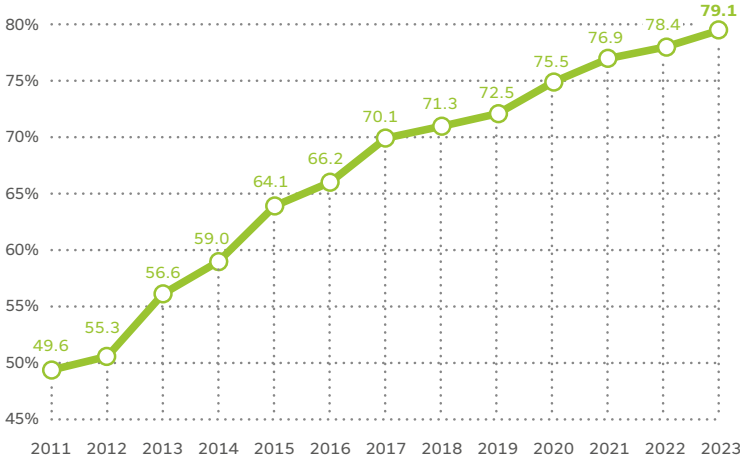


In 2023, ePURE members and other European producers of renewable ethanol produced **5.08 million tonnes (6.4 billion litres) of ethanol** and **6.5 million tonnes of food and feed co-products, including high-protein animal feed** – in other words, **more food than fuel**. All of the crops used were **grown by European farmers**. 86% of the ethanol produced was for fuel use, with an average of **79.1% GHG savings compared to petrol**.

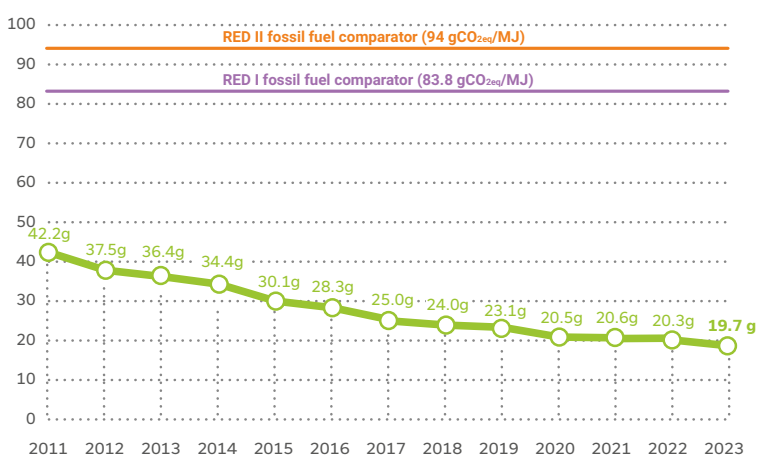
Average certified GHG emission savings in %

Since 2011 the average certified greenhouse gas emission savings of renewable ethanol against fossil fuel have increased continuously, reaching 79.1% in 2023.



Source: Aggregated and audited data of ePURE members and other European producers for volumes certified under RED I or RED II methodology

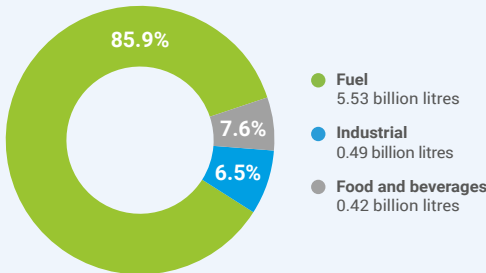
Average certified GHG emissions from the production and use of fuel ethanol in gCO_{2eq}/MJ



Source: Aggregated and audited data of ePURE members and other European producers for volumes certified under RED I or RED II methodology

