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Report Highlights:

This report provides an overview of the biofuel use mandates in EU-27 member states, including temporary changes in response to the COVID-19 pandemic as well as Russia's invasion of Ukraine. It supplements the EU Biofuels Annual Report 2022.

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Abbreviations and definitions used in this report

| | |
|----------------------------|--|
| % Cal = | percent energy content |
| % Vol = | percent volume |
| % Biodiesel = | minimum percentage of biodiesel in total diesel use |
| % Bioethanol = | minimum percentage of bioethanol in total gasoline use |
| % Overall = | minimum percentage of biofuels in total fuel use |
| % GHG Emission Reduction = | Percentage of GHG reductions of total fuel use (fossil and renewable) compared to the hypothetical GHG emissions that would have occurred with the exclusive use of fossil fuels |

All of the above refer to fuel use in the transport sector.

| | |
|-------------------|---|
| Biodiesel = | Fatty acid methyl ester (FAME) and or hydrogenation-derived renewable diesel (HDRD) produced from agricultural or waste feedstock (vegetable oils, animal fat, recycled cooking oils) used as transport fuel to substitute for petroleum diesel |
| Bioethanol = | Ethanol produced from agricultural feedstock used as transport fuel |
| Cat 1 (2 and 3) = | Risk categories for animal-by-products as defined in EU Regulation (EC) 1069/2009 , with cat 1 having the highest and cat 3 the lowest risk. |
| Double counting = | Certain biofuels are counted twice against the mandates. This was introduced to support the use of certain biofuels and/or feedstocks. As a result of double counting, less physical |

volumes of a certain biofuel are needed to fill a mandate, which makes the respective biofuel more attractive than a comparable single counting biofuel. Definition and eligible feedstocks vary by member state (MS).

| | |
|------------------|--|
| EC = | European Community or European Commission - depending on the context |
| ETBE = | Ethyl tert-butyl ether, an oxygenate gasoline additive containing 47% vol ethanol |
| EU = | European Union |
| FQD = | EU Fuel Quality Directive 98/70/EC amended by directives 2009/30/EC and (EU) 2015/1513 |
| GHG = | greenhouse gas |
| GJ = | Gigajoule = 1,000,000,000 Joule or 1 million KJ |
| Ktoe = | 1000 MT of oil equivalent = 41,868 GJ = 11.63 GWh |
| MJ = | Megajoule |
| MS = | Member State(s) of the EU |
| MWh = | Mega Watt hours = 1,000 Kilo Watt hours (KWh) |
| N/A = | Not applicable |
| POME = | Palm Oil Mill Effluent |
| RED = | EU Renewable Energy Directive 2009/28/EC |
| RED II = | EU Renewable Energy Directive 2018/2001/EC |
| RES = | Renewable energy sources |
| SAF = | Sustainable aviation fuel |
| SBE = | Spent Bleached Earth |
| Tall oil = | A by-product of the wood manufacturing industry; qualifies as advanced biofuels feedstock. |
| Tall-oil pitch = | The residue from the distillation of tall oil; qualifies as advanced biofuels feedstock. |
| TME = | Tallow Methyl Ester, biodiesel made from animal fat |
| Toe = | Tons of oil equivalent = 41,868 MJ = 11.63 MWh |
| UCO = | Used cooking oil/ recycled vegetable oil |
| UCOME = | UCO based methyl ester biodiesel |
| UER = | Upstream emission reduction |

Introduction:

The 2009 [EU Energy and Climate Change Package](#) set out a 10 percent minimum target for renewable energy consumed by the transport sector to be achieved by all EU member states (MS) in their countries in 2020. The [Renewable Energy Directive \(RED\)](#) laid out detailed provisions on the goals and conditions in the transport sector for the period 2010-2020. In 2018, the European Union adopted the [Renewable Energy Directive II \(REDII\)](#) covering the period 2021-2030. It set a new overall renewable energy target of 32 percent by 2030 and a 14 percent target for the transport sector.

Many MS have adopted minimum biofuel use mandates in order to achieve the RED and RED II goals. This report provides an overview of the current and future mandates from the various MS. Note that Cyprus, Luxemburg, and Malta are not included in this report. **The tables represent the status quo as of May 20, 2022.** If changes are being discussed but have not yet been adopted, they are mentioned in the text below the tables.

EU Renewable Energy Targets

RED II sets an overall binding renewable energy target of at least 32 percent by 2030 with a 14 percent target for the transport sector, with a clause for a possible upwards revision by 2023. Within the 14 percent transport sector target, food-based biofuels are capped at MS 2020 levels up to one percent higher, but with a maximum cap of seven percent for each MS. If the cap on first generation biofuels in a MS is less than seven percent, the country may reduce the transport target by the same amount (for example, a country with a food and feed crop cap of six percent could set a transport target at 13 percent). Member states can also set a lower limit for conventional biofuels than prescribed in RED II. For advanced biofuels, RED II introduces two different sets of targets for feedstock listed in Part A of Annex IX and feedstock listed in Part B. Feedstock listed in Part A must be supplied at a minimum of 0.2 percent of transport energy in 2022, one percent in 2025, and at least 3.5 percent by 2030. Biofuels produced from feedstocks listed in Part B will be capped at 1.7 percent in 2030. Advanced biofuels will be double counted towards both the 3.5 percent target and towards the 14 percent target.

| Table 1. Advanced Biofuel Sources, Part A and Part B of Annex IX in RED II | |
|---|--|
| Part A | Part B |
| <ul style="list-style-type: none"> • Algae if cultivated on land in ponds or photobioreactors • Biomass fraction of mixed municipal waste • Biowaste from private households subject to separate collection • Biomass fraction of industrial waste not fit for use in the food or feed chain • Straw • Animal manure and sewage sludge • Palm oil mill effluent and empty palm fruit bunches • Crude glycerin • Bagasse • Grape marcs and wine lees • Nut shells • Husks • Cobs cleaned of kernels of corn • Biomass fraction of wastes and residues from forestry and forest-based industries • Other non-food cellulosic material • Other ligno-cellulosic material except saw logs and veneer logs | <ul style="list-style-type: none"> • Used cooking oil (UCO) • Some categories of animal fats |

| Table 2. Advanced Biofuel Sources, Part A and Part B of Annex IX, Mandates and Cap | | |
|---|-------------------------------------|-------------------------------|
| | Part A Mandates (% cal*) | Part B Cap (% cal) |
| 2022 | 0.2 | |
| 2025 | 1 | |
| 2030 | 3.5 | 1.7 |

* % cal = percent based on energy content

EU-wide Greenhouse Gas (GHG) Emission Reductions

The [Renewable Energy Directive \(RED\)](#) stipulated that biofuels can only be counted against EU and/or member state targets if they fulfill the following minimum greenhouse gas (GHG) reduction requirements:

| | Table 3. RED Minimum % GHG Emission Reductions of Each Biofuel Compared to the Respective Fossil Fuel |
|------------|---|
| 2009-2017 | 35% |
| Since 2018 | 50% for biofuels produced in operations that started production on or before Oct 5, 2015. 60% for biofuels produced in operations that started production after Oct 5, 2015. |

Source: Art. 7 b of EU Directive 98/70/EC as revised by Directive (EU) 2015/1513

<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1502451943595&uri=CELEX:01998L0070-20151005>

The **Fuel Quality Directive (FQD)** ([directive 2009/30/EC](#)) complemented the RED and mirrored some of the RED's content such as the sustainability criteria. A key requirement in article 7a of the FQD is that all **fuel suppliers must meet a six percent reduction in GHG emissions by 2020 across all fuel categories supplied to the market**. This is designed to be consistent with the 10 percent minimum use target for biofuels and shift demand towards biofuels with higher GHG savings. In addition, the FQD limits ethanol blends to 10 percent or less when ethanol is used as an oxygenate, and places limits on palm oil and soy oil content of biodiesel. The Commission does not plan to extend the GHG reduction target beyond 2020. Instead, the Commission addressed the issue of the decarbonization of transport fuels after 2020 in RED II.

