

SBH Workshop: Land Use Decision Making for Biomass Crop Deployment

Barriers for the UK Sector

Virtual Event, 14th January 2022

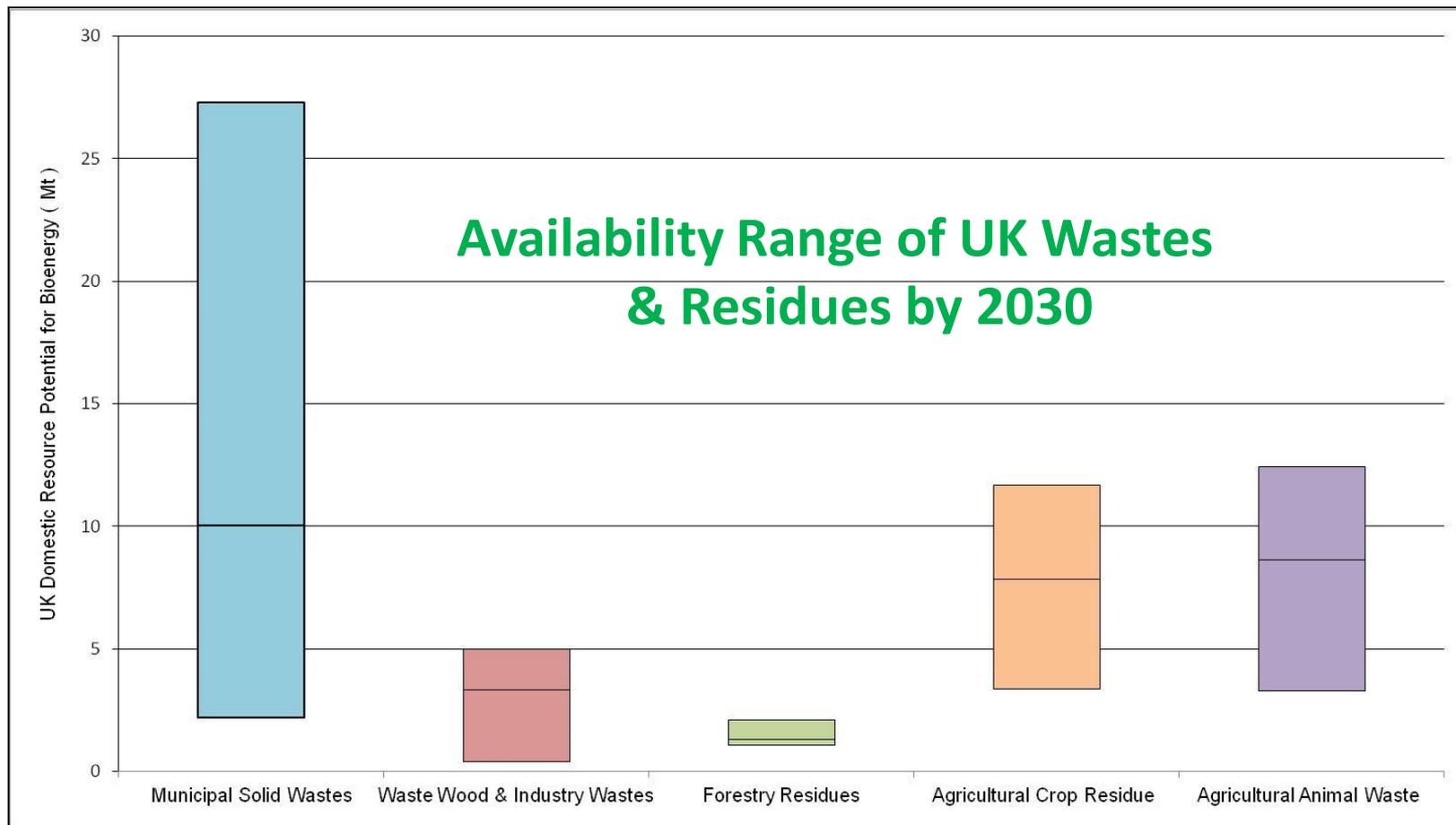
Dr. Andrew Welfle

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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.



