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# West Yorkshire Green Technologies & Services Sector Mapping

Published September 2024



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# EXECUTIVE SUMMARY

West Yorkshire's green technologies and services sector (GTS) in 2022/23 was valued at £8.1 billion, generated by nearly 3,000 businesses employing over 53,000 people. The sector comprised 2,914 businesses, constituting 3.6% of West Yorkshire's businesses, in line with national averages. Sales in the sector grew by 6.1% from 2020/21 to 2021/22 and 6.4% from 2021/22 to 2022/23, mirroring UK trends. This represented 2.9% of UK and 3.4% of England's LCEGS2023 sales. Employment in West Yorkshire's LCEGS2023 sector was 53,214 in 2022/23, accounting for 2.1% of the county's workforce, compared to 5.9% for England.

West Yorkshire's GTS sector was primarily composed of Level 1 sub-sectors such as Low Carbon, Renewable Energy, and Environmental, with Wind, Building Technologies, and Alternative Fuel Vehicle leading in sales. Sales forecasts indicate consistent growth, with a 37% increase expected by 2025/26. West Yorkshire's LCEGS2023 exports were valued at £500 million, while imports were £419 million. Notable exporting sub-sectors included Energy from Waste and Alternative Fuels.

Leeds, Calderdale, Kirklees, Bradford, and Wakefield each contributed significantly to West Yorkshire's LCEGS2023 sales, with Leeds being the largest contributor. Each city showcased strong sales in various sub-sectors, with Wind, Building Technologies, and Alternative Fuels leading across the board.

## Methodology

The report utilizes data provided by kMatrix, which has been gathering information on the UK's Low Carbon Environmental Goods and Services (LCEGS) sector since 2008/09. This dataset, known as LCEGS2023, builds upon previous years' data and includes both core activities of the sector and those within its supply chain. For example, the Wind sector encompasses companies involved in turbine power generation as well as those handling system integration software. Similarly, waste management includes activities from waste collection to recycling, along with equipment manufacturing. kMatrix employs a taxonomy-based methodology, grouping similar products and services together for analysis, akin to biological taxonomic ranking.

## Statistics

The primary sector definition used in this report is "Low Carbon and Environmental Goods and Services" (LCEGS) and all statistics shown relate to the financial year 2022/3 unless otherwise stated. Green Economy refers to Green Technologies and Services to include climate adaption services and emerging technologies within the definition.



# STATUS UPDATE ON THE LOW CARBON SECTOR IN WEST YORKSHIRE

## Sector Size

West Yorkshire's Low Carbon and Environmental Goods and Services (LCEGS2023) sector was worth £8.1bn to West Yorkshire's economy in 2022/23, as indicated by the value of sales in the sector. These sales were generated by nearly 3,000 businesses that employed over 53,000 people in the sector in 2022/23.

The top ten sub-sectors by Sales in 2022/23 are:

- **Wind** – £1,248m in sales, 6,926 employees and 422 businesses
- **Building Technologies** – £895m in sales, 7,325 employees and 377 businesses
- **Alternative Fuels Vehicle** – £877m in sales, 5,578 employees and 326 businesses
- **Alternative Fuels** – £866m in sales, 5,641 employees and 341 businesses
- **Carbon Finance** – £812m in sales, 2,117 employees and 186 businesses
- **Geothermal** – £570m in sales, 4,714 employees and 255 businesses
- **Energy from Waste** – £445m in sales, 1,513 employees and 48 businesses
- **Photovoltaic** – £374m in sales, 2,909 employees and 159 businesses
- **Recovery & Recycling** – £338m in sales, 2,315 employees and 138 businesses
- **Water & Waste Water Treatment** – £332m in sales, 2,604 employees and 131 businesses

## Historical Growth

The Low Carbon and Environmental Goods and Services sector in West Yorkshire grew 6.1% from 2020/21 to 2021/22 and 6.4% from 2021/22 to 2022/23. In comparison, UK growth in sales was 6.3% and 7.0%, and in England was 6.3% and 7.1% respectively.

West Yorkshire's LCEGS2023 Sales accounted for 2.9% of UK and 3.4% of England's LCEGS2023 sales, broadly in-line with the county's wider economic contribution to GDP of 3.0% and 3.4% respectively. Sales in West Yorkshire's LCEGS2023 sector in 2021/22 contributed 11.3% to the county's GDP. This compares with England at 11.5% and the UK 11.4%.



## Forecast Growth

The LCEGS2023 sector in West Yorkshire is projected to experience consistent sales growth over the next three years: 9.0% between 2022/23 and 2023/24, 11.1% between 2023/24 and 2024/25, and 12.9% between 2024/25 and 2025/26. Comparatively, UK sales are forecasted to grow by 9.4%, 11.7%, and 13.3% over the same periods. West Yorkshire's sales are expected to increase by 37% from £8.1 billion in 2022/23 to £11.1 billion in 2025/26.

All Level 1 sub-sectors are predicted to see year-on-year growth between 2022/23 and 2025/26, with notable increases in Renewable Energy (47%), Green Infrastructure and Nature Based Solutions (40%), and Low Carbon (37%).

Likewise, sales for all Level 2 sub-sectors are expected to rise. The top twelve sub-sectors with the strongest sales forecasts include Carbon Finance (70% growth), Geothermal (67% growth), and Air Source Heat Pumps (62% growth).

## Exports and Imports

### Exports

In 2022/23, West Yorkshire's Low Carbon and Environmental Goods and Services sector exported goods worth £500 million, representing 2.9% of the UK's LCEGS2023 exports and aligning with West Yorkshire's 2.9% share of the overall UK LCEGS2023 market. West Yorkshire contributed 3.3% to England's LCEGS2023 export market, slightly lower than its 3.4% share of England's LCEGS2023 sales.

The largest exporting sub-sectors in West Yorkshire during 2022/23 were Energy from Waste (£89.4 million), Alternative Fuels (£72.2 million), Alternative Fuel Vehicle (£50.1 million), Building Technologies (£42.0 million), Carbon Finance (£41.4 million), and Wind (£39.0 million).

Among West Yorkshire's largest net exporters were Energy from Waste (£66.0 million net), Alternative Fuels (£23.8 million net), Carbon Finance (£21.9 million net), Recovery & Recycling (£8.7 million net), Low Carbon Agriculture (£8.4 million net), and Water & Waste Water Treatment (£7.7 million net).

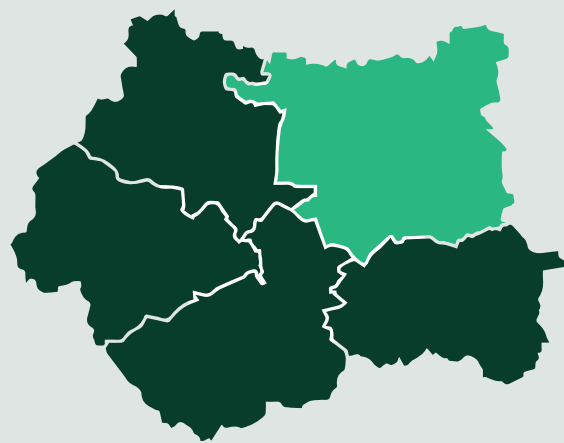
### Imports

In 2022/23, imports in West Yorkshire's Low Carbon and Environmental Goods and Services sector amounted to £419 million, comprising 2.8% of the UK's LCEGS2023 imports, slightly below West Yorkshire's 2.9% share of the overall UK LCEGS2023 market. West Yorkshire represented 3.2% of England's LCEGS2023 import market, slightly lower than its 3.4% share of England's LCEGS2023 sales.

