

AN GHNÍOMHAIREACHT CHÚLTACA OLA NÁISIÚNTA THE NATIONAL OIL RESERVES AGENCY



THE RENEWABLE TRANSPORT FUEL OBLIGATION ANNUAL REPORT 2024

A report on how the RTFO has been implemented to date and an assessment of the level of compliance by obligated parties with Part 5A of the NORA Act and designated fuel suppliers' compliance with SI 160 of 2017 during the 2024 obligation period.

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Document No: 457-25X0109

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GLOSSARY OF TERMS

BÓC	Byrne Ó Cléirigh
BOS	Biofuel Obligation Scheme
CBs	Certification Bodies
CNG	Compressed Natural Gas
DECC	Department of Environment, Climate and Communications
DoT	Department of Transport
EV	Electric vehicle
FBS	Fuel Baseline Standard (94.1 gCO _{2eq} /MJ)
FQD	Fuel Quality Directive (2009/30/EC)
gCO _{2eq}	Grams of CO ₂ equivalent
GHG	Greenhouse gas
ILUC	Indirect Land Use Change
ISCC	International Sustainability and Carbon Certification (a voluntary scheme)
LNG	Liquified Natural Gas
LPG	Liquified Petroleum Gas
MJ	Megajoule
NORA	National Oil Reserves Agency
NORA Act	National Oil Reserves Agency Act 2007
OLA	Online Levy Assessment (a reporting system for obligated parties)
PJ	Petajoule
POME	Palm Oil Mill Effluent
RED	Renewable Energy Directive (2009/28/EC)
RED II	Recast Renewable Energy Directive (2018/2001)
RED III	Recast Renewable Energy Directive (2018/2001), as amended by Directive 2023/2413
RFNBO	Renewable Fuel of Non-biological Origin
RTFO	Renewable Transport Fuel Obligation
RTFO Team	Personnel from NORA, BÓC and S&W
SBE	Spent Bleached Earth
SI	Statutory Instrument
UCO	Used Cooking Oil
UEs	Upstream Emission Reductions

EXECUTIVE SUMMARY

Overview

The Renewable Transport Fuel Obligation (RTFO), formerly the Biofuels Obligation Scheme, was one of the measures introduced by the Irish Government to assist it comply with the requirement imposed on all EU Member States by the Renewable Energy Directive (RED) (1) that by 2020 at least 10% of the final consumption of energy in transport was from renewable sources. In 2020, Ireland met this requirement. NORA was appointed under the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 (2), which amended the NORA Act 2007, to administer the scheme and the Agency appointed a consortium of Byrne Ó Cléirigh and S&W to assist with its administration. A project team (the RTFO Team) was established with personnel from NORA and members of the consortium. This Team prepared and implemented a comprehensive set of systems and procedures for implementing and administering the scheme.

Under the RTFO, the oil companies and oil consumers that are obliged to pay the NORA Levy (the obligated parties) on disposals of diesel and gasoline are required to ensure that a specified amount of their total relevant disposal of road transport fuel is in the form of renewable fuel. For 2024, this amount was 21% of diesel and gasoline disposals, including multiple counting, by energy. The obligated parties must also pay a levy of €0.001 per litre on their renewable fuel disposals and may then apply to NORA for one RTFO Certificate (Cert) in respect of each MJ. In the case of renewable fuel produced from feedstocks listed in Annex IX of RED III, two RTFO Certs per MJ may be awarded. Additional Certs may also be awarded for biodiesel produced from category 1 tallow, HVO, BioCNG, RFNBOs and renewable fuels supplied to the aviation and marine sectors. At the end of each obligation period (the calendar year) obligated parties are required to surrender to NORA sufficient Certs to match their obligation. Failure to surrender sufficient Certs incurs a liability to pay a buy-out charge which was set at €0.05 per MJ for 2024.

The advanced biofuel obligation came into effect in 2023 and placed a requirement on obligated parties to achieve a 0.3% target – the target for 2024 was 1%. The advanced biofuel obligation is discharged by surrendering Green Certs, which are awarded for biofuels produced from the feedstocks listed in Annex IX Part A of RED III.

