



SAMPLE Lipid Feedstock Outlook 2023 Edition

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BY
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EXECUTIVE SUMMARY

Stillwater’s Lipid Feedstock Outlook provides a forward-looking view of lipid biomass feedstock supply for U.S. renewable fuel production through 2035. This outlook is a key factor in Stillwater’s California Low Carbon Fuel Standard (LCFS) Credit Price Outlook and is used to determine the viability of announced lipid-based renewable fuel production capacity. Stillwater analyzed the outlook for feedstocks in the U.S. and Europe as these two markets are seen as competitors for low-carbon feedstocks.

Supply of all low-carbon fuels is ultimately limited by the availability of suitable feedstocks. The most critical feedstock availability issue concerns fats, oils, and greases (collectively, FOG or lipids) utilized for nearly all existing commercial production of biodiesel (BD), renewable diesel (RD), sustainable aviation fuel (SAF), and other lipid-based biofuels. For this report, we limit our feedstocks coverage to these lipids; we may extend this coverage to other feedstocks in future editions if we see them becoming critical in our assessment of potential fuel supply.

To understand the parameters for acceptable feedstocks in the U.S. and Europe, it is important to understand the regulations driving feedstock markets. As such, in Section One, we detail the U.S. and European regulations creating the preferences, prohibitions, incentives, and penalties applied to the use of different feedstocks.

In Section Two, we describe our approach to analyzing the outlook for feedstock supply. This includes an assessment of the outlook for each of the major feedstocks expected to supply the U.S. market in coming years depending on the feedstock production method. To assess the European market, we established a “compliance recipe” to meet the projected lowest-cost biofuels blending to fulfill the various European Union (EU) and United Kingdom (UK) markets. This compliance recipe translates into demand patterns across various feedstock categories.

In Section Three, we provide a view of current lipid-based renewable fuel production along with an outlook for production in the U.S., EU, and UK. This provides the basis for feedstock demand currently and the outlook for required feedstocks to meet projected renewable fuel production through 2035.

Section Four offers supply outlooks for each of the major lipid feedstocks utilized for U.S. renewable fuel production. This section also offers an outlook for European feedstock supply. Based on the outlook for each feedstock supplied to the U.S. and the view of the European feedstock demand outlook, we offer a composite outlook for U.S. biofuels feedstocks through 2035.

Finally, in Section Five, we provide insights and conclusions which form Stillwater’s view of the “race for feedstocks” and the challenges ahead for biofuels producers in the U.S., Canada, Europe, and Asia.