

Supergen



TG2: Enabling Technologies for the UK Bioeconomy

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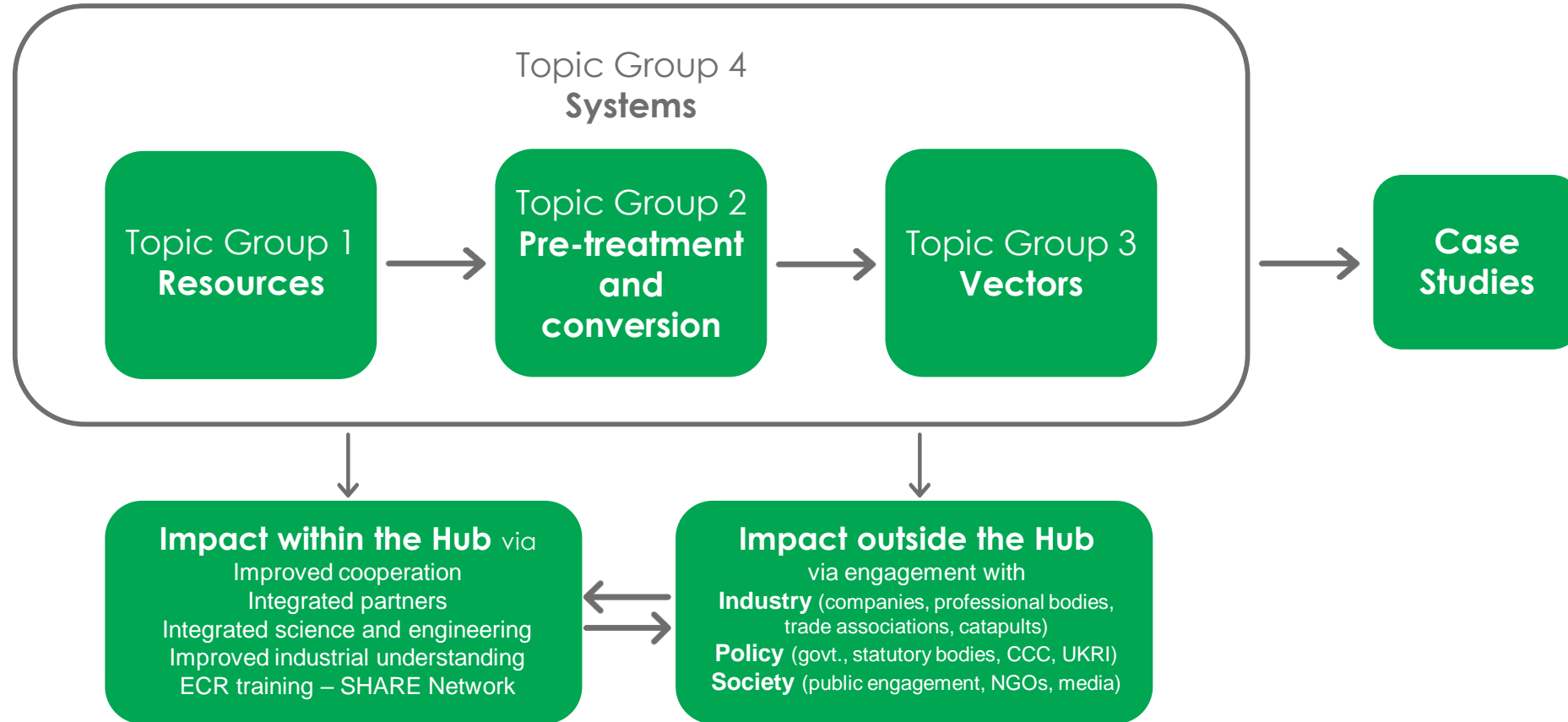
We work with academia, industry, government and societal stakeholders to develop sustainable bioenergy systems that support the UK's transition to an affordable, resilient, low-carbon energy future.