Renewable ethanol production by end-use

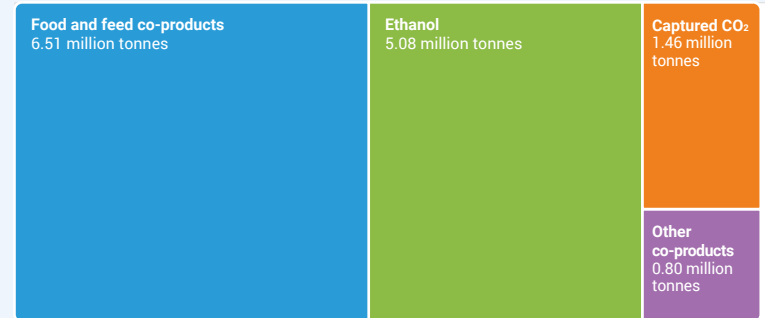
In 2023, ePURE members and other European producers of renewable ethanol produced 6.44 billion litres of ethanol, operating at 80% of their 8.05 billion litres of installed capacity. Fuel accounted for 85.9% of the use; other markets, such as industrial applications and beverages, represented 7.6% and 6.5% respectively.



Source: Aggregated and audited data of ePURE members. Ethanol volumes in pure alcohol

Main output of European renewable ethanol plants

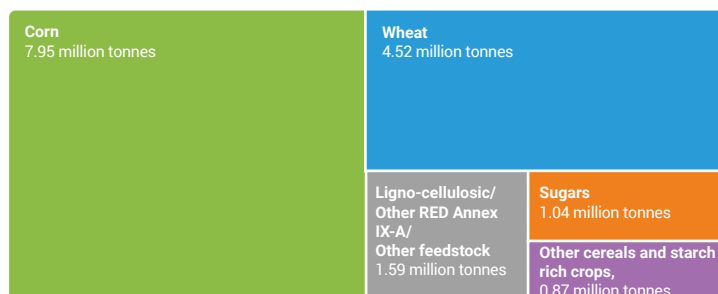
In 2023, ePURE members and other European producers of renewable ethanol produced more food and feed co-products than ethanol: of the 8.77 million tonnes of co-products produced by biorefineries, 6.51 million tonnes were food and feed co-products.



Aggregated and audited data of ePURE members and other European producers. Ethanol – pure alcohol; Food and feed co-products – commercial product equivalent; Other co-products – commercial equivalent

Feedstock used to produce renewable ethanol

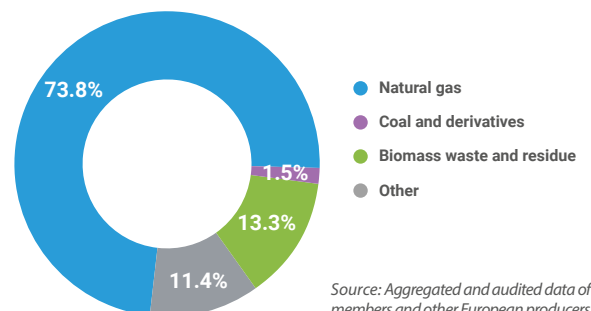
All the feedstock used to produce renewable ethanol by ePURE members and other European producers was grown in Europe. Of the 6.44 billion litres of ethanol produced in 2023, 48.3% was from corn, 24.8% from wheat, 10.4% from sugars, 5.3% from other cereals and starch-rich crops, and 11.2% from ligno-cellulosic, other RED Annex IX-A and other feedstocks.



Source: Aggregated and audited data of ePURE members and other European producers. Sugars – sugar equivalent; Ligno-cellulosic/Other RED Annex IX-A/Others – dry matter equivalent

Share of installed production capacity per type of process fuels

ePURE members and other European producers are improving production processes for renewable ethanol. In 2023, more than 47% of the installed production capacity of the European bioethanol industry was equipped with a CO₂ capture system, and more than 60% had integrated cogeneration of heat and power (CHP) to reduce their energy demand.