In 2017, SI 160 (3) transposed Article 7a of the Fuel Quality Directive (FQD) (4). It designates NORA as the administrator of fuel suppliers' compliance with a carbon intensity reduction target of at least 6% by 2020, and in the years thereafter. The requirements under SI 160 differ from the obligations under the RTFO in so far as it requires fuel suppliers to achieve at least a 6% reduction in the greenhouse gas (GHG) intensity of fuels used in road vehicles, non-road mobile machinery, agricultural and forestry tractors, and recreational craft relative to a fuel baseline standard (94.1 gCO_{2eq}/MJ). The RTFO also administers the requirements of SI 160 by allowing applications for RTFO Certs to be combined applications for Certs and carbon savings.

Companies that produce or supply renewable fuels, and electricity suppliers, may also open an RTFO account and apply to NORA for RTFO Certs and carbon savings. Account holders

may also obtain RTFO Certs and carbon savings by arranging with other account holders to have Certs/carbon savings transferred to their accounts from other accounts. At the start of 2024 there were a total of twenty-two RTFO account holders (ten obligated parties, eight companies that produce or supply biofuels registered as RTFO account holders, three additional companies designated as fuel suppliers under SI 160, and one electricity supply company). One additional supplier opened an RTFO account during 2024.

RTFO Compliance

In total for the 2024 obligation period, approximately 471m equivalent litres (14.6 PJ) of renewable fuels were placed on the market; approximately 32 billion Certs and 1,140kt of carbon savings were awarded in respect of those disposals. At the end of the period, including the Certs that were carried forward from previous periods (c. 2.1 billion), account holders held 34.3 billion RTFO Certs – the 2024 biofuel obligation was 30.8 billion Cert. All the obligated parties were in possession of sufficient RTFO Certs to satisfy their respective obligations.

Additional Certs, i.e. 2 or more, were awarded for all renewable transport fuel if it was produced from a feedstock listed in Annex IX of RED III and/or it was one of the fuel types designated for receipt of additional Certs under SI 142 of 2023.

All the biodiesel and HVO placed on the market was awarded 2 or more Certs per MJ having been produced from Annex IX feedstocks. Approximately 21% of the bioethanol and all the bioLPG placed on the market was double counted. All the BioCNG was awarded 3.4 Certs per MJ. In total, there were seven different biofuel types and eighteen different biofuel feedstocks reported in the RTFO Sustainability Statements.

The fuel type, feedstock and transport end-use combinations are illustrated in the table overleaf.

Fuel Type			Bioethanol	Biodiesel	Biogasoil	CHVO	HVO	BioLPG	BioCNG
Feedstock	Transport end-use	Road	X	X		X	X	X	X
		Rail		X			X		
		Marine			X		X		
		NRMM					X		
Animal manure									X
Brown grease				X					X
Category 1 tallow				X	X	X	X		
Category 2 tallow				X			X		
Corn			X						
Empty palm fruit bunches							X		
Food waste (not fit for use as food or feed)			X	X		X			X
Forest-based industrial waste and residue						X			
Liquid whey permeate			X						X
Palm oil mill effluent				X			X		
Soapstock acid oil contaminated with sulphur				X					
Spent bleaching earth							X		
Starch slurry			X						
Sugar beet			X						
Sugar cane			X						
Used cooking oil				X		X	X	X	
Waste pressings from vegetable and animal oil				X					
Wheat			X						

The feedstocks were reported to have originated from 71 different countries. The single largest source of feedstock for biofuel was the UK (13%); approximately 10% of the feedstock originated from Ireland.

Approximately 34% of all the biofuel placed on the market in Ireland was produced from used cooking oil (UCO) which was sourced from 56 different countries; China was the largest source (30%). All the biofuel placed on the Irish market was reported as being certified by a voluntary scheme.

A central requirement of RED, RED II and the Sustainability Regulations (5) is that biofuels achieve at least a 50%, 60% or 65%¹ reduction in carbon intensity (GHG emissions per unit of energy) in comparison to fossil fuels. The weighted average carbon intensity of all the biofuel placed on the market in Ireland in 2024 was 15.2 gCO_{2eq}/MJ, which is an 84% reduction in comparison to the fossil fuel comparator of RED II (94 gCO_{2eq}/MJ).

¹ 60% for biofuel production plants that came into operation after October 2015, and 65% for plants that started operating from January 2021.

SI 160 Compliance

In total, fuel suppliers achieved a carbon intensity reduction of 5.8% in 2024. This was achieved by placing biofuel, and fossil fuels with lower carbon intensities, on the market. There were no carbon savings from upstream emission reductions (UERs) nor electricity supplied to EVs claimed during 2024.

