

Recycling Carbon Index

England, Wales &
Northern Ireland Local
Authorities 2018/19

Winter 2020

About Eunomia Research & Consulting

Eunomia provides environmental consultancy to waste collection and treatment companies, to investors and to local, national and European government. In all of our work we aim to help our clients understand how the environmental and cost performance of the services and products they provide can be improved. We have modelled the carbon and other environmental impacts of waste collection and treatment services for a large number of clients including:

- European Commission Directorate General of the Environment. We have provided detailed advice on the impacts of changes to waste management across the European Union, informing the EU's circular economy proposals, assisted the EU in understanding member states' compliance with current rules, and are closely involved in developing the EU's guidance on its new waste legislation.
- Devolved administrations in Scotland and Wales. We have helped the devolved governments develop progressive waste management policies, including proposals for a deposit refund scheme in Scotland.
- UK Local Government. Eunomia has carried out waste collection and treatment reviews and assessments for a large number of local authorities in England, Wales, Scotland and Northern Ireland, and assists councils that are trying to reduce their carbon footprint.
- Private companies. We advise businesses, manufacturers, retailers and waste management organisations on how to adopt more circular business models.

Our intention in publishing this work free of charge is to help local authorities and their service providers to think about the environmental performance of the services they provide. An authority's recycling rate is an interesting and important metric, but there are other, equally valuable measures of a service's environmental performance, including the carbon index presented in this report.

What is the Carbon Index?

This is the eighth edition of Eunomia's Local Authority Recycling Carbon Index. It gives councils an alternative, and arguably better, measure of the environmental performance of their waste and recycling services than a purely weight-based measure. The Index shows which local authorities' recycling activities are delivering the greatest carbon benefits. Reading it alongside the recycling rate and other metrics provides a fuller picture of the benefits achieved by waste and recycling services.

This and previous years' results are available through our interactive website (www.eunomia.co.uk/carbonindex) where authorities can track and compare their performance.

How is it Calculated?

Local authorities' recycling performance data for 2018/19 is taken from WasteDataFlow¹ and multiplied by the same carbon 'factors' used by Zero Waste Scotland to produce the Scottish Carbon Metric.² This process converts tonnage data for each recyclable material into carbon dioxide equivalents (CO₂ eq.). This shows the total embodied carbon³ in the material that authorities are diverting from disposal to recycling. Local authorities that collect more of the materials with a higher embodied carbon for recycling will show greater benefits. We also take account of the emissions impact of source separated and comingled collections.

We have calculated the total carbon savings generated from all the recycling reported by each authority, encompassing their kerbside collections, HWRCs and bring sites. Dividing this figure by the population served yields a carbon saving figure per person, thereby allowing an effective comparison between authorities. The formula for the Index is shown below:

$$\left[\frac{\text{Total Carbon Savings (Kg CO}_2 \text{ eq.)}}{\text{Population served}} \right] = \text{kg CO}_2 \text{ saved per person}$$

The higher the value, the higher carbon savings. Rating authorities in this way demonstrates that a high recycling rate does not necessarily result in the greatest carbon savings.

Small errors in data reporting might significantly affect the ranking of the authorities in the Index tables so the results should be treated as approximate values. For this reason we have created four categories to better reflect the general performance of each authority. These categories are defined as follows:

- **High Flyers** – the top 10%
- **Good Performers** – the next 30%,
- **Mid Performers** – the next 30%, and
- **Low Performers** – the bottom 30%

Key Findings

England's Carbon Index performance remained close to last year at 69 kg CO₂eq per capita. The recycling rate in England increased 0.6% from 45.2% in 2017/18 to 45.8% in 2018/19, with local authorities recycling 65,000 tonnes more material than in 2017/18.⁴

Northern Ireland's performance on the Carbon Index improved by 3.4 points to almost 82.2 kg CO₂eq, reflecting a 2.1% increase in the recycling rate to 48.1%.⁵