RED II introduces new GHG emission criteria that biofuels used in transport must comply with to be counted towards the overall 14 percent target. The European Commission is allowed to revise and update the default values of GHG emissions when technological developments make it necessary. Economic operators have the option to either use default GHG intensity values provided in RED II or to calculate actual values for their pathway.

| Table 3. Greenhouse gas savings thresholds in RED II | | | |
|---|--------------------|--|----------------------------------|
| Plants started/start operations | Transport biofuels | Transport renewable fuels of non-biological origin | Electricity, heating and cooling |
| Before October 2015 | 50% | - | - |
| After October 2015 | 60% | - | - |

| | | | |
|---------------------------|------------|------------|------------|
| After January 2021 | 65% | 70% | 70% |
| After January 2026 | 65% | 70% | 80% |

Mandate Changes in Response to Crisis

Temporary Changes to Existing Mandates in Response to the COVID-19 Pandemic

In response to the COVID-19 pandemic, fuel suppliers in Romania were able to apply for exemptions from the blending mandates for the period of April 16 through May 14, 2020.

Changes in Response to Russia’s Invasion in Ukraine

- **Finland** temporarily reduced its 2022 and 2023 mandates to alleviate high fuel prices for consumers.
- **Latvia** suspends mandatory blending of biofuels for the period of July 1, 2022 thru December 31, 2023, in an effort to control rising fuel prices. During this period, adding biofuels to gasoline and diesel will be voluntary.
- In **Germany**, the Ministry of the Environment has put forward a working paper proposing to reduce the allowed share of crop-based biofuels and increase multiple counting options for non-biomass renewable fuels to alleviate pressure on global food security. At the time of writing no decision has been made.
- **Czech Republic** made blending mandates voluntary as of July 1, 2023. This measure was part of a legislative package adopted by the Czech government in May 2022 to address the soaring price of motor fuels. The obligation for suppliers to reduce the emissions, however, remains in place.

More changes may be forthcoming in 2022 and beyond as long as exceptionally high fuel prices persist.

Mandates by Member State:

In order to provide context, current, expired, and future mandates are listed below, by member state in alphabetical order. Mandates based on energy content are expressed in percent energy content/calorific value (% cal), volume-based mandates in percent volume (% vol), and GHG saving mandates in % GHG emission reduction (compared to the hypothetical GHG emissions that would have occurred with the exclusive use of fossil fuels). **For easy reference, mandates applicable in 2022 are in bold.**

Austria

| | Overall Percentage (energy content, % cal) | Biodiesel (% cal) | Bioethanol (% cal) | Advanced Biofuels (% cal) | GHG Emission Reduction (%) * | Cap on crop-based biofuel (% cal) | Double counting* |
|-------------|--|-----------------------------|------------------------------|-------------------------------------|--|---|-------------------------|
| 2012-2018 | 5.75 | 6.3 | 3.4 | | | | Yes |
| 2019 | 5.75 | 6.3 | 3.4 | | 6 | 7 | No |
| 2020 | 5.75 | 6.3 | 3.4 | 0.5 | 6 | 7 | No |
| 2021 | 5.75 | 6.3 | 3.4 | 0.5 | 6 | 7 | No |
| 2022 | 5.75 | 6.3 | 3.4 | 0.5 | 6 | 7 | No |

Source: FAS Vienna based on Fuels Order 2012 (including amendments)

* To reach the GHG reduction target, emission credits from upstream emission reduction (UER) projects and electric power from renewable energy sources used for electrically powered motor vehicles may also be taken into account.

The [Austrian Fuels Order 2012](#), with its amendments in 2014, 2017, 2018, and 2020 lays down all Austrian requirements for biofuels in the transport sector.

Penalties:

Failing to meet the mandates is sanctioned with the following penalties:

| Mandate | Penalty |
|----------------|---|
| Energetic | Bioethanol (3.4%): 43 Euro per GJ under allocated Biodiesel (6.3%): 19 Euro per GJ under allocated |
| GHG reduction | 15 Euro per MT CO ₂ eq under allocated reduction |

In addition to penalties, there is a tax incentive for biofuels. For gasoline with a minimum content of biogenic substances of 46 liters per 1,000 liters, the reduced mineral oil tax is EUR 482 per 1,000 liters

(regular tax rate = EUR 515). For diesel with a minimum content of biogenic substances of 66 liters per 1,000 liters, the reduced mineral oil tax is EUR 397 per 1,000 liters (regular tax rate = EUR 425). Pure biofuels in transportation are fully exempt from the mineral oil tax.

Belgium

| | Overall Percentage | Biodiesel (% cal) | Bioethanol (% cal) | Double counting |
|--|---------------------------|--------------------------|---------------------------|------------------------|
| Until Dec 31, 2016 | | 6.0 | 4.0 | Possible upon approval |
| 2017 - 2019 | | 6.0 | 8.5 | |
| From January 1, 2020, to March 31, 2020 | 8.5 | 6.5 | 6.5 | |
| From April 1, 2020, to December 31, 2020 | 9.9 | 6.5 | 6.5 | |
| 2021 | 9.55 | 6.5 | 6.5 | Max 0.6 % |
| Since January 1, 2022 | 10.2 | 6.5 | 6.6 | Max 0.95 % |

Source: FAS USEU based on [Law of July 7, 2013](#); [Law of July 21, 2017](#); Law of May 4, 2018; Law of December 27, 2021.

Since the increase of the bioethanol mandate at the beginning of 2017, the majority of Belgian gasoline became E10, with the exception of a remnant market for bioethanol-free gasoline for older cars and small engines like lawnmowers.

Failing to meet the mandates is sanctioned with the following penalties:

| Penalty |
|--|
| Penalties for fuels suppliers not meeting the renewable mandates: €900/1,000 liters of missing biofuels, with a maximum of €10,000. In the event of a repeat offence, the fine can be doubled. |

Source: [ePure](#)

Bulgaria

| Biodiesel (% vol) | | Bioethanol (% vol) | | Advanced Biofuels (% cal) | Cap on crop-based biofuels (% vol) | Double counting |
|--------------------------|-----------------|-----------------------|----------|---------------------------------|---|--------------------|
| Since June 1, 2012 | 6 | September 1, 2014 | 6 | - | - | No |
| | | March 1, 2015 | 7 | | | |
| | 6 ¹⁾ | September 1, 2018 | 8 | | | |
| | | March 1, 2019 | 9 | | | |
| | | April 1, 2019 | 9 | | | |

Source: FAS Sofia

1) Since April 1, 2019, the mandate is kept at six percent biodiesel, however, at least one percent of the volume of the biodiesel should be advanced biodiesel.

In 2018, (Official Gazette 91/November 2, 2018) Bulgaria's Parliament amended the nation's Renewable Energy [Law](#) to transpose Directive 2015/1513/EU into national law. The legislation introduced sustainability criteria (traceability) for advanced biofuels. Adopted changes are in Article 47 of the Bulgarian Renewable Energy Law and enforced since April 1, 2019.

