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**Report Highlights:**

Spain's bioethanol consumption will likely grow in 2027, driven by the recently introduced greenhouse gas (GHG) reduction targets, a larger overall energy-based blending mandate, and the expanding gasoline pool. Limiting mandate eligibility to undenatured bioethanol is expected to build preference for domestic production. However, the lack of a bioethanol-specific target, the volume-based hydrocarbon tax, and the cap on crop-based biofuels will likely limit further expansion.

**Disclaimer:** This report presents the views of the authors and does not reflect the official views of the U.S. Department of Agriculture (USDA). The data are not official USDA data. Official government statistics on biofuels are not available in many instances. It is recommended that this report be read in conjunction with the latest [EU Biofuels GAIN Report](#).

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## Executive Summary

Spain's biofuel sector is driven by regulatory developments and overall fuel demand. The [National Integrated Energy and Climate Plan \(PNIEC\) 2023-2030](#) gives electrification a prominent role and pairs it with ambitious advanced biofuel targets to decarbonize transport.

Spain implemented growing biofuel mandates each year through 2026. Gasoline consumption began recovering in 2021 and continues to grow in parallel to the expanding fleet of hybrid vehicles, which rely on gasoline for their non-electric power.

Spain produces more bioethanol than it consumes, which makes it a net exporter. Most of its bioethanol exports go to other EU Member States, while imports originate from the United States and Pakistan.

[Royal Decree 611/2026](#), which transposes the revised Renewable Energy Directive (RED II Plus), should create new bioethanol demand as Spain shifts to a combination of consumption mandates and GHG-reduction targets by 2027. The decree also introduces an advanced bioethanol mandate and limits compliance eligibility to undenatured bioethanol. Both measures are expected to boost domestic consumption. Nevertheless, volume-based (rather than energy-based) fuel taxation and strict caps on crop-based biofuels continue to limit further growth.

## Regulatory Framework in Spain<sup>1</sup>

Spain's biofuel consumption **mandates** are set through ministerial orders and royal decrees – and are the main driver of Spain's biofuel demand. In September 2024, the government of Spain released the updated national energy and climate strategy, or the PNIEC, which outlines its's long-term energy transition vision. The plan gives electrification a prominent role, and pairs it with ambitious advanced biofuel goals to decarbonize transport.

In 2014, Spain phased out **tax incentives** for biofuels and lowered its mandate, which left consumption targets as the sole incentive for blending. In 2019, the Spanish government introduced sustainability requirements and set caps on double counting, **crop-based** and **feedstocks with high indirect land-use change (ILUC) risk**. These measures aim to incentivize the move towards advanced biofuels made from waste and residues.

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<sup>1</sup> The EU adopted the second iteration of the REDII for 2021-2030 in 2018. Most of the provisions of this [Directive 2018/2001](#) entered into force on January 1, 2021. [RED II](#) was incorporated into Spanish Law by [Royal Decree 205/2021](#) and [Royal Decree 376/2022](#). Revised RED II ([Regulation 2023/2413](#)).

The revised REDII ([Directive 2023/2413](#)) was published in October 2023 to align with the EU's Green Deal goals of a 55 percent reduction of greenhouse gas emissions by 2030 (versus 1990) and carbon neutrality by 2050. It entered into force on November 20, 2023, giving Member States an 18-month period to transpose most of the provisions into national law. Spain's [Amended RED II transposal](#) public comment period ended in September 2024.

## Biofuel Targets and Compliance

**Table 1. Consumption Mandates, Minimum and Maximum Share Requirements<sup>2</sup>**

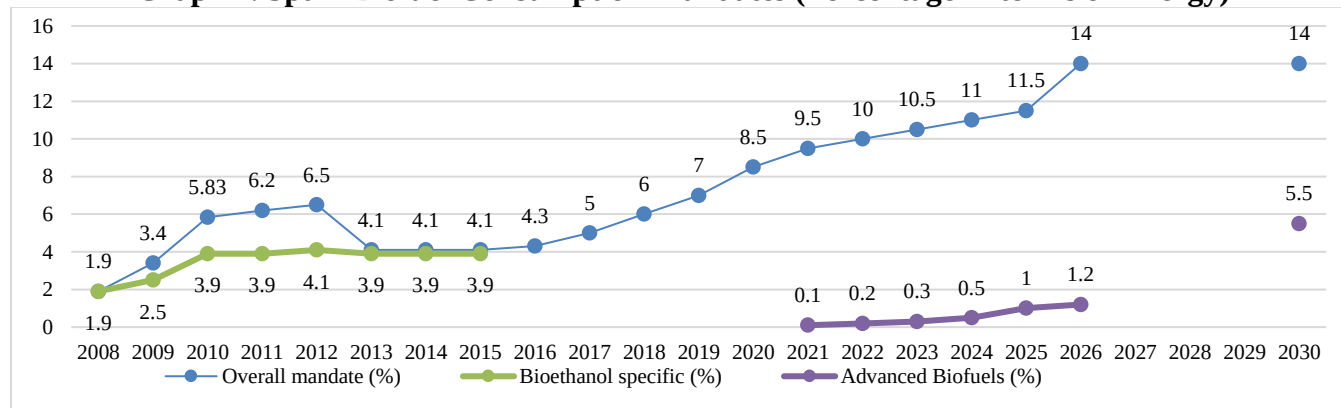
|             | Overall Target (% cal) | Annex IX- Part A Target (% cal) | Annex IX- Part B Cap (% cal) | Cap on High ILUC Risk Biofuels (% cal) <sup>3</sup> | Cap on crop-based biofuels (% cal) | Double counting |
|-------------|------------------------|---------------------------------|------------------------------|-----------------------------------------------------|------------------------------------|-----------------|
| 2022        | 10                     | 0.2                             | 1.7                          | 3.1                                                 | 7                                  | Yes             |
| 2023        | 10.5                   | 0.3                             |                              | 3.1                                                 | 3.5                                |                 |
| 2024        | 11                     | 0.5                             |                              | 1.5                                                 | 3                                  |                 |
| 2025        | 11.5                   | 1                               |                              | 0                                                   | 2.6                                |                 |
| <b>2026</b> | <b>14</b>              | <b>1.2</b>                      |                              | <b>0</b>                                            | <b>2.6</b>                         |                 |
| 2030        | 14                     | 5.5                             |                              | 0                                                   | 2.6                                |                 |

