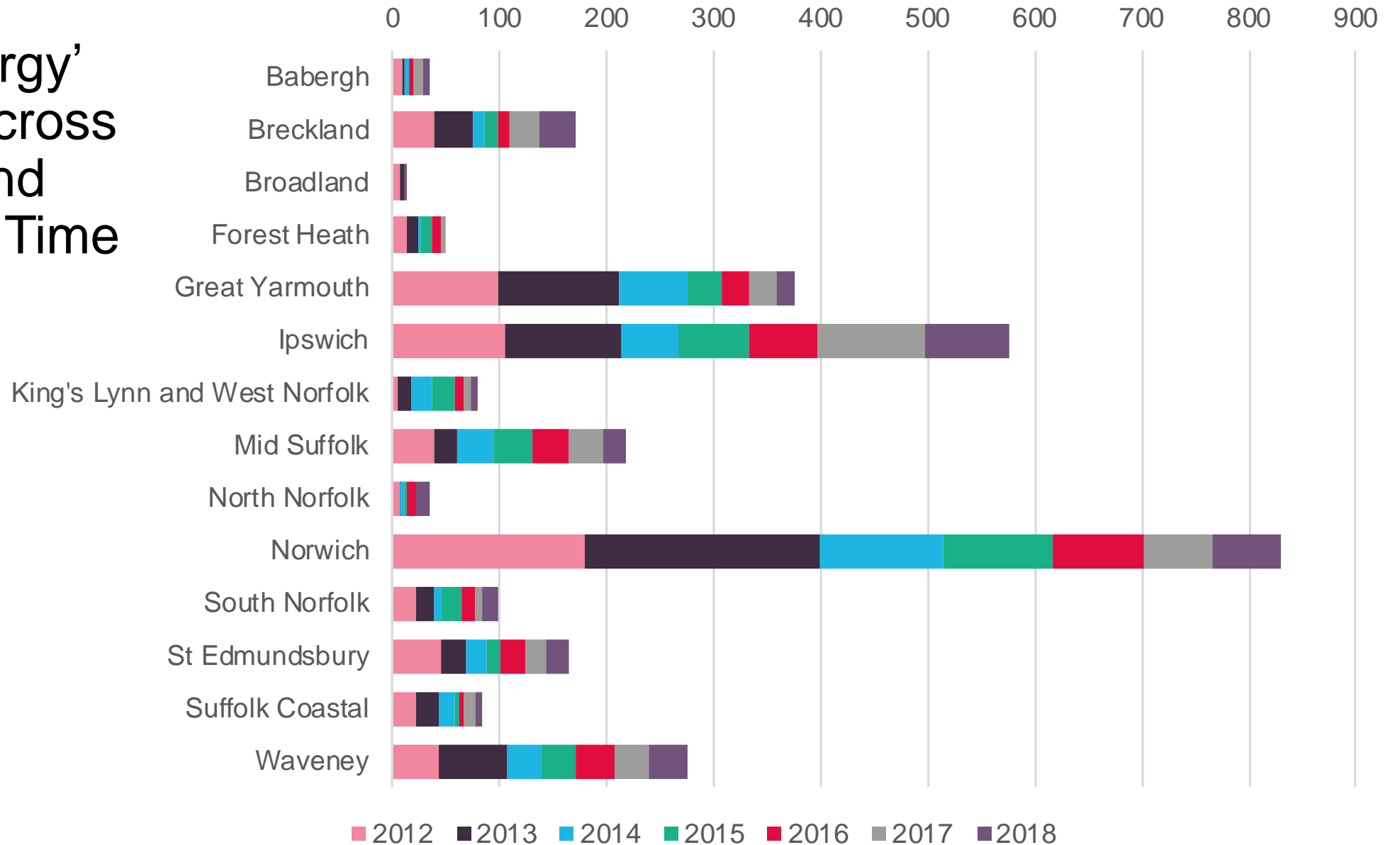
Norfolk and Suffolk 'Clean Energy' Vacancies Over Time