Wales remains by some distance the country which achieves the greatest carbon saving per capita from local authority recycling. Its Carbon Index showed a small increase (of 0.2 points) in 2018/19, reaching 93.6 kg CO₂eq per capita. The recycling rate, which is calculated on a different basis from England and Northern Ireland, showed a slight increase by 0.1%.⁶

Kg Collected per Person	2017/18	2018/19	Change
Garden and food waste	17.8	17.7	-0.3%
Waste food only	9.2	9.7	4.7%
Garden waste only	50.3	49.8	-0.9%
Textiles	1.8	1.7	-2.0%
WEEE	4.4	4.4	-0.2%
Paper	29.1	28.8	-1.0%
Card	14.6	14.5	-0.5%
Glass	22.4	22.7	1.1%
Plastic	8.3	8.5	2.0%
Metal	9.4	9.5	0.8%
Total	167.3	167.4	0.01%

The table above shows the weight of the key materials collected for recycling per head of population across England, Wales and Northern Ireland in both 2017/18 and 2018/19. Overall captures of these recyclable materials increased by 0.01%.

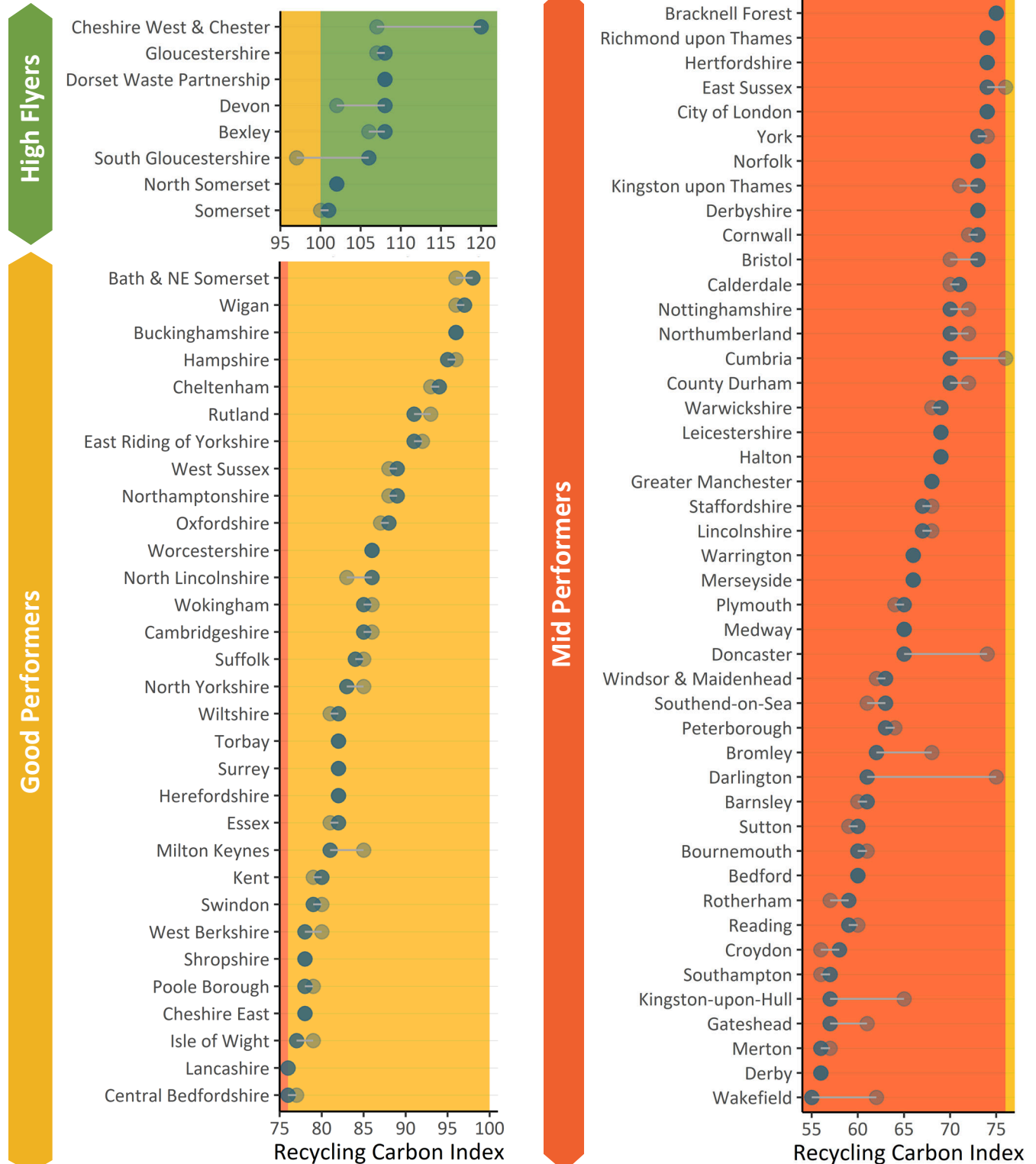
Yields of most material streams remained similar to the previous year. The biggest decrease in percentage terms was in paper. The greatest reductions in terms of Kg per capita were in garden waste, perhaps reflecting an increase in charging for such collections, and in paper which has been declining consistently for several years as newsprint and paper correspondence have reduced. Food waste was the stream whose capture increased most, both in percentage and weight terms.