The largest importing sub-sectors in West Yorkshire during 2022/23 were Geothermal (£65.9 million), Alternative Fuel Vehicle (£65.4 million), Alternative Fuels (£48.4 million), Building Technologies (£44.9 million), Wind (£32.4 million), and Energy from Waste (£23.4 million).



# STATUS UPDATE ON THE LOW CARBON SECTOR BY LOCAL AUTHORITY



## Leeds

### Headline Figures

- Leeds's Low Carbon Environmental Goods and Services (LCEGS2023) sector contributed £3.9 billion to the city's economy in 2022/23, with over 1,300 businesses and more than 25,000 employees.
- Leeds accounted for over 47% of West Yorkshire's LCEGS2023 sales, surpassing its broader economic contribution to West Yorkshire's GDP.
- Sales from Leeds's LCEGS2023 sector constituted 11.9% of the city's GDP in 2021/22.

### Sector Size

- Leeds's LCEGS2023 sales reached £3.86 billion in 2022/23, accounting for 47.4% of West Yorkshire's sales.
- Leeds's LCEGS2023 sector employed 25,101 people in 2022/23, representing 6.6% of Leeds's economically active population.
- Leeds had 1,379 active companies in the LCEGS2023 sector in 2022/23, comprising 4.7% of the total active businesses in Leeds.

### Forecast Growth

- Leeds is expected to witness steady growth in its LCEGS2023 sector, with sales forecasted to increase from 9.1% in 2023/24 to 13.1% in 2025/26.
- Leeds's growth rates slightly outpace West Yorkshire's across various sub-sectors.

### Imports and Exports

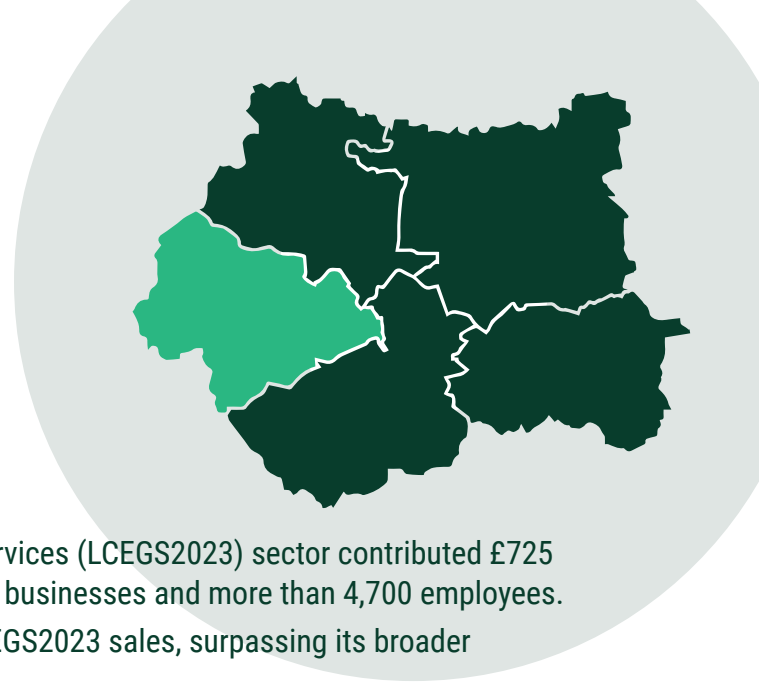
- Leeds emerges as a net exporter in the LCEGS2023 sector, with exports constituting 6.0% of sales and imports accounting for 5.1%.
- Sustainable Food Production demonstrates high export percentages, particularly Low Carbon Agriculture.

### 2023 Summary

- The six leading sub-sectors—Wind, Carbon Finance, Alternative Fuel Vehicles, Building Technologies, Alternative Fuels, and Geothermal—commanded 66% of Leeds's LCEGS2023 sector activity in 2022/23.
- Building Technologies, Wind, Alternative Fuels, Alternative Fuel Vehicles, and Geothermal led in employment, representing 57% of sector activity.
- The top 15 sub-sectors dominate the LCEGS2023 sector sales, accounting for 94% of overall sales in 2022/23 and 93% of employment in the sector.



## STATUS UPDATE ON THE LOW CARBON SECTOR BY LOCAL AUTHORITY



### Calderdale

#### Headline Figures

- Calderdale's Low Carbon Environmental Goods and Services (LCEGS2023) sector contributed £725 million to the local economy in 2022/23, with over 260 businesses and more than 4,700 employees.
- Calderdale accounted for 8.9% of West Yorkshire's LCEGS2023 sales, surpassing its broader economic contribution to West Yorkshire's GDP.
- Sales from Calderdale's LCEGS2023 sector constituted 12.0% of the region's GDP in 2021/22.

#### Sector Size

- Calderdale's LCEGS2023 sales reached £725 million in 2022/23, representing 8.9% of West Yorkshire's sales.
- The LCEGS2023 sector employed 4,776 individuals in Calderdale in 2022/23, constituting 5.0% of the economically active population.
- Calderdale had 261 companies active in the LCEGS2023 sector in 2022/23, accounting for 3.0% of active businesses.

#### Forecast Growth

- The LCEGS2023 sector in Calderdale is forecasted to experience consistent growth, ranging from 8.9% in 2023/24 to 12.8% in 2025/26.
- Calderdale's growth rates in certain sub-sectors are expected to slightly outpace West Yorkshire's forecasts.

#### Imports and Exports

- Calderdale's LCEGS2023 sector is a net exporter, with exports constituting 6.3% of sales and imports accounting for 5.2%.
- Sustainable Food Production, particularly Low Carbon Agriculture, stands out with high export percentages and below-average imports.

#### 2023 Summary

- Six primary sub-sectors, including Wind, Building Technologies, Carbon Finance, Alternative Fuels, Alternative Fuel Vehicles, and Geothermal, collectively represent 63% of Calderdale's LCEGS2023 sector sales in 2022/23.
- Building Technologies, Wind, Alternative Fuels, Alternative Fuel Vehicles, and Geothermal lead in employment, constituting 56% of Calderdale's LCEGS2023 sector activity.
- The top 15 sub-sectors dominate the LCEGS2023 sector sales, accounting for 95% of overall sales in 2022/23 and 93% of employment in the sector.



## STATUS UPDATE ON THE LOW CARBON SECTOR BY LOCAL AUTHORITY



### Kirklees

#### Headline Figures

- Kirklees' Low Carbon Environmental Goods and Services (LCEGS2023) sector contributed £998 million to the local economy in 2022/23, supporting over 360 businesses and employing over 6,600 individuals.
- Despite contributing 12.3% to West Yorkshire's LCEGS2023 sales, Kirklees' impact on West Yorkshire's GDP stood at 14.4%.

