

# UTILITIES

FROM LINEAR....

## ENERGY

JOB: 2000 (0.3% OF TOTAL EMPLOYMENT)  
GVA: £450M (1.9% SHARE OF TOTAL GVA)

## WATER

WATER COLLECTION, TREATMENT & SUPPLY LQ: 0.44  
SEWARGE LQ: 1.6

## WASTE MANAGEMENT

WASTE COLLECTION, TREATMENT & DISPOSAL LQ: 0.86 (SELBY: 3.2)

Total energy consumption in the YNYER LEP area in 2015 was estimated at 31,150 Gwh

Utilities sector accounts for 61% of CO2 emissions in YNYER

Within YNYER, CO2 emissions are forecast to grow most strongly in York between 2017-2036.

Mining & Quarrying; Electricity, Gas, Steam & Air Conditioning; Water Supply; Waste Management & Remediation Activities in YNYER:

JOB: 5,100 (1% share of total employment)  
GVA: £621 million (3% share of total GVA)

43,1947 tonnes of waste & water treatment wastes processed each year in YNYER

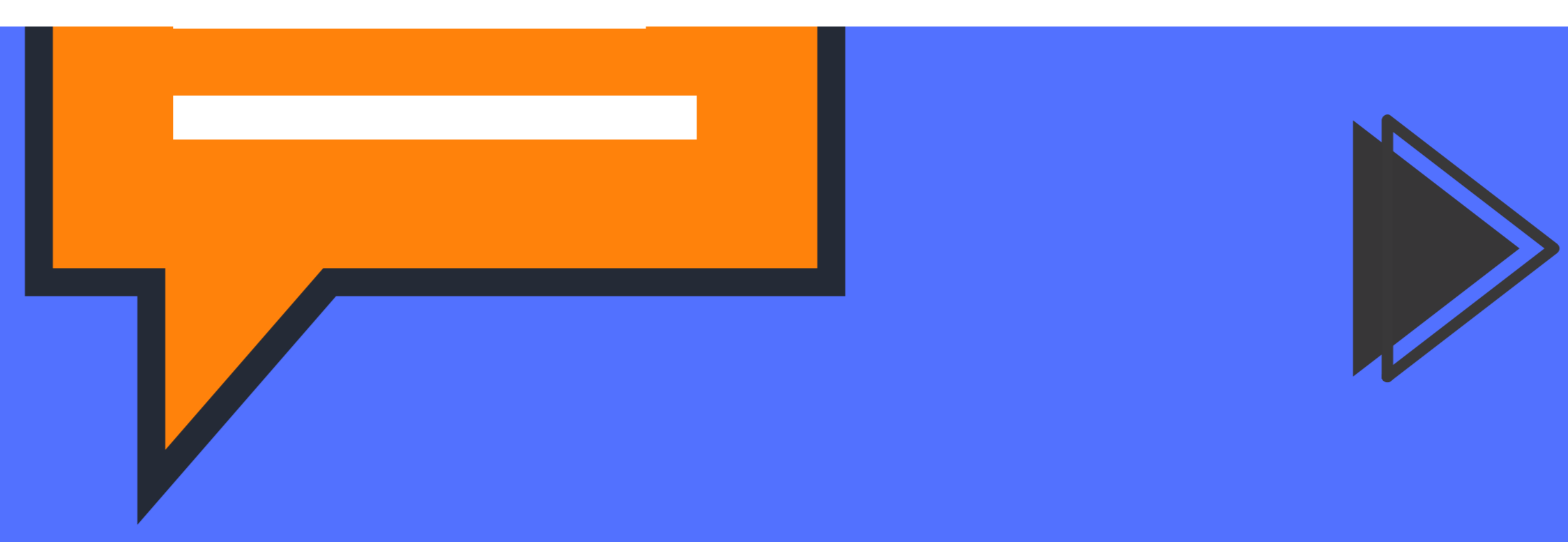
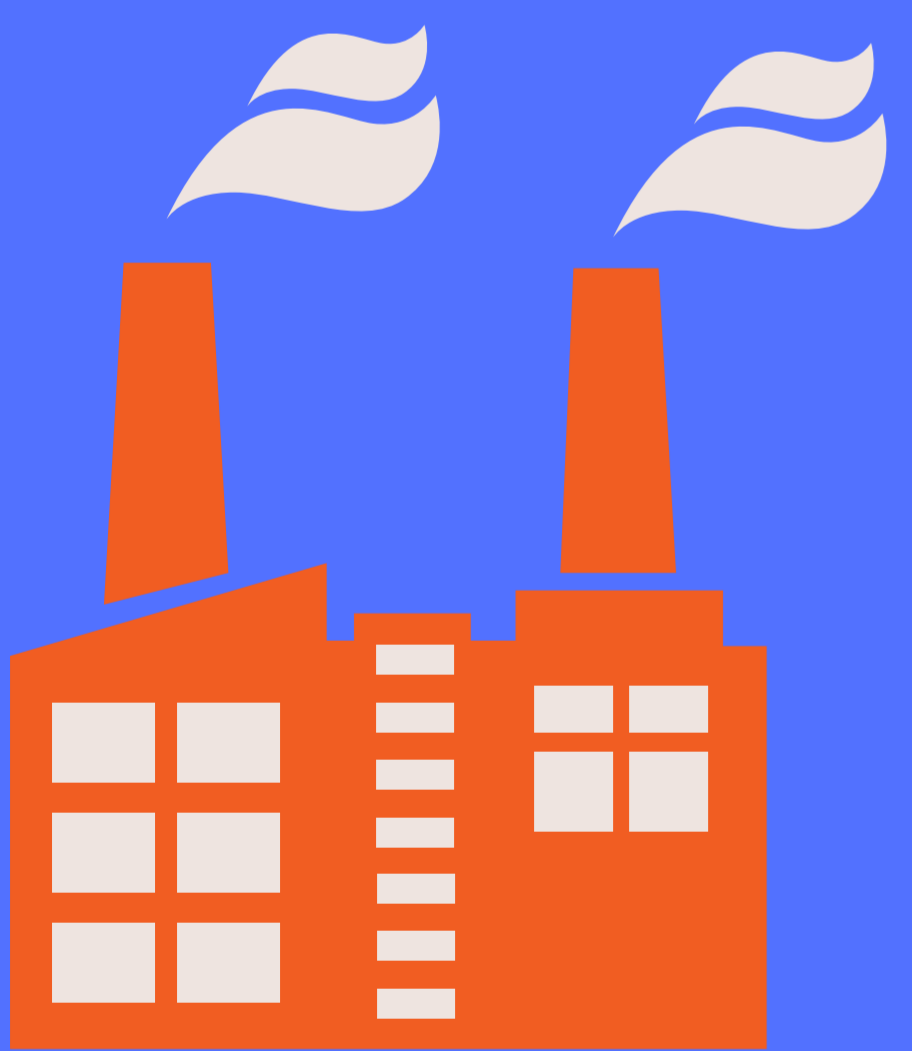
Challenging nature of obtaining material & waste data from businesses.