Compliance with SI 160 is, however, a fuel supplier requirement. Just over half the fuel suppliers achieved the 6% carbon intensity reduction target. NORA has not applied to the High Court for compliance orders for fuel suppliers that did not achieve the 2024 target.

Auditing

The annual audit of RTFO account holders was carried out during 2024. The programme included a plenary audit of all the Levy Returns' data, four on-site audits and several desk-based audits. While most account holders were well prepared for the audits and were able to substantiate the data contained in the Levy Return and in the applications for RTFO Certs, one account holder was not prepared for the audit and was not able to provide substantiation for most of the data contained in its Levy Returns during the on-site audit. Notwithstanding these difficulties, and others experienced while carrying out the audit, the Audit Team was able to extract the necessary information to confirm the OLA data and substantiate the information provided in applications for RTFO Certs.

RTFO in 2025

The primary change to the RTFO for 2025 is the increased obligations. The RTFO and the advanced biofuel obligation have increased to 25% and 1.5%, respectively.

In relation to the Union Database (UDB), SI 350 of 2022 requires RTFO account holders to enter the information referred to in Article 28 (2) of RED II into the UDB, namely information on transactions made and the sustainability characteristics of the renewable fuels. The UDB went live on the 15th of January 2024, i.e. it can be accessed and economic operators can register as users. However, there have been problems with introducing the UDB across the entire supply chain so very little transactional data is being recorded; thus, proofs of sustainability are not yet being produced in the UDB. For the RTFO to start relying on the UDB as the source of sustainability data, all the voluntary scheme certified companies need to be recording the sustainability and transactional data in the UDB. Members of the RTFO Team, the Department of Transport and the Department of Environment, Climate and Communications have been engaging with the European Commission on amending and seeking to fully implement use of the UDB. We understand that its mandatory use may not be implemented until Q1 2026, albeit may be adopted by economic operators before then.

It is a requirement of RED III that renewable electricity supplied via public charge points to electric vehicles be eligible for RTFO Certs. In anticipation of awarding RTFO Certs for electricity, the RTFO was modified during 2024 to enable charge point operators (CPOs) apply for Certs. While the RTFO Procedure and Guidance have been updated and published,

it is noted therein that Certs cannot be awarded until the legislation is in effect – we expect the legislation will be published during 2025.

There is a RED III target of 1% for renewable fuels of non-biological origin (RFNBOs) by 2030. The RTFO application procedure and guidance were updated during 2024 to cater for RFNBOs. In the short term, a new Cert type has been created ([Blue Certs](#)) to identify Certs awarded for RFNBOs and it is planned to count Blue Certs towards both the advanced biofuel obligation and the RTFO. Eventually, similar to the advanced biofuel obligation, which is discharged with Green Certs only, Blue Certs will be used to discharge a distinct RFNBO obligation (i.e. only Blue Certs will count). Blue Certs will also be used to discharge the RTFO but not the advanced biofuel obligation. The DoT is preparing national legislation to set out how RFNBOs will be incorporated into the RTFO, to ensure compliance with RED III.

Under RED III, Member States are required to supervise the operation of certification bodies (CBs) carrying out audits to certify economic operators to voluntary scheme standards. However, there has been uncertainty among Member States on interpreting and applying the requirements. A CA-RES² task force was established to examine how the supervision requirements could be implemented in practice. The recommendations of the task force are being incorporated in to revised legislation currently being prepared by the European Commission, to strengthen Implementing Regulation 2022/996. In the interim, the RTFO Team will be implementing its own supervision procedure that will come into effect until a more comprehensive EU-wide system is agreed and put in place.

NORA is to be appointed as the competent authority for aviation fuel suppliers in Ireland under the ReFuelEU Regulations (2023/2405). The Agency has already engaged with aviation fuel suppliers and put in place reporting systems. The RTFO procedure for applying for RTFO Certs, and the associated guidance, have also been modified to incorporate aviation fuel suppliers' compliance with the Regulations. The SAF supplied and counted towards compliance with the Regulations will be awarded RTFO Certs and be counted towards RED III transport targets and obligated parties' compliance with the RTFO. The minimum share set out in the Regulations for 2025 is 2% (by energy).