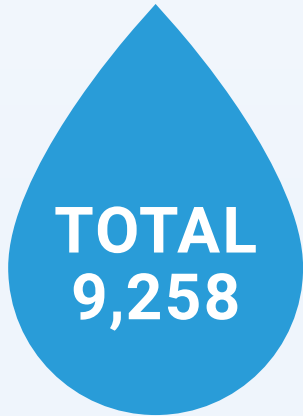
Source: Aggregated and audited data of ePURE members and other European producers; based on their total installed production capacity



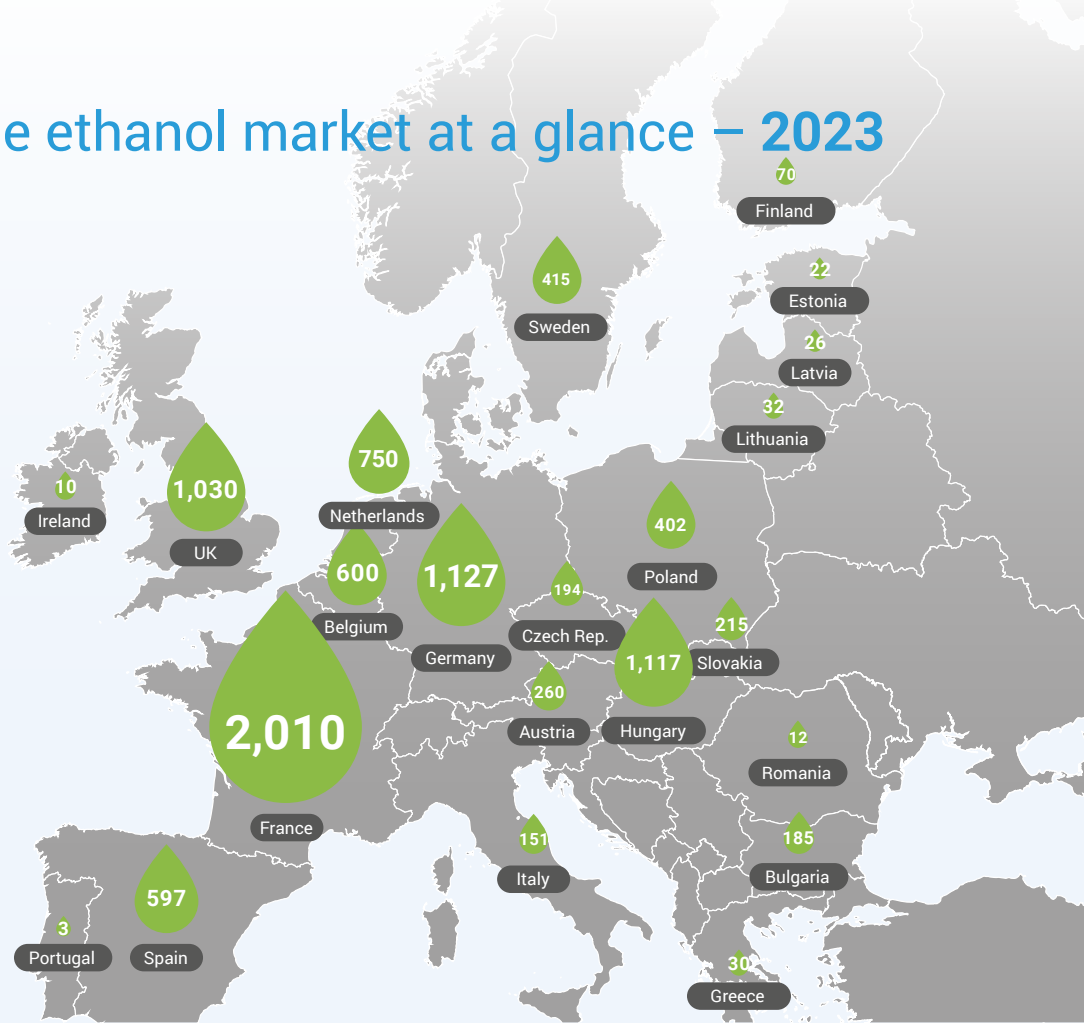
Renewable ethanol market at a glance – 2023

EU27 + UK renewable ethanol installed production capacity (Million litres)

*Includes non-ePURE members. ePURE members account for 7.2 billion litres of total European production capacity.

