

Eugene Heaney

**Head of Green Economy
Invest Northern Ireland**



What will I cover?

Industrial Decarbonisation for Northern Ireland (IDNI)

- **Who was involved?**
- **Why we did it?**
- **How we did it?**
- **What could be achieved?**
- **Main learnings**



Who was involved?



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Industrial Decarbonisation for Northern Ireland

Revolutionising carbon reduction efforts in Northern Ireland, our innovative dual approach of combining energy efficiency and productivity, IDNI will provide businesses with customised support, expert guidance, essential tools, and measurable metrics. By enabling NI industries to collaborate we will simultaneously reduce emissions and boost productivity, thereby paving the way towards a more decarbonised and competitive future.

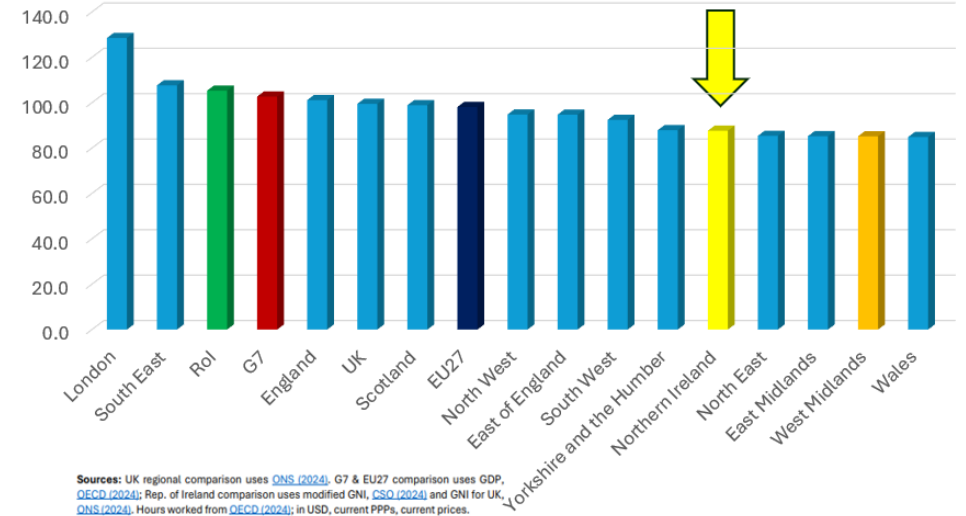


Why we did it?



The cheapest energy is the energy you don't use in the first place.

Value of output per hour worked in 2023 (UK=100)



Climate Change Act (Northern Ireland) 2022

CHAPTER 11



How we did it?