Source: FAS Madrid based on [Royal Decree-Law 4/2013](#), [Royal Decree 1085/2015](#), [Royal Decree 205/2021](#), [Resolution of 30 of March 2021](#), [Resolution of 29 of September 2021](#), [Error! Hyperlink reference not valid.](#), [Royal Decree 376/2022](#), [Ministerial Order TED 1342/2022](#), Ministerial [Order TED 728/2024](#), and [Royal Decree 5/2026](#).

Obligated parties that fail to meet the mandates are assessed a penalty of 1,623 Euros per missing certificate (each certificate equals one Ktoe.)<sup>4</sup> To calculate compliance, Spain applies a 4x multiplier for electricity used in road transport, a 1.5x multiplier for renewable energy used in trains, and, as of 2024, a 1.2x multiplier for renewable marine and aviation biofuels- provided the feedstocks are non-crop based.

Consumption mandates can be consulted in **Graph 1**.

**Graph 1. Spain Biofuel Consumption Mandates (Percentage in terms of Energy)**



Source: FAS Madrid based on [Royal Decree-Law 4/2013](#), [Royal Decree 1085/2015](#), [Royal Decree 205/2021](#), [Resolution of 30 of March 2021](#), [Resolution of 29 of September 2021](#), [Error! Hyperlink reference not valid.](#), [Royal Decree 376/2022](#), [Ministerial Order TED 1342/2022](#), Ministerial [Order TED 728/2024](#), and [Royal Decree 5/2026](#).

<sup>2</sup> Annex IX Part A lists Advanced biofuels' feedstock; Annex IX Part B defines feedstock credited double against mandates. Spain has defined a roadmap for advanced feedstock use by defining specific mandates (Part A). The country has capped the part of the overall target that can be met through double counting (Part B).

<sup>3</sup> [Ministerial Order 728/2024](#) established the limit for high ILUC biofuels at 1.5 percent in 2024 and at zero percent as of 2025, unless they are low-ILUC risk certified.

<sup>4</sup> FAS Madrid based on [Resolution of 17 of December of 2021](#) and [Ministerial Order TED 728/2024](#) by the Ministry for Ecological Transition and Demographic Challenge.

For more information about biofuels mandates and how these are structured in other EU Member States (MS), please see GAIN report [Biofuels Mandates in the EU by Member State -2026](#).

While individual distributors may fall short of their mandatory blending targets, Spain as a country meets or even exceeds its consumption mandates. When blending beyond mandates, companies generate an excess of certificates in the **SICBIOS** (*Sistema de Certificación de Biocarburantes*) - the official Information System for the Certification of Biofuels in Spain. These excess certificates may be used to offset other obliged parties' deficit. Through the Compensation Fund, penalties from non-compliant parties are redistributed to those who over-delivered. Companies can also “bank” surplus certificates to the following calendar under [Order TED/728/2024](#), fulfilling up to 30 percent of their obligations using prior year surplus.

## Types of Certificates

According to [Order TED/728/2024](#), as of 2025, there are six types of Renewable fuel certificates (RFCs) that are issued for each type of biofuel or renewable fuel sold or consumed in the Spanish territory. The type of certificate issued depends on the nature of the raw material used and the limits and targets to which they apply.

**Table 2. Types of Certificates**

| Type | Feedstock                                                                                                                      | Target / Limit                                                                                                | Double Counting | Advanced |
|------|--------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-----------------|----------|
| A    | Double-count raw materials, established in <b>Part A of Annex I</b> of <a href="#">Royal Decree 376/2022</a> .                 | Target<br><a href="#">Royal Decree 1085/2015</a> ..                                                           | YES             | YES      |
| B    | Double-count feedstocks, as established in <b>Part B of Annex I</b> of <a href="#">Royal Decree 376/2022</a> .                 | 1.7 percent limit <a href="#">Royal Decree 1085/2015</a> .                                                    | YES             | NO       |
| C    | Food and feed crops, excluding those with a high ILUC risk.                                                                    | Limit established in <a href="#">Order TED/1342/2022</a>                                                      | NO              | NO       |
| CI   | Raw materials with High ILUC                                                                                                   | Limit established in Article 10 of <a href="#">Order TED/728/2024</a> and <a href="#">Order TED/1342/2022</a> | NO              | NO       |
| D    | Raw materials not included in Annex I of <a href="#">Royal Decree 376/2022</a> nor do they originate from food and feed crops. | N/A                                                                                                           | NO              | NO       |
| E    | RFNBOs <sup>5</sup> including if used as an intermediate product to produce conventional fuels.                                | N/A                                                                                                           | YES             | NO       |

Source: [Order TED/728/2024](#).