1. See: www.wastedataflow.org
2. We have used figures from the 2018 and 2019 versions of the **Scottish Carbon Metric** as appropriate.
3. Embodied carbon is defined as the amount of carbon released from material extraction, transport, processing and manufacturing, and all related activities.
4. Source: UK Department for Environment, Food and Rural Affairs (Defra), **Statistics on waste managed by local authorities in England in 2018/19**.
5. Source: Northern Ireland Department for Agriculture, Environment and Rural Affairs (Daera), **Northern Ireland Local Authority Collected Municipal Waste Management Statistics Annual Report 2018/19**.
6. Source: Welsh Government, **Local Authority Municipal Waste Management Report for Wales, 2018-19**.

English Recycling Carbon Index

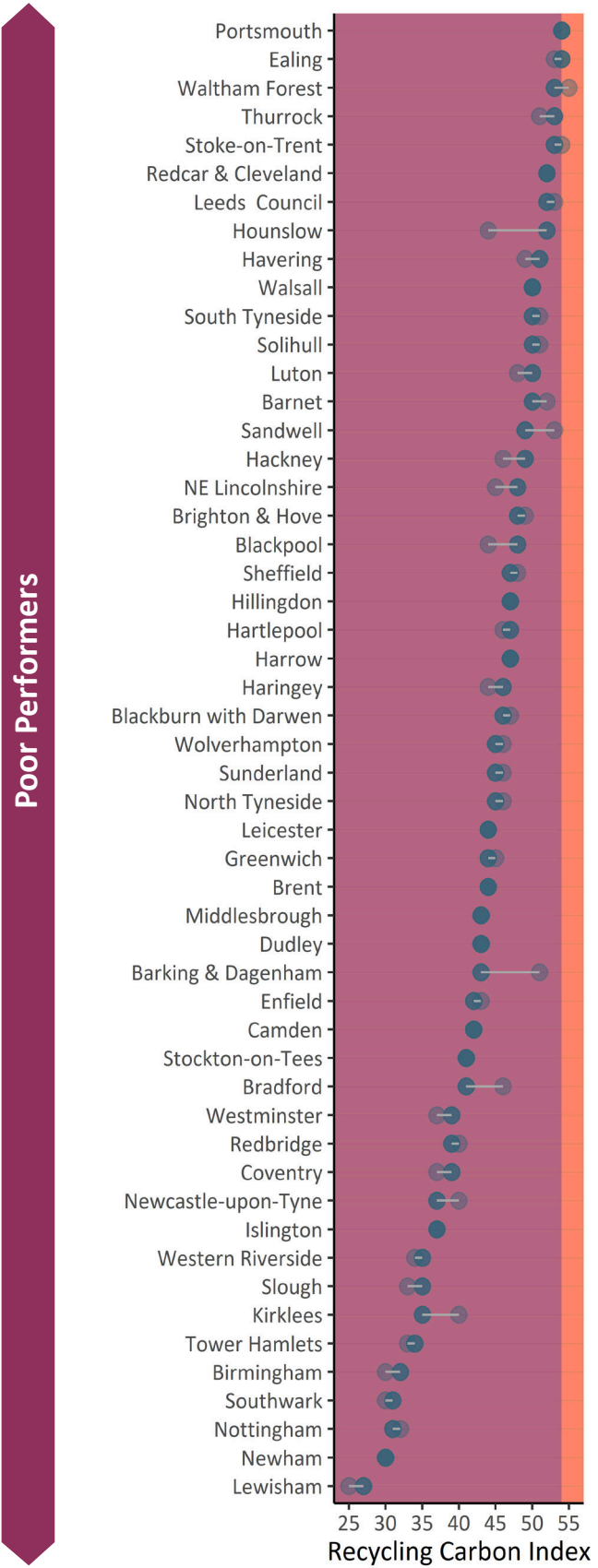
The Carbon Index results for 2018/19 are shown alongside the 2017/18 figures for ease of comparison and to highlight changes. The relative positions and groupings of councils within the Index are defined by the 2018/19 data to reflect the latest position. Because we include material collected at HWRCs in addition to kerbside collections, we report performance by Waste Disposal Authority area rather than for Waste Collection Authorities. This helps to ensure a fair comparison between two tier councils and unitary authorities. While the Carbon Index method could be applied to Waste Collection Authorities, their performance would be lower due to HWRCs being operated only at the Waste Disposal Authority level.