The institution supervising the quality of fuel, biofuel mandates, and advanced biofuels on the market is the [Agency](#) for Metrological and Technical Surveillance under the Ministry of Economy. Per the current legislation, the maximum blend with conventional fuel cannot exceed seven percent for biodiesel, and ten percent for bioethanol, to be in line with the EU fuels' quality regulations FQD.

Transposition of RED II into the national law was scheduled for June 2021. However, due to the political stalemate with two Parliamentary elections in April and in November 2021, the work on the new law was delayed. The initial intentions were for a new target of 14 percent renewable energy in transportation by 2030, compared to the current 10 percent target, to be achieved by the incorporation of more advanced biofuels. This includes second generation bioethanol, new production capacities, and more electricity in the renewable energy mix. However, due to the current challenging energy situation and industry's demand for an abolishment and/or temporary cancellation of biofuel mandates, these plans may change. The transposition of RED II into the national law is expected to be debated later this year with the goal that it will be finalized before the end of 2022.

Croatia

| | Overall Percentage (% cal) | Biodiesel | Bioethanol | Double counting |
|---------------------------|--------------------------------------|------------------|-------------------|--|
| 2014 ^{1,2} | 3.18 | 2.83 | 0.35 | Advanced and waste-based biofuels |
| 2015 ^{1,2} | 3.88 | 3.04 | 0.84 | |
| 2016 ^{1,2} | 4.89 | 3.94 | 0.90 | |
| 2017 ^{1,2} | 5.89 | 4.83 | 0.94 | |
| 2018 ^{1,2} | 6.92 | 5.75 | 0.97 | |
| 2019 ^{1,2} | 7.85 | 6.61 | 0.98 | |
| 2020^{1,2} | 8.81 | 7.49 | 1.00 | |
| 2030 ^{3,4} | 14 ⁵ | | | |

Source: FAS Zagreb based on

1. National Action Plan for Renewable Energy Sources to 2020, https://mzoe.gov.hr/UserDocsImages/UPRAVA%20ZA%20ENERGETIKU/Strategije,%20planovi%20i%20programi/National_Action_Plan%20for%20Renewable%20Energy%20Sources%20to%202020.pdf
2. Act on Biofuels for Transport (Official Gazette 65/09, 145/10, 26/11, 144/12, 14/14, 94/18), <https://www.zakon.hr/z/189/Zakon-o-biogorivima-za-prijevoz>
3. The Integrated National Energy and Climate Plan (NECP) for the Republic of Croatia (2021-2030), https://ec.europa.eu/energy/sites/default/files/documents/hr_final_necp_main_en.pdf
4. European Commission, Assessment of the final national energy and climate plan of Croatia, https://ec.europa.eu/energy/sites/default/files/documents/staff_working_document_assessment_necp_croatia_en.pdf
5. The 13.2 percent according to the NECP (2021-2030), was amended to 14 percent.

The new Law on Amendments to the Act on Biofuels for Transport entered into force on May 22, 2021. According to the Integrated National Energy and Climate Plan for the Republic of Croatia (2021-2030) (NECP), the nation aims to have a share of renewable energy sources (RES) in gross final energy consumption at 36.4 percent and the share of RES in final energy consumption in transport at 13.2 percent (later amended to 14 percent) by 2030. Due to high inflation caused by COVID-19 and Russia's invasion of Ukraine in March 2022 the Croatian Government removed some of the penalties for not achieving the blending thresholds for fuel distributors. This measure will be valid until the end of 2022.

Czech Republic

| | Minimum GHG Emission Reduction ¹⁾ (%) | Biodiesel ¹⁾ (% vol) | Bioethanol ¹⁾ (% vol) | Double counting ¹⁾ |
|-------------|--|---|--|--|
| 2014 – 2016 | 2 | 6 | 4.1 | No |
| 2017 | 3.5 | | | |
| 2018 | 3.5 | | | |
| 2019 | 3.5 | | | Yes ²⁾ |
| 2020 | 6 | | | |

Source: FAS Prague based on

1) According to act No. 201/2012 coll., on air protection, as amended by act No. 172/2018

2) According to Government Regulation 189/2018 from August 15, 2018, on Sustainability Criteria for Biofuels and Reduction of GHG Emissions from Fuels

RED II obligations for 2021 - 2030 were transposed into national law with the *Act on Supported Energy Sources and Amendments to Certain Other Acts no. 382 Coll.*, that entered into force on September 15, 2021.

The *Act on Air Protection no. 201/2012*, as later amended (by 284/2021, 282/2021, 261/2021) sets the following renewable energy mandates in transport:

| | Renewable energy in transport (% cal) | Advanced biofuels, biomethane, bioLPG (% cal) | Minimum GHG emission reduction (%) | Biodiesel (% vol) | Bioethanol (% vol) | Double counting ¹⁾ |
|-------------|---|---|--|-----------------------------|------------------------------|---|
| 2021 | - | - | 6 ³⁾ | 6 ⁵⁾ | 4.1 ⁵⁾ | Yes applies only to shares of advanced biofuels raw material IX.A, to biofuels raw material IX.B and to advanced biomethane and bioLPG |
| 2022 | | 0.22 ²⁾ | | | | |
| 2025 | | | | | | |
| 2030 | 9.5 ⁴⁾ | 1.07 ²⁾ | | | | |
| | | | | | | |

¹⁾ According to the Act on Supported Energy Sources and Amendments to Certain Other Acts No. 382 Coll., with effect from September 15, 2021.

²⁾ 2 CZK per MJ of advanced biofuel that was not supplied

- 3) 10 CZK per kg CO_{2eq} reduction that was not achieved
 4) 1 CZK per MJ of energy from renewable sources that was not supplied
 5) 40 CZK per liter of biofuel that was not supplied.

Failing to meet the mandates is sanctioned with the following **penalties**:

Penalties:

| Year | Penalty |
|------------------|--|
| Since 2009 | Biofuel: 40 CZK per liter of biofuel that was not supplied GHG: 10 CZK per kg CO ₂ eq reduction not achieved |
| Since 2022 | Advanced biofuel: 2 CZK per MJ that was not supplied |
| 2030 and onwards | Renewable energy: 1 CZK per MJ that was not supplied |

Denmark

| | Overall Percentage (% cal) | Biodiesel (% cal) | Bioethanol (% cal) | Advanced Biofuels ¹⁾ (% cal) | Double counting |
|-------------------|-------------------------------|----------------------|-----------------------|--|-----------------|
| 2012-2019 | 5.75 | | | | |
| Since 2020 | 7.6 | | | 0.9¹⁾ | |

Source: FAS The Hague based on Stratas

1) The advanced mandate excludes UCO and animal fats.

Until 2020, Denmark did not have sub-targets for specific biofuels. Instead, *Act No. 674* of June 21, 2011, on *Sustainable Biofuels and Reducing Greenhouse Gas Emissions from Transportation* together with *Act No 276* of March 27, 2012, set a general obligation of blending biofuels with fossil fuels at 5.75 percent from January 2012 onwards (Source: Stratas).

In December 2016, Denmark set a 0.9 percent (energy content) mandate for advanced biofuels in transportation that entered into force in 2020. This mandate supports biofuels produced from a number of waste feedstocks but notably excludes used cooking oil and animal fat (Source: F.O.Licht).