## Feedstock Related Provisions

**Cap to crop-based biofuels:** [EU Directive 1513/2015](#) was transposed into Spanish law by [Royal Decree 1085/2015](#) and later amended by [Royal Decree 235/2018](#). Notably, national level decrees set a more restrictive cap on crop-based biofuels than mandated by the EU regulation. [Ministerial Order TED 1342/2022](#) set the limit to 3.5 percent (2023), 3 percent (2024) and 2.6 percent (2025- 2030). Given the

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<sup>5</sup>Renewable Fuels of Non-Biological Origin.

limited scale of double counting and advanced biofuels production, the crop cap limits expansion of bioethanol use despite growing gasoline demand.

**Double counting:** Fully enforced in Spain since 2019, double counting applies to feedstocks under Part A and B of Annex I of [Royal Decree 376/2022](#). The main feedstocks qualifying for double counting in Spain are wine industry residues: wine alcohol, lees, and grape marcs. Combined with multipliers, double counting reduces volumetric biofuel needs, displacing first-generation biofuels, like bioethanol. Double counted biofuels are limited to 1.7 percent in energy terms.

**“Advanced” bioethanol targets:** Spain has no specific advanced bioethanol target. Overall mandates are largely met through advanced biobased diesel, except for wine alcohol and bio-gasoline made from food industry waste. Other potential advanced feedstocks include lignocellulosic biomass (cereal straw, pruning residues), agri-food industrial residues (sugar beet pulp, corn dust from ethanol plants), as well as urban organic waste (FORSU), processed through fermentation after decomposition to produce bioethanol. Like double counted biofuels, advanced biofuels reduce volumetric needs. Unlike crop-based biofuels, advanced biofuels are not subject to a cap.

Consult [Upcoming Regulatory Framework](#) Section for regulation applicable as of 2027.

**High-risk ILUC biofuels:** To date, no bioethanol feedstock in Spain has been classified as high ILUC.

**Sustainability Requirements:** Sustainability requirements have been fully enforced in Spain since 2019. At the national level, large and medium-size biofuel producers rely on EC approved company schemes<sup>6</sup> given their dependence on imported raw materials. [Royal Decree 376/2022](#) transposes to National Law [Directive \(EU\) 2018/2001](#) provisions regarding sustainability criteria and reduction of greenhouse gas emissions from biofuels.

## FQD: Technical fuel specifications in place

The EU Fuel Quality [Directive 2009/30](#) (FQD) enabled fuel operators to market non-labelled biofuel blends (B7 diesel and E10 gasoline). This regulation was transposed into national regulation by [Royal Decree 1088/2010](#), raising the permitted biodiesel content from 5 to 7 percent and the bioethanol content from 5 to 10 percent by volume. Blends with volumetric **biodiesel** content over 7 percent, volumetric **bioethanol** content over 10 percent, or volumetric bioethanol content over 5 percent, and over 2.7 of oxygen content in terms of mass, must be labeled indicating the biofuel content. Non-labelled E10 blend was introduced in 2020, however, E5 remains the standard blend in petrol stations. **HDRD** has no blend limit and is fully substitutable if the EU fuel specifications are met.

## Greenhouse Gas Emissions

The EU’s FQD required all fuel suppliers to meet a 6 percent reduction - versus a 2010 baseline - in GHG emissions by 2020, across all fuel categories. Starting in 2023, Spain’s [Royal Legislative Decree 6/2022](#) established the obligation to reduce fossil fuel GHG emissions by 6 percent compared to a 94.1 g CO<sub>2</sub> equivalent/MJ baseline. The GHG Emission calculation methodology is laid out by [Royal Decree 235/2018](#). The 6 percent GHG intensity reduction obligation in transport remains in effect in 2026.

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<sup>6</sup> There are currently [18 certification](#) schemes approved by the EU.

## Upcoming Regulatory Framework

On July 23, 2026, the Ministry for the Ecological Transition and the Demographic Challenge (MITECO) published [Royal Decree 611/2026](#) for the Promotion of Renewable Fuels, partially transposing [Directive \(EU\) 2023/2413](#). It establishes the framework for decarbonizing Spain's transport sector through renewable and low-carbon fuels from 2027 through 2040, shifting the regulatory focus from a pure energy content target to a mixed system incorporating both energy content and GHG reduction targets.

- **E-credits:** Renewable electricity in transport can count towards compliance.
- **Modal GHG-reduction targets:** As of 2027, Spain's traditionally energy-based biofuel targets will coexist with differentiated GHG-intensity reduction targets across transport modes- a change that greatly benefits bioethanol given its strong GHG savings compared to fossil gasoline.