Vacancies have been identified through the key words search of 'low carbon' or 'renewable', and 'energy'

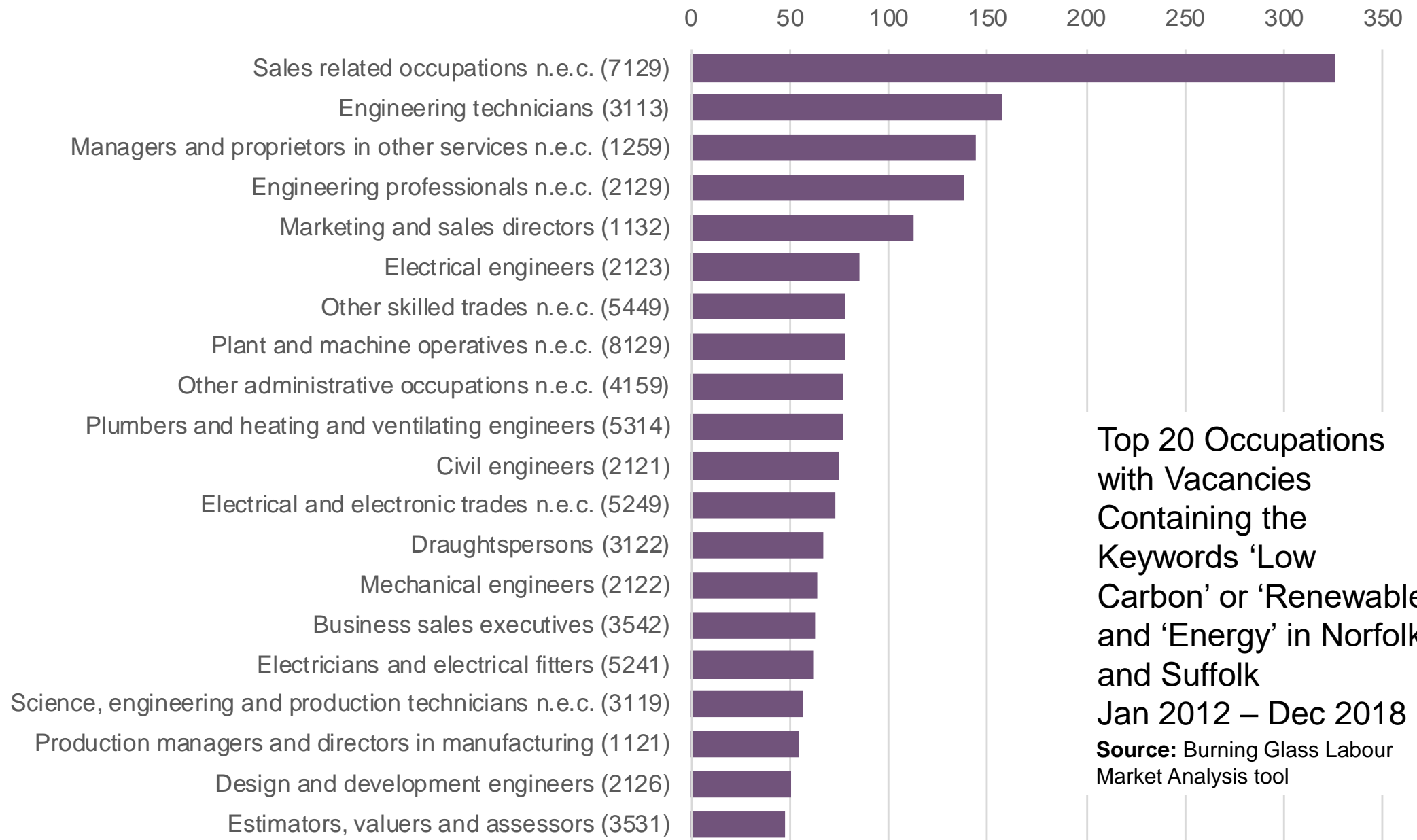


Source: Burning Glass Labour Market Analysis tool

'Clean Energy' Vacancies Across Norfolk and Suffolk Over Time



Source: Burning Glass Labour Market Analysis tool