In September 2020, the Danish Parliament began negotiating the transition of the transport sector towards the RED II goals for 2030 and beyond. The current blending mandate of 7.6 percent will return to the pre-2020 level of 5.75 percent if a new regulation is not agreed upon (Source ePURE).

Penalties: Fuel suppliers failing to fulfill the mandates may be fined (Source ePURE).

Estonia

| | Overall Percentage (% cal) | Advanced Biofuels (% cal) | Cap on crop-based biofuel (% cal) | Double counting |
|-------------|--------------------------------------|-------------------------------------|---|------------------------|
| 2022 | 7.5 | 0.5 | 4.5 | Yes |
| 2023 | | 0.5 | 2.5 | |
| 2024 | | 0.5 | 0.5 | |
| 2028 | 8.5 | | | |

Source: FAS Warsaw based on the Estonian Liquid Fuel Act passed on January 29, 2003, last amended on June 17, 2020

Penalties:

Failure to comply with the obligation concerning the share of biofuel released for consumption can be fined with:

| Committed by | Penalty |
|---------------------|------------------------|
| Natural person | Up to 300 fine units |
| Legal entity | Up to 10,000,000 Euros |

Source: § 33 of [Liquid Fuel Act of 2003 as amended in June 2020](#)

Finland

| | Overall Percentage (% cal) | Biodiesel | Bioethanol | Double counting |
|-------------|--------------------------------------|------------------|-------------------|------------------------|
| 2014 | 6 | | | |
| 2015 | 8 | | | |
| 2016 | 10 | | | |
| 2017 | 12 | | | |
| 2018 | 15 | | | |
| 2019 | 18 | | | |
| 2020 | 20 | | | |
| ↓ | Increasing to | | | |
| 2029 | 30 | | | |

Source: FAS The Hague based on Stratas

The Finnish Parliament approved a law that sets a gradually increasing biofuel target until it reaches 30 percent in 2029. Additionally, Finland approved a law that mandates an advanced biofuel share of two percent in 2023, increasing to 10 percent in 2030 (Source: IEA Country Report).

On April 7, 2022, the Government of Finland decided to temporarily reduce its 2022 and 2023 biofuel blending obligations by 7.5 percentage points to 12 percent. The reduction of the obligation is intended to reduce the very high fossil and renewable fuel prices. It is anticipated that mandate reduction will have the most significant impact on the HDRD, as Finland's blending mandate is typically mostly achieved through this renewable fuel.

| Penalties |
|--|
| Biofuel: : €0.04 per MJ (\approx €1,675/toe) of missing biofuel |
| Advanced biofuels: €0.03/MJ (\approx 1,260/toe) of missing advanced biofuel |

Source: ePure

France

| | Bioethanol (objective, % cal) | | Biodiesel (objective, % cal) | | Double counting^{1,2} |
|------------------|---|----------------------------|--|----------------------------|--------------------------------------|
| | | Advanced (% cal) | | Advanced (% cal) | |
| 2010 to 2013 | 7 | | 7 | | No |
| 2014 to 2016 | 7 | | 7.7 | | Yes ¹⁾ |
| 2017 to 2018 | 7.5 | | 7.7 | | |
| 2019 | 7.9 | | 7.9 | | Yes ²⁾ |
| 2020 | 8.2 | | | | |
| 2021-2022 | 8.6 | | 8 | | |
| 2023-2027 | | 1.2 | | 0.4 | |
| 2028 and onwards | | 3.8 | | 2.8 | |

Source: FAS Paris

1) Double counting for cellulosic biofuels and waste biofuels up to:

- 0.5% double-counted bioethanol and 0.7% double-counted biodiesel in 2014-2016
- 0.6% double-counted bioethanol and 0.7% double-counted biodiesel in 2017-2018

2) Double counting for cellulosic biofuels and waste biofuels produced from the feedstocks listed in Annex IX of Directive 2009/28/EC except tall oil and tall oil pitch.

From 2019, the share of energy that can be taken into account is limited to a maximum of:

- Seven percent for conventional biofuels including biofuels produced from palm oil fatty acid distillates

- 0.9 percent for used cooking oil and animal fats
- 0.6 percent for tall oil and tall oil pitch
- 0.2 percent for sugar plant residues and starch residues extracted from starch-rich plants (0.4 percent from 2020)

Article 32 of the 2005 Finance Act introduced a tax (renamed *Taxe Incitative relative à l'Incorporation de Biocarburants*, biofuel incorporation incentive tax, in the 2019 Finance Act) penalizing operators who release a proportion of biofuels below the incorporation targets. The operator is taxed on the difference between the national target percentage of renewable energy incorporation and the proportion of renewable energy contained in the products.

Some eligible products, obtained from raw materials derived from biomass not intended for human consumption, can be taken into account for twice their energy value for the determination of the renewable energy share in a scheme called “double counting.” Double counting promotes the emergence of advanced biofuels, whose incorporation mandates will increase from 2023 onward.

Article 43 of the *Energy Transition Law for Green Growth* states that priority should be given to the development of advanced biofuels while preserving investments made in conventional biofuel production.

On February 24, 2021, the French Council of State confirmed the ban on palm oil in biofuels. This decision supported a 2019 vote by members of parliament to exclude palm oil products from the list of biofuels and the list of products eligible for tax incentives. These exclusions took effect on January 1, 2020.

Germany

| | Overall Percentage¹⁾ % Cal | Advanced Biofuels³⁾ (% cal) | GHG Emission Reduction¹⁾ (%) | Cap on crop-based biofuel³⁾ (% cal) | Double counting²⁾ |
|-----------|---|--|---|--|---|
| 2009 | 5.25 overall 4.4 biodiesel 2.8 bioethanol | - | | | - |
| 2010 | | | | | |
| 2011-2014 | 6.25 overall 4.4 biodiesel 2.8 bioethanol | | - | - | 2011-2014 UCO- and waste fatty acids based HVO, UCOME only; TME excluded |

| | | | | | |
|-----------|--|--------------------|-----|-----|----|
| 2015-2016 | | | 3.5 | | No |
| 2017 | | | 4.0 | | |
| 2018-2019 | | | | | |
| 2020 | | 0.05 ⁴⁾ | 6.0 | 6.5 | |
| 2021 | | 0.1 ⁵⁾ | | | |

Sources: FAS Berlin based on

- 1) *Federal Act on Protection against Air Pollution* (Bundes-Immissionsschutzgesetz) in the version of 2013
- 2) Double counting expired at the end of 2014 with the transition to a GHG reduction mandate. Since then, HVO and UCO-based biodiesel enjoy competitive advantages based only on their higher GHG reduction compared to first generation biofuels.
- 3) *38th Implementation Ordinance on the Federal Act on Protection against Air Pollution*
- 4) Companies that put on the market 20 PJ or less of biofuels in the previous year are exempted
- 5) Companies that put on the market 10 PJ or less of biofuels in the previous year are exempted

Germany transposed the REDII directive into national law with the *Law for the Further Development of the Greenhouse Gas Reduction Mandate* of September 24, 2021. This law amends the existing mandates and feedstock caps, introduces additional mandates for advanced biofuels and sustainable aviation fuel, and allows for additional compliance options.