#### Sector Size

- Kirklees' LCEGS2023 sales increased from £885 million in 2020/21 to £998 million in 2022/23, accounting for 12.3% of West Yorkshire's sales.
- In 2022/23, Kirklees' LCEGS2023 sector employed 6,672 full-time equivalent (FTE) workers, constituting 3.4% of the region's economically active population.

#### Forecast Growth

- Kirklees' LCEGS2023 sector is expected to see steady growth, with sales projected to increase by 9.1% between 2022/23 and 2023/24, and by 13.0% between 2024/25 and 2025/26.
- Certain sub-sectors like Geothermal, Carbon Finance, Air Source Heat Pumps, and Biomass are forecasted to achieve double-digit growth by 2025/26.

#### Imports and Exports

- Kirklees' LCEGS2023 sector is primarily a net exporter, with exports constituting 6.0% of sales and imports at 5.1%.
- Sustainable Food Production, particularly Low Carbon Agriculture, stands out as a significant export market.

#### 2023 Summary

- Six primary sub-sectors, including Wind, Building Technologies, Alternative Fuels, Alternative Fuel Vehicles, Carbon Finance, and Geothermal, represent 66% of Kirklees' LCEGS2023 sector activity in 2022/23.
- The top 15 sub-sectors dominate the LCEGS2023 sector sales, accounting for 94% of overall sales in 2022/23.
- In terms of employment, five leading sub-sectors, namely Building Technologies, Wind, Geothermal, Alternative Fuels, and Alternative Fuel Vehicles, collectively account for 59% of Kirklees' LCEGS2023 sector activity in 2022/23, with a secondary group contributing to a further 34%.





## STATUS UPDATE ON THE LOW CARBON SECTOR BY LOCAL AUTHORITY



### Bradford

#### Headline Figures

- Bradford's Low Carbon Environmental Goods and Services (LCEGS2023) sector contributed £1.4 billion to the local economy in 2022/23, supporting over 500 businesses and employing more than 9,300 individuals.
- Bradford's share of West Yorkshire's LCEGS2023 sales stood at 17.6%, aligning closely with its broader economic impact on West Yorkshire's GDP, which also amounted to 17.6%.

#### Sector Size

- Bradford's LCEGS2023 sales in 2022/23 reached £1.4 billion, representing 17.6% of West Yorkshire's sales and 11.3% of Bradford's GDP.
- The LCEGS2023 sector employed 9,347 people in 2022/23, constituting 4.1% of Bradford's economically active population.

#### Forecast Growth

- Bradford's LCEGS2023 sector is expected to see consistent growth, with sales projected to increase by 8.9% in 2022/23 and by 12.5% by 2025/26.
- Certain sub-sectors like Geothermal, Carbon Finance, Air Source Heat Pumps, and Biomass anticipate double-digit growth by 2025/26.

#### Imports and Exports

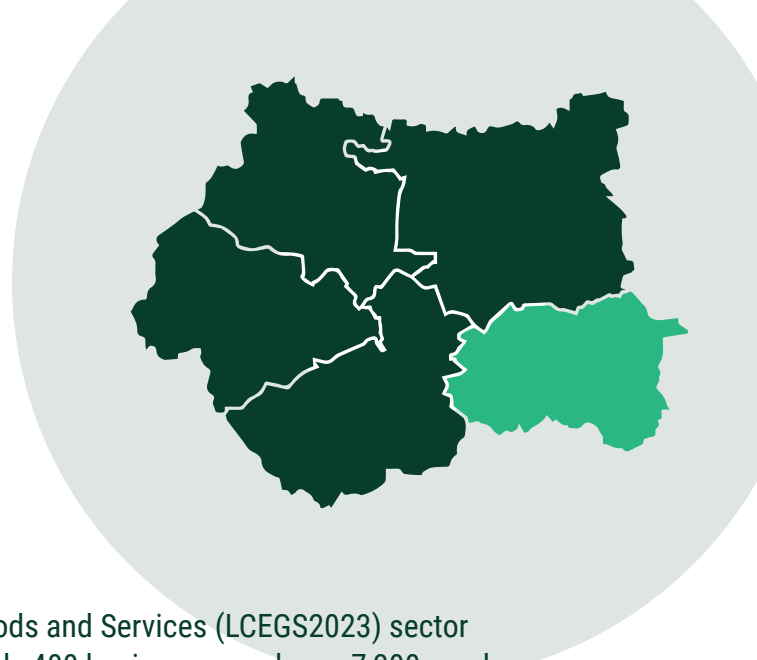
- Bradford's LCEGS2023 sector is primarily a net exporter, with exports constituting 6.5% of sales, surpassing imports at 5.1%.
- Sustainable Food Production, particularly Low Carbon Agriculture, stands out for its notably high exports relative to sales.

#### 2023 Summary

- Six primary sub-sectors, including Wind, Alternative Fuels, Alternative Fuel Vehicles, Building Technologies, Carbon Finance, and Geothermal, account for 63% of Bradford's LCEGS2023 sector activity in 2022/23.
- The top 15 sub-sectors dominate the LCEGS2023 sector sales, accounting for 94% of overall sales in 2022/23.
- Employment distribution mirrors sales trends, with the majority of the workforce employed in Low Carbon and Renewable Energy sectors.



## STATUS UPDATE ON THE LOW CARBON SECTOR BY LOCAL AUTHORITY



### Wakefield

#### Headline Figures

- In 2022/23, Wakefield's Low Carbon Environmental Goods and Services (LCEGS2023) sector contributed £1.1 billion to the local economy, with nearly 400 businesses and over 7,300 employees.
- Its share of West Yorkshire's LCEGS2023 sales stood at 13.7%, slightly below its broader economic contribution to West Yorkshire's GDP, which reached 14.5%.

#### Sector Size

- Wakefield's LCEGS2023 sales in 2022/23 reached £1.1 billion, representing 13.7% of West Yorkshire's total.
- Employment stood at 7,318, accounting for 4.3% of the economically active population in Wakefield, with 399 active businesses, comprising 4.0% of the area's total.

#### Forecast Growth

- The forecast predicts steady growth for Wakefield's LCEGS2023 sector, with a growth rate of 8.9% between 2022/23 and 2023/24, gradually increasing to 12.8% between 2024/25 and 2025/26.
- Several sub-sectors are expected to achieve double-digit growth by 2025/26.

#### Imports and Exports

- Wakefield's international trade dynamics show it maintains a net exporter status for the overall sector.
- Exports constitute 6.2% of sales, with imports at 5.3%.
- Notably, there's variability in both export and import percentages across different sub-sectors.

#### 2023 Summary

- Six leading sub-sectors, including Wind, Alternative Fuel Vehicles, Alternative Fuels, Building Technologies, Carbon Finance, and Geothermal, constitute the majority of sales, comprising 63% of Wakefield's LCEGS2023 sector activity in 2022/23.
- A second grouping of nine sub-sectors contributes significantly to sector sales, accounting for 32% of activity in 2022/23.
- Together, these 15 sub-sectors dominate the LCEGS2023 sector sales, making up 95% of its overall sales in 2022/23.