Top 20 Occupations with Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk

Jan 2012 – Dec 2018

Source: Burning Glass Labour Market Analysis tool

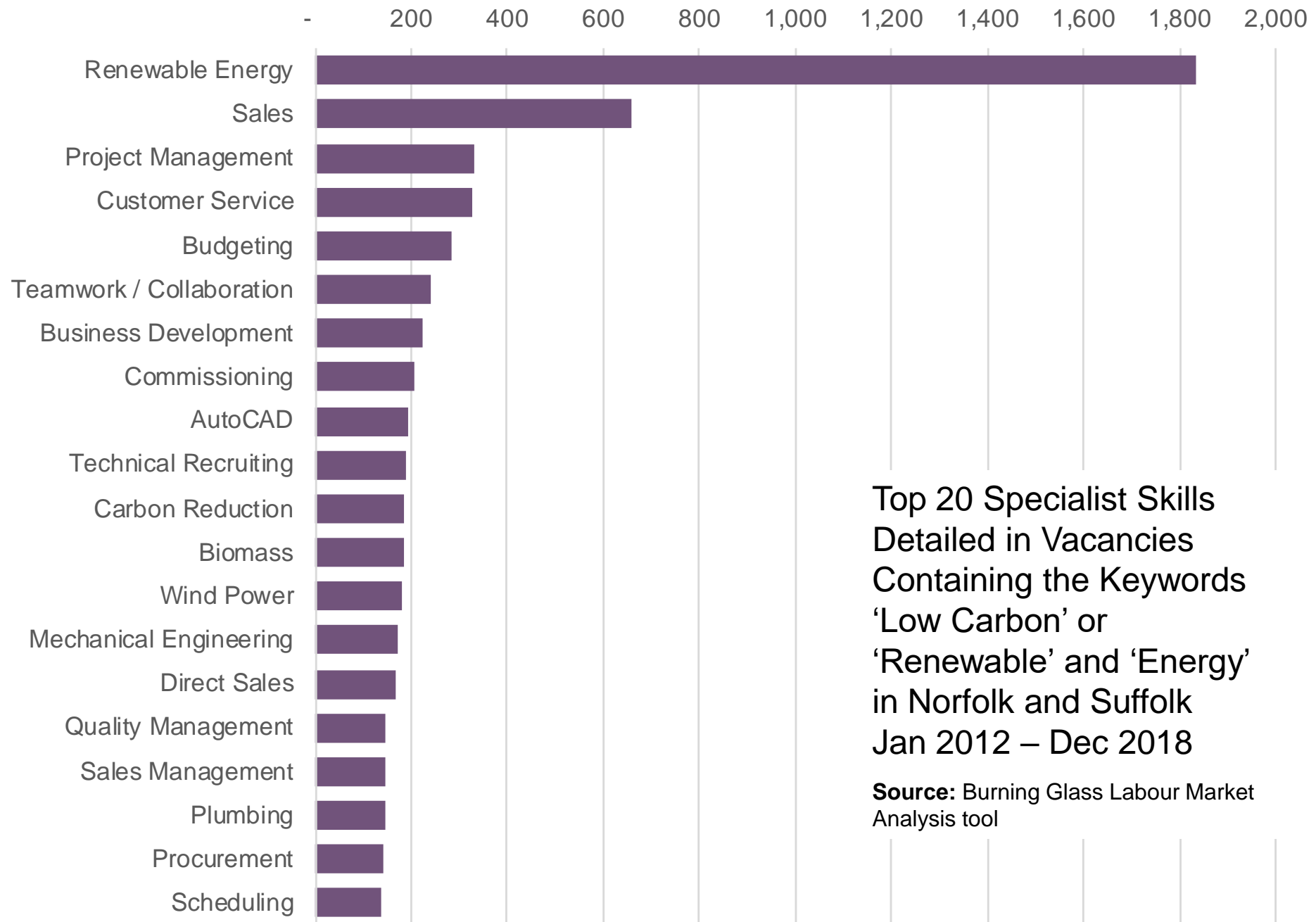
Top 10 Occupations with Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk, 2012