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² Concerted Action – Renewable Energy Sources Directive

1 BACKGROUND

Article 3 of the Renewable Energy Directive (1) set out mandatory national overall targets and measures for the use of energy from renewable sources for all EU Member States. Ireland's target for the share of its gross final consumption of energy to come from renewable sources, by 2020, was 16%.

Although Member States could set individual targets for heat (RES-H) and electricity (RES-E), item 4 of Article 3 placed the following obligation on all Member States:

Each Member State shall ensure that the share of energy from renewable sources in all forms of transport in 2020 is at least 10 % of the final consumption of energy in transport in that Member State.

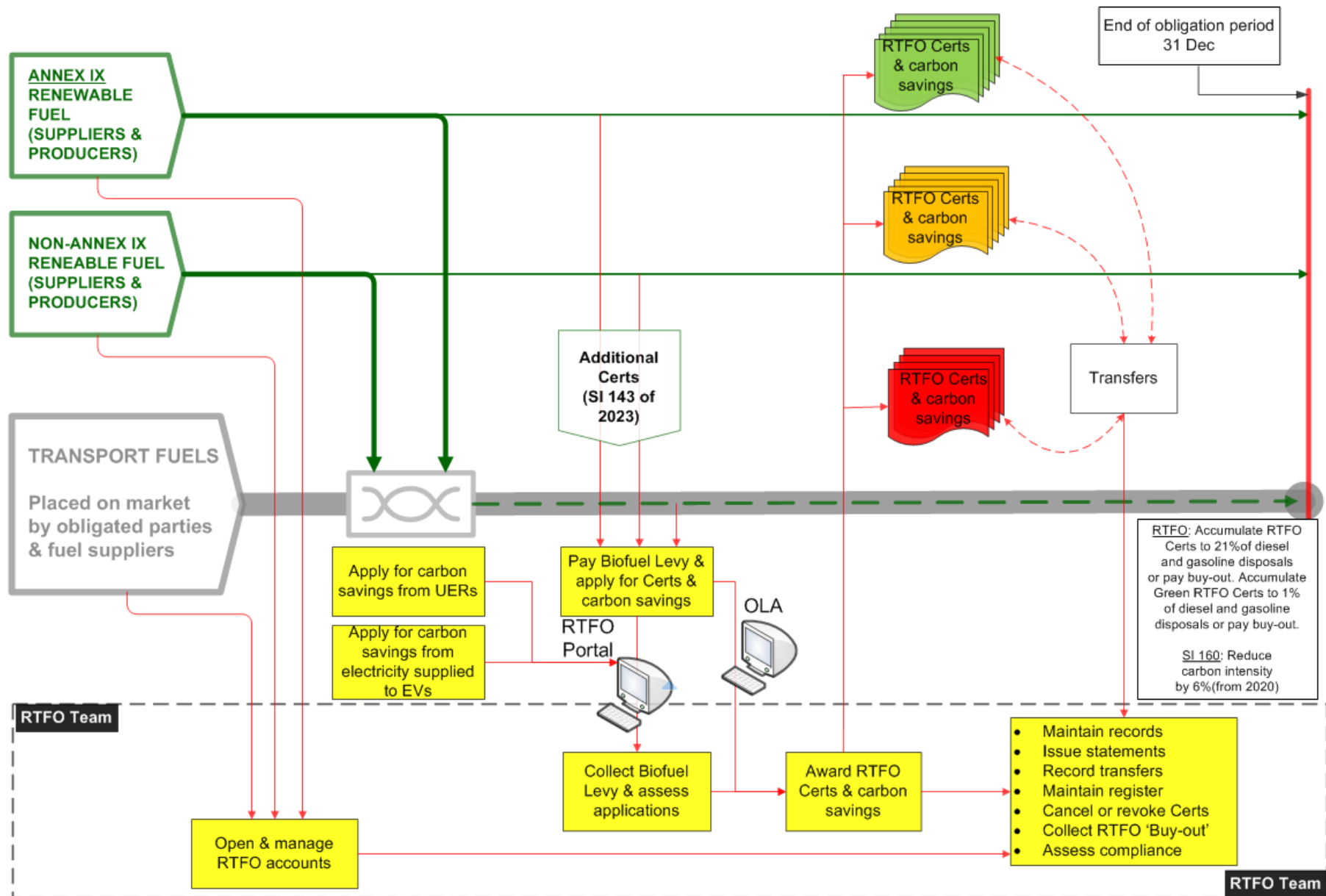
It is in the context of this obligation that Ireland implemented the Renewable Transport Fuel Obligation (RTFO), which was given effect in law by the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 (2). While the RED compliance date of 2020 has passed, the RTFO remains an integral part of Government's plan of achieving E10 and B20 by 2030, reducing GHG emissions in the transport sector, and meeting compliance with the recast Renewable Energy Directive (RED II). Under RED II, Ireland has a 14% renewable energy target in the transport sector and must contribute to the EU's overall 32% renewables target. The 2030 renewable energy transport target has been increased under revisions to RED II (RED III) to 24%.