For **road transport** mandates are as follows:

**Table 3. Road Transport Targets and Caps.**

| Year | Overall GHG cut compared to fossil (%) | Annex IX-Part A Target (% cal) | Annex IX-Part B Cap (% cal) | RFNBO (% cal) | Advanced ethanol (% cal) | Cap on crop-based biofuels (% cal) | Double Counting |
|------|----------------------------------------|--------------------------------|-----------------------------|---------------|--------------------------|------------------------------------|-----------------|
| 2027 | 8.5                                    | 4                              | 1.7                         | 0.2           | 0.1                      | 2.6 <sup>7</sup>                   | YES             |
| 2028 | 11                                     | 4.5                            |                             | 0.7           | 0.2                      |                                    |                 |
| 2029 | 14                                     | 5                              |                             | 1.5           | 0.3                      |                                    |                 |
| 2030 | 17.6                                   | 5.5                            |                             | 2.5           | 0.5                      |                                    |                 |
| 2031 | 19                                     | 6                              |                             | 3             | 0.95                     |                                    |                 |
| 2032 | 21                                     | 6.5                            |                             | 3.5           | 1.4                      |                                    |                 |
| 2033 | 22                                     | 7                              |                             | 4             | 1.85                     |                                    |                 |
| 2034 | 24                                     | 7.5                            |                             | 4.5           | 2.3                      |                                    |                 |
| 2035 | 25                                     | 8                              |                             | 5             | 2.75                     |                                    |                 |
| 2036 | 26                                     | 8.5                            |                             | 6             | 3.2                      |                                    |                 |
| 2037 | 27                                     | 9                              |                             | 8             | 3.65                     |                                    |                 |
| 2038 | 28                                     | 9.5                            |                             | 9             | 4.1                      |                                    |                 |
| 2039 | 29                                     | 10                             |                             | 10            | 4.55                     |                                    |                 |
| 2040 | 30                                     | 11                             |                             | 11            | 5                        |                                    |                 |

Source: [Royal Decree 611/2026](#) transposing [Directive \(EU\) 2023/2413](#).

**Undenatured bioethanol only for mandate compliance:** Denatured ethanol (HS 220720) imported into the EU is subject to a €10.20 per hectoliter import duty, whereas undenatured bioethanol (HS 2207 10) is subject to €19.20 per hectoliter. Starting in 2027, the [Royal Decree 611/2026](#) makes only undenatured bioethanol eligible to meet mandates—making bioethanol imports relatively more costly and build preference for bioethanol consumption.

**Advanced Bioethanol:** [Royal Decree 611/2026](#) introduces a specific mandate for second-generation (2G) bioethanol—produced from agricultural, forestry, or industrial residues, requiring it to account for 0.5 percent of total gasoline sales for road transport by 2030.

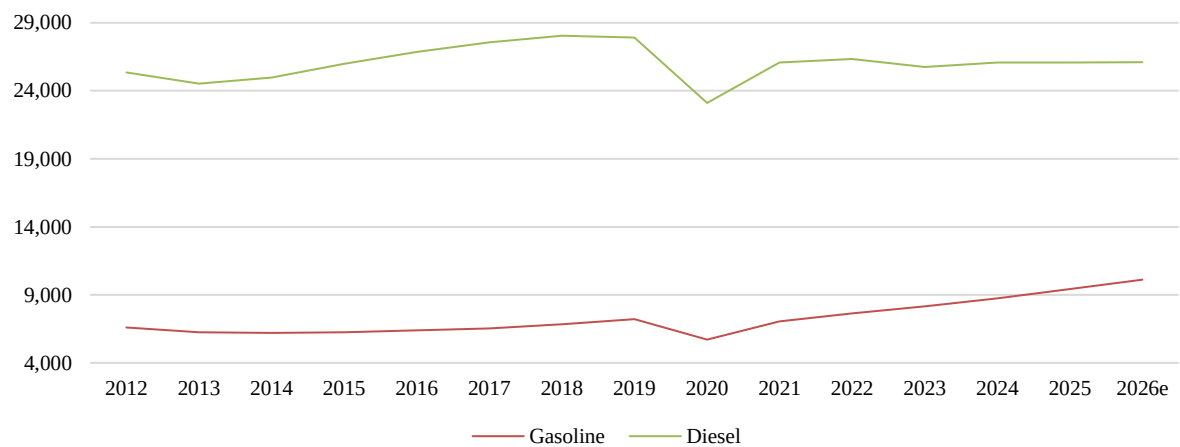
<sup>7</sup> The cap on crop-based biofuels remains at 2.6 percent until a new ministerial order is issued per the transitional provision referencing Order TED/1342/2022. The Royal Decree sets a maximum ceiling of 7 percent but does not change the operative figure pending that order.

# Conventional Fuels Consumption

In 2026, the global fuel market is grappling with rising oil and logistics costs. Yet, despite concerns about high gasoline prices affecting consumption, demand remains solid. The Spanish fuel market is transitioning, with electric and hybrid vehicle sales growing. However, liquid fuel demand, both gasoline and diesel, is expected to remain significant, particularly in those market segments where electrification is not easy to deploy. While electric and hybrid vehicles are gaining ground in the Spanish passenger car market, heavy-duty vehicles, aviation, and maritime shipping face structural barriers that make a full transition to electrification impractical in the near term.

As in most of the EU Member States, diesel is the main transport fuel in Spain<sup>8</sup>. The post-pandemic conventional fuel consumption recovery that started in 2021 is expected to continue in 2026, particularly in the case of gasoline, in response to regulatory signals<sup>9</sup> to purchase hybrid cars, largely dependent on gasoline for the non-electric portion. In 2022, gasoline consumption already exceeded pre-pandemic consumption levels achieved in 2019. The share of gasoline in total conventional fuel consumption continues to expand, in 2025 it amounted to 25 percent of the volume, up from just 20 percent in 2015.

Graph 2. Spain’s Conventional Fuel Consumption (1,000 m³)



Source: FAS Madrid based on CORES data.

