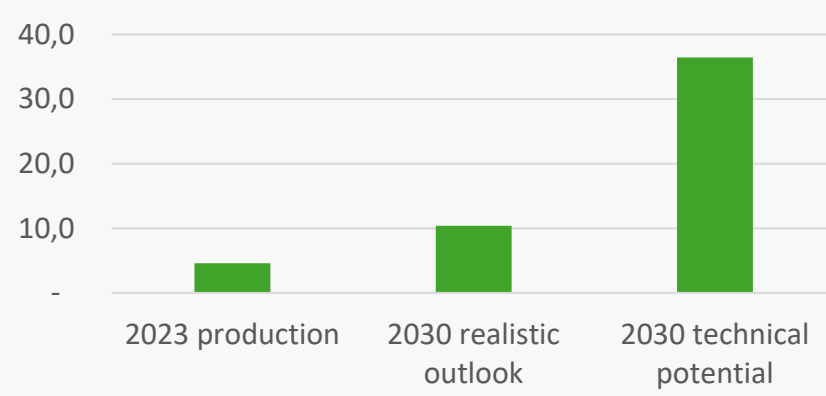


Supply and Demand of Annex IX-A Fuels



Scaling Advanced Biofuels Production

Results of two recent studies for the European Commission

Dina Bacovsky
 Maria Georgiadou, EC
 Teodor Goumas, Exergia
 David Chiaramonti, Polito

AREA 3 - Sustainable Supply and Value Cycles I Unit Biofuels

BEST – Bioenergy and Sustainable Technologies GmbH

Head Office Graz
 Inffeldgasse 21b
 A 8010 Graz

P +43 5 02378-9201
 office@best-research.eu
 www.best-research.eu

Introduction

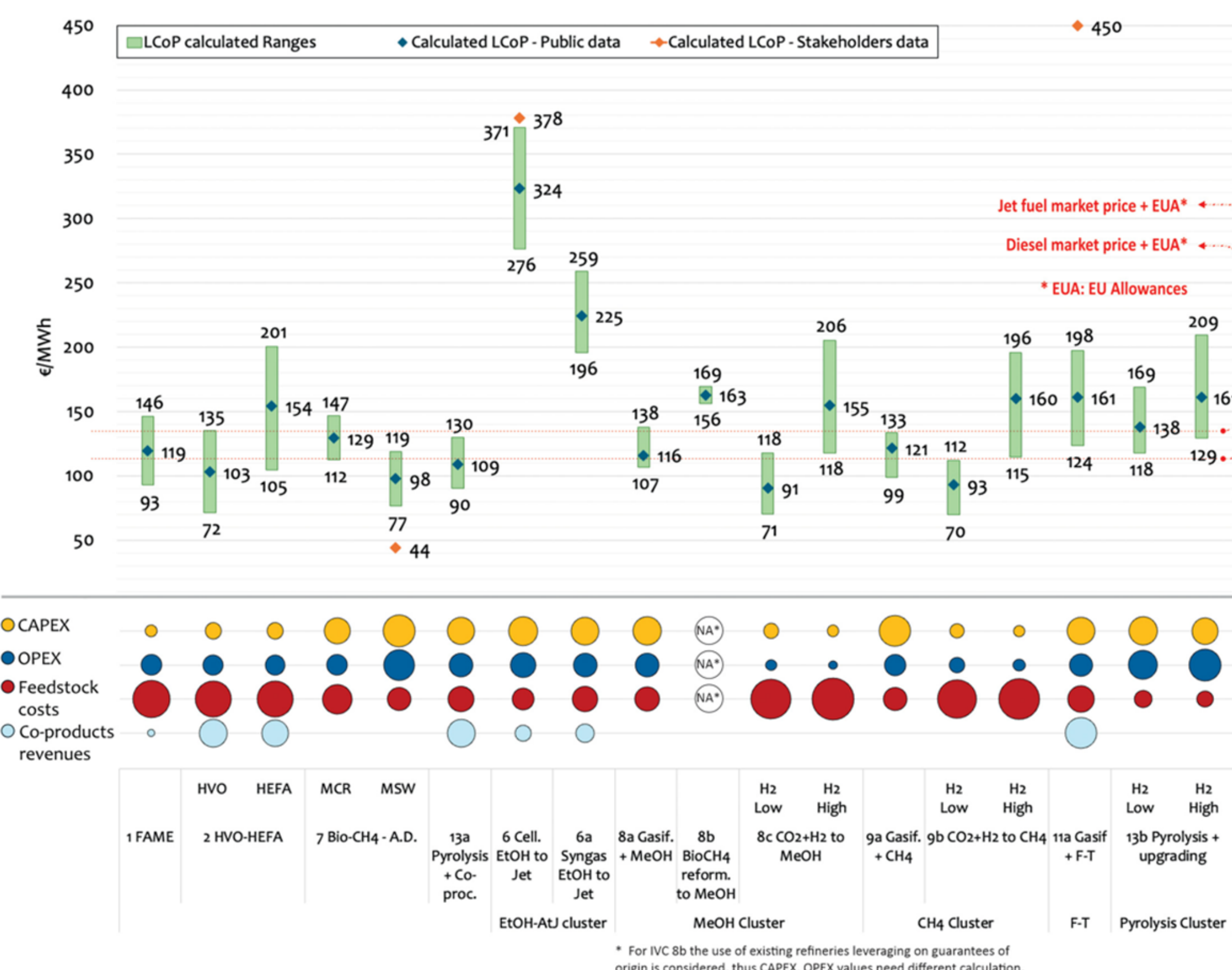
The Renewable Energy Directive mandates that by 2030, advanced biofuels, biomethane and RFNBOs shall jointly provide a share of at least 5.5 % of the energy used in the transport sector. The study “Development of outlook for the necessary means to build industrial capacity for drop-in advanced biofuels¹” assessed the feasibility of achieving this target. While sufficient biomass could be mobilised within Europe to reach this target, the industrial capacity building is likely to lag – additional efforts will be needed to stimulate EU-27 production of advanced biofuels and biomethane to reach the target.

