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From the Sugar Platform to biofuels and biochemical

Final report for the European Commission Directorate-General Energy

Numerous potential pathways to biofuels and biochemical exist via the sugar platform. This study use literature surveys, market data and stakeholder input to provide a comprehensive for policymakers and industry identifying the key benefits and development needs for the sugar platform.

The study created a company database for 94 sugar -based products, with some already commercial, the majority at research/pilot stage, and only a few demonstration plants crossing the "valley of death". Case studies describe the value proposition, market outlook and EU activity for ten value chains (acrylic, adipic & succinic acids, FDCA, BDO, farnesene, isobutene, PLA, PHAs and PE). Most can deliver significant greenhouse savings and drop -in (or improved) properties, but at an added cost to fossil alternatives.

Whilst significant progress has been made, research barriers remain around lignocellulosic biomass fractionation, product separation energy, biological inhibition, chemical selectivity and monomer purity, plus improving whole chain process integration. An assessment of EU competitiveness highlights strengths in R&D, but a lack of strong commercial activity, due to the US, China and Brazil having more attractive feedstock and investment conditions.

Further policy development, in particular for biochemicals, will be required to realize a competitive European sugar-based bioeconomy.

Source:

<https://ec.europa.eu/energy/sites/ener/files/documents/EC%20Sugar%20Platform%20final%20report.pdf>