<sup>8</sup> The gasoline share in Spain it has evolved from 20 percent in 2016 to over 25 percent in 2025.  
<sup>9</sup> E.g. the establishment of low emission zones in cities over 50,000 inhabitants serves as an incentive for gasoline over diesel cars.

# Bioethanol Market<sup>10</sup>

## Installed Capacity

Spain's installed bioethanol production capacity exceeds domestic demand, though it only slightly exceeds annual production.

**Table 4. Spain's Bioethanol Plants**

| Plant                    | Location                          | Company                   | Bioethanol Prod. Capacity | DDG (MT)       | Grain consumption (MT)         | Start of Operation |
|--------------------------|-----------------------------------|---------------------------|---------------------------|----------------|--------------------------------|--------------------|
|                          |                                   |                           | (MT)                      |                |                                |                    |
| Ecocarburantes Españoles | Cartagena (Murcia)                | <a href="#">Vertex</a>    | 100,000                   | 110,000        | 300,000                        | 2000               |
| Bioetanol Galicia        | Texeiro (La Coruña)               | <a href="#">Vertex</a>    | 145,000                   | 130,000        | 340,000                        | 2002               |
| Biocarburantes CyL       | Babilafuente (Salamanca)          | <a href="#">Vertex</a>    | 175,000                   | 120,000        | 585,000                        | 2006               |
|                          |                                   |                           |                           |                | 25,000 (USW <sup>11</sup> )    | 2013               |
| Bioetanol de la Mancha   | Alcazar de San Juan (Ciudad Real) | <a href="#">Interalco</a> | 35,000                    | -              | None. Operates on wine alcohol | 2006               |
| <b>Total</b>             |                                   |                           | <b>455,000</b>            | <b>360,000</b> | <b>1,225,000</b>               | <b>-</b>           |

Source: FAS Madrid and Industry Sources.

The three Spain-based [Vertex Bioenergy](#) bioethanol plants reported confined research with GE yeast (*Saccharomyces cerevisiae*) to optimize bioethanol production.

- **Direct blending:** The production of the inland plant (Babilafuente) is intended for direct blending, which is still a relatively small market in Spain.
- **ETBE production:** The bioethanol plants in port locations supply neighboring fuel refineries (La Coruña, Cartagena) with ethanol intended for ETBE production for the domestic and/or export markets.

Also active in the market but to a much smaller extent, [Interalco](#), sources raw alcohols made from agricultural and waste feedstocks to produce bioethanol. Given that Spain's installed capacity exceeds current demand (**Graph 3**) no bioethanol production capacity increase is projected in the short term.

## Production

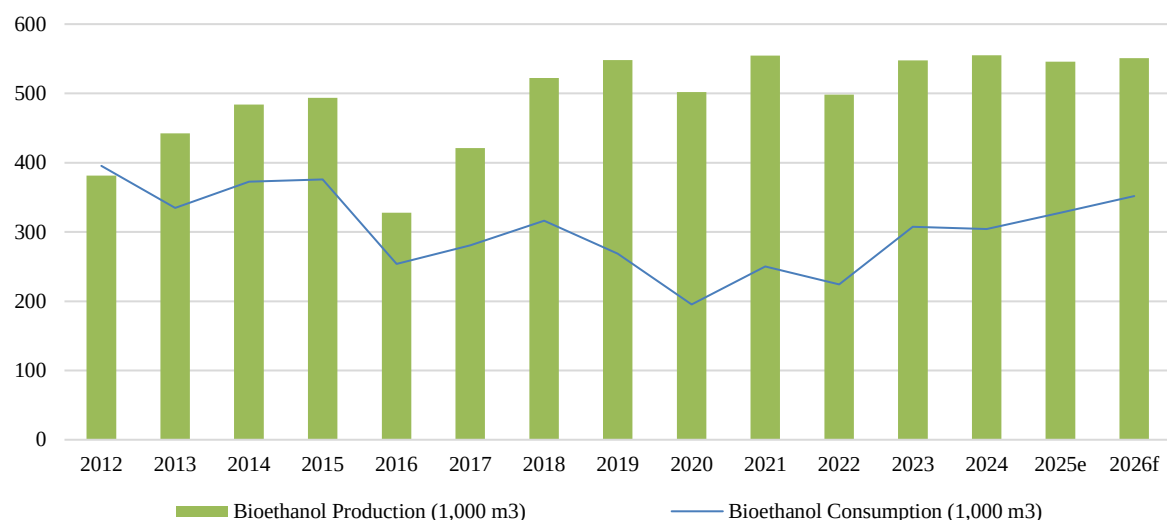
Production levels are projected stable for 2026. Increased energy costs particularly affect biofuel margins, with natural gas remaining a key cost factor for many plants, despite ongoing bioethanol industry decarbonization efforts. At the same time, producers benefit from firm prices and growing recognition of biofuels' strategic role in energy self-sufficiency.

Between 2023 and 2025<sup>12</sup>, falling energy and grain prices, combined with larger domestic gasoline pool, drove a recovery in Spain's bioethanol production. As a result, Spain's bioethanol plants operate at full capacity, meaning, short-term production gains depend solely on process improvements.

<sup>10</sup> Bioethanol is produced by fermenting the carbohydrate components of plant materials.

<sup>11</sup> Urban Solid Waste.

**Graph 3. Bioethanol Production and Consumption in Spain (1,000 m<sup>3</sup>)**



Source: FAS Madrid based on MITECO data and FAS Madrid estimates.