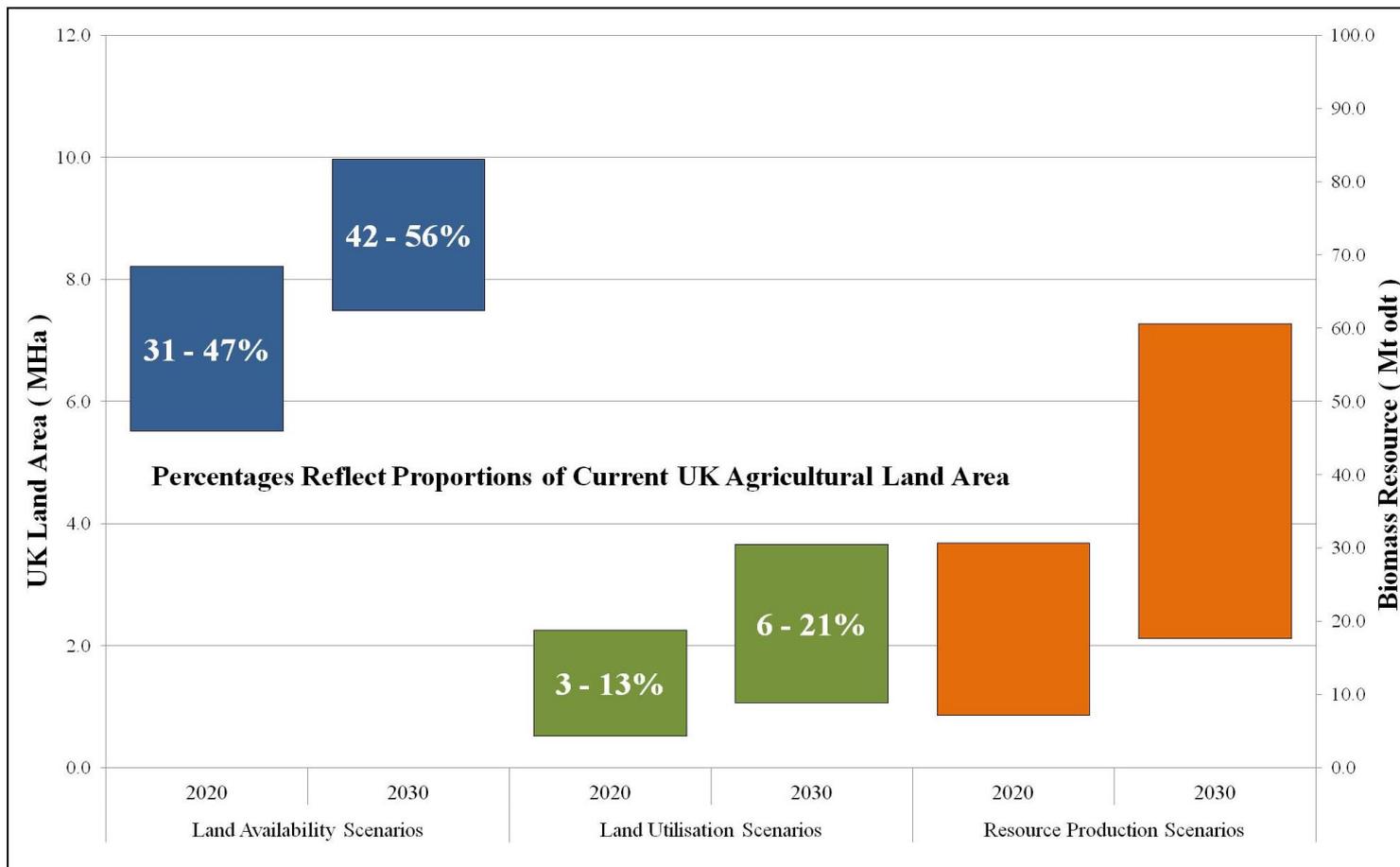
Modelling - UK Biomass Potentials



Welfle A, Wagland S, Longhurst P, Lad J, Chong K. Establishing Viable Pathways for Increasing Biofuel Production from UK Wastes & Residues to meet Transport Energy Targets. Supergen Bioenergy Hub Report for the UK Department for Transport. 2019.