# West Yorkshire Local Authority Sector comparators



## Leeds

Figure 62: Leeds and West Yorkshire Level 1 Measures for 2022/23

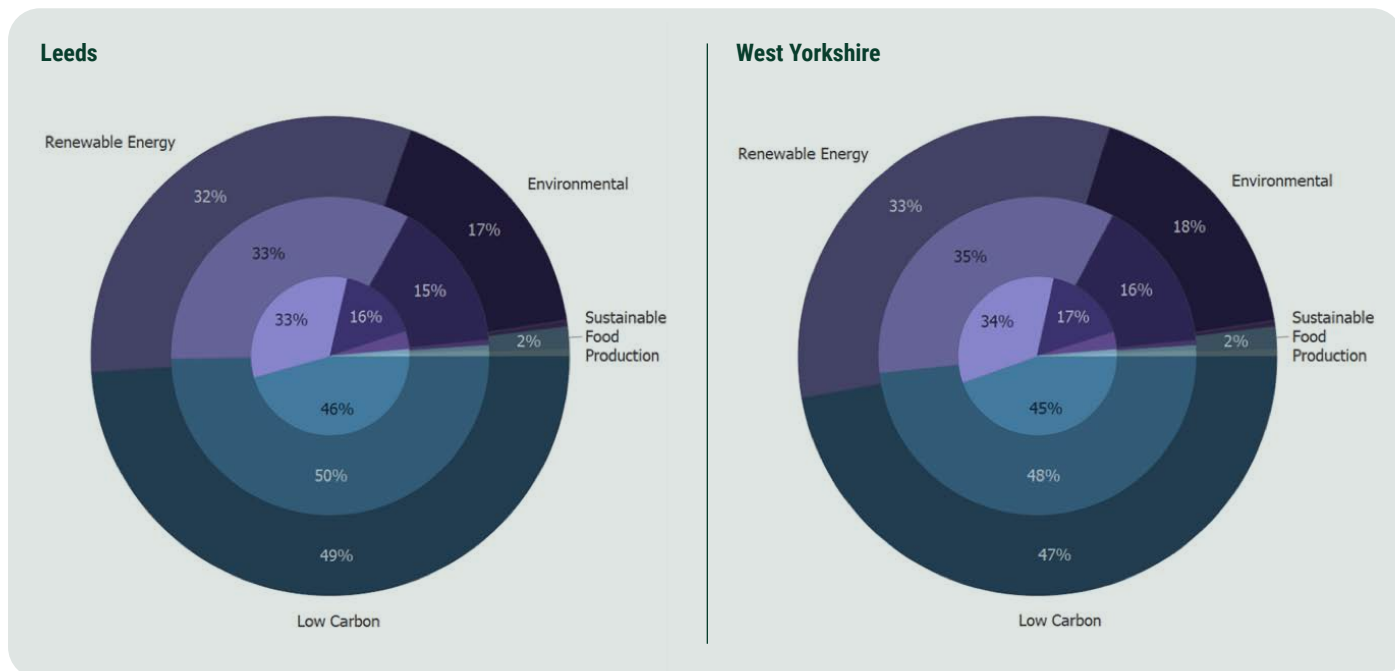
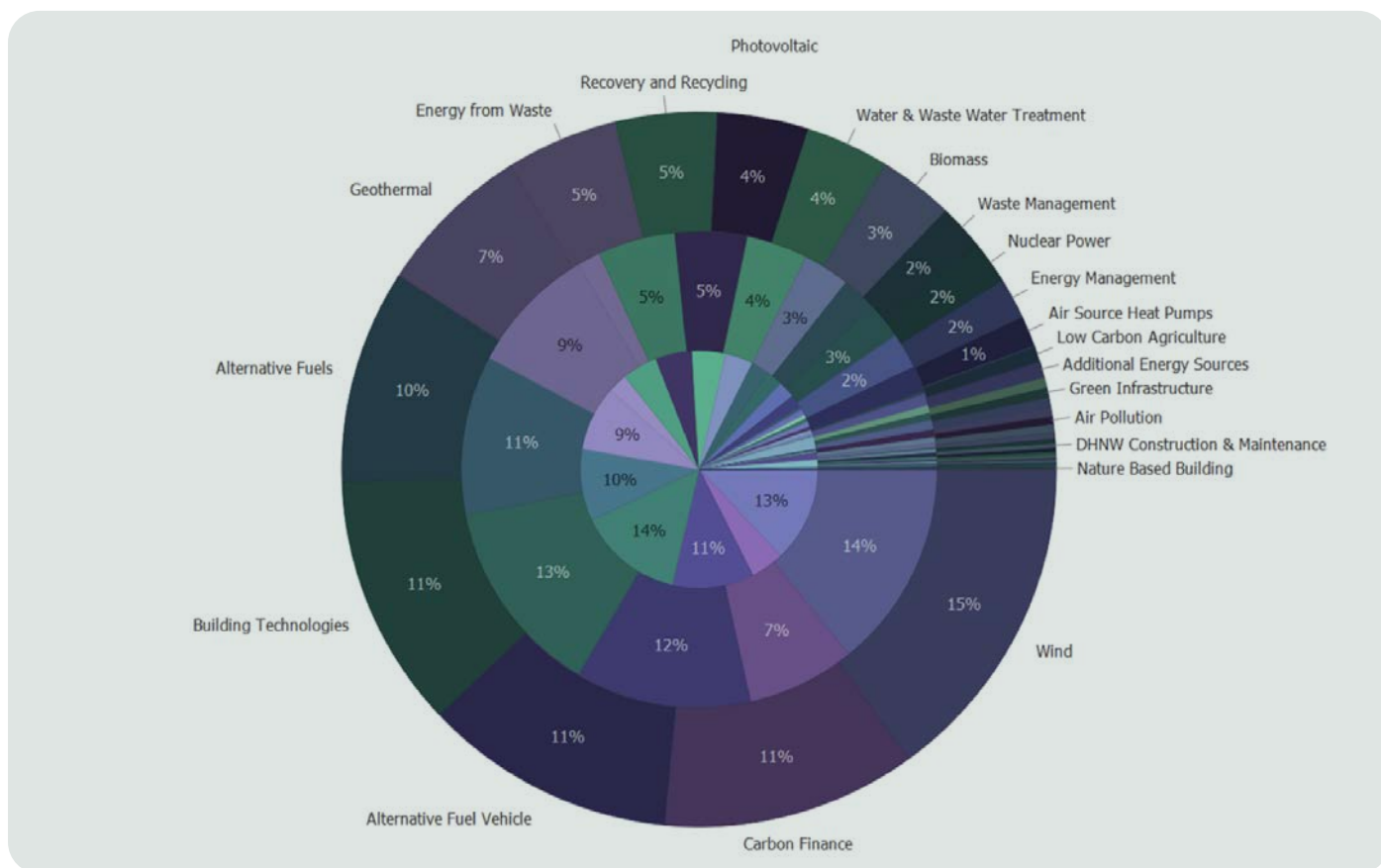
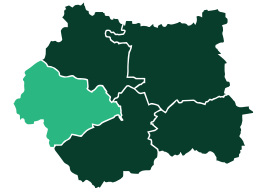


