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Clean Growth Audit

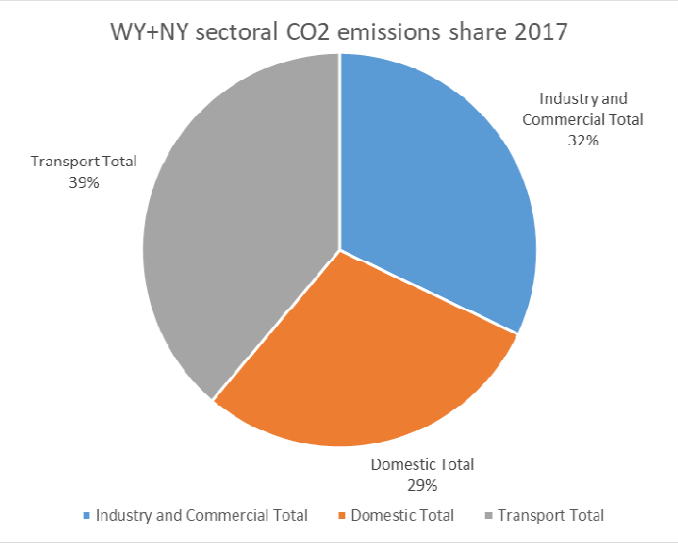
James Brass

Background – Where do our emissions come from - JAMES to add pls

- ADD in figs on Industry & Commerces CO2 emissions in the City Region
- i.e 1/3 or ?
- Need to tackle this

Background carbon emissions: Leeds City Region 2017

- Net zero carbon target of 2038
- Since 2005, carbon emissions have fallen by 35% (less than Yorkshire & Humber 36.5% and Greater Manchester 39%)
- Industry and commercial accounts for 32%
- For every job about 10 tonnes of carbon in 2017
- Higher proportion of manufacturing jobs in the region
- Imported goods driving global emissions



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Objectives

1. To locate, quantify and gather evidence on energy usage and natural resources, including carbon intensive industries.
2. To map businesses working in the low carbon and sustainability service sectors, exploring attitudes to co-operation and innovation, including understanding the functional links between business and support institutions
3. Make recommendations to advance clean growth sectors, including intensive industries

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Our approach

Intensive industries

- Covered the Leeds City Region and North Yorkshire area
- Analysis of local environmental data and sectoral impact
- Mapping location of intensive businesses and inventory
- Economic analysis using standard industrial classifications
- Quantifying climate impact of intensive industries
- Prioritising intensive industries (multi-criteria)

Clean industry

- Used literature based assessments of the UK low carbon economy – and sectoral studies where available
- Agreed a shortlist of 7 ‘clean industries’ using multiple criteria
- Developed economic projections out to 2036
- Modified BRES data using estimates proportion of ‘clean’ industries and developed projection of jobs/GVA consistent with regional forecast
- SWOT analysis

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Just transition – social impacts

Transition Impact on jobs

Table 3.1. The five sectors likely to be most affected by the zero-carbon transition in Yorkshire and the Humber

Sector	No. of jobs in Yorkshire and the Humber	Transition exposed (%) (falling skills demand)	Transition aligned (%) (rising skills demand)	Total % affected
Construction	114,200	30%	30%	60%
Manufacturing	273,290	17%	32%	49%
Transport and storage	131,860	26%	19%	45%
Motor trades	48,170	26%	19%	45%
Mining, quarrying and utilities	25,130	26%	15%	41%
Region total (all sectors)	**2,367,010**	**11%**	**11%**	**22%**

N. Robbins et al. 2019

- The balance between ‘transition aligned’ and ‘transition exposed’ sectors varies between sectors
- Presents challenge around skills and training for a zero carbon economy, and basis for future growth potential