Year: 2017/18 ● 2018/19 ●



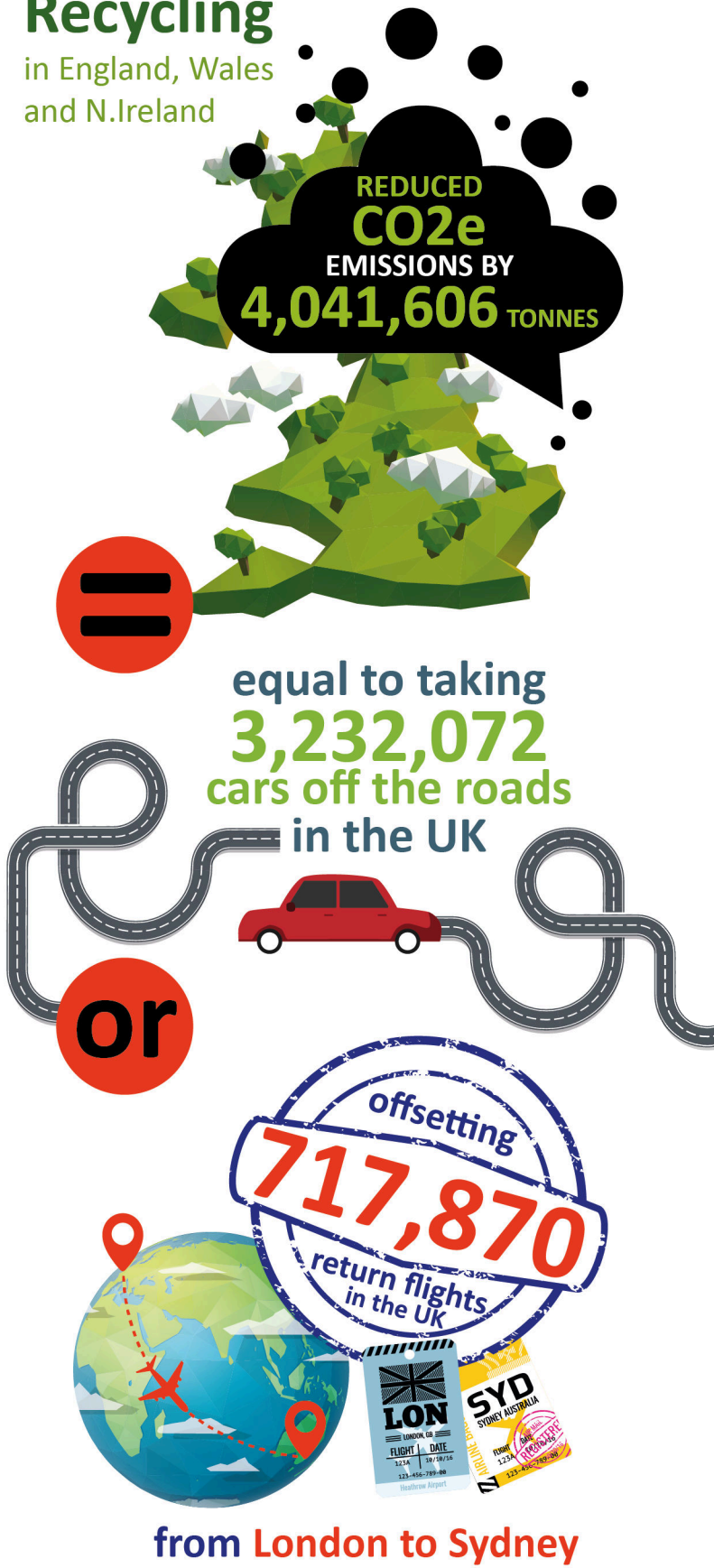
In 2018/19, 30% of English authorities improved their Recycling Carbon Index performance compared to 2017/18. Of those with an improved performance, 44% showed increases of at least 3kg of CO₂eq. per person.

