

Supergen



The Future of UK Bioenergy

Patricia Thornley, Aston University

p.thornley@aston.ac.uk

ALL Energy, Glasgow, 10 May

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.

Biomass Strategy Expectations

- Sustainability framework
- Priority use framework
- Public discourse
- Policy direction

Biomass Strategy Possibilities

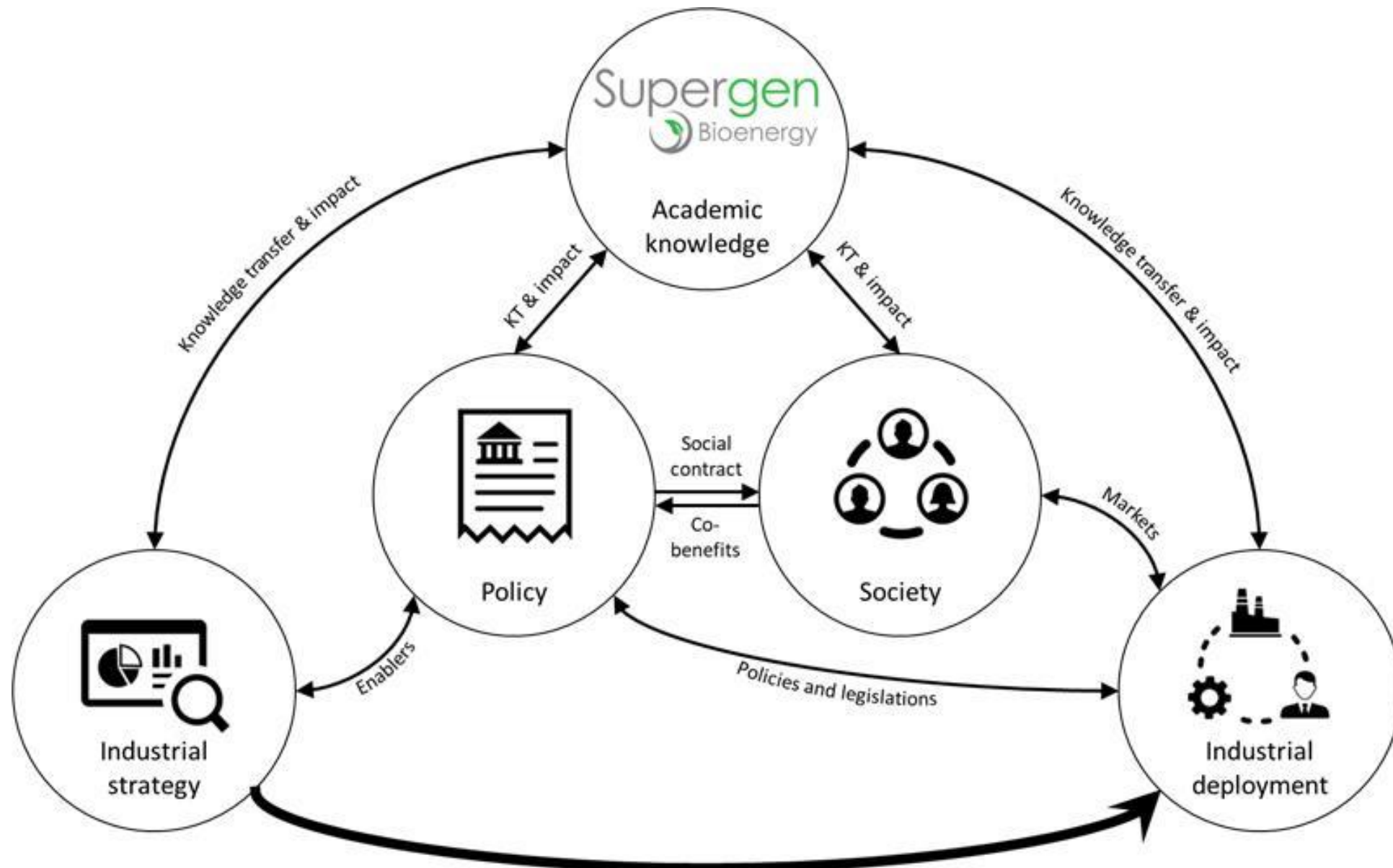
- Hydrogen
- Aviation fuel
- BECCS
- Biochar
- Chemical and material production
- Biochar
- Large scale heat

Incubating Technology Development Projects

- **Optimisation of low carbon hydrogen production from biomass gasification** (i.e., energy crops) - Blanco-Sanchez (Aston)
- **Two stage (thermal digestion and biomass electrolysis)** technology at 1kW hydrogen yield and beyond, engaging with stakeholders including whisky distilleries and agricultural industry. - Li (Strathclyde)
- **BECCUS net negative hydrogen** technology from MSW via high pressure gasification - Paul (Glasgow)
- **Aero-engine system modelling** capacity and combustion characteristics for bio-derived sustainable aviation fuels - Siouris (Sheffield)
- **rDME – process optimization**, efficiency and economic enhancement - Yuan (Sheffield)
- **Hybrid artificial intelligence modelling** for AD; digital twin; dynamic system models Short (Surrey)

Diffusing knowledge from cross-cutting Projects

- **ILUC & Global Biomass Observations & Standards** - Thornley (Aston)
- **Ionic Liquids and Fractionation** - Hallett (Imperial)
- **Scale-up and product commercialization** - Sneddon (York)
- **Maximising sustainability trade-offs** enabling economic growth and - societal benefits. - Roeder (Aston)
- **Improving scale-up efficiency for biorefineries** via adaptive models/machine-learning. - Watson (Glasgow)
- **Geospatial land-use frameworks** - Holland (Southampton)





@SupergenBioHub
@EBRI_UK



Supergen Bioenergy Hub

www.supergen-bioenergy.net

[**p.thornley@aston.ac.uk**](mailto:p.thornley@aston.ac.uk)