| | GHG Emission Reduction¹⁾ (%) | Advanced Biofuels²⁾ (% cal) | Cap on crop-based biofuel²⁾ (% cal) | Cap on UCO- and animal fat-based biofuels²⁾ (% cal) | Cap on feedstocks with high ILUC risk^{2), 5)} (% cal) | Double/multiple counting | Sustainable Aviation Fuel^{1) 6)} % Cal | |
|-------------|---|--|--|--|--|---------------------------------|---|-----|
| 2022 | 7 | 0.2³⁾ | 4.4 | 1.9 | 0.9 | See table below | - | |
| 2023 | 8 | 0.3 ⁴⁾ | | | 0 | | | |
| 2024 | 9.25 | 0.4 ⁴⁾ | | | | | | |
| 2025 | 10.5 | 0.7 | | | | | | |
| 2026 | 12 | 1 | | | | | | 0.5 |
| 2027 | 14.5 | 1 | | | | | | 0.5 |
| 2028 | 17.5 | 1.7 | | | | | | 1 |
| 2029 | 21 | 1.7 | | | | | | 1 |
| 2030 | 25 | 2.6 | | | | | | 2 |

Sources: FAS Berlin based on [Federal Act on Protection against Air Pollution](#) and [38th Implementation Ordinance on the Federal Act on Protection against Air Pollution](#) (both in German language)

1) Federal Act on Protection against Air Pollution

Until 2026, emission credits from upstream emission reduction (UER) projects may be taken into account to comply with the GHG reduction mandate.

2) 38th Implementation Ordinance on the Federal Act on Protection against Air Pollution

3) Companies that put on the market 10 PJ or less of biofuels in the previous year are exempted

4) Companies that put on the market 2 PJ or less of biofuels in the previous year are exempted

5) Effectively, this means that starting in 2023, biofuels based on palm oil feedstock no longer count against the mandates.

6) Only non-biomass-derived sustainable aviation fuel (SAF) is eligible for counting against this mandate

Multiple counting

| Compliance Option | Conditions | Factor |
|-------------------------------------|---------------------------------|--------|
| Advanced biofuels ¹⁾ | Volumes that exceed the mandate | 2 |
| Hydrogen and PtX fuels ² | If not derived from biomass | 2 |
| Electricity | For road e-vehicles | 3 |

Sources: FAS Berlin based on

1) *38th Implementation Ordinance on the Federal Act on Protection against Air Pollution*

2) *Federal Act on Protection against Air Pollution*

Penalties

Failing to meet the mandates is sanctioned with the following penalties:

| Mandate | Year | Penalty |
|---------------|-------------|---|
| Energetic | 2009-2014: | Biodiesel: 19 Euro per GJ under allocated Bioethanol: 43 Euro per GJ under allocated |
| GHG reduction | 2015 – 2021 | 0.47 Euro per kg CO ₂ eq under allocated reduction |
| | Since 2022 | 0.60 Euro per kg CO ₂ eq under allocated reduction |
| SAF | Since 2022 | 70 Euro per GJ under allocated |

Source: FAS Berlin based on *Federal Act on Protection against Air Pollution*

Proposed changes

In response to Russia's invasion of Ukraine and in an effort to reduce the share of crops that are used to produce biofuels the German Federal Ministry of the Environment and for Consumer protection (BMUV) issued a concept paper that proposes to:

- tighten the cap on crop-based biofuels and phase out agricultural feedstocks altogether by 2030;
- increase the multiplication factors for other compliance options;
- postpone the phase out of UER measures from the end of 2026 to 2028.

The new caps would be:

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------|------|------|------|------|------|------|------|------|------|
| Current cap | 4.4 | | | | | | | | |
| Proposed cap | 4.4 | 2.5 | 2.3 | 2.1 | 1.9 | 1.9 | 1.2 | 1.2 | 0 |

The new multiple counting factors would be

| Compliance Option | Conditions | Factor | Proposed Factor |
|--------------------------|-----------------------------|---------------|------------------------|
| Hydrogen and PtX fuels | If not derived from biomass | 2 | 3 |
| Electricity | For road e-vehicles | 3 | 4 |

The changes are still under discussion and subject to change during the legislative process.

Greece

| | Overall Percentage (% cal) | Biodiesel (% cal) | Bioethanol (% cal) | Double counting |
|-------------------|--------------------------------------|-----------------------------|------------------------------|------------------------|
| 2014-2016 | 5.75 | 5.75 | - | No |
| 2017-2018 | 7.0 | 7.0 | - | |
| 2019 | | | 1.0 | |
| Since 2020 | 10.0 | | 3.3 | |

Source: FAS Rome

In 2012, decision 4062 (FEK 70/A/30.3.2012) harmonized the Greek legislation with European Commission Directive 2009/28/EC. As a result, the increased mandate of 10 percent in 2020 can be met either by domestic production or imports. Note: The previous lower mandate was only allowed to be filled through domestic production.

Law 3054/2002 and its amendments mandates that producers and distributors of petrol and diesel must blend their fuels with a certain amount ("quota") of biofuels. The quota is specified in the "distribution scheme," reviewed every year, and set at seven percent for 2019 and 2020. This translates into 133 million liters for 2020 and 110 million liters for 2021.

Hungary

| | Renewable energy in transport (% cal) | Biodiesel (% cal) | Bioethanol (% cal) | Advanced Biofuels (% cal) | Double counting |
|-------------|---------------------------------------|-------------------|--------------------|---------------------------|---|
| 2014 | 7.0 | 4.9 | 4.9 | - | Waste materials and residual products from agricultural and forestry production including biofuels from non-food cellulosic and ligno-cellulosic materials. |
| 2015 | 7.2 | 4.9 | 4.9 | | |
| 2016 | 7.8 | 4.9 | 4.9 | | |
| 2017 | 7.7 | 4.9 | 4.9 | | |
| 2018 | 7.7 | 4.9 | 4.9 | | Biofuels derived from feedstocks listed in Annex 2 of the Government Decree No. 279/2017 (in Hungarian) |
| 2019 | 8.1 | 6.4 | 6.4 | | |
| 2020 | 11.6 | 8.2 | Min. 6.1 | | |
| 2021 | | 8.2 | Min. 6.1 | | |
| 2022 | | 8.4 | Min. 6.1 | 0.2 | Biofuels derived from feedstocks listed in Annex 2 of the Government Decree No. 821/2021 (in Hungarian) |
| 2025 | | | | 1 | |
| 2030 | 14 | | | 3.5 | |

Source: FAS Budapest

Hungary has set the target of a minimum 14 percent share of renewable energy in transport by 2030. This obligation entered into force with the [CXVII/2010 Act](#) (in Hungarian) on promoting the use of renewable energy and the reduction of GHG emissions of energy used in transport. To meet this requirement, Hungary increased the share of crop based biofuels to roughly seven percent, and the share of advanced biofuels produced from waste and biogas will grow to 3.5 percent of energy consumption in transport according to the [National Energy and Climate Plan](#). The remaining share of the target will be achieved through an increase of electricity use in transport as GHG emissions should be reduced by at least 40 percent by 2030, compared to 1990. This means, gross GHG emissions may not exceed 56.19 million MT CO₂ equivalent in 2030.