## Advanced Bioethanol

Spain currently has no advanced biofuel production blended with gasoline, aside from bioethanol produced from winemaking residues (grape marcs and lees). Thus, the 2.6 percent energy-based cap on crop-based biofuels creates a ceiling preventing further expansion. Through its [Research Center](#), Moeve (formerly known as Cepsa) is studying second generation biofuels from lignocellulosic feedstock - including olives, wine, or livestock residues.

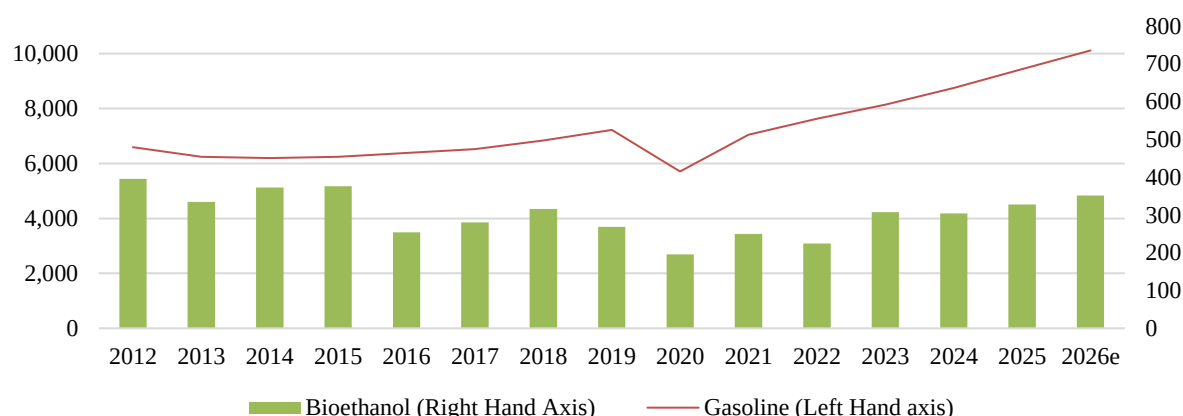
## Consumption

Consumption of bioethanol depends on volumetric blending limits within the gasoline pool, the size of that pool, and bioethanol's price competitiveness against gasoline. In Spain, most bioethanol is marketed as Bio-ETBE. While E10 is permitted in Spain, actual volumetric blending is estimated below 5 percent. Nevertheless, bioethanol consumption in Spain continues to expand in line with the growing mandates and the larger gasoline pool. In 2024, anecdotal volumes (2.7 million liters) of biogasoline<sup>13</sup> ([Nexa 95 by Repsol](#)) were marketed in Spain as 100 percent renewable and produced out of food industry waste.

<sup>12</sup> Following the COVID-related market size reduction in 2020 and 2021, in 2022, high energy and corn prices eroded bioethanol producer margins, pushing production levels down.

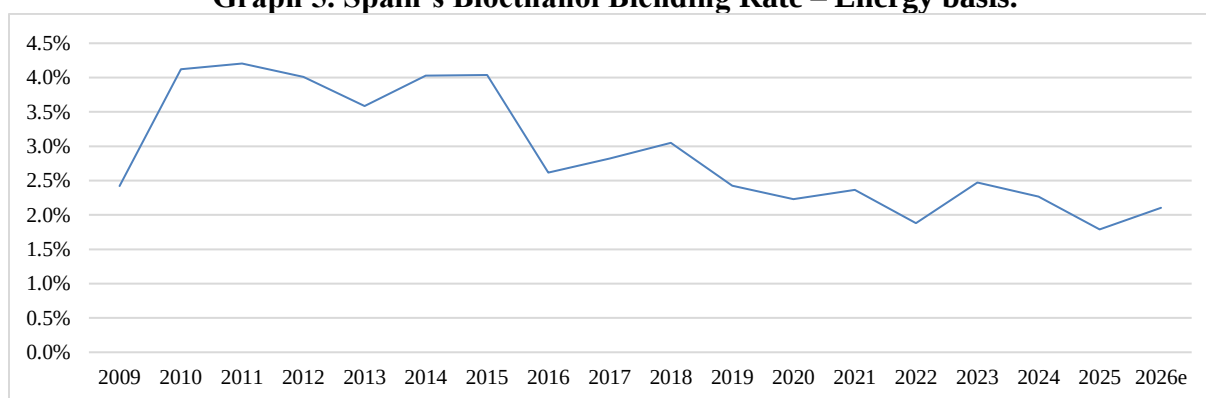
<sup>13</sup> Synthetic gasoline produced from biomass or organic waste which can be blended with conventional gasoline or used directly in internal combustion engines.

**Graph 4. Spain's Gasoline and Bioethanol Consumption (1,000 m<sup>3</sup>)**



Source: FAS Madrid based on CORES and MITECO data.

**Graph 5. Spain's Bioethanol Blending Rate – Energy basis.**



Source: FAS Madrid based on CORES and MITECO data and own estimates.

Several factors favor mandate compliance with biobased diesel as opposed to bioethanol:

**No specific mandate:** Since bioethanol specific targets were phased out in 2016, bioethanol consumption and production trends have diverged, though gasoline pool expansion as of 2021 combined with growing mandates contributed to recent consumption growth.