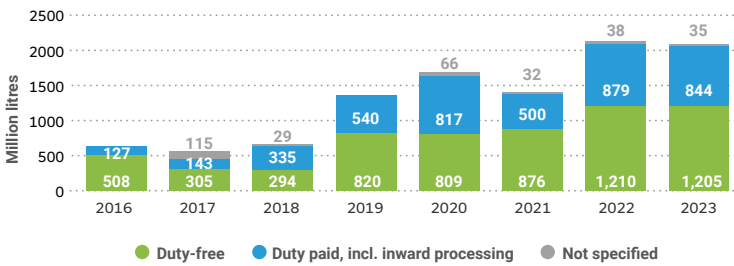


Source: ePURE estimates for ethanol fermentation capacity based on F.O. Licht



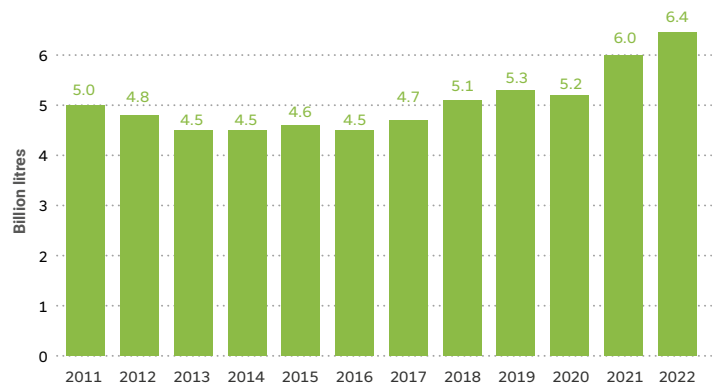
Imports of ethanol into the EU27

EU ethanol imports remained high at 2,084 million litres in 2023, registering only a mild decrease of 2% compared to 2022, noting that in 2022 imports registered an increase by 51% as compared to 2021. Imports from countries enjoying duty-free access to the EU form the majority of imports with 58%, these include notably imports from Pakistan representing 408 MI in 2023, while benefiting from duty exemption under the GSP regime. Imports subject to duties including inward processing, represented 40% of total imports, these include imports from the US which decreased by 16% in 2023 as compared to 2022 reaching 394 MI and imports from Brazil which increased by 12% as compared to 2022 reaching 374 million litres in 2023.



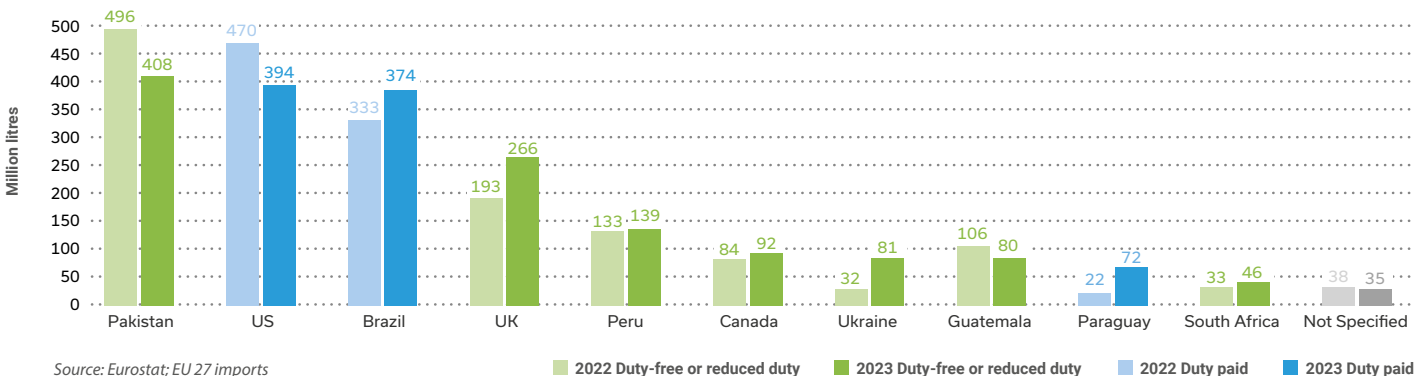
Source: Eurostat EU28 imports until 2019, EU27 imports without the UK as of 2020

EU27 biogasoline consumption



Source: Eurostat
Biogasoline: liquid biofuels suitable to be blended with or to replace motor gasoline from fossil origin e.g. ethanol, methanol and the share of ETBE and MTBE from biomass

Top 10 origins of EU ethanol imports



Source: Eurostat; EU 27 imports