Year: 2017/18 ● 2018/19 ●



Municipal Recycling

in England, Wales and N.Ireland



Results for England Using the ONS 2001 Area Classification

A number of geographic and social factors may influence the recycling performance of local authorities. For this reason, we have also ranked English authorities according to their super group classification in the 2001 National Statistics Area Classification. This allows authorities to compare their indicator score against others with similar geo-demographic characteristics, giving a fairer measure of their performance against that of their peers.

Prospering UK	Cheshire West and Chester	120	Cities & Services	Richmond upon Thames	74	Mining & Manufacturing	Wigan	97
	Bexley	108		Bristol	73		North Lincolnshire	86
	Gloucestershire	108		Kingston upon Thames	73		Telford and Wrekin	75
	South Gloucestershire	106		Calderdale	71		Derbyshire	73
	North Somerset	102		Greater Manchester	68		County Durham	70
	Somerset	101		Plymouth	65		Nottinghamshire	70
	Bath & North East Somerset	98		Southend-on-Sea	63		Halton	69
	Buckinghamshire	96		Bromley	62		Staffordshire	67
	Hampshire	95		Bournemouth	60		Merseyside	66
	Cheltenham	94		Sutton	60		Doncaster	65
	East Riding of Yorkshire	91		Reading	59		Barnsley	61
	Rutland	91		Southampton	57		Darlington	61
	East Sussex	90		Derby	56		Rotherham	59
	Northamptonshire	89		Portsmouth	54		Gateshead	57
	West Sussex	89		Leeds Council	52		Kingston-upon-Hull	57
	Oxfordshire	88		Walsall	50		Wakefield	55
	Worcestershire	86		Sandwell	49		Stoke-on-Trent	53
	Cambridgeshire	85		Brighton and Hove	48		Redcar and Cleveland	52
	Wokingham	85		Hillingdon	47		South Tyneside	50
	Suffolk	84		Sheffield	47		North East Lincolnshire	48
	Essex	82		Blackburn with Darwen	46		Hartlepool	47
	Herefordshire	82		Wolverhampton	45		North Tyneside	45
	Surrey	82		Leicester	44		Sunderland	45
	Wiltshire	82		Barking and Dagenham	43		Dudley	43
	Milton Keynes	81		Bradford	41		Middlesbrough	43
	Kent	80		Coventry	39		Stockton-on-Tees	41
	Swindon	79	London Centre	Newcastle-upon-Tyne	37	London Suburbs	Croydon	58
	Cheshire East	78		Kirklees	35		Merton	56
	Poole Borough	78		Birmingham	32		Ealing	54
	Shropshire	78		Nottingham	31		Waltham Forest	53
	West Berkshire	78		City of London	74		Hounslow	52
	Central Bedfordshire	76		Hackney	49		Barnet	50
	Lancashire	76		Haringey	46		Luton	50
	Bracknell Forest	75		Brent	44		Harrow	47
	Hertfordshire	74		Camden	42		Greenwich	44
	Norfolk	73		Westminster	39		Enfield	42
	York	73	Coast & Country	Islington	37		Redbridge	39
	Northumberland	70		Western Riverside	35		Slough	35
	Leicestershire	69		Tower Hamlets	34	Coast & Country	Devon	108
	Warwickshire	69		Southwark	31		Dorset Waste Partnership	108
	Lincolnshire	67		Newham	30		North Yorkshire	83
	Warrington	66		Lewisham	27		Torbay	82
	Medway	65					Isle of Wight	77
	Peterborough	63					Cornwall	73
	Windsor and Maidenhead	63					Cumbria	70
	Bedford	60					Blackpool	48
	Thurrock	53						
	Havering	51						
	Solihull	50						