Supergen Bioenergy Hub



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Supergen Bioenergy Hub Structure



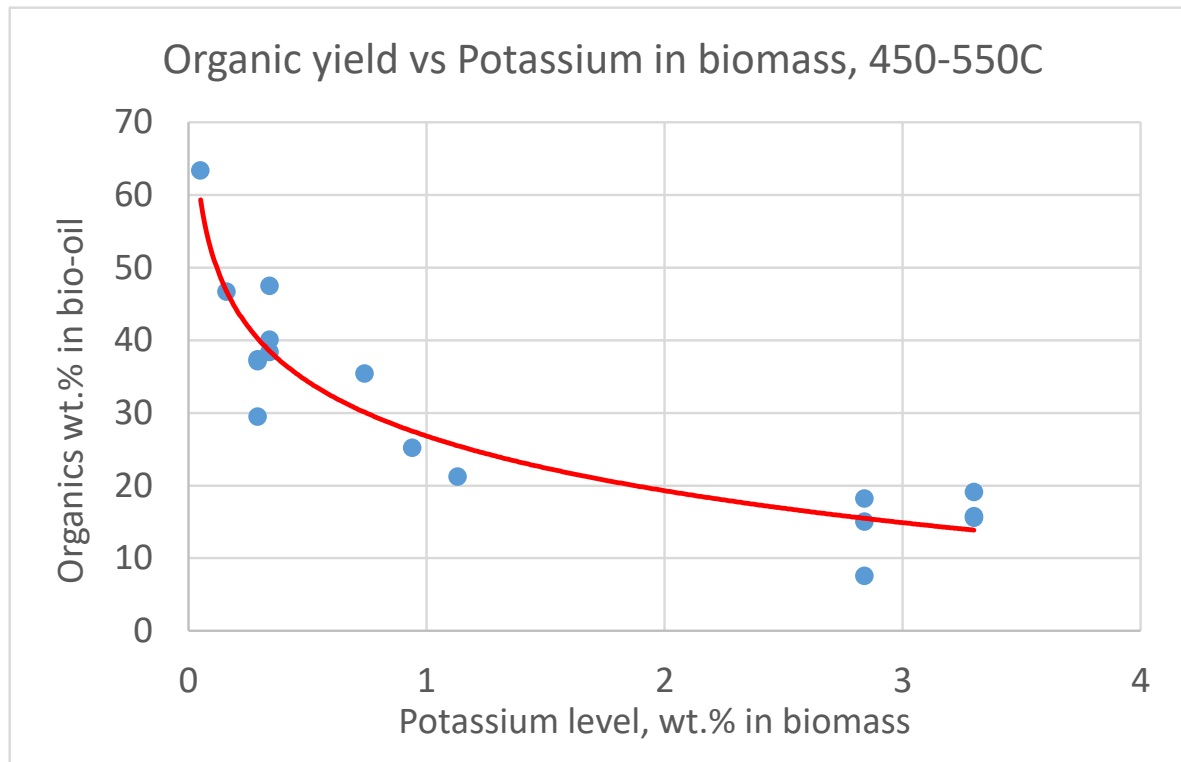
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TG2: Pretreatment and Conversion

Thermochemical, Biochemical, Catalytic Transformations of Biomass



- Example: Dramatic effect of potassium on the organic content of liquid bio-oil formed via thermochemical biomass conversion
- To maximise efficiency, potassium needs careful management in uptake by biomass
- Potential for liquid biofuels or chemicals
 - Sustainable Aviation Fuel
- Aston University experiments by Scott Banks, Tony Bridgwater