A second study, „Mobilization of industrial capacity building for advanced biofuels²”, assessed how 14 different advanced biofuels and RFNBO value chains could be supported in order to reach their required deployment.

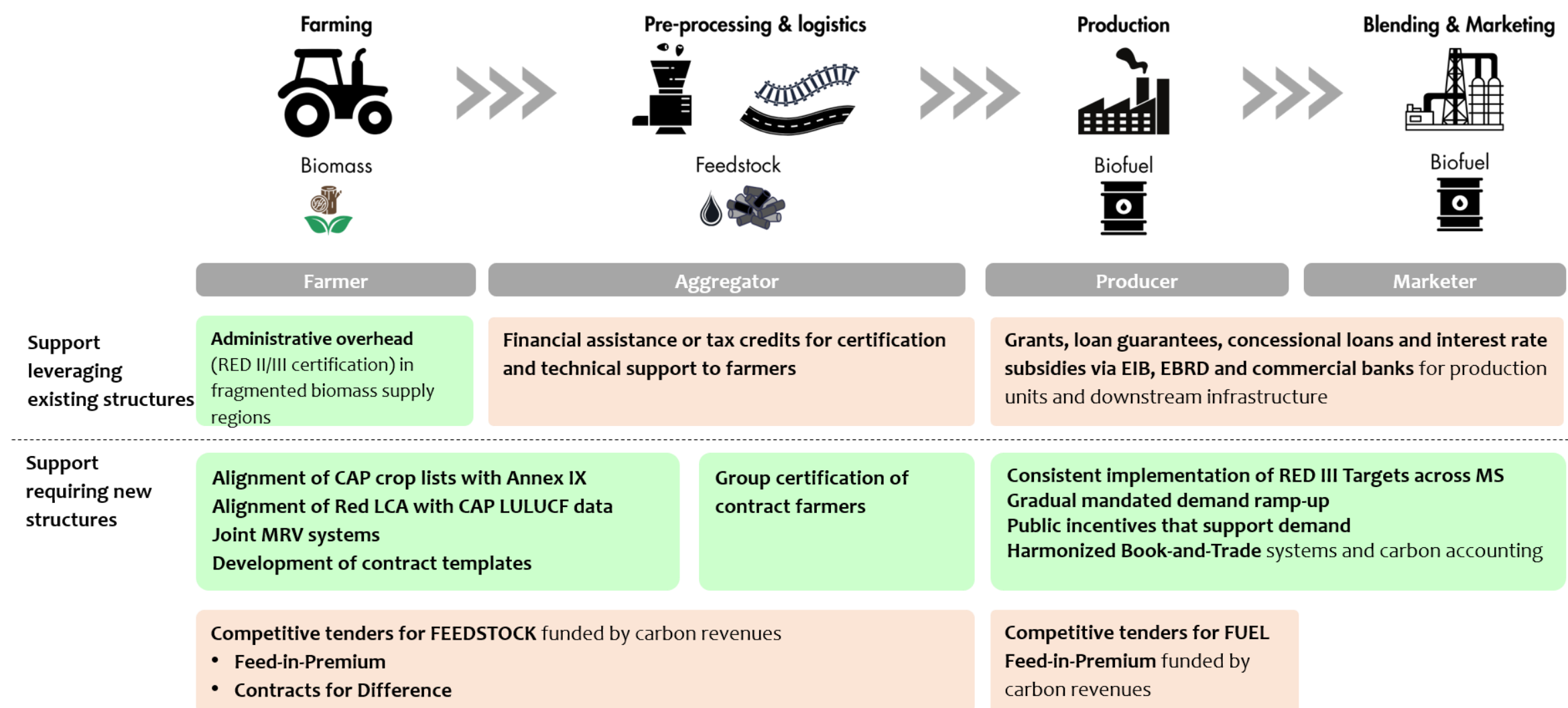
Financial Support

To assess the financial needs per value chain, business models were elaborated. The levelized cost of production (LCoP) for each value chain was compared to current market prices plus the value of EU Allowances (EUA) of their fossil counterparts.

- For diesel-type fuels (FAME, HVO), LCoP is close to the diesel market price + EUA.
- For biomethane from anaerobic digestion and from gasification, LCoP varies around the methane market price + EUA.



Levelized cost of production of essential pathways



Proposals for supporting measures

- SAF LCoPs cover a wide range, depending on the technology; while HEFA is close to the jet fuel market price + EUA, Ethanol-to-Jet and Gasification + FT LCoPs are 2-3 times costlier (see orange marks in the graph which represent stakeholder feedback on the calculated values).
- LCoPs of methanol for the shipping sector, produced through several pathways, vary, depending on the pathway and the assumed price of green hydrogen.

Given that most value chains have LCoP that are higher than the market price + EUA of their fossil counterparts, annual financial support should be given to industrial units, proportional to the quantities of biofuels produced. In addition, financial support, proportional to the quantities of feedstock delivered, should be given to farmers or collectors as to efficiently mobilise the required biomass quantities.

Administrative Support

Administrative support to farmers, collectors and aggregators includes the alignment of Common Agricultural Policy (CAP) and Renewable Energy Directive (RED) provisions on supported crops and harmonized registries and sustainability certification.

For biofuel producers and marketers, consistent implementation of RED across Member States as well as harmonized book and trade systems and carbon accounting would be constructive and necessary.

References

- European Commission: Directorate-General for Research and Innovation, Exergia, E3Modelling, Wageningen University & Research, BEST, BTG, POLITO, Georgiadou, M., Goumas, T. Chiaramonti, D. (eds), Development of outlook for the necessary means to build industrial capacity for drop-in advanced biofuels – Final report, Publications Office of the European Union, 2024, <https://data.europa.eu/doi/10.2777/679307>
- European Commission: Directorate-General for Research and Innovation, EXERGIA, POLITO, BEST, Georgiadou, M. et al. (eds), Mobilization of industrial capacity building for advanced biofuels – Final report, Publications Office of the European Union, 2026, <https://data.europa.eu/doi/10.2777/2375274>

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