Under Part 5 A of the National Oil Reserves Agency (NORA) Act, NORA is the body charged with administering the RTFO. In 2021, following an open tendering process, a consortium of Byrne Ó Cléirigh and Evelyn Partners was appointed to assist NORA with implementing and administering the RTFO until 2026. Throughout this report, the individuals from the consortium and NORA who collaborate with implementing and administering the scheme are referred to as the RTFO Team.

This report provides an overview of the RTFO and describes how it was implemented throughout the 2024 obligation period. It also illustrates the extent to which the overall obligation was met and how each individual obligated party performed.

In 2017, SI 160 (3) transposed Article 7a of the Fuel Quality Directive (FQD) (4). SI 160 designates NORA as the administrator of fuel suppliers' compliance with a carbon intensity reduction target of 6% by 2020 – this target remained in effect for 2024 and will continue to remain in effect until the legalisation is amended, which is anticipated during 2025. It requires fuel suppliers to achieve a 6% reduction in the carbon intensity of fuels used in road vehicles, non-road mobile machinery, agricultural and forestry tractors, and recreational craft relative to a Fuel Baseline Standard (FBS) of 94.1 gCO_{2eq}/MJ. The Regulations require biofuels to satisfy the same sustainability criteria as the RTFO, if they are to be counted towards the 6% target. Thus, there is a significant overlap in what the RTFO and SI 160 require: significant volumes of sustainable biofuel to be placed on the market.

Figure 1: Overview of RTFO



2 AN OVERVIEW OF THE RTFO

Figure 1 provides an overview of the RTFO. The principal features are described below.

2.1 RTFO ESSENTIALS

- a) The RTFO obliges all oil companies and oil consumers (obligated parties) that make relevant disposals of road transport fuels to ensure that a specific percentage of their total disposals, in each obligation period, is renewable fuel.
- b) The first obligation period was from July to December 2010, inclusive. For each subsequent year, including 2024, the obligation period ran from January to December, inclusive.
- c) Obligated parties are awarded RTFO Certificates at the rate of one Certificate for each MJ of renewable fuel they place on the market. For certain renewable fuels – those produced from feedstocks listed on Annex IX of RED II – two RTFO Certs per MJ may be claimed.
- d) From April 2023 onwards, additional Certs were also awarded for certain renewable fuels (in accordance with SI 143 of 2023).

Table 1: Additional Certs

Fuel Type	End use	Feedstock	No. of Additional Certificates per MJ	Total no. of Certificates per MJ
BioCNG	Road, rail & NRMM	Any Annex IX	1.4	3.4
		Not Annex IX	0.7	1.7
HVO & CHVO	Road, rail & NRMM	Any Annex IX	0.5	2.5
		Not Annex IX	0.25	1.25
Biodiesel (FAME)	Road, rail & NRMM	Category 1 tallow	0.5	2.5
Any	Aviation	Any Annex IX	0.4	2.4
		Not Annex IX	0.2	1.2
Any	Marine	Annex IX	0.4	2.4
		Not Annex IX	0.2	1.2
RFNBO	Road, rail & NRMM	Any	3	4

- e) The 2024 obligation was 21% of the petroleum-based disposal. Obligated parties meet their obligations by disposing of renewable fuel (which can be in liquid or