Modelling - UK Energy Crop Potential



Welfle A, Gilbert P, Thornley P. *Securing a Bioenergy Future without Imports. Energy Policy. 2014; 68: 1–14.*



Workshop Aim: Barriers

Within this segment of the workshop the **aim** is to identify and discuss the barriers to the growth of the UK energy crop sector. A key **objective** is to identify the specific leading barriers identified by specific stakeholder groups.

- What is stopping large scale planting of bioenergy crops in the UK?
- What is stopping individual land owners and managers from choosing to produce energy crops?
- Does the current policy framework provide support or barriers for the energy crop sector?
- What are the specific technical barriers that are restricting the sector?
- What issues currently reduce the economic attractiveness of producing energy crops on a large scale?



What Does the Literature Say?

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Barriers to Energy Crops from People

- **Acceptance** – energy crops not perceived as an attractive option.
- **Perception** – poor perception of energy crops and bioenergy processes.
- **Active Opposition** – to energy crop production or bioenergy processes.
- **No Awareness** – of potential opportunities from energy crop production.
- **Experience** – lack of knowledge and skills required for energy crop projects.
- **Cultural** – norms restricting likelihood to embrace new crops and practices.
- **Policy Memory** – negative influences of past experiences with energy crops.



Barriers to Energy Crops from Policy

- **Planning & Regulation** – prohibitive requirements for projects.
- **Support & Incentives** – insufficient or restricted schemes.
- **Uncertainty & Policy Instability** – not providing the reassurances required.
- **Environmental Requirements** – restricting feedstock and operational choices.
- **Poor Awareness** – of any support schemes or incentives.
- **None Alignment** – contrasting policy objectives and mixed messaging.
- **Scope** – policy support schemes too focused or badly targeted.



Technical Barriers for Energy Crops

- **Skills & Knowledge** – new producers are not capable of energy crop production.
- **Infrastructure** – preventing or restricting projects.
- **Land Access** – prohibiting wider use of lands.
- **Location Connectivity** – detachment between production and conversion sites.
- **Machinery Performance** – preventing efficient and economic viability of processes.
- **Land Limitations** – preventing optimal use of land.
- **Feedstock Limitations** – restricting compatibility with onward activities and conversion.
- **Sustainability & Environmental Performance** – regulating use of lands, resources and activities.



Economic Barriers for Energy Crops

- **CAPEX Costs** – prohibitive establishment and set up costs.
- **OPEX Costs** – expensive ongoing costs.
- **Onward Markets** – lack of/ inaccessible onwards markets for feedstocks.
- **Feedstock Supply & Demand** – market lacks maturity to provide confidence for new producers.
- **Contracts** – no/ insufficient contracts to attract new producers.
- **Incentive Schemes** – insufficient support to establish and maintain operations.
- **Scale Economics** – attractive business models for different project scales.
- **Time Investment** – is too large given the uncertainty.
- **Risk** – simply too much economic uncertainty compared conventional crops



What Do You Say?

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Discussion 2: What are the barriers that are currently preventing large scale energy crop deployment?

What are the barriers that are currently preventing your sector from increasing production and use of energy crops in the UK?

- What are the current barriers related to **people**?
- What are the barriers related to the current **policy** framework?
- What are the current **technical** barriers?
- What are the current **economic** barriers?



Thank you

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