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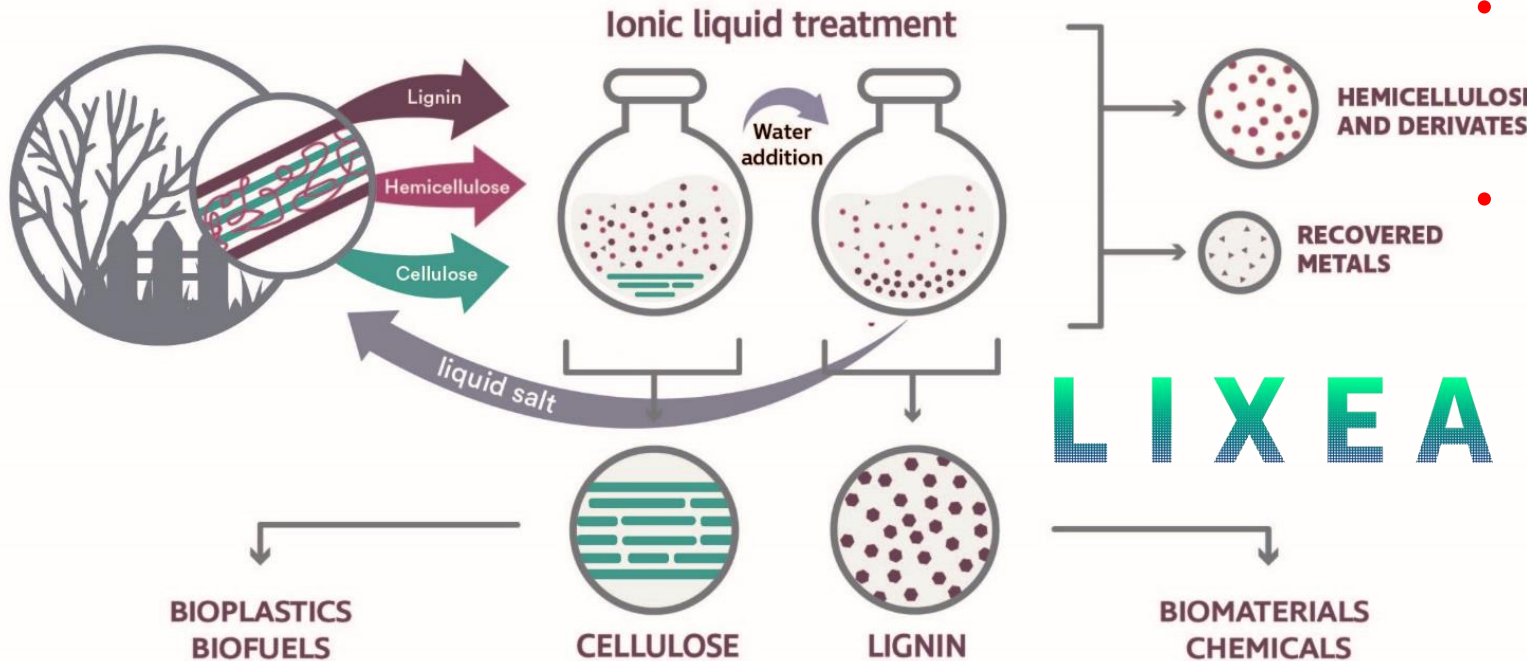
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TG2: Pretreatment and Conversion

Commercialisation of the Biorefinery Concept

www.lixea.co – pilot scale facility in Sweden



- **Glucose can be sold at £0.14/kg**
- **Lower energy costs than steam explosion**
- **Higher solids loading possible**
 - **Fermentable C6 stream separated**
 - **High yields demonstrated**
- **Less phase change = less cost**

Business case vs. Technology case

Compared to (dilute acid pretreatment)

30% lower capital costs

40% higher product value

100% larger profit margin

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Technology Translation (Academia-Industry) in the UK

- I have started/spun-out 6 companies from Imperial College
 - Two have moved out of the UK; 3 more are considering it
- There are limitations to biorefining in the UK
 - Investment de-risking environment
 - Commercial infrastructure
 - Government support
 - Trade issues
- Academic spin-out follow government grants angel investment
 - EU and US have more opportunities/higher success rates/more money
 - Industry partners and investors are more incentivised
- We excel at innovation, but are behind on translation

LIXEA



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A green solution for the chemical industry

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