Penalties

Penalties imposed on fuel distributors for failing to meet the six percent GHG emissions reduction mandate stipulated in the [CXVII/2010 Act](#) (in Hungarian).

| Year | Penalty/MT CO ₂ equivalent under allocated reduction |
|-----------|---|
| 2017-2019 | HUF 100,000 |

| | | |
|------------|--|--|
| Since 2020 | If GHG reduction in energy units is 0-4% | If GHG reduction in energy units is 4-6% |
| | HUF 100,000 | HUF 10,000 |

Source: <https://njt.hu/jogszabaly/2010-117-00-00>

Ireland

| | Overall Percentage (% vol of fossil fuel to be added) | Equals % vol of total fuel used | Double counting |
|-------------------|---|--|--|
| 2010 | 4.166 (equal to 4 liters of biofuel for 96 liters of fossil fuel) | 4 | UCO |
| 2011 - 2013 | 4.166 | 4 | UCO & Cat 1 Tallow |
| 2014 - 2016 | 6.383 | 6 | UCO, Cat 1 Tallow, Spent Bleached Earth (SBE), Palm Oil Mill Effluent (POME) |
| 2017 - 2018 | 8.695 | 8 | UCO, Cat 1 Tallow, Spent Bleached Earth (SBE), Palm Oil Mill Effluent (POME), Whey Permeate |
| 2019 | 11.11 | 10 | |
| Since 2020 | 12.359 | 11 | |

Source: FAS London

Ireland will carry out public consultations on future obligation rate increases every two years post-2020. Further information on Ireland's Biofuels Obligation Scheme can be found at: <http://www.nora.ie/biofuels-obligation-scheme.141.html> and <https://www.nora.ie/biofuels-obligation-scheme/administration.142.html>.

Also see: Section 44C(3)(b) of the NATIONAL OIL RESERVES AGENCY ACT 2007
<http://revisedacts.lawreform.ie/eli/2007/act/7/revised/en/html#SEC44C>

Italy

| Year | Overall Percentage, incl. Advanced Biofuels (% cal) | Advanced Biofuels necessary for fulfilling the targets (% cal) | |
|-------------|---|--|------------------------------|
| | | % of advanced biomethane | % of other advanced biofuels |
| 2015 | 5 | - | - |
| 2016 | 5.5 | - | - |
| 2017 | 6.5 | - | - |
| 2018 | 7 | 0.6 | - |
| 2019 | 8 | 0.8 | - |
| 2020 | 9 | 0.9 | - |
| 2021 | 10 | 2.0 | 0.5 |
| 2022 | 10 | 2.5 | 0.6 |
| 2023 | 10 | 3.0 | 0.5 |

Source: FAS Rome

Italy mandated the use of advanced biofuels through Ministerial Decree on October 10, 2014. The Italian Ministry of Economic Development amended this mandate with a new decree on December 30, 2020.

On November 8, 2021, the Italian Ministry of Ecological Transition set the percentage of other advanced biofuels for 2023 through Legislative Decree No. 2021/199 implementing EU Directive No. 2018/2001 (RED II) regarding the promotion of the use of energy from renewable sources.

Penalties:

As of 2020, fuels suppliers not complying with at least 95 percent of the renewable mandates have to pay a penalty of €750 per missing certificate. A certificate is equivalent to 10 Gcal \approx 1 toe or 5 Gcal \approx 0.5 toe for advanced biofuels. The penalty for advanced biofuels can be reduced if insufficient market availability is demonstrated.

Latvia

| | Minimum GHG Emission Reduction ¹⁾ (%) | Cap on crop-based biofuel ⁵⁾ (% cal) |
|-------------------|--|---|
| Since 2021 | 6 | 7 |

Source: [Regulation No. 597](#) of 2018 on calculating and reporting the amount of GHG emissions from the life cycle of transport energy and its reduction, as amended in 2019

1) To comply with the mandate fuel suppliers may also use:

- alternative fuels other than biofuels;
- electricity used for charging electric vehicles for final consumption in transport;
- implementing upstream emission reductions or purchasing upstream emission reductions implemented by another fuel supplier or economic operator.

In accordance with Cabinet Regulation No. 332 of 2000 on conformity assessment of petrol and diesel fuel, last amended in 2020, in Latvia, only diesel with biodiesel content of 6.5 percent by volume of the total amount of end product, and petrol with 5 percent (for 98-octane gasoline) or 9.5 percent (95-octane gasoline) of bioethanol content by volume of the total amount of petrol may be sold.

The requirement on the mandatory admixture of 6.5 percent of biodiesel does not apply to Class 0, 1, 2, 3 and 4 diesel for use in arctic or severe winter conditions during the time period from 1 November to 1 April.

Latvia will suspend mandatory blending of biofuels for the period of July 1, 2022 thru December 31, 2023, in an effort to control rising fuel prices. During this period, adding biofuels to gasoline and diesel will be voluntary.

Tax incentives

Until 2021, the Latvian tax law has aided the blending of biofuels by reducing the rate of excise duties. In 2021, changes were introduced that raised the reduced rates (i.e., reducing the reduction) of excise duty on biofuels.

As of 1 February 2021:

- the reduced rate of excise duty on biodiesel used as fuel is abolished and a minimum duty rate applies - EUR 330 per 1000 liters of biodiesel entirely derived from biomass and paraffinized diesel from biomass;
- the reduced tax rate is increased from EUR 152.7 to EUR 360 per 1000 liters for unleaded petrol with a high bioethanol content (from 70-85 percent by volume) (fuel E85).

As of 1 July 2021:

- the reduced excise duty rate on biodiesel used for heating is abolished and a minimum duty rate applies - EUR 21 per 1000 liters of biodiesel entirely derived from biomass and paraffinized diesel fuel derived from biomass, provided that those products are labelled (marked);
- a single tax rate is set for petroleum products used for heating, applying EUR 60 per 1000 liters, irrespective of the blending of biofuels, if those petroleum products are labelled (marked).

However, the excise duty rates still favor biofuels, as the Latvian excise duty rates on unleaded petrol is EUR 509 per 1000 liters, on unleaded petrol is EUR 594 per 1000 liters, and on diesel EUR 414 per 1000 liters.

Lithuania

| | Overall Percentage (% cal) | Advanced Biofuels (% cal) | Cap on crop-based biofuel (% cal) | Cap on UCO- and cat I and II animal fat-based biofuels (% cal) | Double counting |
|-------------|--------------------------------------|-------------------------------------|---|--|------------------------|
| 2021 | | | 6.2 | | Yes |
| 2022 | 6.8 | 0.2 | No more than 1 % higher than the total share in 2020 | 1.7 | |
| 2023 | 7.2 | 0.4 | | | |
| 2024 | 7.8 | 0.7 | | | |
| 2025 | 8.6 | 1.0 | | | |
| 2026 | 9.8 | 1.4 | | | |
| 2027 | 11.3 | 1.8 | | | |
| 2028 | 12.9 | 2.2 | | | |
| 2029 | 14.7 | 2.7 | | | |
| 2030 | 16.8 | 3.5 | | | |

Source: FAS Warsaw based on the Lithuanian Law on Alternative Fuels of 2021

Mandatory blending of biofuels into fossil fuels.

Fuel sales points must sell the following fuels meeting the Lithuanian or European standards:

- petrol containing a minimum of 10 percent of biofuel (blending into 98-octane petrol is optional);
- diesel containing at least 7 percent of biofuel.

The Lithuanian Parliament on March 23, 2021, approved the *Law on Alternative Fuels (LAF)*. Under the law, the transport sector will be encouraged to shift to electricity, biomethane, and hydrogen, increasing

the requirements for blending biofuels. The LAF establishes clear directions for the development of alternative fuel vehicles and the infrastructure required for them.