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Summary evidence

Intensive industries

CO_2

5.3 Mt
2017

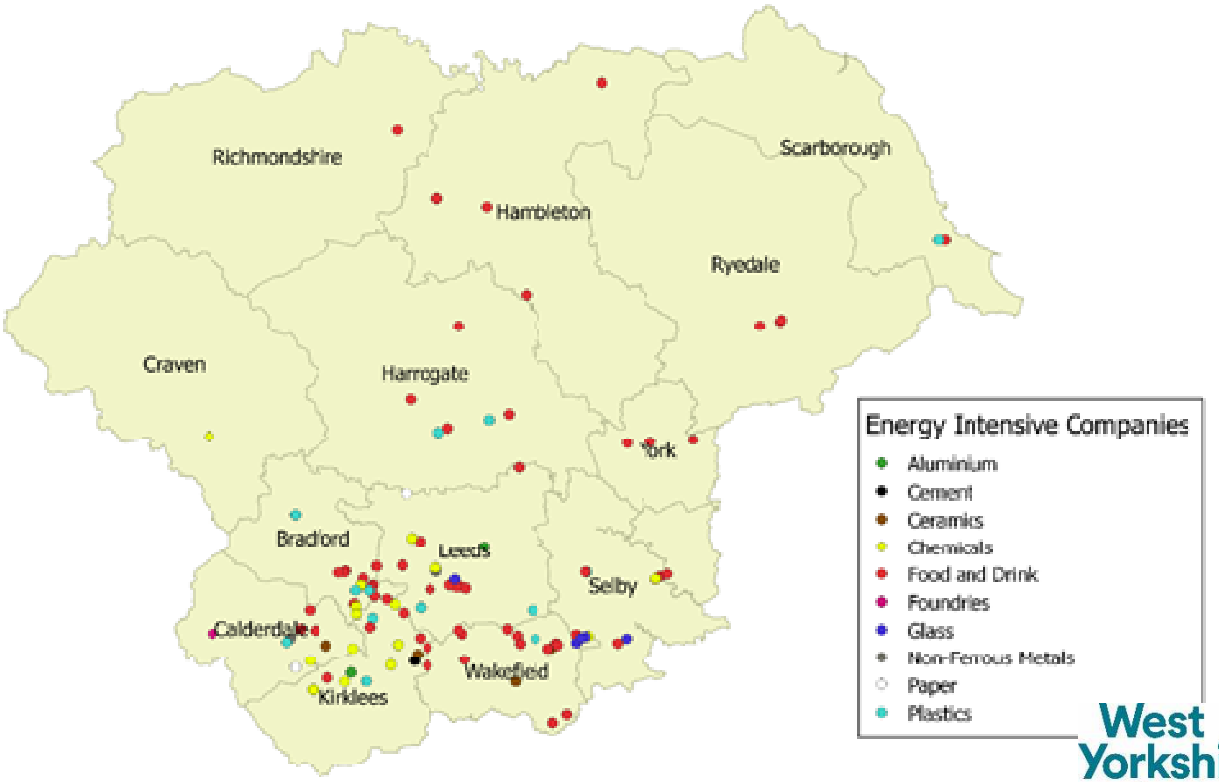
Energy
- Food and drink
- Glass
- Chemicals

