

E4tech to help evaluate the future of UK biomass

E4tech is proud to announce its participation in two new bioenergy projects commissioned by the UK's Energy Technologies Institute (ETI). The aim of these projects is to help define the ETI's Bioenergy strategy, by understanding the opportunities and UK benefit case for the development and deployment of effective bioenergy solutions.

The two projects are:

Biomass Systems Value Chain Model (BVCM)

Exploring the key challenges in developing sustainable UK bioenergy supply chains for heat, power, and transport fuels production, and considering the best use of UK biomass from an energy security, affordability and GHG reduction perspective.

E4tech is leading a consortium to develop an innovative toolkit to identify the best bioenergy options to meet UK's energy needs by 2050. The focus of the project is to develop a Biomass Systems Value Chain Model to determine which bioenergy chains can best contribute to efficient, low cost and low emissions renewable energy provision in the UK, and those chains that could provide interesting opportunities for acceleration. In particular, determining which bioenergy chains deliver best value will require an understanding of the spatial distribution of the UK biomass resource base, the logistics and technologies through which it can be exploited, its interaction with imported feedstocks, and the end-uses it may be of greatest value to.

The nine-month long, £835,000 project will be executed in collaboration with Agra CEAS Consulting, Black & Veatch, EDF Energy through the European Institute for Energy Research (EIFER), Forest Research, Imperial Consultants, Rothamsted Research, and The University of Southampton. The consortium brings together years of experience in agro-economics and crop modelling, technology assessment and development, energy system modelling, innovation systems thinking, as well as the implementation of bioenergy projects.

Techno-Economic Study of Biomass to Power with CCS (TESBIC)

Providing a techno-economic and engineering assessment of the most promising options available within the "biomass to power with CCS" sector, and the developments required for significant deployment by 2050.

Internal scenario modelling by ETI has highlighted Biomass-to-Power combined with Carbon Capture and Storage (CCS) as a key technology in the UK's future energy mix, given its large negative emissions potential. However, compared to coal power with CCS, relatively little analysis has been carried out on the available technology options and the challenges faced by the Biomass-to-Power with CCS sector. E4tech will take part in a consortium to provide a better understanding of the sector and the opportunities it could generate for the UK. The project outcomes will also feed into the ETI Biomass Value Chain Model project led by E4tech.

The project will review the current status of Biomass-to-Power with CCS. Case Studies will be selected for detailed engineering assessment, with recommendations made regarding the development opportunity for the UK, and a comparison with other forms of CCS, including coal and gas. The project will use information from international demonstration projects, and take parameters such as development status, feedstock suitability, CO₂ savings, cost, and plant efficiency in account.

E4tech, with its know-how in biomass techno-economic analysis and innovation road mapping, will lead the first work package of the six months long, £455,000 project. This initial work package will deliver a landscape overview of the feasible combinations of biomass power and CCS technologies that could be available by 2050, assess their relative merits and prospects, and put forward recommendations for a shortlist of combinations to be analysed in more detail in the rest of the project. This overview will include co-firing and dedicated biomass power plants, new build and retrofit, at both small and large scales, considering different suitable UK feedstocks, and a range of carbon capture technologies. The other consortium partners are Cambridge University, Doosan Babcock, Drax Power, EDF Energy, Imperial Consultants, and Leeds University, with CMCL Innovations as the lead partner.

Information

For more information on the projects please contact:

Fabio Montemurro (fabio.montemurro@e4tech.com) regarding the BVCM project

Richard Taylor (richard.taylor@e4tech.com) regarding the TESBIC project

For more information on E4tech and the ETI please visit:

E4tech www.e4tech.com

ETI www.energytechnologies.co.uk

E4tech (UK) Ltd is an independent technologically-informed business consultancy in sustainable energy. We have worked at the interface between energy technology, environmental needs and business opportunities since 1997, always maintaining a focus on innovative approaches to sustainable energy. Our international team have backgrounds in industry, consultancy and research, and provide services relating to technology, policy and business across a wide range of energy areas. Our clients include investors and financial institutions, governments and public agencies, energy, industrial and automotive companies.

E4tech has in-depth expertise in the bioenergy sector. Our highly skilled and experienced staff focuses on both conventional and novel bioenergy routes, and we understand how policy and sustainability issues can affect bioenergy uptake in different markets.

www.e4tech.com