- gaseous form). They may also meet the obligation by purchasing RTFO Certs from other RTFO account holders or by paying the buy-out charge.
- f) There was a 2% limit on the quantity of crop-based fuel that can be discharged against an obligated party's obligation.
 - g) There was a 1% sub-target for advanced biofuels (i.e. those produced from the feedstocks listed in Annex IX Part A of RED II).
 - h) Obligated parties discharge their obligation by surrendering the appropriate number of RTFO Certs to NORA at the end of the obligation period. RTFO Certs may be transferred between parties – NORA has no role in negotiating transfers.
 - i) A Biofuel Levy (currently €0.001 per litre) is payable on all disposals of renewable transport fuels. This levy is payable to NORA.
 - j) An obligated party that has not collected sufficient RTFO Certs to meet its obligation in a given obligation period is liable to pay a buy-out charge, which was set at €0.05 per MJ for the 2024 period – the advanced biofuel buy-out charge was set at €0.08 per MJ. These charges are collected by NORA but are payable to the Exchequer.
 - k) NORA is responsible for assessing applications for RTFO Certs, for issuing Certs, for recording all transactions, and for facilitating transfers of RTFO Certs between account holders.
 - l) All renewable fuel placed on the market must meet the sustainability and GHG emissions savings criteria. Sustainability is determined in accordance with the RTFO Application and Sustainability Procedure (6).
 - m) Under certain circumstances, RTFO Certs may be cancelled or revoked.
 - n) RTFO Certs may be carried forward for a period of two years from the end of the obligation period in which they were initially issued. However, no more than 15% of a party's obligation in each obligation period may be met using RTFO Certs carried forward from previous periods.

Administering the requirements of SI 160 of 2017 has been integrated into the RTFO. The following describes the essential features of SI 160 and how NORA has incorporated them into the RTFO.

- a) Fuel suppliers are required to reduce the life-cycle greenhouse gas emissions per unit of energy (i.e. the carbon intensity) from fuel and energy supplied by 6% relative to a Fuel Baseline Standard (FBS) of 94.1 gCO_{2eq}/MJ by 2020. This requirement has been maintained for each year thereafter.
- b) The carbon intensity reduction requirement applies to fuels used to propel road vehicles, non-road mobile machinery (including inland waterway vessels when not at sea), agricultural and forestry tractors, recreational craft when not at sea and electricity for road vehicles.
- c) An application for RTFO Certificates is also an application for carbon savings. The carbon savings are calculated using data supplied in the Sustainability Statement submitted with an application.
- d) The same sustainability criteria and verification requirements apply for claiming carbon savings as for claiming RTFO Certificates.
- e) Monthly fossil and renewable fuel data is reported via OLA to DECC in monthly Levy Returns. The relevant data is then supplied to the RTFO Portal by OLA. Carbon emissions and savings from fossil fuels are calculated in the Portal. Fossil fuels with a carbon intensity lower than 94.1 gCO_{2eq}/MJ will generate carbon savings, e.g.

gasoline has a carbon intensity of 93.3 gCO_{2eq}/MJ and thus generates a carbon intensity saving of 0.85%.

- f) Carbon savings can be transferred between RTFO account holders.
- g) Unlike the RTFO, there is no provision for suppliers to buy-out of the requirements of SI 160 and there is no carry-over of carbon savings from previous years.
- h) In addition to placing biofuels and lower carbon intensity fossil fuels on the market, carbon savings can also be generated by applying for carbon savings from electricity consumed in EVs and from upstream emission reductions (UERs).

2.2 IMPORTANT DATES

The following important dates are specified in legislation and by NORA.

- a) The RTFO obligation period for 2024 commenced on the 1st of January and ended on the 31st of December.
- b) It is a legal requirement to submit quarterly applications for RTFO Certs & carbon savings from renewable fuels on the following dates.

Reporting Period	Closing Date
1 January to 31 March	15 May
1 April to 30 June	14 August
1 July to 30 September	14 November
1 October to 31 December	14 February

- c) The date by which NORA is obliged to inform RTFO account holders of the extent of their biofuel obligations for the previous obligation period and the number of RTFO Certs held on their account in respect of that period is the 16th of March.
- d) The deadline date for transferring RTFO Certs and carbon savings is 22nd March.
- e) The final date by which obligated parties must inform NORA of which RTFO Certs are to be set off against their obligations is the 20th of April.
- f) The 4th of May is the date by which NORA is obliged to raise invoices for any buy-out charges that may be payable by an obligated party. They may be raised sooner, if desired.
- g) The buy-out charge must be paid within 28 days from the date of the invoice.

The following dates are specific for administering compliance with SI 160.

- a) The deadline for submitting applications for carbon savings from electricity consumed in road vehicles is the 14th February.
- b) The deadline for submitting applications for carbon savings from Upstream Emission Reductions (UERs) is the 14th February.

Compliance with SI 160 is assessed in tandem with RTFO compliance.