Emissions
- Agriculture
- Electricity
- Transport

Resource
- Construction
- Food and drink

GVA £9.2 Bn

Employment
182,765



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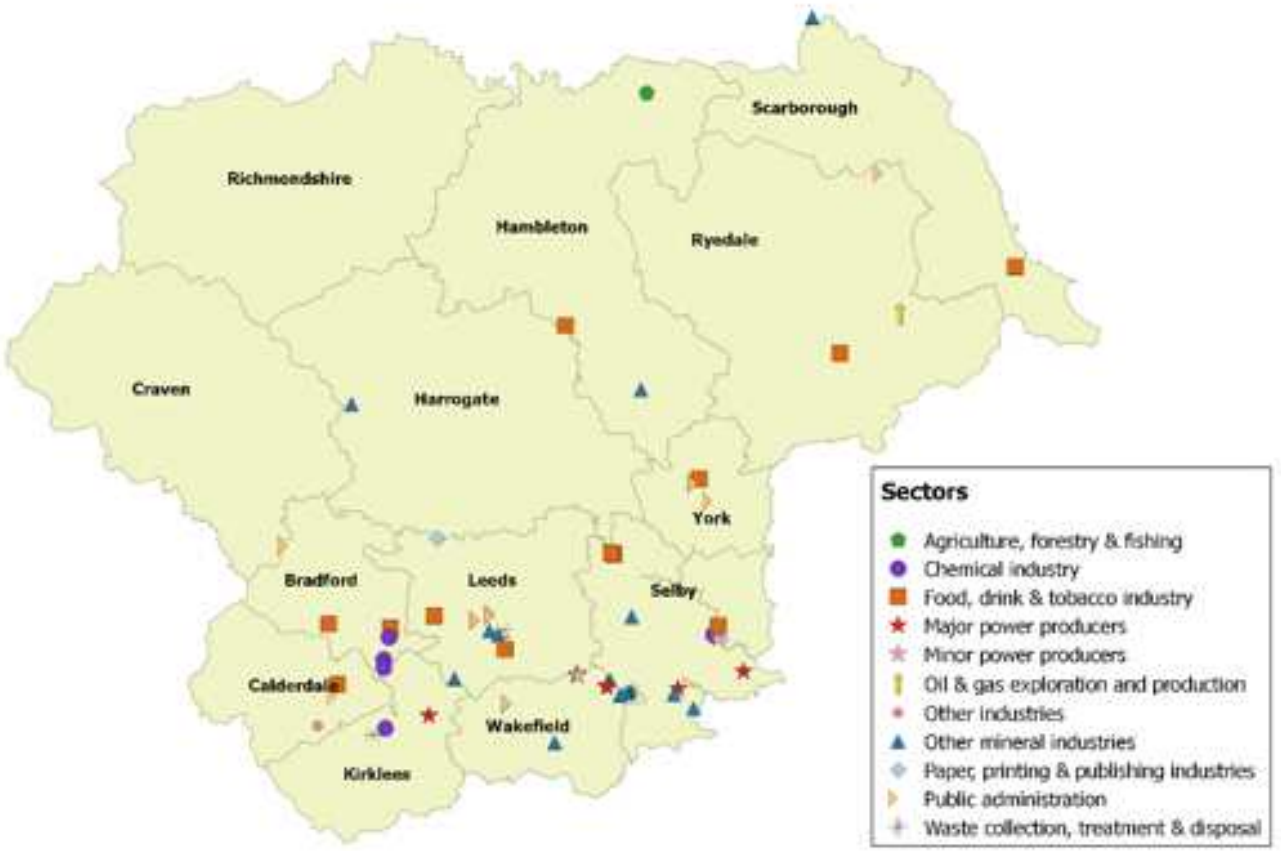
Whats the message? Location of carbon int

Figure 2.7: Location of GHG emission-intensive plants by sector in the W&NY region (2016)



Source: Cambridge Econometrics using NAEI data.

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Strengths in clean-tech

Clean industry

- **Clean agri-tech**: *adoption of advanced technologies to improve the sustainability and productivity of the agri-food supply chain by reducing emissions and material usage*
- **Bio-energy**: *production of heat and electricity using fuels such as biomass, waste and other by-products from different sectors*
- **Hydrogen**: *systems of production and consumption of low-carbon gas/ substitute for fossil fuels*
- **Low carbon transport**: *ultra-low emissions vehicles rail/bus/taxi and low carbon travel*
- **Smart city**: *introduction of new IT and other technological innovations that can be applied to monitoring and managing existing infrastructure, assets and resources more efficiently*
- **Circular economy**: *smarter approach to resource consumption; an alternative to linear economic production (make, use, dispose).*
- **Construction**: *solutions to reduce the burden on the environment of the construction value chain*