The LAF introduces progressively increasing obligations for fuel suppliers regarding the use of biofuels, which will be possible to implement more flexibly over the years. In order to encourage the use of biomethane and other advanced biofuels and hydrogen, their blending will be offset by twice the energy value. In order to comply with the obligation provided for in LAF, fuel suppliers must ensure that each liter of petrol supplied to the internal market contains at least 6.6 percent of biofuels and that each liter of diesel supplied to the internal market contains at least 6.2 percent of biofuels, calculated on the basis of the total energy value of the mixture of fuels and biofuels.

Excise duty concession for biofuels

Biofuel and fuel blends complying with the requirements laid down in the *Law on Excise Duty* and the standards EN 14214 and CEN/TS 15293 adopted by the European Committee for Standardization are subject to an excise duty rate reduced in proportion to the percentage of impurities of biological origin in the biofuel and fuel blend.

The Netherlands

| | Overall Percentage (% cal) | Of which advanced biofuels¹⁾ (% cal) | Cap on conventional crop-based biofuel (% cal) | Double counting²⁾ |
|-------------|--------------------------------------|---|--|-------------------------------------|
| 2014 | 5.5 | | | Yes |
| 2015 | 6.25 | | | |
| 2016 | 7.0 | | | |
| 2017 | 7.75 | | | |
| 2018 | 8.5 | 0.6 | 3 | |
| 2019 | 12.5 | 0.8 | 4 | |
| 2020 | 16.4 | 1.0 | 5 | |
| 2021 | 17.5 | 1.2 | 5 | |
| 2022 | 16.4 | 1.7 | 1.2 | |
| 2023 | 17.4 | 2.3 | 1.2 | |
| 2024 | 18.5 | 2.9 | 1.2 | |
| 2025 | 19.8 | 3.5 | 1.2 | |

Source: FAS The Hague based on Dutch [Decision Transport Energy 2021](#) and [Amendment of Environmental Law](#)

1) Advanced biofuels must be produced from waste, not including used cooking oil and animal fats of category I and II (NEA).

2) Dutch Law provides the possibility of double-counting biofuels from waste and residues

Since October 1, 2019, Dutch distributors are obliged to offer E10 at their stations. At least half of the offered blends must be E10 (Source: Dutch Government.)

Penalties: A fuel supplier failing to fulfill the quota obligation is liable and can be brought to court for committing an economic violation (source: ePURE).

Poland

| | Overall Percentage (% cal) | Biodiesel (% cal) | Bioethanol (% cal) | Double counting |
|-------------|--------------------------------------|-----------------------------|------------------------------|------------------------|
| 2014 - 2017 | 7.1 | | | Yes |
| 2018 | 7.5 | | | |
| 2019 | 8.0 | | | |
| 2020 | 8.5 | | | |
| 2021 | 8.7 | | | |
| 2022 | 8.8 | | | |
| 2023 | 8.9 | | | |
| 2024 | 9.1 | | | |

Source: FAS Warsaw based on the Polish *act on bio-components and liquid biofuels* as amended by the Polish Parliament in July 2019.

Draft legislation for RED II implementation

In February 2022, a draft of the act that will amend the act on bio-components and liquid biofuels was published by the Ministry of Climate and Environment. It includes provisions implementing the RED II directive into the Polish legal system. The draft needs to be approved by the Polish Government and passed by the Parliament.

The draft introduces the National Indicative Target (NIT), concerning the share of energy in transport. The justification of the project indicates that in 2021, this share was 8.7 percent, in the current year it is to be 8.8 percent, and in the year 2030, it is to be 14.8 percent. The target is higher than the one specified in the RED II directive, which results from maintaining, in national regulations, the so-called reduction coefficient that makes it possible to reduce the requirements for entities realizing NIT on condition of using, in a given year, biocomponents produced, for example, from domestic agricultural raw materials.

According to the provisions of the draft, the reduction coefficient is one of the ways to reduce the achievement of the indicative target, and the substitution fee is another. The fee would be paid if an entrepreneur meets the target at the minimum level, i.e. 80 percent in 2022. However, it is stipulated that the substitution fee is to be gradually phased out by 2030.

The draft act also establishes the maximum share of bio-components that can be produced from food or feed crops (1st generation bio-components). According to the final report published by Eurostat concerning achievement of the goals described in the RED I directive in 2020, including achievement of the goal of minimum participation of renewable energy in transport and the structure of achieving that goal, the share of biocomponents produced from food and feed crops in road and railroad transport in Poland in 2020 amounted to 5.1 percent. In view of the above, the maximum limit for the use of bio-

components from food and feed crops for Poland after 2020 is 6.1 percent, which has been taken into account in the draft act. In turn, the minimum share of advanced bio-components has been fixed at the level of at least 3.5 percent of the overall volume of liquid fuels or liquid biofuels consumed in transport.

Portugal

| | Overall Percentage (% cal) | Biodiesel (% cal) | Bioethanol/ ETBE (% cal) | Advanced Biofuels (% cal) | Cap on conventional crop-based biofuel (% cal) | Double counting |
|-------------------|--------------------------------------|-----------------------------|--|---|--|----------------------------|
| 2014 | 5.5 | - | - | | | Yes |
| 2015 | 7.5 | - | 2.5 | | | |
| 2016-2018 | 7.5 | - | - | | | |
| 2019 | 7 | - | - | | | |
| 2020 | 10 | - | - | | | |
| Since 2021 | 11 | - | - | 0.5 | 3.1¹⁾ | |

Sources: FAS Madrid based on

Consumption mandates: [Decree-Law 117/2010](#), [Decree-Law 69/2016](#), [Law 42/2016](#), Budget Law for 2018 and 2019 and [Decree-Law 8/2021](#) as amended by [Rectification Declaration 9-A/2021](#).

Double counting: [Decree-Law 117/2010](#) and Annex III in [Implementing Order 8/2012](#).

1) This value was determined by adding one percent to the energy-based incorporation value registered in 2020.

A mandatory target of 0.5 percent of advanced biofuels (raw materials included in Part A of Annex IV of Decree-Law 8/2021) entered into force in 2021. [Decree Law 60/2020](#) introduced a 3.5 percent energy basis mandate for advanced biofuels in transport that will take effect in 2030.

At the drafting time of this report, Portugal's biofuel consumption target for 2022 has not been published. However, Portuguese obligated companies are currently operating under the assumption that the 11 percent mandate established for 2021 will be rolled over to 2022.

Failing to meet the mandates is sanctioned with the following penalties:

| Year | Penalty |
|-------------|--|
| Since 2011 | 2,000 Euros per TdB (Biofuel Entitlement, equals a Ktoe) that the obliged party fails to meet. |

Source: FAS Madrid based on [Implementing Regulation 301/2011](#)

For additional information about Portugal's biofuel sector, see GAIN Report PO2020-0001 *Portugal Biofuels Policy and Market* available through the FAS report database at <https://gain.fas.usda.gov/#/search>.