Figure 63: Leeds's Level 2 sub-sectors for 2022/23



# West Yorkshire Local Authority Sector comparators



## Calderdale

Figure 89: Calderdale and West Yorkshire Level 1 Measures for 2022/23

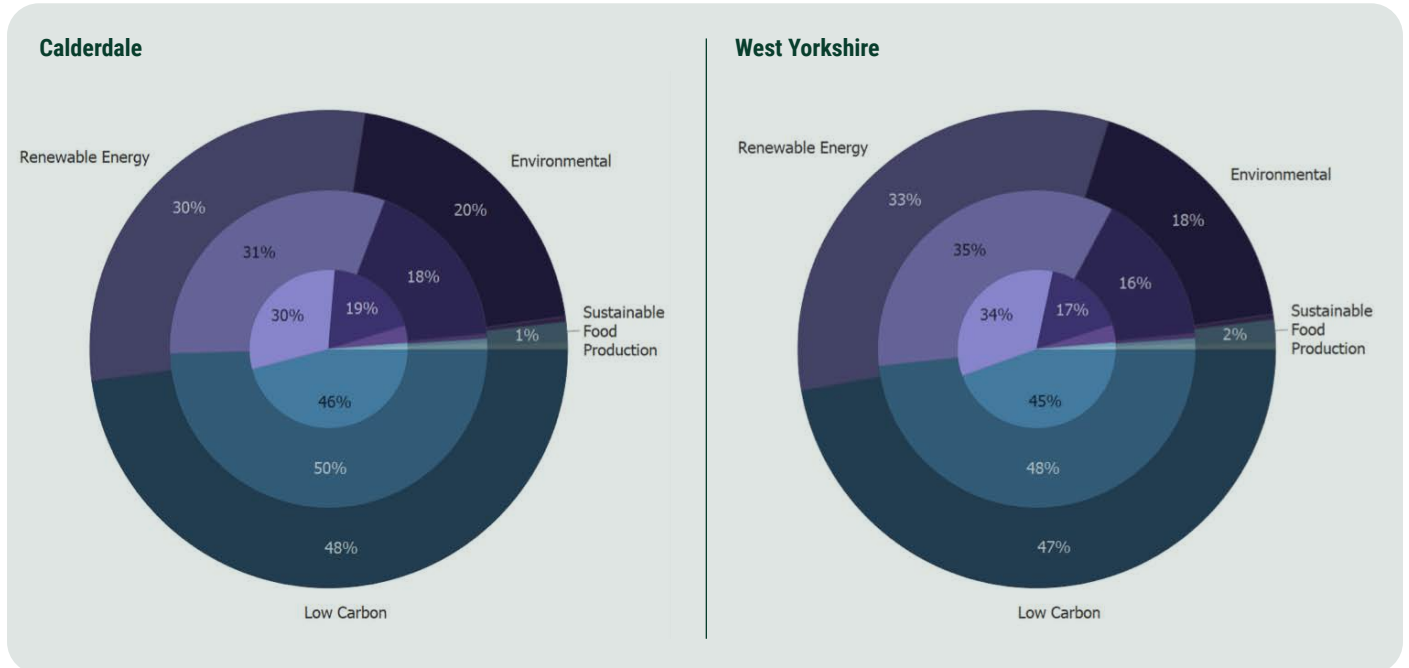
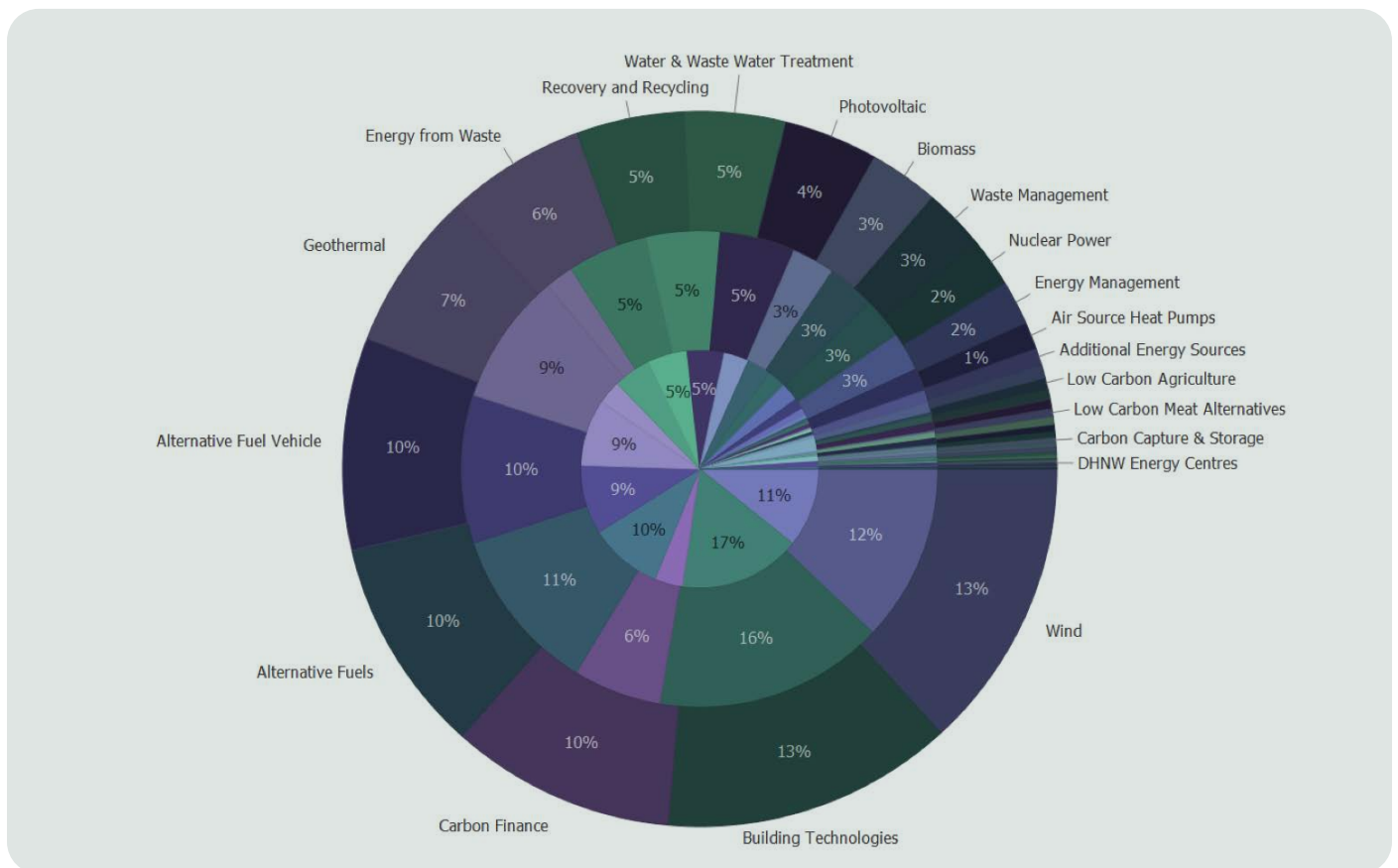


