

Industrial Symbiosis: Path to Net Zero for the West Midlands

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Authority Workshop



“To lead the world in innovative industrial ecology solutions for a low- carbon, sustainable economy”



| 2018, Industry defines Industrial Symbiosis

“Industrial symbiosis is the use by one company or sector of underutilised resources broadly defined (including waste, by-products, residues, energy, water, logistics, capacity, expertise, equipment and materials) from another, with the result of **keeping resources in productive use for longer.**”

2018 CEN Workshop Agreement 17354

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industrial ecology solutions

| Industrial symbiosis delivers

- Resource efficiency
- Demand-led innovation
- Knowledge transfer
- Landfill diversion
- Water savings
- **Carbon emissions reduction**
- Virgin material savings
- Jobs
- Cascading of best practice
- Increased sales & reduced costs
- Profits leading to tax revenues



| Carbon link to materials

“Emissions from the production of materials increased from **5 gigatons (Gt) of CO2-equivalent in 1995 to 11 Gt in 2015**, with their **share of global emissions rising from 15 per cent to 23 per cent**. This corresponds to the share of GHG emissions from agriculture, forestry and land-use change, yet these have received much less attention.”

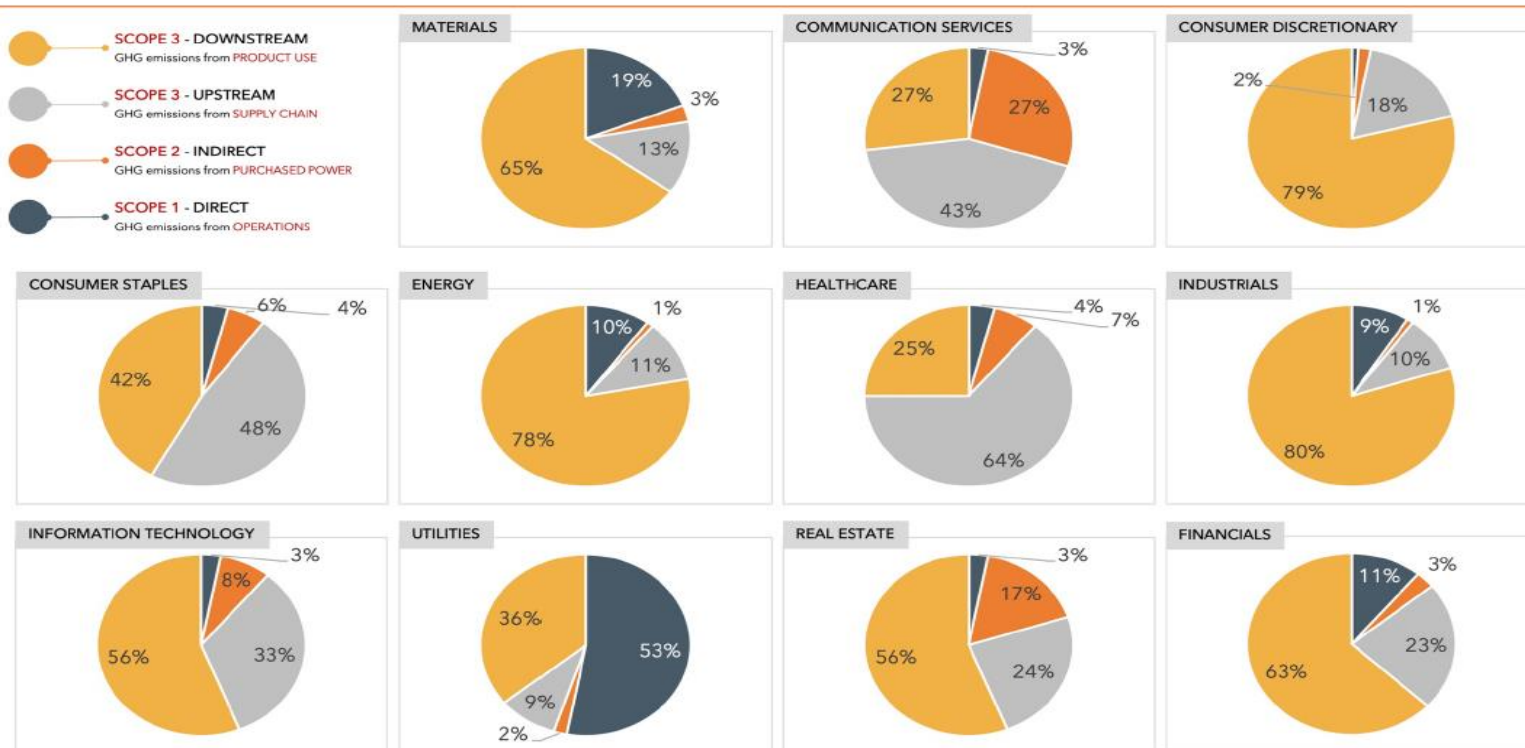
2020 IRP, Resource Efficiency and Climate Change