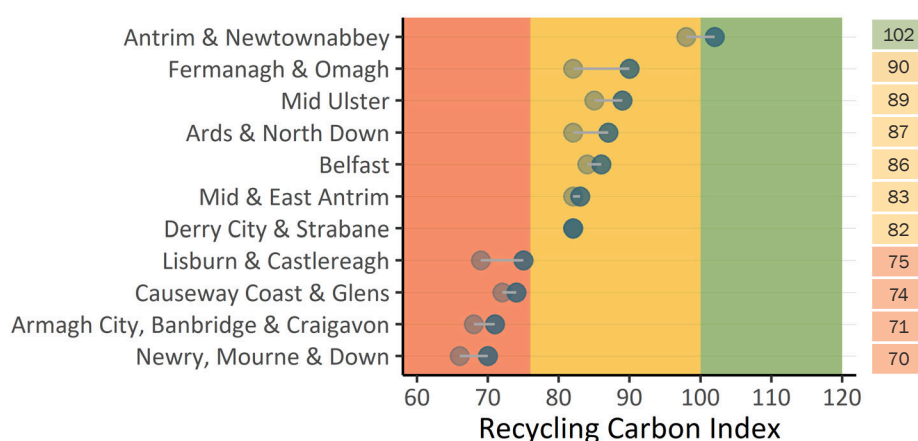
Northern Ireland & Wales Recycling Carbon Index

All local authorities in Wales and Northern Ireland are unitary authorities, with the powers of both a Waste Collection Authority and a Waste Disposal Authority. In the graphs below, authorities have been ordered by their relative performance in the Recycling Carbon Index.