Romania

| | Overall Percentage (% cal) | Biodiesel (% cal) | Bioethanol (% cal) | Double counting |
|--------------------|-------------------------------|----------------------|-----------------------|-----------------|
| 2014 - 2015 | N/A | 5.0 | 4.5 | Yes |
| 2016 - 2018 | | 6.5 | | |
| 2019 | | | 8.0 | |
| 2020 ¹⁾ | 10 | 6.5 | 8.0 | |
| Since 2021 | 10 | 6.5 | 8.0 | |

Sources: FAS Bucharest based on Government Decisions 1121/2013 and 931/2017

1) During the COVID related state of emergency fuel suppliers were able to apply for a temporary exemption (4/16/2020 to 5/14/2020) from blending mandates. For details, please see report: *RO2020-0012 Romania Approves New Biofuels Blending Exemptions* available through the FAS report database at <https://gain.fas.usda.gov/#/search>

Those failing to meet the mandates are sanctioned with the following penalties:

| Year | Penalty |
|------------|--|
| Since 2019 | RON 70,000-100,000 (approx. USD 17,500-25,000) |

Source: FAS Bucharest based on provisions of Emergency Ordinance 80/2018

Romania is in the process of transposing RED II into Romanian national legislation. For additional information about Romania's biofuels sector, please see Romania Biofuels Market Overview available through the FAS report database at <https://gain.fas.usda.gov/#/search>.

Slovakia

| | Overall Percentage (% cal) | Bioethanol (% vol) | Biodiesel (% vol) | Advanced Biofuels (% cal) | Double Counting |
|-------------|-------------------------------|-----------------------|----------------------|------------------------------|-----------------|
| 2018 | 5.8 | 6.5 | 6.9 | | Yes |
| 2019 | 6.9 | | | 0.1 | |
| 2020 | 7.6 | Minimum E9* | Minimum B6.9* | 0.5 | |
| 2021 | 8.0 | | | 0.3 | |
| 2022 | 8.2 | | | | |
| 2023 | | | | | |
| 2024 | | | | | |
| 2025-2030 | | | | 0.75 | |

Source: FAS Prague based on

- Act on the Support of Renewable Energy Sources and Highly Efficient Cogeneration, and on Amendments to Certain Acts No. 309/2009 Coll. and
- Act No. 362/2019 Coll. amending Act No. 609/2007 Coll., on excise duty on electricity, coal and natural gas, and amending Act No. 98/2004 Coll., on excise duty on mineral oil

*Act No. 362/2019 Coll. stipulates that motor gasoline sold on the Slovak market must contain at least nine percent of a bioethanol component (ETBE/bioethanol) in one liter, and diesel must contain at least 6.9 percent of a biodiesel component, as of January 1, 2020.

An extensive amendment to the *Act on Support of Renewable Energy Sources and Highly Efficient Cogeneration, and on Amendments to Certain Acts No. 309/2009 Coll.* that transposes the RED II to Slovak national legislation is currently in preparation and is expected to enter into force as of October 1, 2022.

Slovenia

| | Overall Percentage (% cal) | Biodiesel/ Bioethanol | Advanced Biofuels (% cal) | GHG Emission Reduction (%) | Cap on crop-based biofuels (% cal) | Double counting |
|-------------|----------------------------|-----------------------|---------------------------|----------------------------|------------------------------------|---|
| 2017 | 6.2 | No specific target | | 6 | 7 | Yes (wastes, residues, non-food cellulosic material, lingo-cellulosic material) |
| 2018 | 7.0 | | | 6 | 7 | |
| 2019 | 8.4 | | | 6 | 7 | |
| 2020 | 10.0 | | | 6 | 7 | |
| 2021 | 10.0 | | | 6 | 7 | |
| 2022 | 10.1 | | | 0.2 | 6 | |

Source: FAS Vienna based on

Regulation on Renewable Energy Sources in Transport 2016 (including amendments), [ePure](#)

The *Regulation on Renewable Energy Sources in Transport 2016* ([Uredba o obnovljivih virih energije v prometu](#)) and its amendment in 2021 lays down Slovenian requirements for biofuels in the transport sector.

Penalties:

Suppliers failing to meet the renewables mandates must pay a fine amounting between EUR 50,000 and 2 percent of their annual turnover from the sales of transport fuels (Source: ePure).

Spain

| | Overall Percentage (% cal) | Biodiesel (% cal) | Bioethanol (% cal) | Advanced Biofuels (% cal) | Double counting |
|-------------|--------------------------------------|-----------------------------|------------------------------|-------------------------------------|------------------------|
| 2013-2015 | 4.1 | 4.1 | 3.9 | | No |
| 2016 | 4.3 | - | - | | |
| 2017 | 5 | - | - | | |
| 2018 | 6 | - | - | | |
| 2019* | 7 | - | - | | Yes* |
| 2020 | 8.5 | - | - | | |
| 2021 | 9.5 | - | - | 0.1 | |
| 2022 | 10 | - | - | 0.2 | |

Source: FAS Madrid based on [Royal Decree-Law 4/2013](#), [Royal Decree 1085/2015](#), and [Royal Decree 205/2021](#).

* In 2019, double counting was only in place in the last quarter of the year.

[Royal Decree 235/2018 amending Royal Decree 1597/2011](#) (Spanish language only) classifies raw materials in two groups for double counting purposes:

Group A (qualify as advanced): Algae, bacteria, Organic Fraction of Municipal Waste (OFMSW), industrial residues not fit for food or feed use, forest residues and other cellulosic or lignocellulosic material, sewage sludge, straw, cobs cleaned of kernels of corn, husks, animal manure, glycerin, tall oil pitch, palm oil mill effluent and empty palm fruit bunches, bagasse, grape marcs, wine lees, nut shells, and renewable liquid and gaseous fuels of non-biological origin.

Group B (do not qualify as advanced): Used Cooking Oils and Animal Fats (Categories I and II according to [Regulation \(EC\) 1069/2009](#)).

This same Royal Decree set January 1, 2019, is the beginning of the implementation of double counting in Spain. Nevertheless, the double counting was only fully enforced during the fourth quarter of 2019 after [detailed guidelines](#) (Spanish language only) were issued by a *National Commission of Markets and Competition* (CNMC.)

Those failing to meet the mandates are sanctioned with the following penalties:

| Year | Penalty |
|-------------|--|
| 2008 - 2021 | 763 Euros per missed certificate (each certificate equals one Ktoe.) |
| Since 2022 | 1,623 Euros per missed certificate (each certificate equals one Ktoe.) |

Source: FAS Madrid based on [Resolution of 17 of December of 2021](#) by the Ministry for Ecological Transition and Demographic Challenge.

For additional information about Spain's biofuels sector, see GAIN Report SP2020-0026 available through the FAS report database at <https://gain.fas.usda.gov/#/search>.

Sweden

The main support program to foster renewable fuels for transport purposes is a biofuel mandate scheme. Furthermore, biofuels for transport purposes are exempted from Sweden's energy tax (depending on biofuel type and blending) and CO₂ taxes (all biofuels). On July 1, 2018, the Swedish government executed a system which builds on a gradual increase in reduction of greenhouse gas emissions through the addition of biofuels to gasoline and diesel. This decrease shall increase over time with specific control stations with the goal of a 70 percent decrease in greenhouse gas emissions by the transport sector by 2030 compared to 2010 (Source: FAS The Hague based on EurObserver Country Report and IEA Country Report).

Penalties:

Fuel suppliers failing to fulfill their GHG obligations must pay a penalty per kgCO₂eq of SEK 5 (€0.48) for petrol and SEK 4 (€0.39) for diesel. Suppliers selling fossil fuels with no biofuel content must pay a fee of SEK 0.39/l of petrol (€0.038) and SEK 2.69/l of diesel (€0.26). High blends, such as E85, ED95, HVO100, and FAME100, do not count towards the achievement of the obligations and are incentivized through a tax reduction (source ePURE).

Related reports: Please check the FAS report database for related reports at <https://gain.fas.usda.gov/#/search>.

Attachments:

No Attachments.