**Conventional fuel market:** In Spain, gasoline accounts only 25 percent of road transportation fuel consumption.

**Hydrocarbon tax structure:** Hydrocarbon taxes are applied on a volumetric basis instead of an energy basis. Hence, less energy intense fuels face higher taxation by units of energy. Bioethanol and gasoline are each taxed at 0.359 Euros per liter, (equivalent to 0.061 and 0.041 Euros/Kwh) compared to 0.307 Euros per liter for diesel (equaling to 0.030 Euros/Kwh). This tax structure results in more costly bioethanol by energy unit for consumers, hurting its competitiveness against gasoline and disincentivizing higher blends.

**National Crop-Cap:** Spain's 2.6 percent crop-based biofuel cap (as of 2025) sits well-below the EU's 7 percent ceiling. Given the limited scale of double counting or advanced biofuels production, the cap limits expansion of bioethanol use, despite the growing gasoline pool. In 2024, bioethanol, virtually all produced out of crops, represented 2.3 percent of energy consumption.

**Limited E 10 uptake:** Since January 1, 2020, the abolishment of the obligation to market so-called “protective petrol” opened the possibility for petrol stations to market non-labeled blends of up to 10 percent of bioethanol content (E10), increasing opportunities for direct blending to increase its presence. However, the standard gasoline distributed in Spain’s petrol stations continues to be E5, whereas in several EU Member States E10 is the standard.

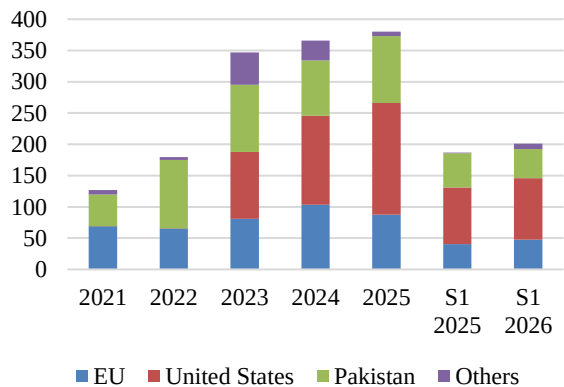
**Alternative outlets:** Absent further road transport opportunities, Spain’s bioethanol industry continues seeking alternative uses - including domestic and industrial stove fuel (particularly for carbon neutral focused sectors) and maritime decarbonization.

Trade

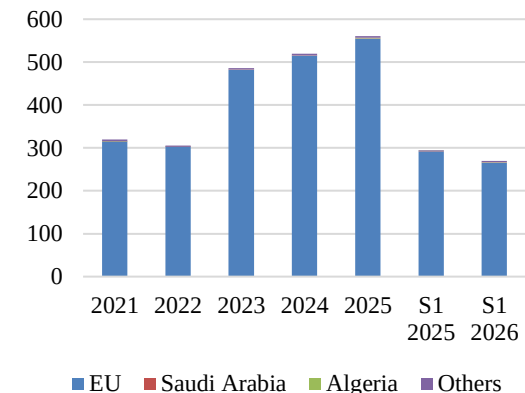
Spain remains a net exporter of bioethanol with exports largely exceeding imports. However, since 2023, Spain imported comparatively large amounts of ethanol, mostly from the United States and Pakistan, both for fuel and non-fuel uses (such as industrial, beverage, pharmaceutical), while exports – largely directed to other EU Member States – also expanded.

Data available for 2026 indicate an expansion in bioethanol imports, with origination from the usual suppliers. Meanwhile exports - largely concentrated to other EU Member States – show a downward correction, likely due to stiff competition from extra-EU suppliers.

Graph 6. Spain’s Ethanol<sup>14</sup> Imports (1,000 m3)



Graph 7. Spain’s Ethanol Exports (1,000 m3)



Source: FAS Madrid based on Trade Data Monitor LLC.

The production of the inland plant (Babilafuente) is intended for direct blending, which is still a relatively small market in Spain. Hence, a large share of production of this plant is exported to other European Member States. Given the country’s excess of installed capacity compared with in-country consumption, most of the bioethanol consumed in Spain is produced domestically.

<sup>14</sup> HS Codes 22071000 and 20072000 combined.

## Feedstocks

Virtually all bioethanol/Bio-ETBE produced in Spain uses corn, with negligible amounts of barley-based production and small amounts from wine-making residues. Spain is the EU's largest feed ingredient importer as the country's dependency on imported grains and oilseeds. Import volumes fluctuate depending on the size of the highly variable domestic crop, pasture availability, and livestock sector demand. Spain's corn production represents on average 3.5 million MT, while total annual grain imports range from 12 - 17 million MT, out of which, between 8 - 10 million MT correspond to corn. The feed compound sector is the country's main user of corn, accounting for over 10 million MT of consumption annually. Main suppliers include other EU Member States (namely France, Romania and Bulgaria) and third countries such as Ukraine, Brazil and the United States. The corn grain-based bioethanol industry in Spain represents slightly more than 1.2 million MT of consumption. This equals roughly 3 percent of the country's total grain consumption.

## By-Products

Spain-based grain bioethanol plants also supply the feed industry with over 360,000 MT of Dried Distillers Grains with Solubles (DDGs), which contributes to reducing the country's protein feed ingredients imbalance<sup>15</sup>. Given its protein content<sup>16</sup>, corn DDGs can be used as a protein ingredient in animal feed. It is an alternative for animal feed nutrition to other sources of traditional protein like rapeseed, and it is particularly suitable for livestock cattle. Due to its low moisture content (below 12 percent), DDGs have a very long shelf life.