Derry City & Strabane



Armagh, Banbridge and Craigavon



Causeway Coast & Glens



Ards & North Down



Mid & East Antrim



Antrim & Newtownabbey



Belfast



Mid Ulster



Fermanagh & Omagh



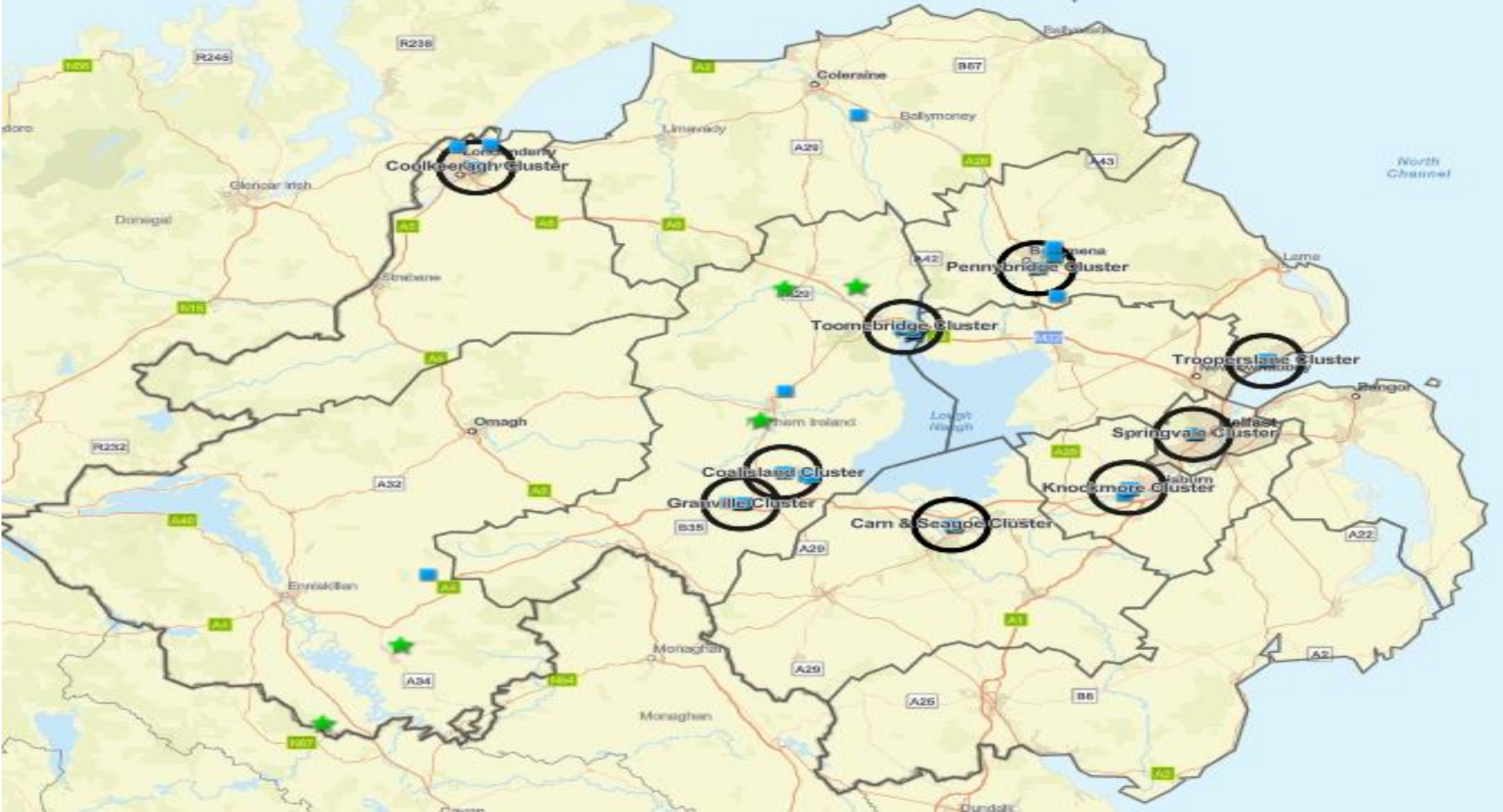
Lisburn & Castlereagh



Newry & Mourne



How we did it?



How we did it?

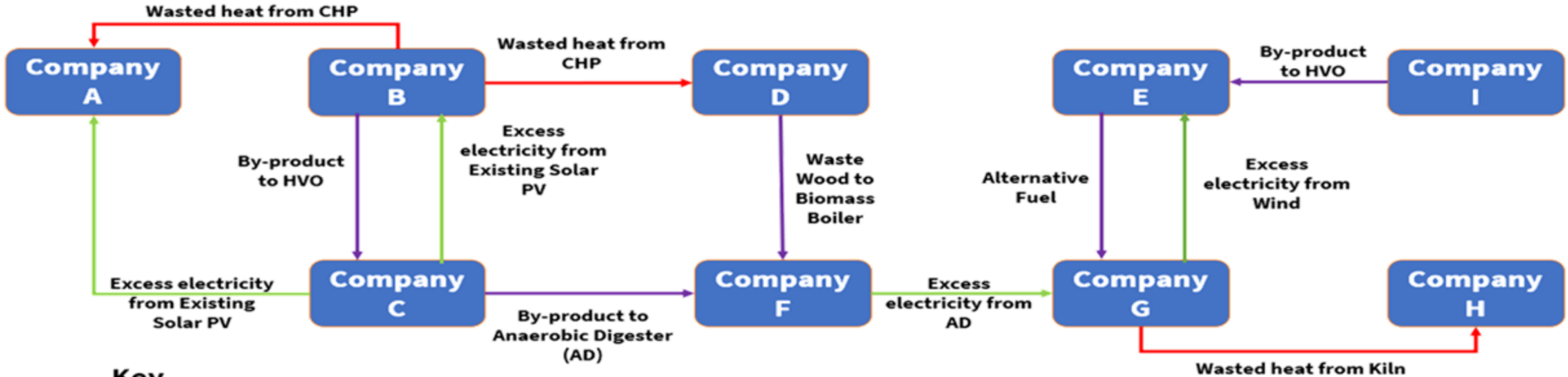


How we did it?

Granville Site Recommendations						
Company ID	Rec. Title	kWh/yr	£/yr	tCO2e/yr	Cost	Payback
1006	Biogas	-	£ -	2192.5	-	0.0
1011	HVO	-	£ -	1190	-	0.0
1005	Repair Air Leaks	41,300	£ 15,100.00	6.5	£ 2,000.00	0.1
1007	aM&T System	160,000	£ 32,000.00	36	£ 40,000.00	1.3
1005	LED Lighting	780	£ 280.00	0.2	£ 400.00	1.4
1008	Shut-off Valves	31,200	£ 6,200.00	7	£ 10,000.00	1.6
1005	VSD Compressor	81,300	£ 36,900.00	22.7	£ 60,000.00	1.6
1006	aM&T System	112,000	£ 17,900.00	28	£ 40,000.00	2.2
1010	PIR Sensors	2,300	£ 600.00	0.5	£ 1,500.00	2.5
Sub-total						
1008	Sub-surface Aeration	346,000	£ 69,000.00	78	£ 230,000.00	3.3
1005	aM&T System	17,900	£ 3,600.00	4	£ 15,000.00	4.2
1007	Inverter Drives	23,500	£ 4,700.00	5.3	£ 20,000.00	4.3
1007	Solar PV	370,100	£ 74,000.00	83.3	£ 473,000.00	6.4
1011	Battery	151,000	£ 30,000.00	34	£ 200,000.00	6.7
Sub-total						
1009	Solar PV	53,900	£ 11,100.00	12	£ 83,000.00	7.5
1008	Solar PV [332.5kW]	170,000	£ 34,000.00	38	£ 266,000.00	7.8
1006	Solar PV	550,000	£ 88,000.00	125	£ 690,000.00	7.8
1008	Solar PV [100kW]	49,900	£ 10,000.00	11.2	£ 80,000.00	8.0
1010	Solar PV	26,577	£ 6,800.00	6	£ 55,000.00	8.1
1012	Solar PV Array	350,000	£ 72,600.00	78.7	£ 607,000.00	8.4
Sub-total						
		2,537,757	£ 512,780.00	£ 3,958.90	£ 2,872,900.00	-

How we did it?