Figure 90: Calderdale's Level 2 sub-sectors for 2022/23



# West Yorkshire Local Authority Sector comparators



## Kirklees

Figure 116: Kirklees and West Yorkshire Level 1 Measures for 2022/23

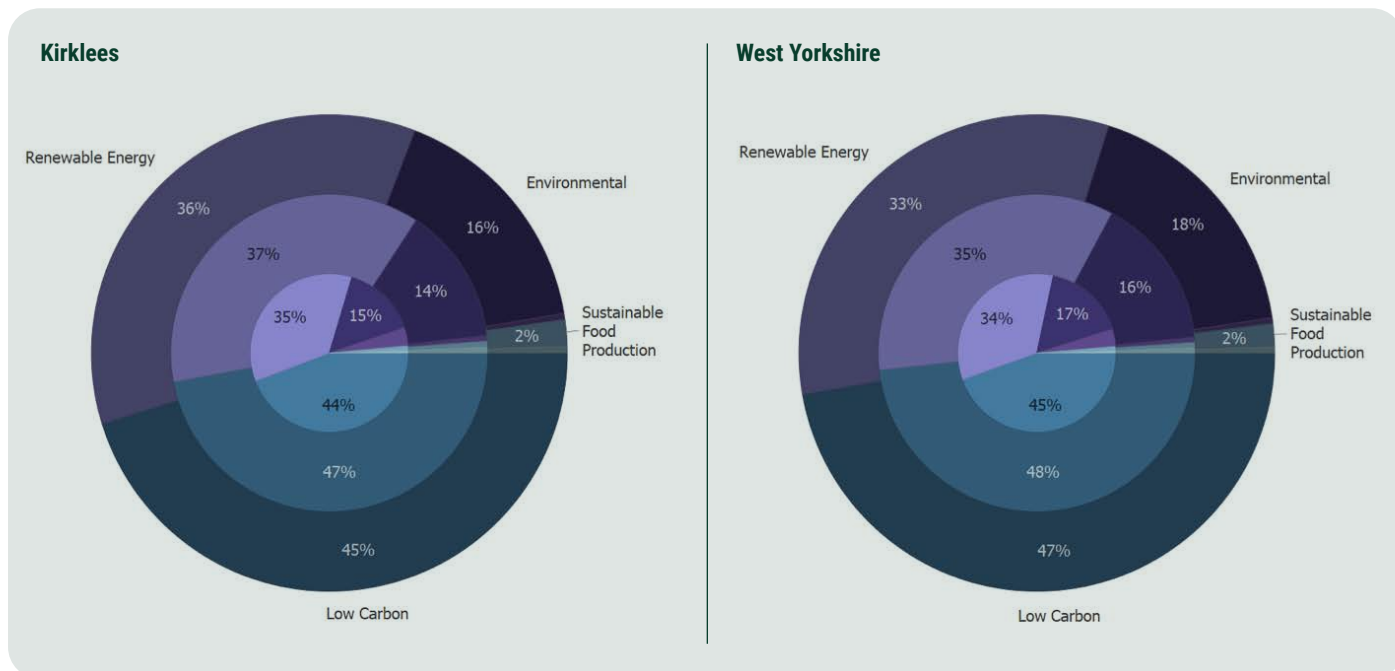
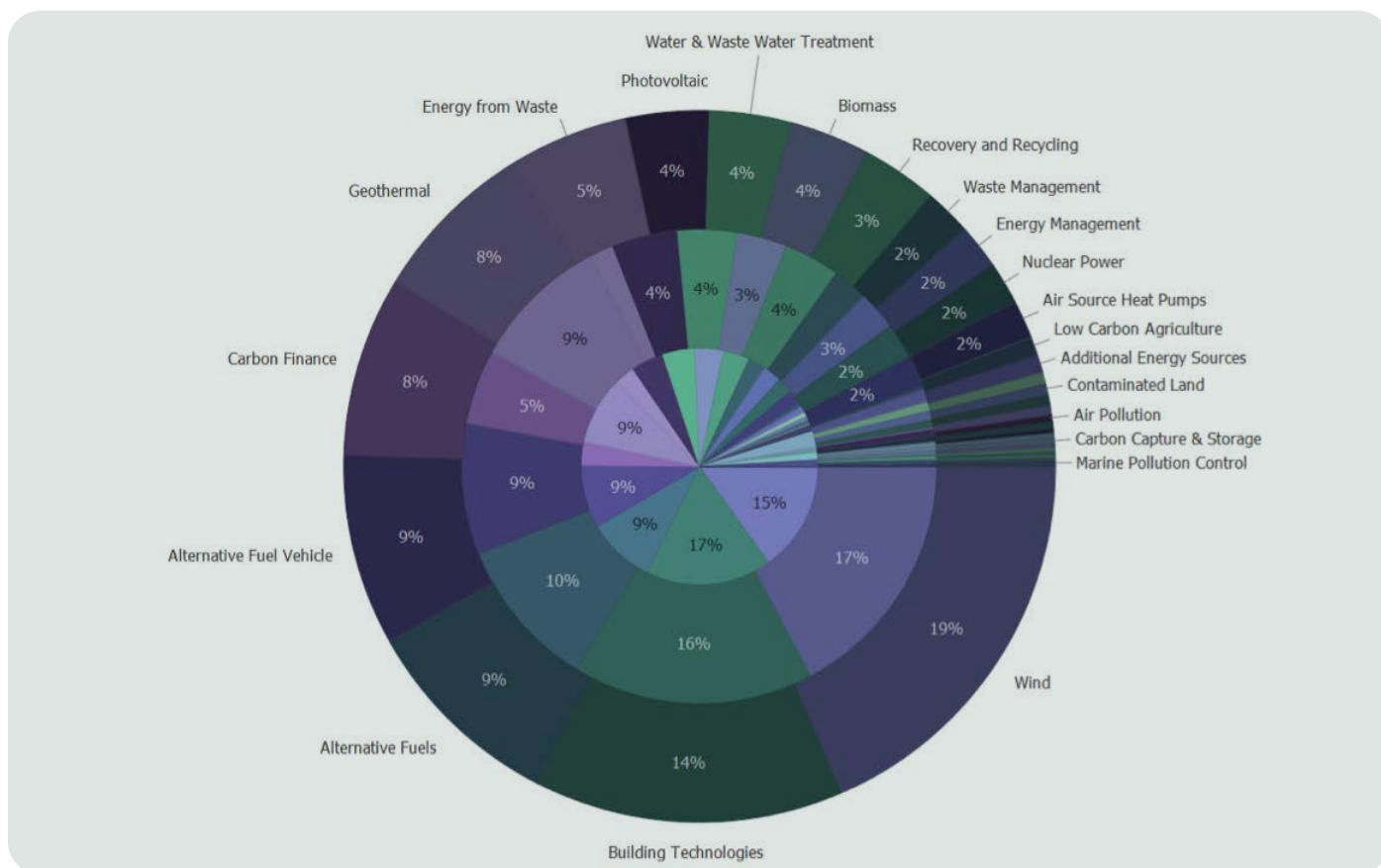
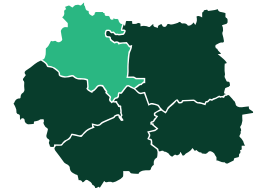