## Future Perspectives

Through [Royal Decree 611/2026](#) implementing Revised RED II, Spain shifts from an energy-content mandate to a combination of energy-content and GHG reduction target system starting January 2027. The introduction of the new advanced bioethanol target, together with gasoline consumption growth, is expected to create increasing opportunities for bioethanol in the road transportation mix. The provision limiting mandate eligibility to undenatured is eligible to count toward transport decarbonization targets is expected to redirect demand away from lower-duty denatured ethanol imports, strengthening the market case for domestic undenatured bioethanol production.

The current Special Hydrocarbon Tax structure discourages the consumption of gasoline blends with high bioethanol content. The Special Hydrocarbon Tax is fixed on a volume basis at 0.472 Euros/liter. Volume-based taxation discourages low-energy density fuel consumption such as bioethanol (21.2 MJ/liter) and favors high-energy density fuels such as gasoline (32 MJ/liter)<sup>17</sup>. It also undermines consumption of high bioethanol content blends such as E85, favoring E10 or E5. Similarly, the fact that Spain opted to limit

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<sup>15</sup> Spanish oilseed production is comprised of olives and sunflower, both primarily intended for the food market. Rapeseed production is small and normally exported to neighboring Portugal or France. Consequently, Spain needs to import virtually of its protein feed ingredients. On average, Spain's annual combined imports of soybean and soybean meal amount to nearly 6 million MT.

<sup>16</sup> According to [FEDNA](#), corn full-fat DDGs protein content ranges between 27.4- 28 percent of Crude Protein content compared to soybean meal, that ranges between 44 to 48.5 percent. In the case of DDGs produced out of Bioethanol plants equipped with corn-oil extraction-unit, the protein content of the DDGs is even higher.

<sup>17</sup>This is not the case for biodiesel or HDRD given their virtually identical energy density compared to regular diesel.

crop-based biofuels at 2.6 percent as of 2025 constrains the expansion of bioethanol use, despite the growing gasoline pool.

## **Annex I. Spain's Competent Authorities for Biofuels**

- The Ministry for Transition Ecological and Demographic Challenge (MITECO) oversees issuing certificates to obligated entities for mandate compliance and leads the country's position regarding regulatory proposals and amendments.
- The Institute for Energy Saving and Diversification (IDAE) provides technical advice in terms of improving energy efficiency, renewable energy, and other low-carbon technologies.
- The Ministry of Agriculture, Fisheries and Food (MAPA) is consulted in the regulatory discussions for the proposal and amendment of regulations concerning agricultural raw materials and calculations related to default values of crops intended for biofuel production.

## **Annex II. Abbreviations, Definitions, Energy content and Conversion rates and HS Codes**

### **Abbreviations and Definitions**

Bioethanol: Ethanol produced from agricultural feedstock and used as transport fuel.

Bio-ETBE: (Bio Etyl-Tertio-Butyl-Ether): Gasoline additive produced out of bioethanol, containing 47 percent ethanol by volume.

CORES: Spanish Corporation of Strategic Reserves of Oil-based Products

CY: Calendar Year

DDG: Distillers Dried Grains

EXX: Blend of mineral gasoline and bioethanol with the number indicating the percentage of bioethanol in the blend, e.g. E10 equals 10 percent bioethanol and 90 percent conventional gasoline by volume

FQD: Fuel Quality Directive

GHG: Green House Gases

Ha: Hectares

HS: Harmonized System of Tariff Codes

IDAE: Spanish Institute for Energy Diversification and Saving

IEH: Hydrocarbons Tax

MAPA: The Ministry of Agriculture, Fisheries and Food

MITECO: Ministry for Ecological Transition

MS: Member State

MT: Metric Tons

MY: Marketing Year

N/A: Not Available

RED: Renewable Energy Directive

RFNBO: Renewable Fuels of Non-Biological Origin

VAT: Value Added Tax

% Cal = percent energy content

% Vol = percent volume

## Energy Content and Conversion Rates

1 Toe = 41.87 GJ  
Bioethanol = 26.90 MJ/kg  
1 MT Gasoline = 1,342 Liters = 1.03 Toe  
1 MT Ethanol = 1,267 Liters = 0.64 Toe  
1 MT of BioETBE = 1,333 Liters = 0.86 Toe

## (HS) Harmonized Codes

ETBE: HS code 29091910  
Denatured bioethanol: HS code 220720  
Undenatured bioethanol: HS code 220710

## Related Reports

| Report Title                                                           | Date Released |
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| <a href="#">EU Biofuels Annual Report -2026</a>                        | 07/17/2026    |
| <a href="#">Biofuels Mandates in the EU by Member State -2026</a>      | 07/17/2026    |
| <a href="#">EU Biofuels Annual Report -2025</a>                        | 08/12/2025    |
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| <a href="#">EU Biofuels Annual Report -2024</a>                        | 08/13/2024    |
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| <a href="#">Biofuels Mandates in the EU by Member State -2022</a>      | 07/05/2022    |
| <a href="#">EU Extends Its AD and CVD on Imports of U.S. Biodiesel</a> | 08/19/2021    |
| <a href="#">EU &amp; UK Biofuels Annual Report 2021</a>                | 06/22/2021    |
| <a href="#">Biofuels Mandates in the EU by Member State -2021</a>      | 06/08/2021    |

### Attachments:

No Attachments.