Cluster Opportunities – General Principles



Key



- Excess electricity production
- Waste heat
- Recover energy from waste products

$$1 + 1 > 2$$



- Economies of scale
- Leverage capability
- Load management
- Grid constraints

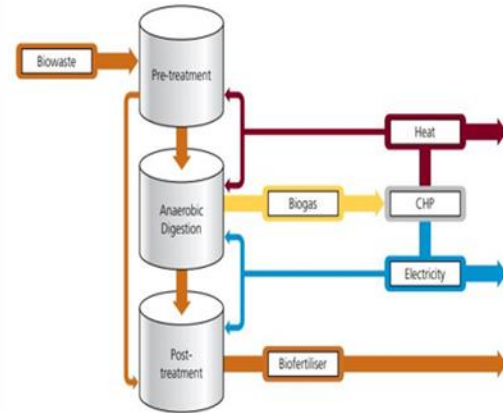
How we did it?

Cluster Opportunities – General Principles



Collective Solar PV Array:

- Saving 5,781,000 kWh Per Yr
- 1,300 tCO₂e,
- 8.4year pay-back period



Collective 2.7 MWp AD Plant W/ChP (Animal Waste):

- Saving 4,500,000 kWh Per Yr – Electricity
- Saving 5,700,000 kWh Per Yr - Heat
- 2,055 Combined tCO₂e,
- 6.5 year pay-back period



Collective HVO Purchasing:

- Savings of approx. £160,000 on standard HVO price by pooling purchasing power
- 1192 tCO₂e,



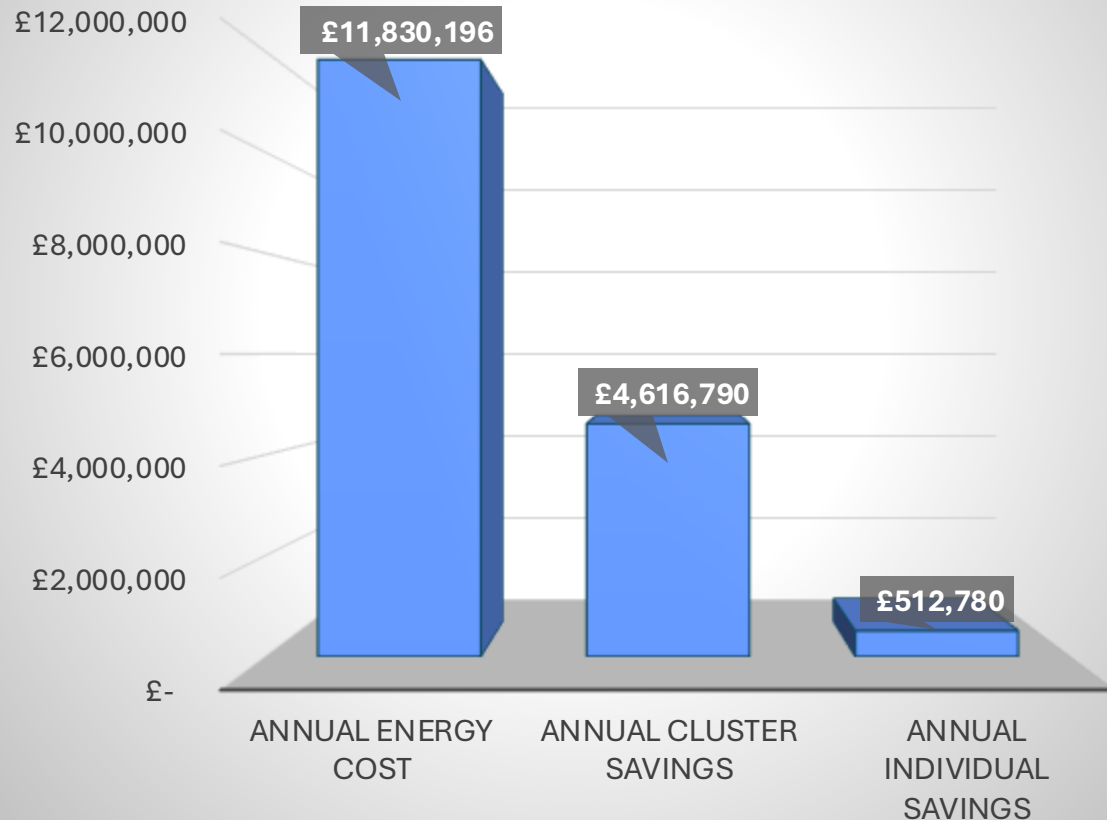
Collective Wind Farm:

- Saving 10,640,000 kWh Per Yr,
- 2,394 tCO₂e,
- 4.3year pay-back period

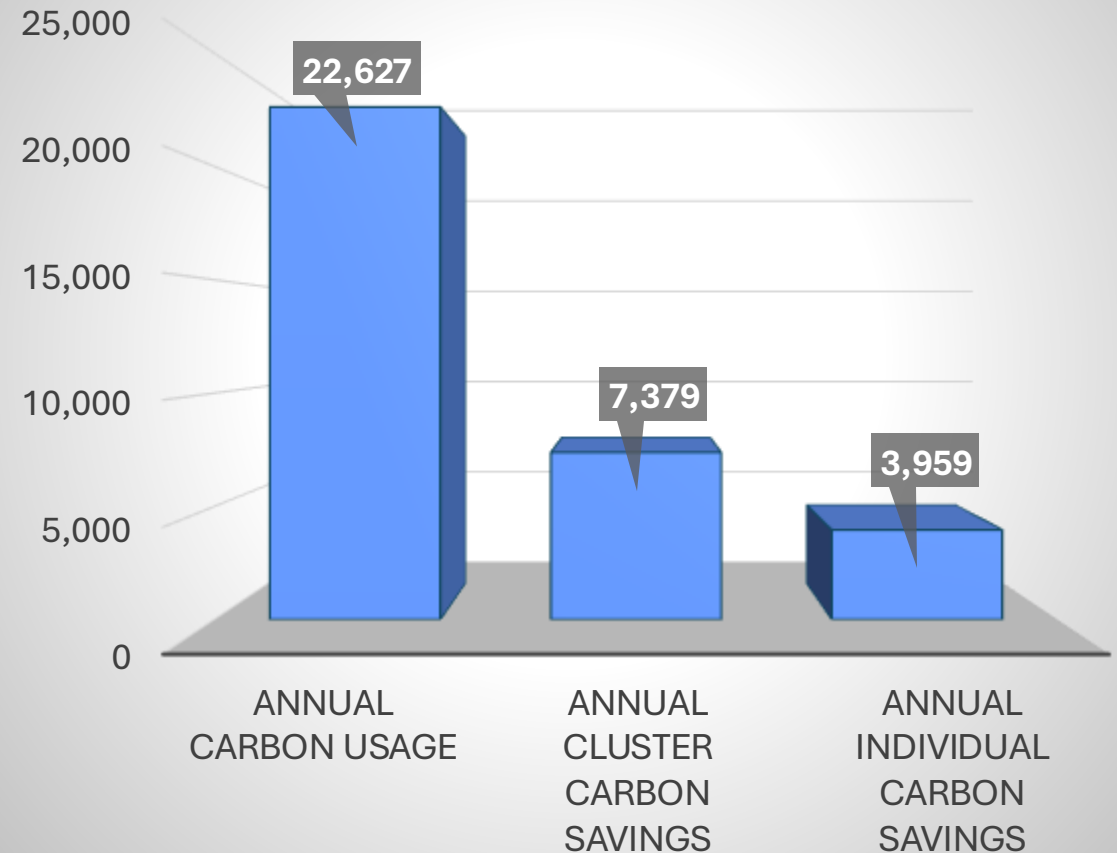


What could be achieved?

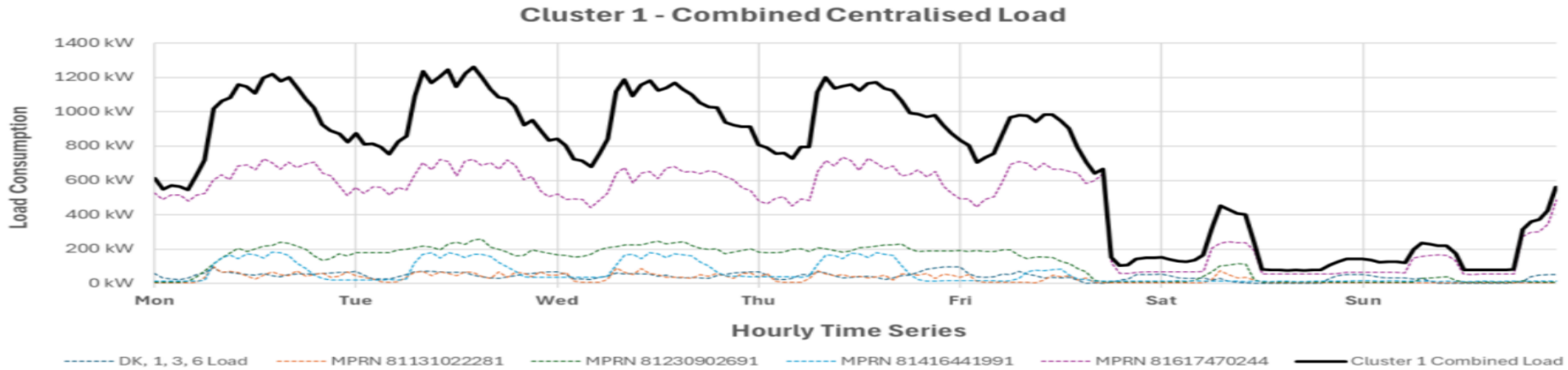
Cluster Monetary Savings Potential



Cluster Annual Carbon Savings Potential (tCO2e)