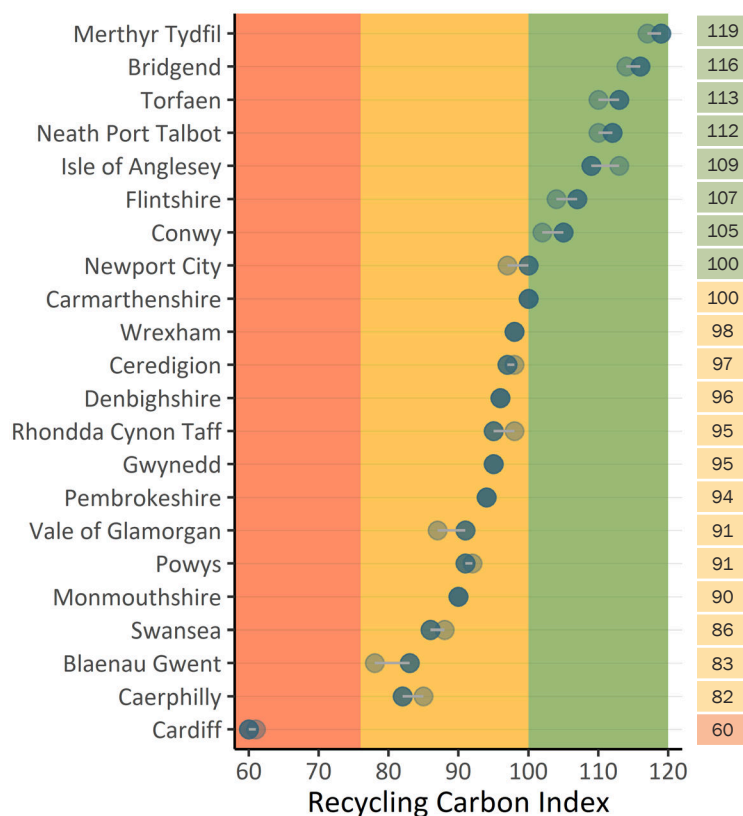
In Northern Ireland, most authorities improved their overall performance in 2018/19, with all but one authority showing an increase. Antrim and Newtownabbey remained the leading Northern Irish authority with a place in the “High Flyer” rank in the Index. Wales consistent reports the highest scores in the Recycling Carbon Index. This year, nine authorities showed improvement over the scores from the previous year, six showed no change and seven reported a decrease in their Recycling Carbon Index.

Welsh and Northern Irish authorities collected very similar amounts of recycling per capita - 200kg and 197kg respectively. However, in Wales, a greater share of this material is dry recycling rather than organics, resulting in considerably greater emissions savings.