Figure 117: Kirklees's Level 2 sub-sectors for 2022/23



# West Yorkshire Local Authority Sector comparators



## Bradford

Figure 143: Bradford and West Yorkshire Level 1 Measures for 2022/23

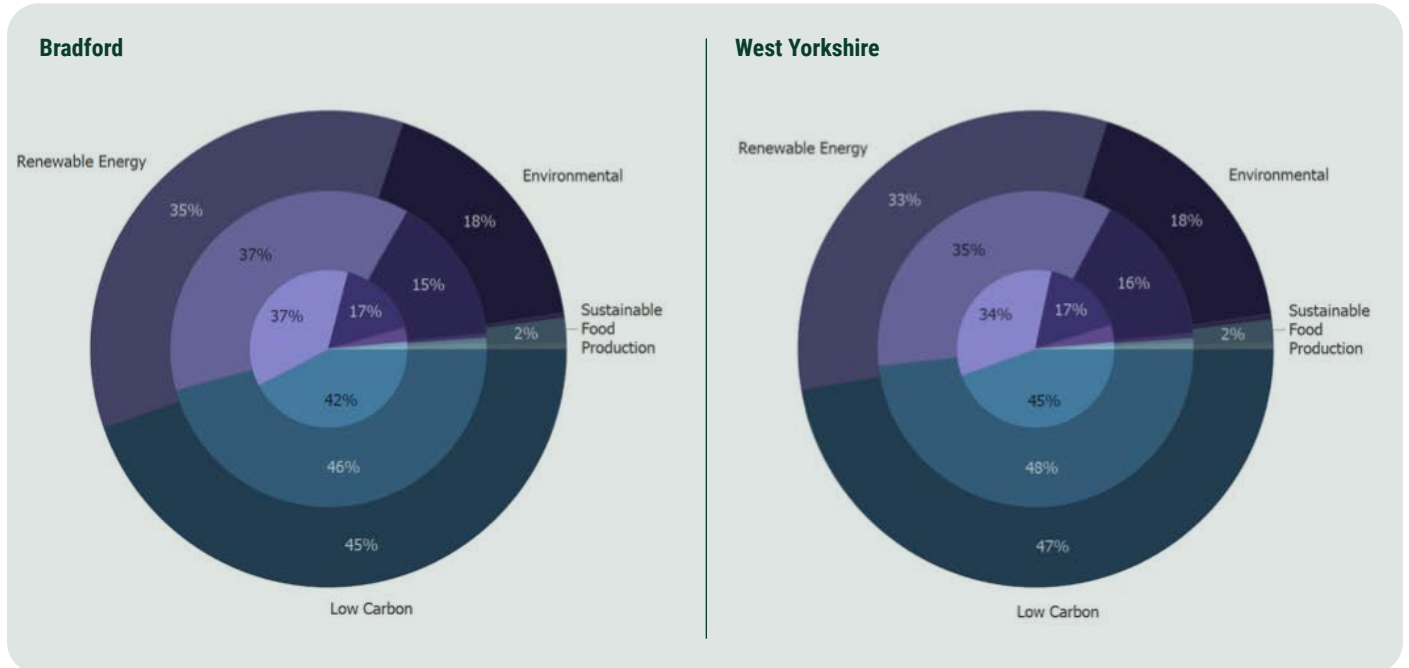
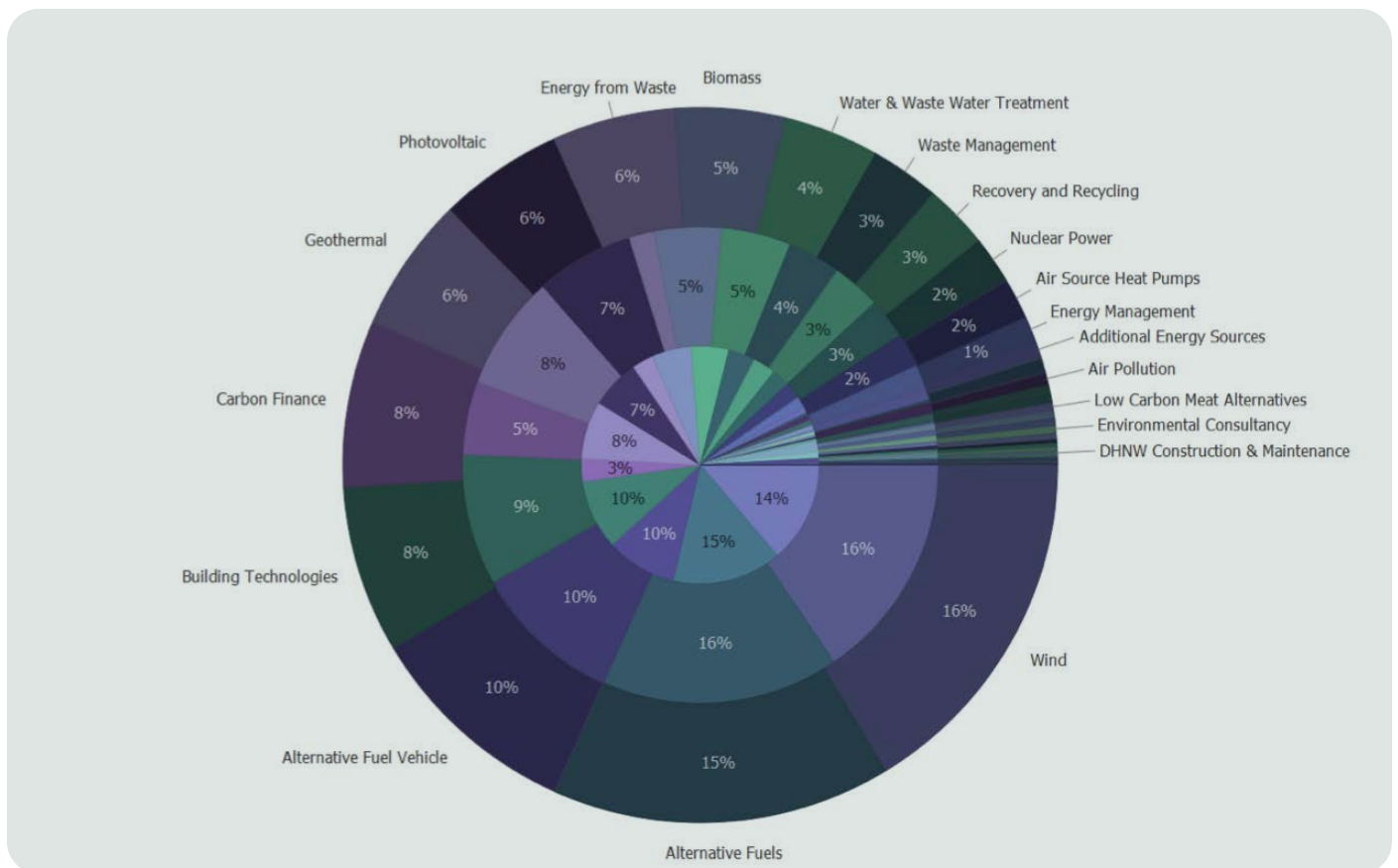