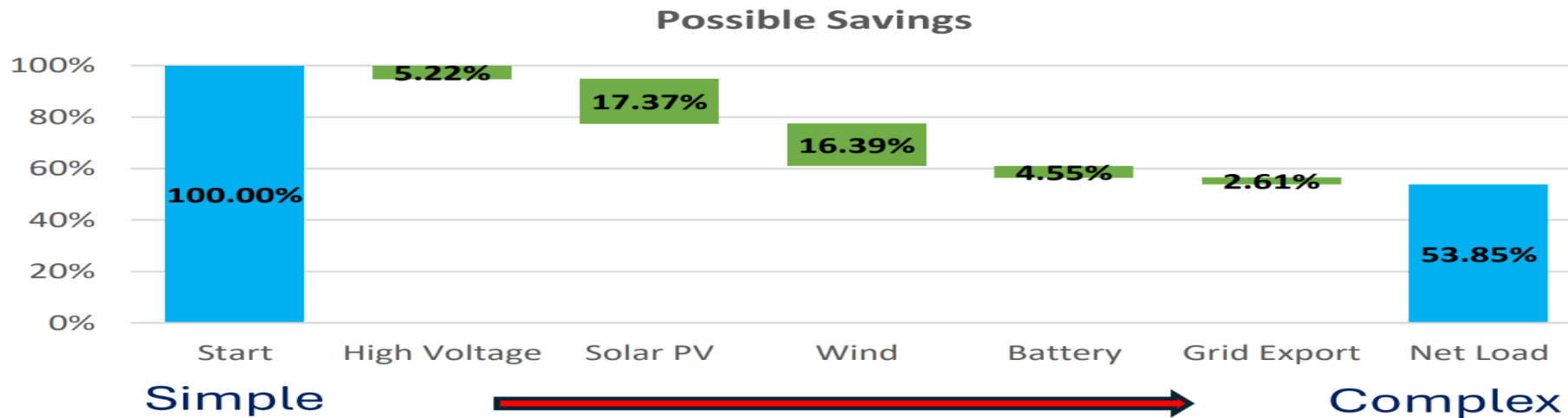


What could be achieved?



As a Cluster:

53.85% Nett Load
or **46.15% reduction** in energy use

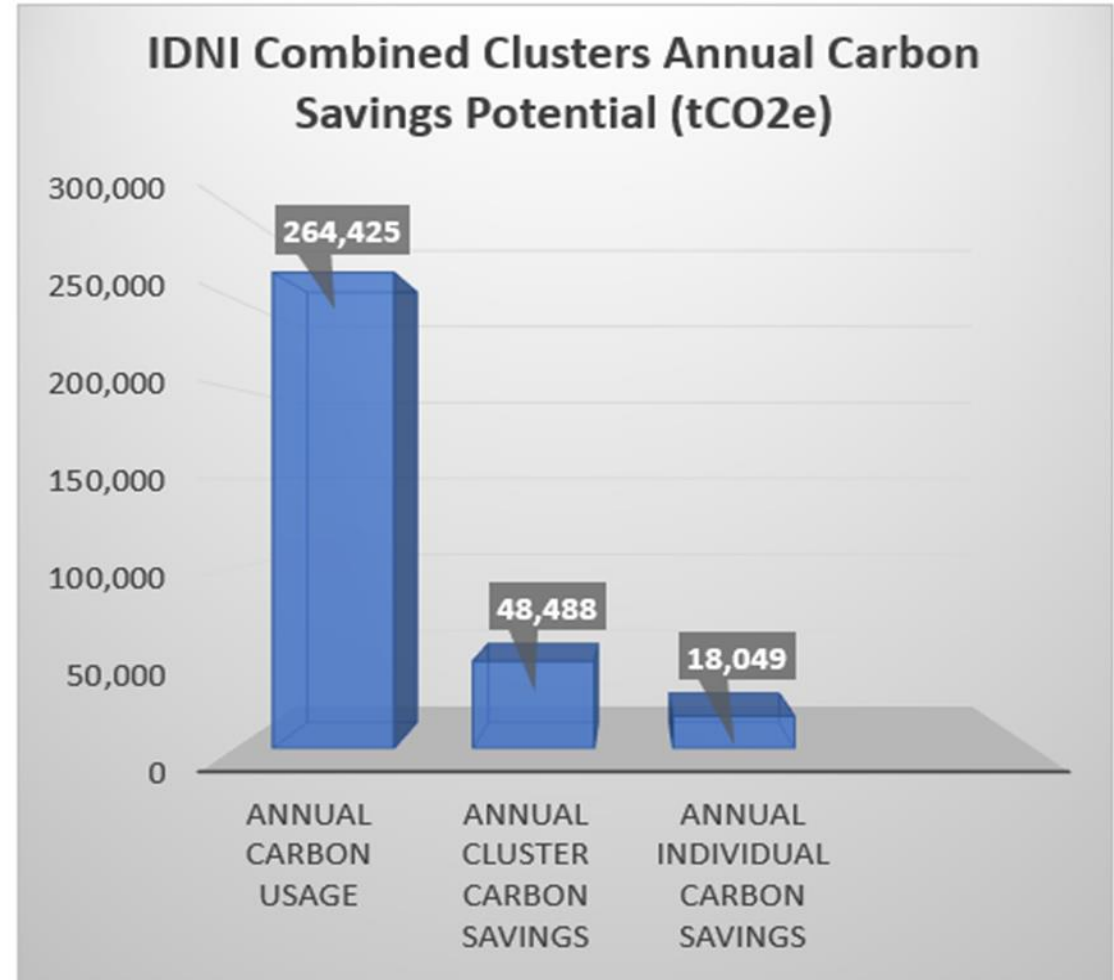
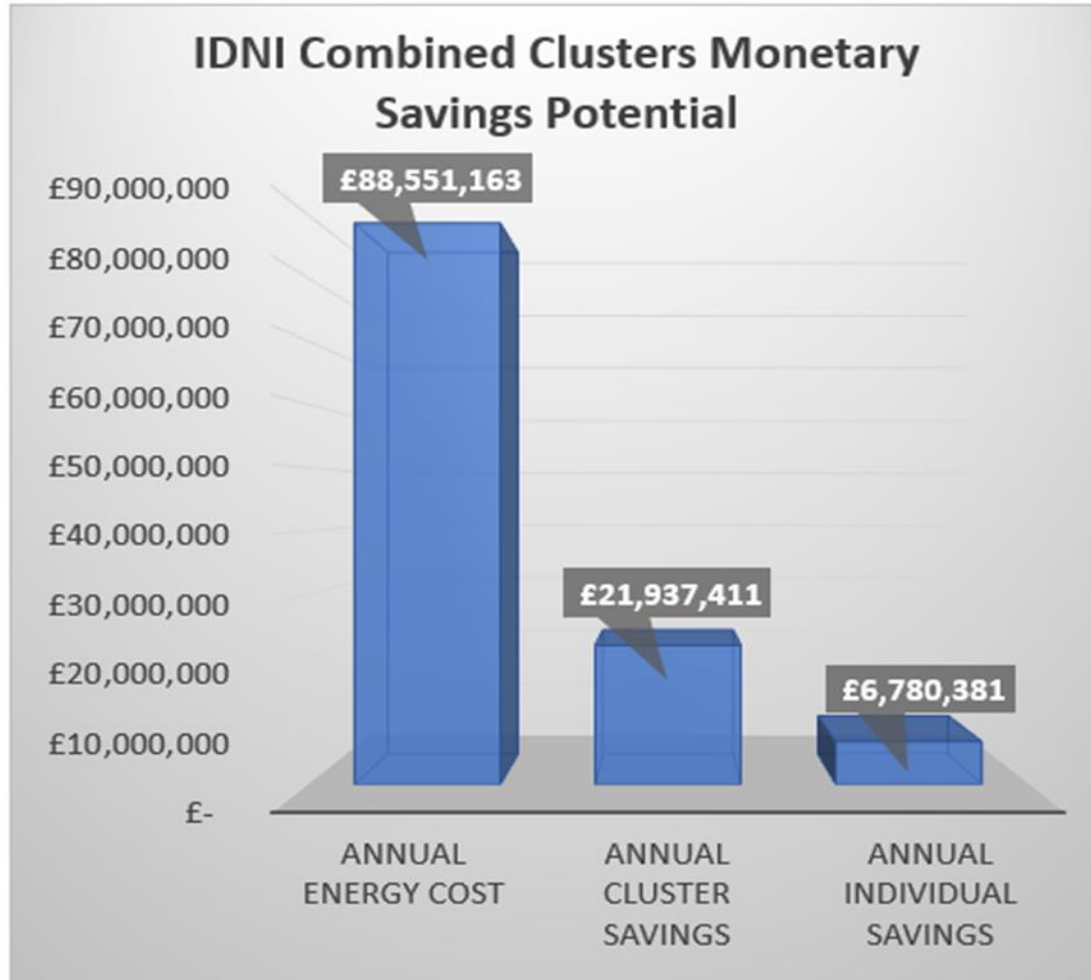


As individuals:

76.5% Nett Load or
23.5% reduction in energy use

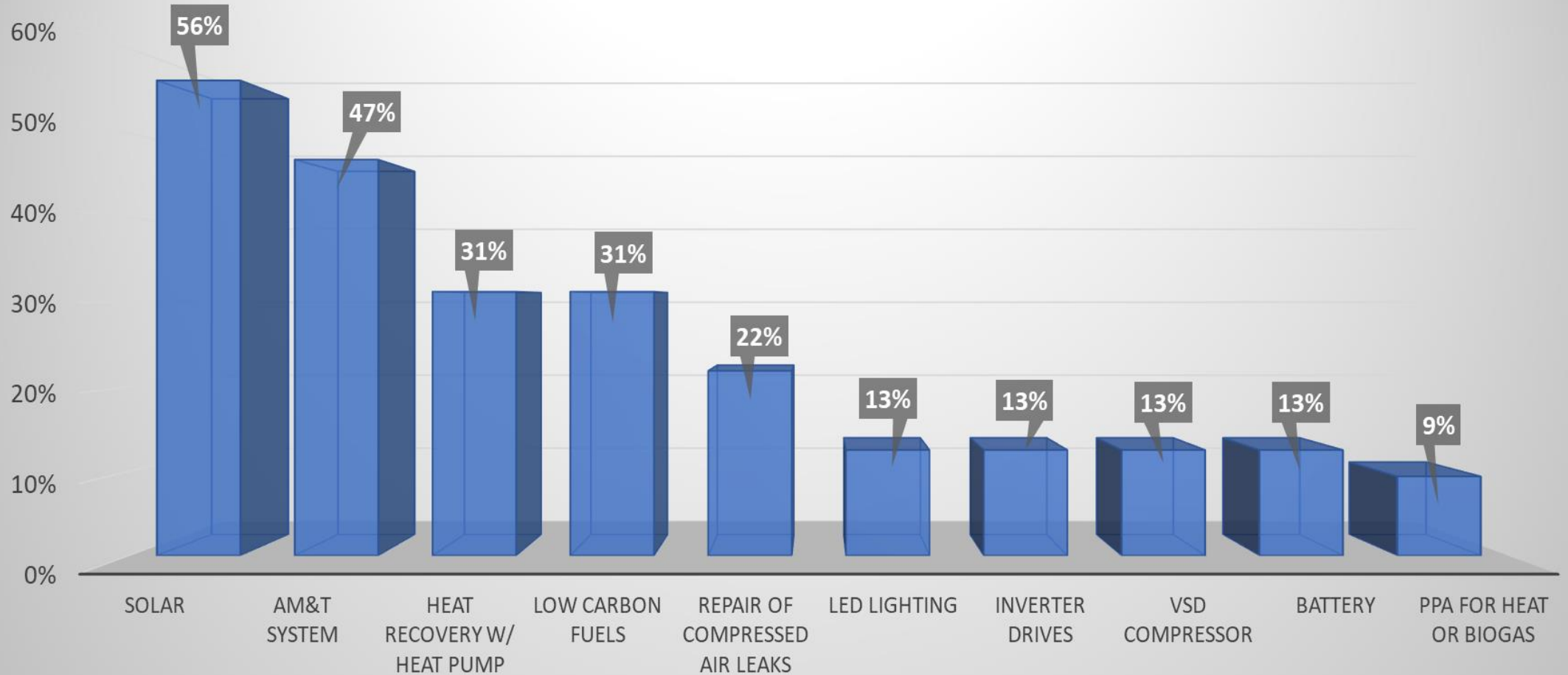


What could be achieved?



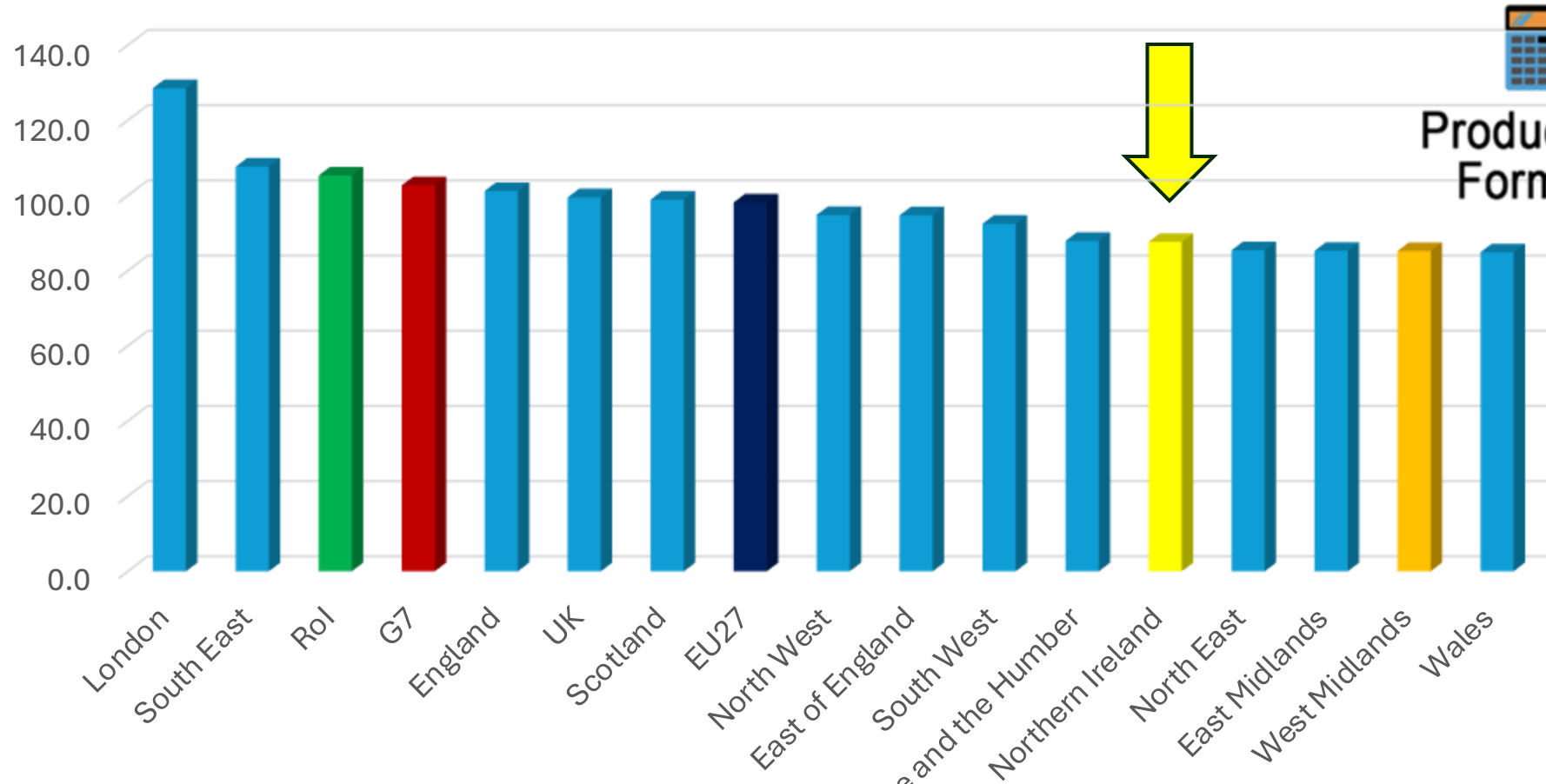
What could be achieved?