Northern Ireland: Authorities Index

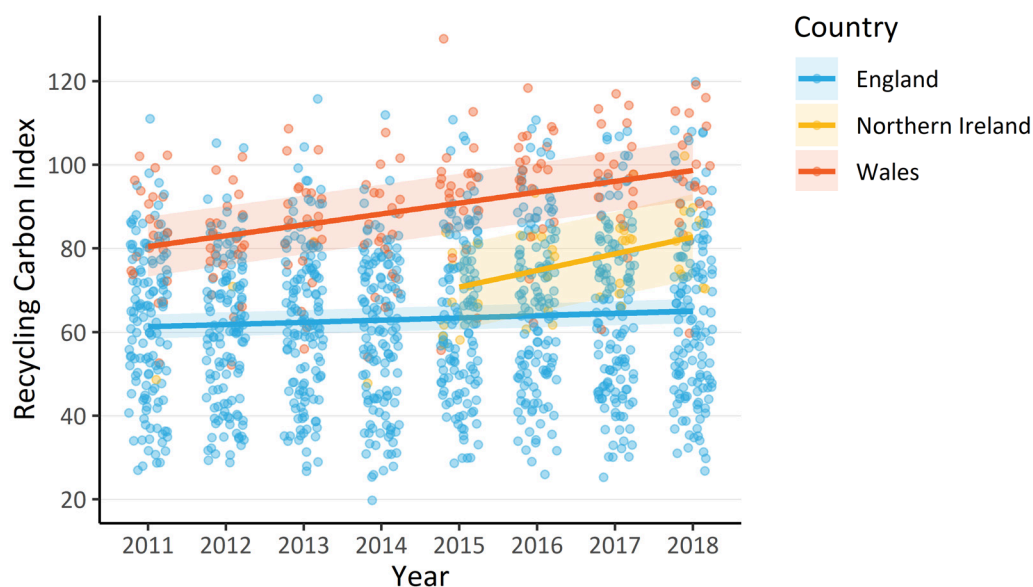


Wales: Authorities Index



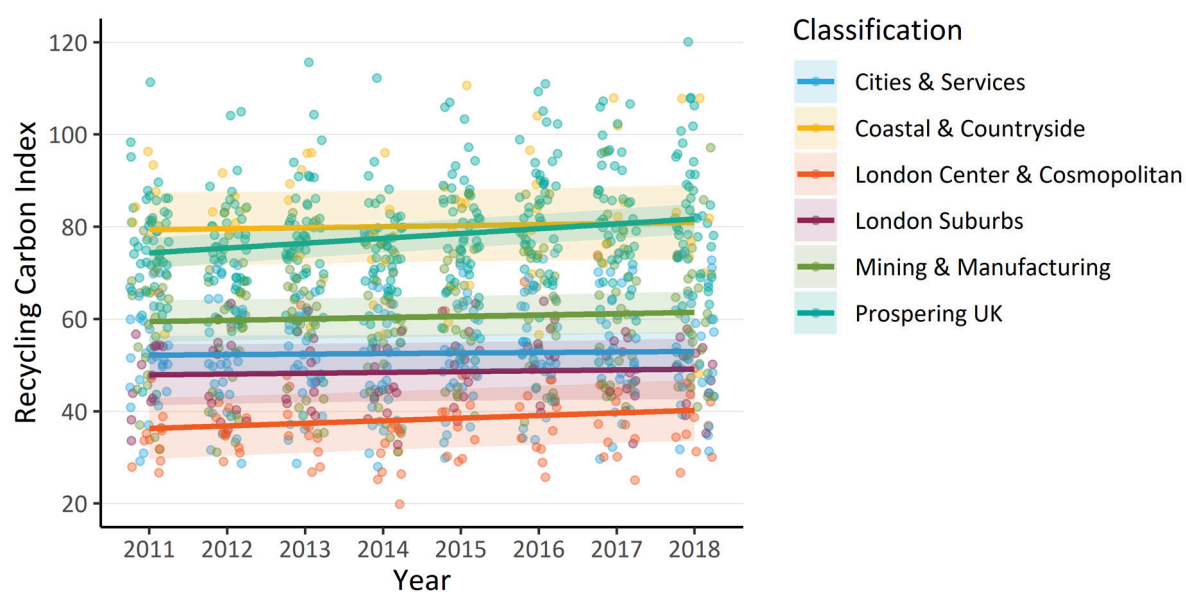
Country-wide Trends

The results displayed here show the trend in local authority Recycling Carbon Index Scores per country, with each point representing an individual local authority's score for that year. Since the Recycling Carbon Index began in 2011, we have seen an increase in the yearly results from authorities in both Wales and Northern Ireland. Authorities in Wales improve on average 2.6 points per year, with those in Northern Ireland (plotted here from 2015 due to the change in authority divisions), have improved 4 points per year since 2015. Authorities in England on the other hand show slower progress: improving on average only 0.5 points per year.



ONS Classification Trends

Splitting the results for England by ONS classification lets us see a more detailed break down of the trends in local authority Recycling Carbon Index Scores. Local authorities included in the 'Prospering UK' classification have shown an improvement of 1.1 points on average per year on the Recycling Carbon Index since 2011. Local authorities in London Centre & Cosmopolitan have also shown an increase of 0.6 points on average per year. Other parts of England have not shown the same trends in growth, increasing by less than 0.3 points on average per year since the Recycling Carbon Index began in 2011.



Further Work

Our intention in publishing this work free of charge is to help local authorities and their service providers to think about the environmental performance of the services they provide.

This report presents a high-level view of the underlying analysis. More detailed outputs can be provided quickly and at low cost for an individual authority or group of authorities.

Our modelling allows us to look at the environmental performance of current and possible future services for both collection and disposal authorities and at the environmental impacts of collection, treatment and disposal.

www.eunomia.co.uk/carbonindex

Want to Know More?

Eunomia Research & Consulting Ltd
37 Queen Square
Bristol
BS1 4QS
E-Mail: elizabeth.raine@eunomia.co.uk