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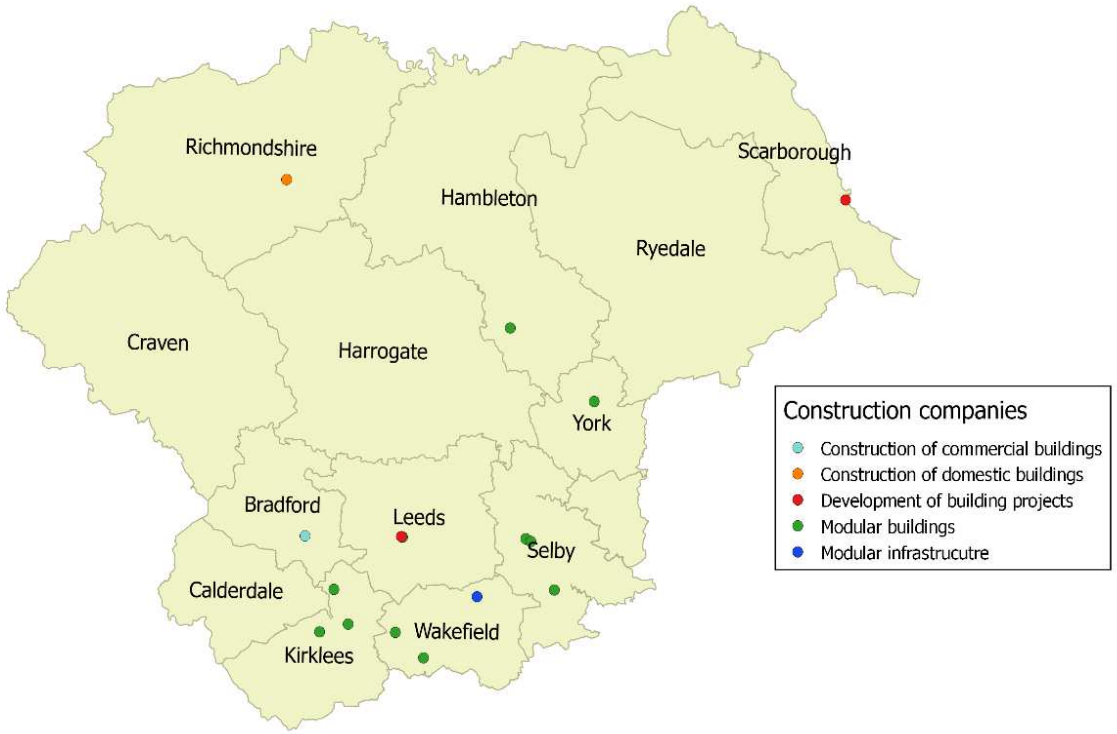
Business clusters – construction

Clean construction business

Figure 3.33: Location of companies involved in construction in W&NY



Source: Cambridge Econometrics.

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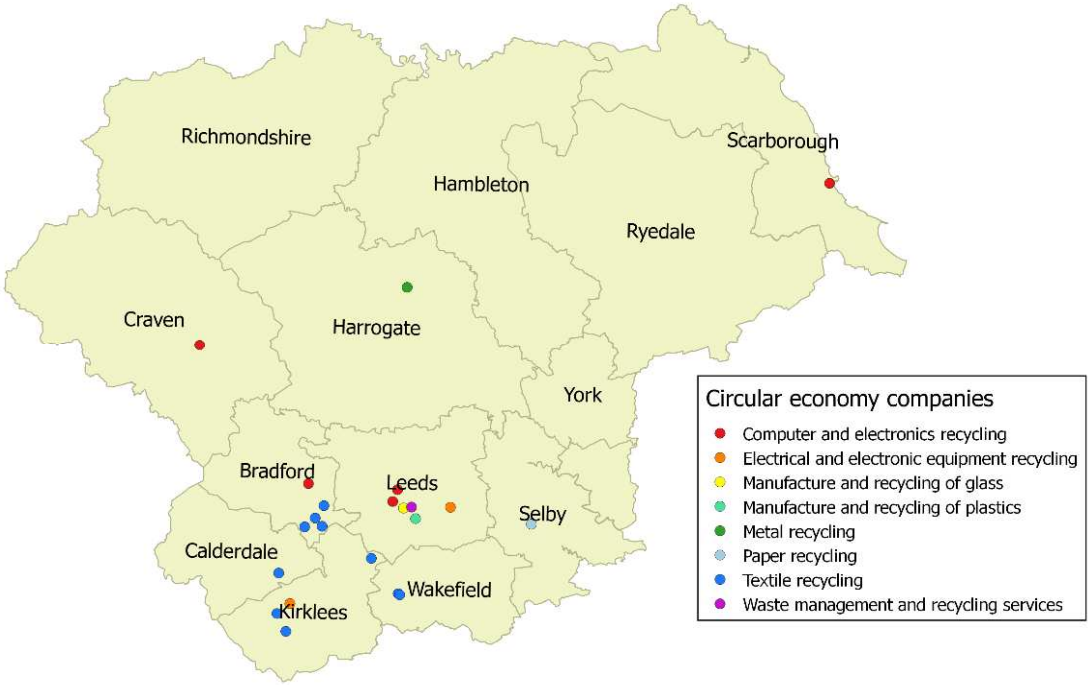
Business clusters – circular economy