Collective IDNI Decarbonisation Recommendations



What could be achieved?

Value of output per hour worked in 2023 (UK=100)

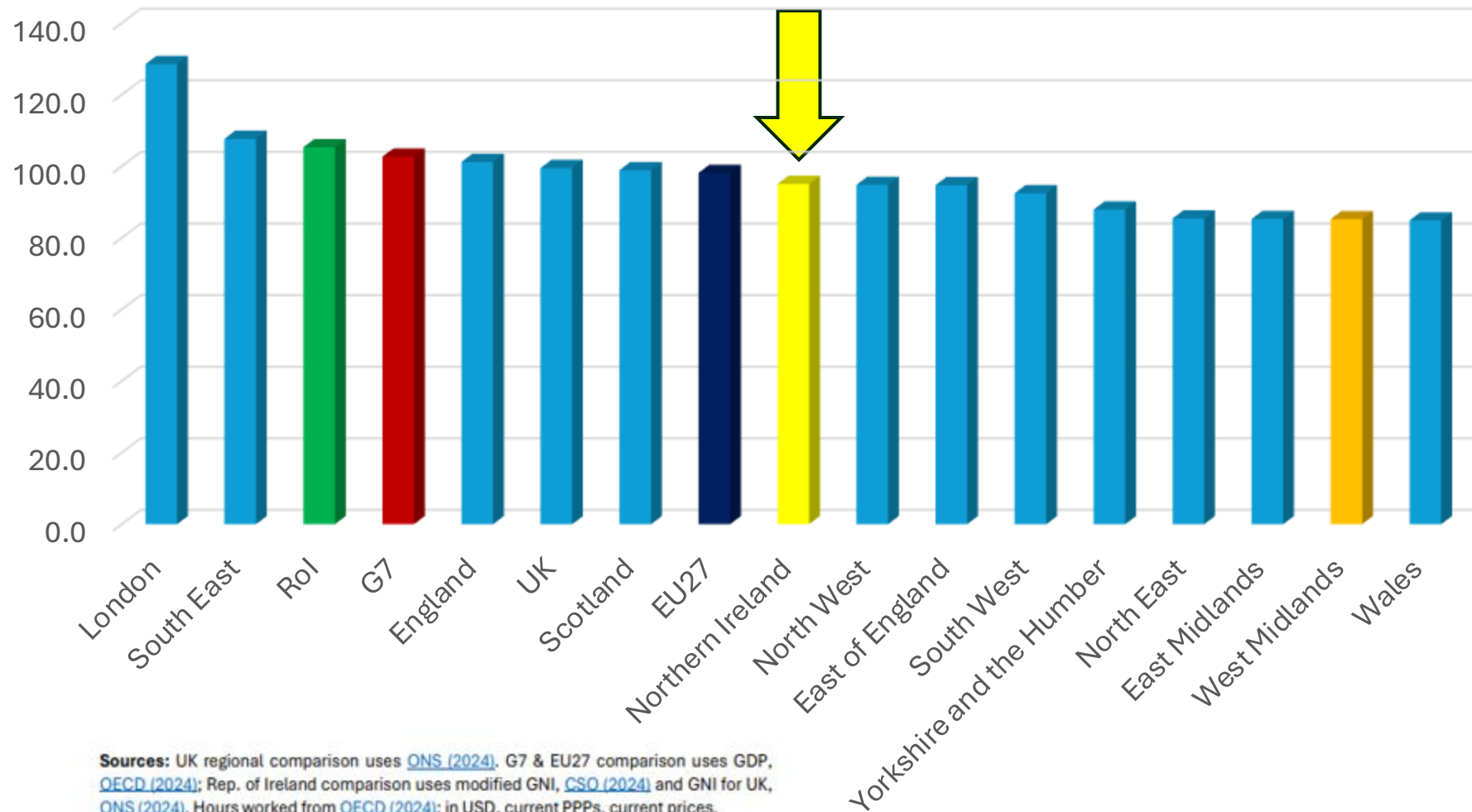


Productivity Formula = $\frac{\text{Output}}{\text{Input}}$

Sources: UK regional comparison uses [ONS \(2024\)](#). G7 & EU27 comparison uses GDP, [OECD \(2024\)](#); Rep. of Ireland comparison uses modified GNI, [CSO \(2024\)](#) and GNI for UK, [ONS \(2024\)](#). Hours worked from [OECD \(2024\)](#); in USD, current PPPs, current prices.

What could be achieved?

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Key Take Aways

**IDNI could deliver
Monetary Savings
£28,717,792 (32%)**

**Carbon Savings
66,537 tCO₂e**

3 C's

Clustering

(Up to 9 times more benefit)

Collaboration

Community

**Over 50% reduction in
NI's Productivity gap**

**Potential 25%
reduction in GhG
emissions**



Thank You

