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GHG emissions from HVOlution produced by Eni Sustainable Mobility (ESM)

Eni's biorefineries play a central role in the energy transition process aimed at reducing greenhouse gas (GHG)¹ emissions.

Thanks to the development of proprietary technologies, Eni has completely rethought the traditional refineries in Venice and Gela, converting them to the processing of biomasses such as, for example, vegetable oils that do not compete with the food and feed chain, vegetable oil processing waste, animal fats and used cooking oils.

The GHG emission values for Eni's renewable fuel productions refer to the entire supply chain (Well To Wheel)² of the fuel in accordance with the RED II Directive (EU Directive 2018/2001) and therefore take into account the cultivation, transport, production and combustion phases also for HVOlution³. As per regulations, the calculation methods and the data obtained have been certified by an accredited third party body (RINA for Eni) according to the rules of the approved EU voluntary schemes (in Eni 2BSvs and ISCC).

The following table shows the average, weighted on the different quantities of raw materials processed, of the CO_{2eq} emissions of HVO produced by Eni Sustainable Mobility and destined for captive use, i.e. destined for blending in traditional diesel fuel and for sales in pure form

(HVOlution) in Italy, in the period 14 April 2023 – 30 June 2023⁴, taking into account the entire product value chain (so-called "well to wheel").

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 $^{^1}$ As stated in RED II, the greenhouse gases (GreenHouse Gas or GHG) taken into account are: CO₂, N₂O and CH₄. For the purpose of calculating CO₂ equivalence (CO_{2eq}), the following values are associated with these gases: CO₂ = 1; N₂O = 298; CH₄ = 25

 $^{^2}$ CO $_2$ emissions are globally relevant because, regardless of the location of the emitting source, they have an effect in terms of global warming. Therefore, for a correct assessment of the greenhouse gas emissions of a fuel, it is necessary to assess CO $_{2eq}$ emissions not only during its combustion, but along the entire supply chain.

³ For biofuels, defined by RED II as liquid transport fuels derived from biomass, the GHG exhaust emission component from combustion is by definition zero under RED II (by convention, the biogenic CO2 emitted during the combustion of the biofuel offsets that previously sequestered during the growth of the biomass from which the biofuel is derived). Annex V, sect. C point 13 of RED II states verbatim: "Emissions of the fuel in use, ..., shall be taken to be zero for biofuels and bioliquids".

⁴ April, 14 2023 corresponds to the date of entry into force of the new legislation relating to the obligations for the sale of pure biofuels.

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This value is compared to the fossil reference mix for transport, whose value of 94 gCO_{2eq}/MJ is reported in RED II (in force since December 2018 and mandatory for the above-mentioned schemes from 1/7/2021).

Table 1: Comparison of HVO for captive use in Italy from 14 April 2023–30 June 2023 with reference fossil mix defined by RED II (2018/2001/EU)

	Weighted average of CO _{2eq} emissions Well to Wheel (gCO _{2eq} /MJ)	Reduction % of weighted average of CO _{2eq} emissions Well to Wheel with respect to the reference RED II
Fossil reference mix RED II	94	
HVO intended for captive use from 14/04/2023 to 30/06/2023	17,6	81,2%

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In the event of the data contained therein being used externally, the user acknowledges that he/she will in any case be required to comply with applicable legislation, including that on unfair commercial practices and misleading advertising.

Eni Sustainable Mobility S.p.A. s.u. and the companies of the Eni Group decline any direct or indirect responsibility in this regard.

Eni Sustainable Mobility S.p.A. also certifies that the volumes of product sold to your company contribute to the fulfilment of the obligation to release for consumption of biofuels by Eni Group companies, as suppliers of energy products for which the conditions for the payment of excise duty are met, having regard to Ministerial Decree No. 110 of 29 April 2008 setting forth criteria, conditions and modalities for the implementation of the obligation to release for consumption in the national territory a minimum quota of biofuels, pursuant to Article 1, paragraph 36, point 3 of Law No. 296/06; the Ministerial Decree of 10 October 2014 and ss.mm.ii. updating the conditions, criteria and modalities for the implementation of the obligation to release for consumption of biofuels including advanced biofuels, issued pursuant to paragraph 1, of Article 30-sexies of Law Decree of 24 June 2014, no. 91 converted with amendments by Law No. 116 of 11 August 2014 and the Ministerial Decree of 16 March 2023 implementing Article 39 paragraph 4 of Legislative Decree No. 199 of 8 November 2021 and Article 6-bis of Decree-Law No. 176 of 18 November 2022, converted with amendments by Law No. 6 of 13 January 2023.

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