Figure 144: Bradford's Level 2 sub-sectors for 2022/23



# West Yorkshire Local Authority Sector comparators

## Wakefield

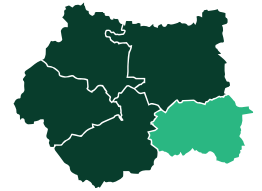


Figure 171: Wakefield and West Yorkshire Level 1 Measures for 2022/23

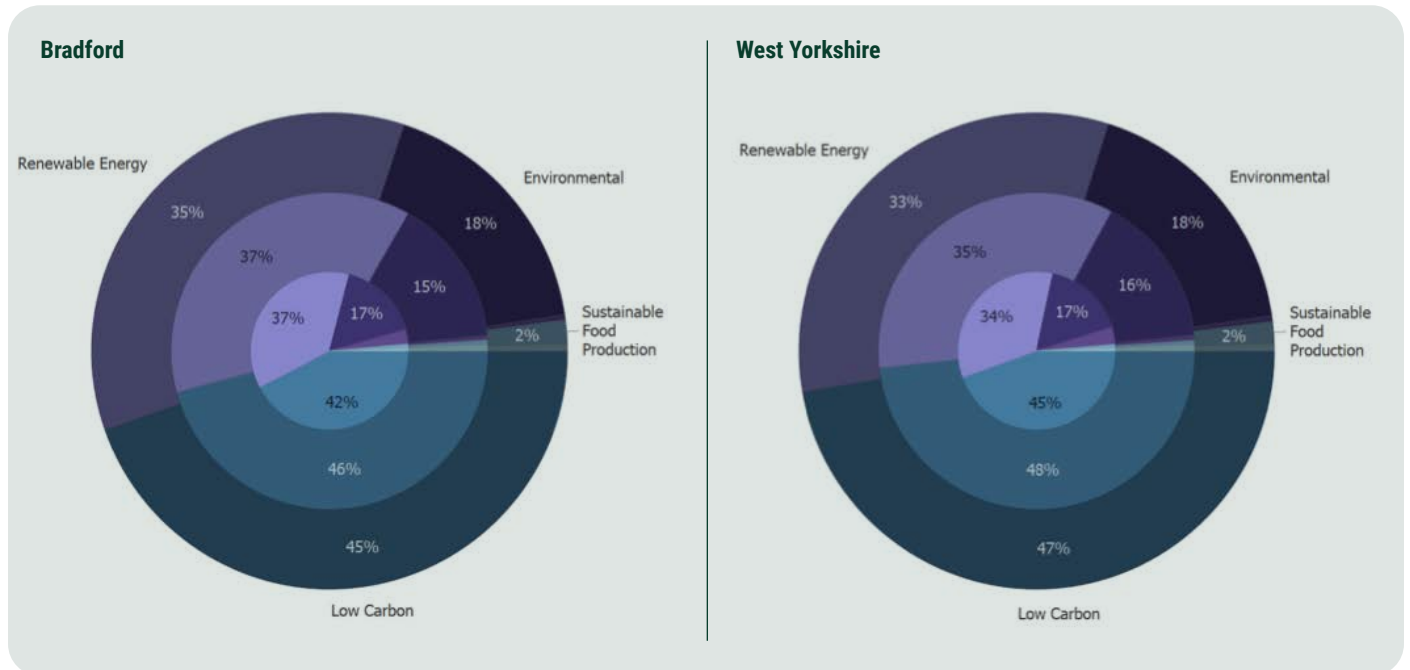
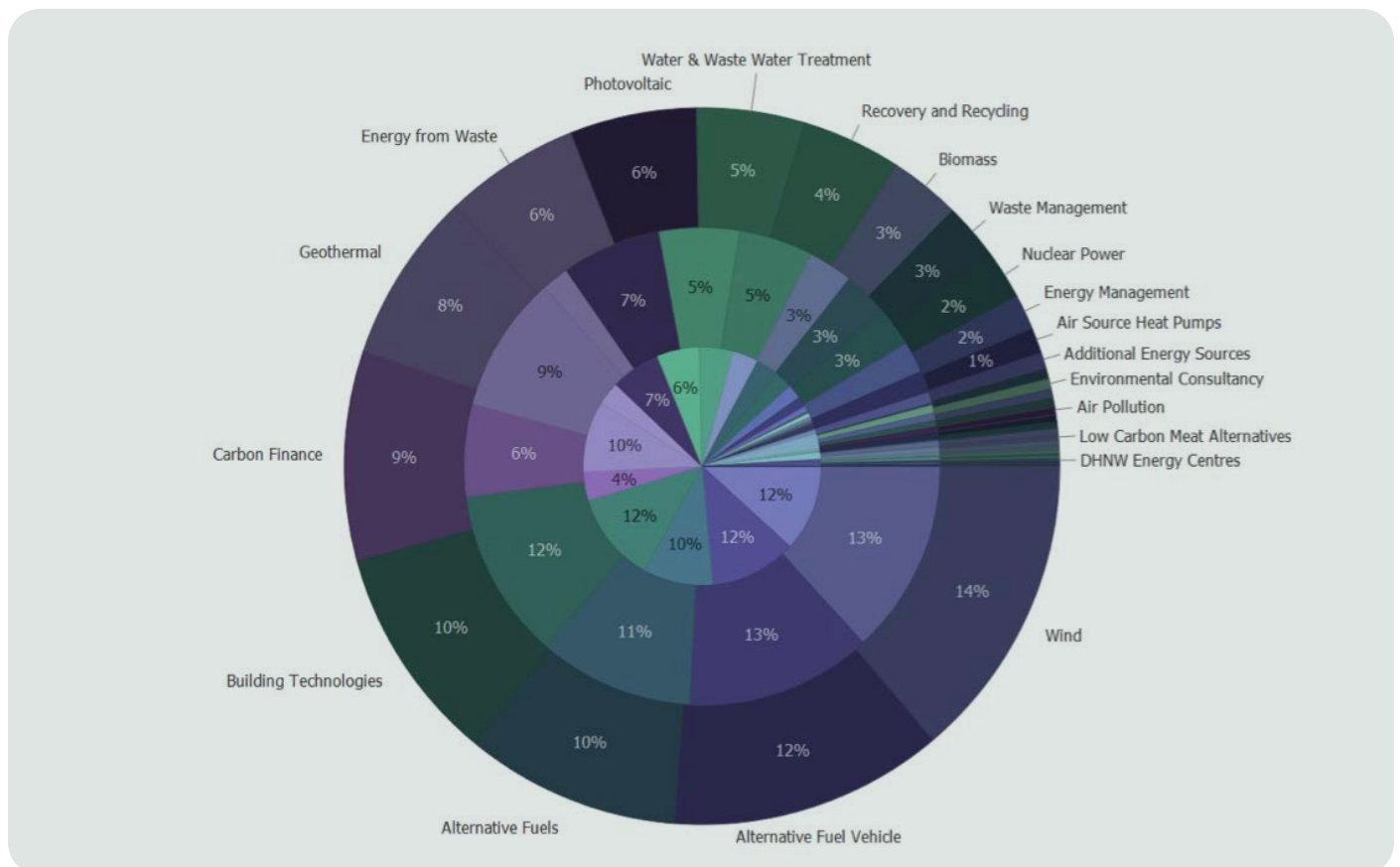


Figure 172: Wakefield's Level 2 sub-sectors for 2022/23





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