Circular economy business

Figure 3.28: Location of companies involved in the circular economy in W&NY



Source: Cambridge Econometrics.

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Economic evidence

Clean industry

GVA £ millions	**Wider sector**	**Clean-tech**	
	2017	*Projection 2025*	*Projection 2036*
Clean agri-tech	£2,038	£123	£184
Bio-energy	£1,235	£250	£440
Hydrogen	£508	£12	£23
Low carbon transport	£1,556	£75	£114
Smart city	£3,329	£800	£1,350
Circular economy	£655	£380	£555
Construction	£926	£23	£37
Jobs			
	2017	*2017*	*Projection 2036*
Clean agri-tech	37000	1450	3400
Bio-energy	8465	1000	2700
Hydrogen	2410	60	170
Low carbon transport	34600	970	1800
Smart city	51235	10500	19000
Circular economy	16375	5,300	14000
Construction	21455	170	400

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Cross cutting innovation

Clean-technologies can support renewal of traditional industries and decarbonisation

	Intensive industries						
Clean-tech	*Food/drink*	*Glass*	*Chemicals*	*Agriculture*	*Electricity*	*Transport*	*Construction*
Clean-agri tech	✓			✓			
Bio-energy		✓	✓		✓	✓	
hydrogen	✓	✓	✓			✓	
Low carbon transport						✓	
Smart city					✓	✓	✓
Circular economy	✓	✓	✓	✓			✓
Clean construction							✓

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Draft recommendations

Sector	Recommendation
Clean agri-tech & bio-energy	• Raise the profile of the agri-tech sector to increase opportunities for collaboration Use University of Leeds as a lever for bioenergy development • Develop a regional policy/position on bioenergy • Support for SMEs and develop clusters to alleviate fragmentation in supply chains
Hydrogen	• Collaboration with Humberside Industrial Cluster • Increase public awareness and understanding of hydrogen tech • Communication and collaboration between industry and research • Development of supply chains building on manufacturing base
Smart City Technology	• Build on existing strengths to develop and test smart tech • Policy needs to promote cross sectoral cooperation • Focus on information provision to consumers to increase knowledge of the smart community concept
Circular Economy	• Encourage collaborations to enable innovative circular economy products • Provision of a regulatory and fiscal framework that incentivises remanufacturing and reuse
Construction	• Build on city region's strengths to develop clean construction skills
Low Carbon Transport	• Implementation of local measures to encourage behaviour change • Focus on opportunities brought by potential High-Speed Rail Institute

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Next steps:

- Review Pathways work
- Finalise Clean Growth Audit recommendations
- Develop new opportunities
- Come back to panel with preferred options

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Key questions:

- Initial ideas to support energy intensive industries
- How do we support the clean growth sectors identified?
- Develop new opportunities

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Thank you