The importance of Scope 3 Carbon

UNDERSTANDING EMISSIONS

In all but 1 out of 11 GICS code sectors a business's greenhouse gas emissions come from their supply chains and the ways in which their products are used and disposed of.

How is your business going to address its upstream and downstream environmental impact?



SOURCE S&P Global Trucost. Data as at November 2020. For illustrative purposes. Based on companies listed in the S&P Global 1200 index, selected to represent a global supply chain, equity portfolio or loan book. The index covers 31 countries and approximately 70% of global stock market capitalisation.

Adrian SEGENS
LEVELLER TECHNOLOGY LTD 2021

| Industrial Symbiosis – who benefits?

- Climate and environment (reduced CO₂, pollution and waste)
- All sectors and all sizes (including MSMEs)
- Entrepreneurs (new revenue, start-ups)
- Innovation community (demand-led innovation)
- New markets for Cleantech/Greentech
- Education and skills (upskilling workforces)
- Governments (increased tax revenues)
- Regions (competitiveness)

| Success in West Midlands 2005-13

GOV contract for services £4M delivered 2005-2013

METRICS	Unit	In-year benefits	Lifetime Impact*
Cost savings	£	41,402,903	124,208,710
Additional sales	£	69,517,963	157,009,435
CO ₂ reduction	T	1,695,590	5,086,770
Landfill diversion	T	1,136,795	4,250,385
Hazardous waste eliminated	T	27,990	83,970
Virgin material savings	T	3,346,775	10,040,326
Water savings	T	4,446,425	13,339,274
Jobs		3,269	
Private investment	£	£115,368,177	

* Lifetime impact recognises benefits persist year on year

NB: Figures independently verified



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| Key: Facilitation



| Industrial Symbiosis – Why West Mids

- WM identified as 1 of 5 EU hotspots for IS (SCALER 2019)
- History of success (NISP[®], BASIS) + maintain world-lead
- SYNERGie[®] software (selected for CircLean), UKMSN+
- Diverse economy + excellent networks/institutions

£1M/yr over 5 yrs investment delivery, estimated impact:

- ***5 million tonnes Carbon avoided***
- ***1000 Jobs (new, safeguarded) – avg cost £5k per job***
- ***Total Economic Value Added between £150M-£200M***

| Industrial Symbiosis – CE Routemap

“Develop a business case for a West Midlands **Industrial Symbiosis** delivery programme”

“Implement a place-based **industrial symbiosis** delivery programme to cross-fertilise opportunities across the three priority areas (construction, manufacturing, food)”

“Support region-wide systems thinking and **industrial symbiosis**”

“Implement spatial planning policies to enhance material flow and create business opportunities such as **industrial symbiosis**”

“**Industrial symbiosis** and co-location of industries within clusters are key”

“The West Midlands was home to the National **Industrial Symbiosis** Programme (NISP®) and is building on this legacy”

| Who thinks it's a good idea...



European
Commission



G7 GERMANY
2015 | G7 Alliance for Resource Efficiency



WORLD BANK GROUP



UNEP



Thank you

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