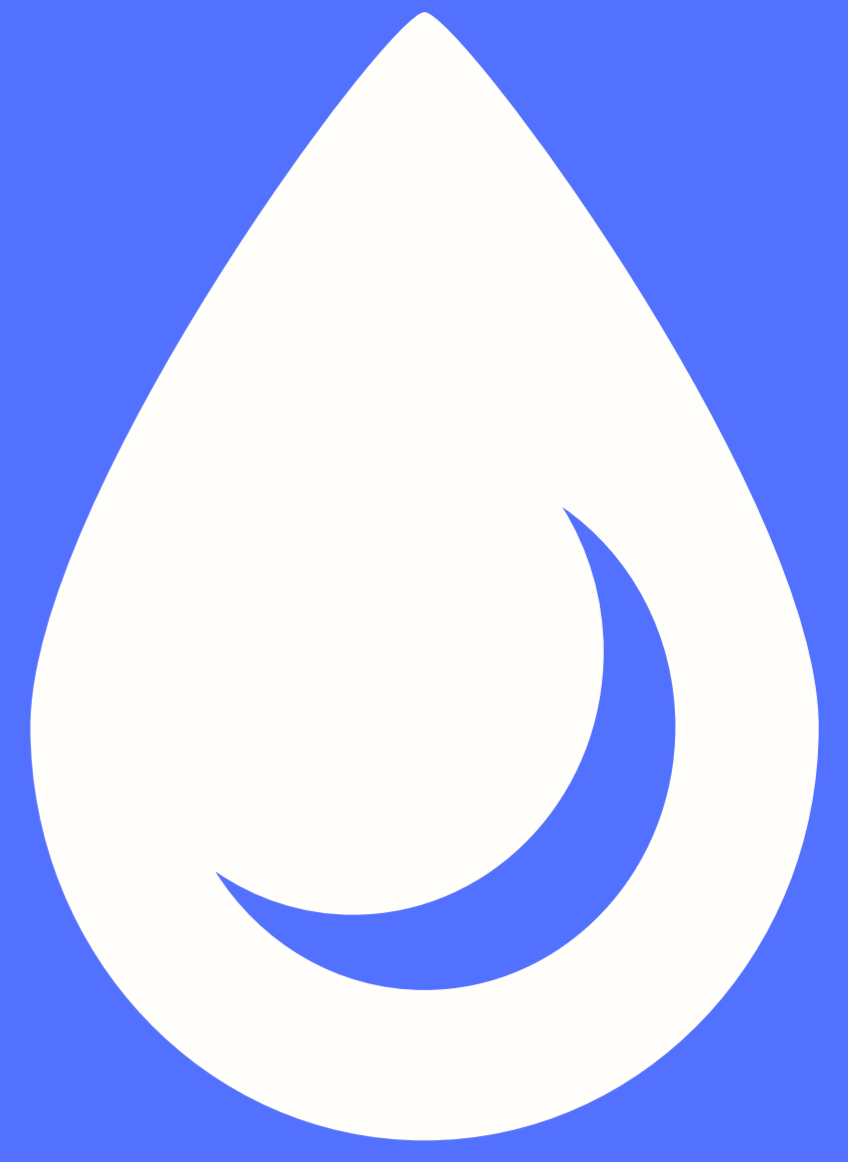
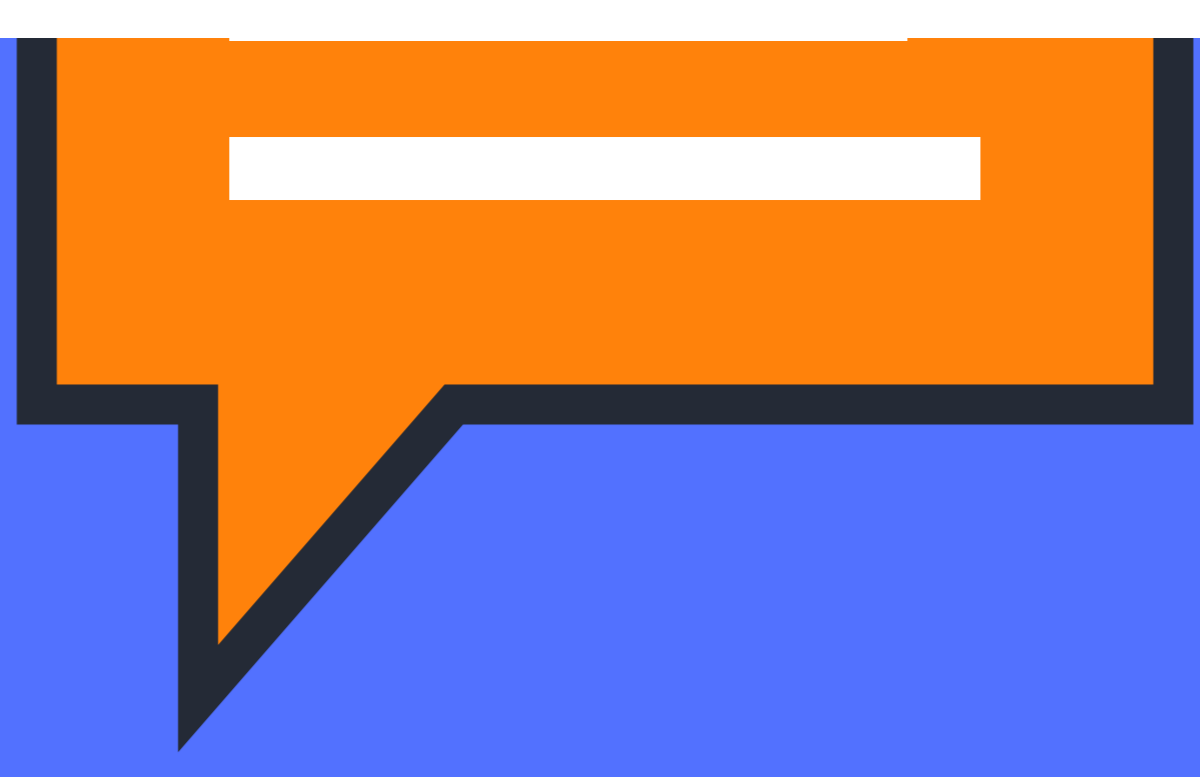
Can we achieve greater synergies between energy, water & waste management through better understanding their interconnections?