Occupation (SOC)	Vacancies
Sales related occupations n.e.c. (7129)	87
Marketing and sales directors (1132)	35
Managers and proprietors in other services n.e.c. (1259)	31
Business sales executives (3542)	30
Collector salespersons and credit agents (7121)	24
Telephone salespersons (7113)	19
Civil engineers (2121)	17
Engineering professionals n.e.c. (2129)	15
Science, engineering and production technicians n.e.c. (3119)	15
Book-keepers, payroll managers and wages clerks (4122)	13

Top 10 Occupations with Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk, 2018

Occupation (SOC)	Vacancies
Engineering technicians (3113)	36
Plant and machine operatives n.e.c. (8129)	24
Engineering professionals n.e.c. (2129)	20
Managers and proprietors in other services n.e.c. (1259)	20
Electricians and electrical fitters (5241)	18
Design and development engineers (2126)	13
Marketing and sales directors (1132)	13
Electrical and electronic trades n.e.c. (5249)	12
Electrical engineers (2123)	12
Mechanical engineers (2122)	11

Source: Burning Glass Labour Market Analysis tool



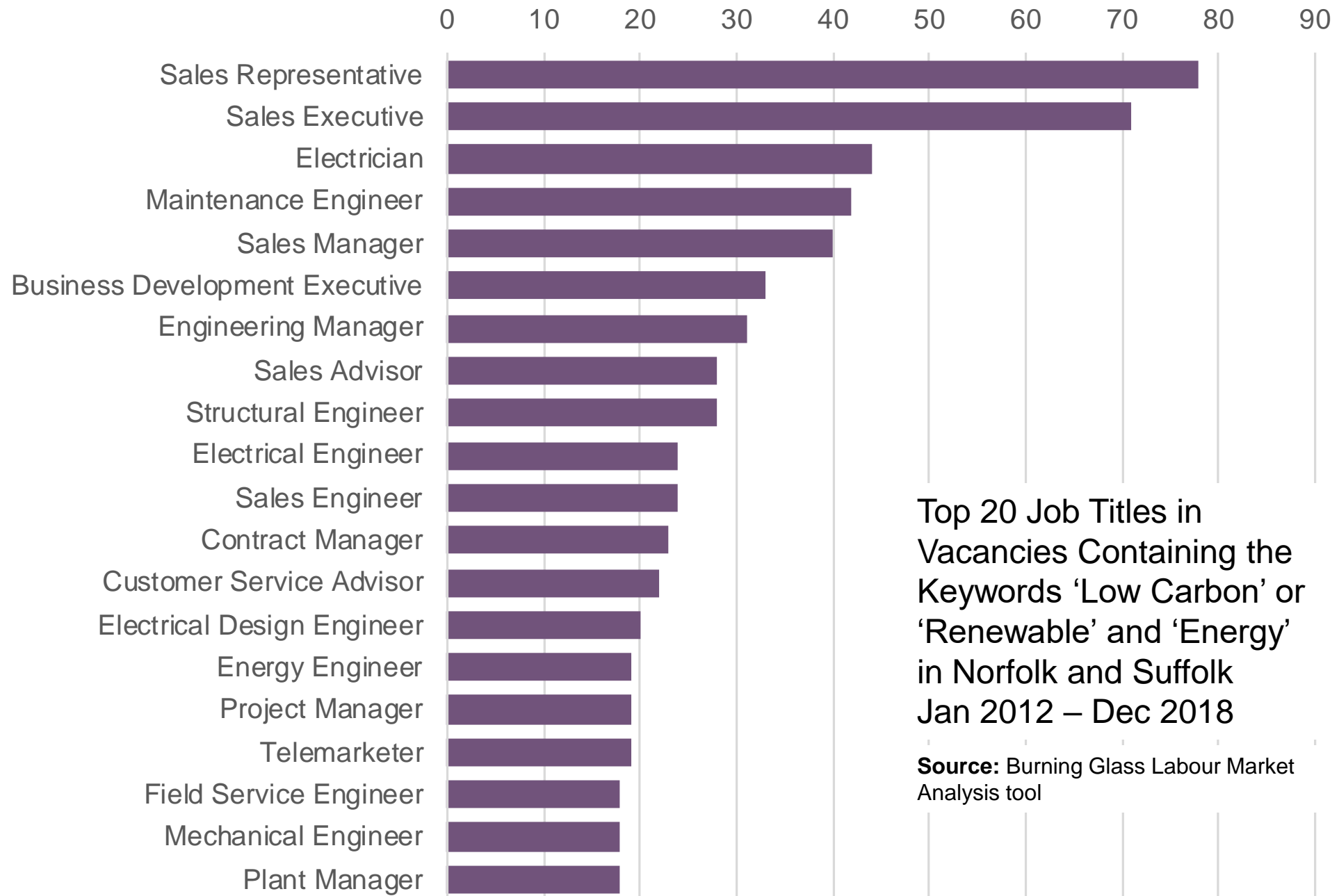
Top 10 Specialist Skills in Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk 2012