How can we ensure better separation of waste streams to enable recovery & use?

By considering the management of resources at an ecosystem or regional level, rather than at a business level, can we deliver greater efficiencies?

THOUGHTS FROM STAKEHOLDERS

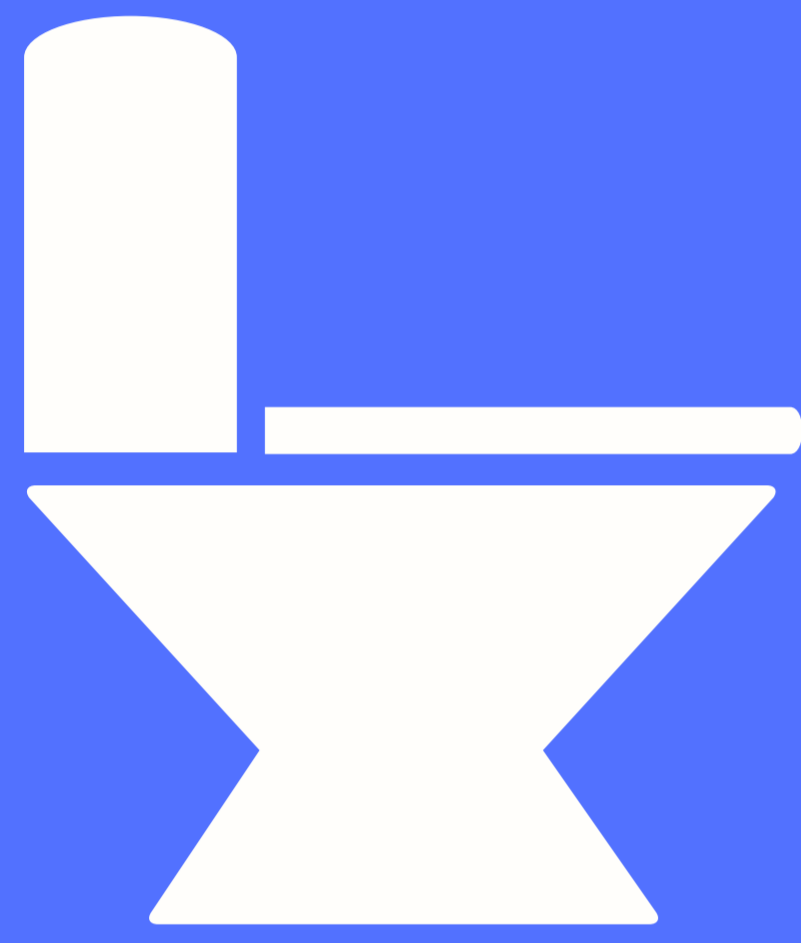




# UTILITIES

## ... TO CIRCULAR

### POTENTIAL OPPORTUNITIES



**Capturing heat from sewage** - largely untapped resource of heat in sewage which could be exploited.

**Shifting to service based business models** - achieving greater collaboration across industries to deliver service based models (e.g., electricity or heat demand response services).

**Exploiting side streams & excess energy** - including, using side streams & flue gases generated by energy production; side streams generated by production units in other industries; excess heat generated in production units & properties.

E.g., Allerton Waste Recovery Facility

This could be increased by planning at the municipal level, or by designing new financing methods for projects.

### DESIGN

**Designing energy assets for adaptability, deconstruction & disassembly** - cradle-to-cradle design can eliminate demolition 'waste', reducing raw material use and providing massive financial benefits.

**Exploiting carbon** - using carbon and associated by-products from CCS technologies.

E.g., MgCO<sub>3</sub> - valuable as a building material due to its fire-retardant properties

### WHAT ARE THE OTHER OPPORTUNITIES?

**Increasing material and resource processing, sharing and repurposing capabilities** - this will help ensure economic value remains within the YNYER area.

Approx. 50,000 mattresses need to be disposed of each year in the YNYER area.



**Increasing capacity for AD & biomass** - making use of food waste, agri waste, waste wood, and the biogenic component of municipal solid waste & commercial/industrial waste. Preliminary research conducted by Element Energy suggests there's potential for further deployment in YNYER, providing significant local value accrual.

- Post-consumer mattresses
- Post-consumer carpet
- Electrical equipment
- Plastic packaging