Specialist Skill	Vacancies
Renewable Energy	323
Sales	199
Project Management	68
Business Development	66
Budgeting	52
Direct Sales	46
Sales Management	45
Customer Service	37
Product Sales	37
Solar Energy	37

Top 10 Specialist Skills in Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk, 2018

Specialist Skill	Vacancies
Renewable Energy	213
Carbon Reduction	49
Customer Service	48
Teamwork / Collaboration	36
Budgeting	35
Technical Recruiting	31
Biomass	29
Site Surveys	28
Business Development	27
Commissioning	27

Source: Burning Glass Labour Market Analysis tool



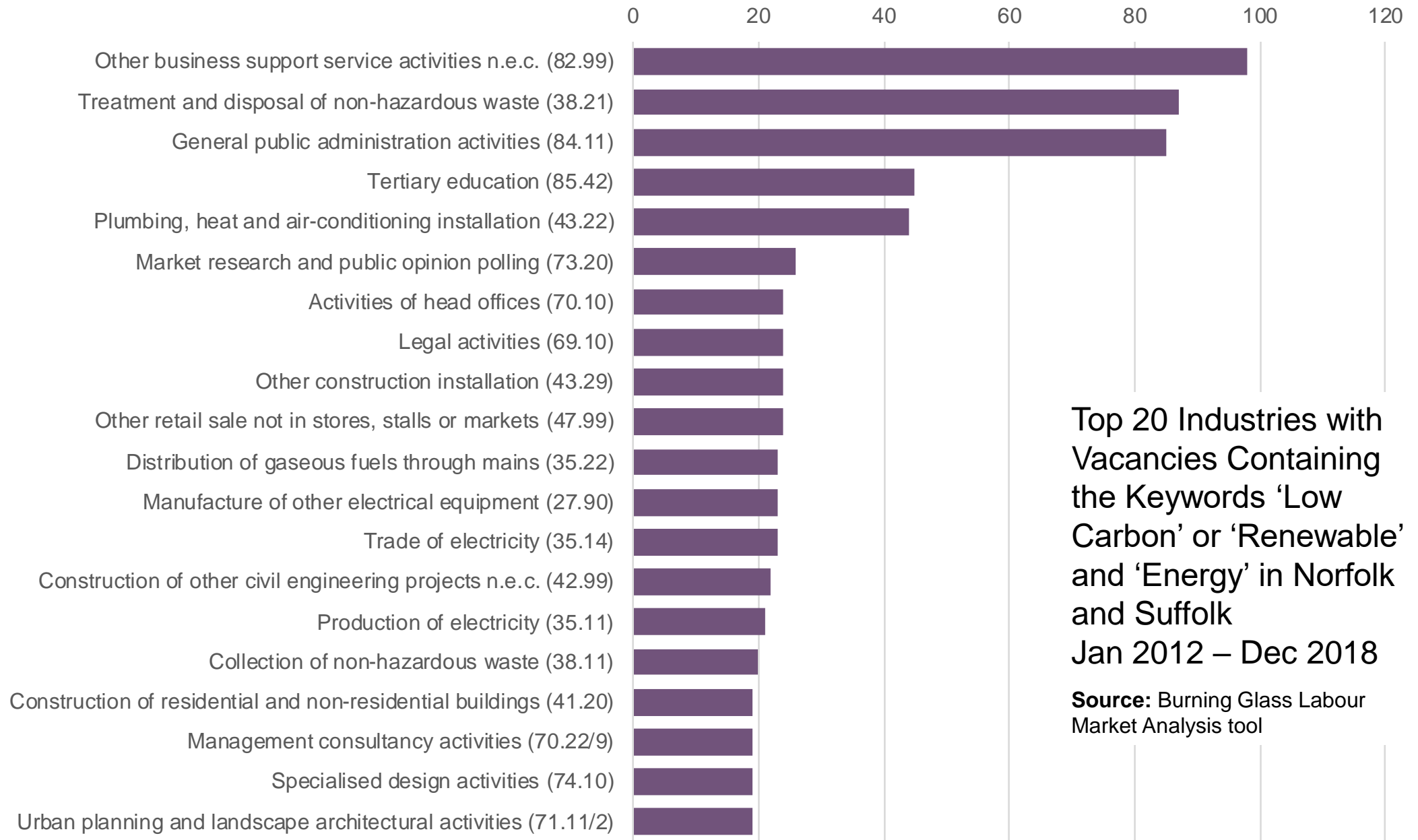
Top 10 Job Titles in Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk, 2012

Job Title	Vacancies
Sales Executive	26
Sales Representative	21
Canvasser	16
Sales Manager	15
Sales Advisor	14
Sales Engineer	14
Business Development Executive	11
Call Centre Staff	9
Telemarketer	9
Sales Consultant	8

Top 10 Job Titles in Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk, 2018

Job Title	Vacancies
Electrician	17
Building Engineer	11
Business Development Executive	10
Maintenance Engineer	8
Energy Engineer	7
Plant Operator	7
Sustainability Engineer	7
Technical Analyst	7
Contract Manager	6
Mechanical Engineer	6

Source: Burning Glass Labour Market Analysis tool



Top 20 Industries with Vacancies Containing the Keywords 'Low Carbon' or 'Renewable' and 'Energy' in Norfolk and Suffolk
Jan 2012 – Dec 2018

Source: Burning Glass Labour Market Analysis tool

A Future View of the LCRE Sector in Norfolk and Suffolk

We have shown in previous work for the Energy sector (which encapsulates a significant proportion of the LCRE sector) that it is projected to grow by 6% between 2017 and 2024 (based on the UK Commission for Employment and Skills Working Futures 2014-2024 data). Given the emerging and important nature of the LCRE sector, and its local high profile, then clearly it will play a major role in driving this growth.

The recently announced (March 2019) Offshore Wind Sector Deal sets out the following ambitions for growth between now and 2030:

- Increased offshore wind capacity in the UK from 8GW to 30GW at a cost of £40billion, of which the East of England would represent 14.5GW, or nearly 50%;
- Increase employment from 12-13,000 jobs now, adding a further 27,000 by 2030.

The focus of the sector on the East of England, and the fact that Norfolk and Suffolk already delivers 20% of the country's offshore wind generated electricity would suggest that we could expect at least a similar proportion of the jobs target would be met in Norfolk and Suffolk i.e. 5,400 jobs.

This coupled with the Nuclear Sector Deal, means that we can expect to see an increase in low carbon and renewable energy vacancies across Norfolk and Suffolk in the near future.