2.3 RTFO PARTICIPANTS

Entities participating in the RTFO can be obligated parties or producers/suppliers of biofuels that have applied to NORA for an RTFO account. Participants may also be companies designated by NORA as fuel suppliers under SI 160 of 2017. In most cases, fuel suppliers are either obligated parties or renewable fuel producers.

2.3.1 Obligated Parties

An obligated party is any oil company or oil consumer liable to pay the NORA Levy; the RTFO applies to its relevant disposals of road transport fuel (i.e. diesel and gasoline) in the obligation period. It applies whether the NORA Levy was paid or not, and, in the case of an oil consumer, whether or not the oil consumer is exempt from or has claimed an exemption from the NORA Levy.

At the start of the 2024 obligation period, the following companies were identified as obligated parties under the RTFO:

1. Valero Energy (Ireland) Ltd
2. Irving Oil Whitegate Refinery Ltd
3. Inver Energy Ltd
4. Irish Rail
5. John Kelly Fuels (Ireland)
6. Lissan Coal Company Ltd (LCC)
7. Maxol Ltd
8. Nicholl (Fuel Oils)
9. Tedcastle Oil Products (TOP)
10. Circle K

2.3.2 Renewable Fuel Producers and Suppliers

In addition to the ten obligated parties, there were eight renewable fuel producers /suppliers that held RTFO accounts at the start of 2024:

1. Green Biofuels Ireland (GBI)
2. Agri Energy
3. Calor Teoranta
4. Carbery Food Ingredients
5. College Biofuels
6. Green Gas Generation
7. ElectroRoute Energy Trading
8. Green D Project Ireland

Each company must report its disposals of renewable fuels to DECC via the OLA system³, and may then pay the Biofuel Levy and claim RTFO Certs and carbon savings on those disposals⁴. None of these account holders incur an obligation as they do not place diesel or gasoline on the road transport market.

Applegreen applied for and was awarded an RTFO account during 2024.

2.3.3 Fuel Suppliers

NORA wrote to all fuel suppliers at the end of 2019 to inform them of their responsibilities under SI 160 and their designation as fuel suppliers. In addition to the obligated parties listed in section 2.3.1 and the renewable fuel producers listed in section 2.3.2, the following companies are designated as fuel suppliers under SI 160 and are also RTFO account holders:

1. Flogas
2. Flogas Enterprise (formerly Naturgy)
3. Bord Gais

2.4 ENGAGEMENT WITH RTFO PARTICIPANTS

Throughout the 2024 obligation period, and during the weeks following the end-of-period reconciliation, the RTFO Team maintained regular contact with all RTFO participants.

From the outset of the RTFO, the Team has used dedicated email accounts for receiving and issuing all email communications with the RTFO participants (bos@nora.ie & bosaccounts@nora.ie). NORA's website is also used to host all RTFO documents (procedures, guidance notes, application forms, etc.) that are likely to be required by the participants.

The RTFO Team held two briefing sessions during the year. The first was held in April and the second in November. The sessions were attended by nearly all account holders and followed a similar agenda:

1. Provide an update on RTFO performance.
2. Highlight any recurring problems with RTFO Cert and carbon savings applications or the data contained therein (the problems and data are anonymised).
3. Set out any planned changes to the RTFO systems.
4. Identify and summarise new legislation that will impact on the RTFO.
5. Provide an update on legislative changes (by the Department of Transport).

³ The Online Levy Application (OLA) reporting system is used by Obligated Parties to report monthly disposals of oil products to DECC.

⁴ Renewable fuel producers and suppliers have some discretion in how they participate in the RTFO. A producer operating in Ireland can choose between paying the Biofuel Levy and claiming the RTFO Certs and carbon savings or providing the sustainability information to the company to which it sold the renewable fuel and allowing it to pay the Biofuel Levy and claim the RTFO Certs and carbon savings. While there is some flexibility in the supply chain with respect to the entity that pays the Biofuel Levy, it is a requirement that a Biofuel Levy is paid and the company that pays it is the only company that can apply for the RTFO Certs and carbon savings.

RTFO 2024

The sessions are relatively informal and provide a forum for open discussion, which is welcomed and encouraged.

In addition, audits were carried out on account holders by members of the RTFO Team to determine the level of compliance with the requirements of Part 5A of the NORA Act. The audit process and the findings are discussed in more detail in Section 4.9 of this report.

3 RTFO ACCOUNTS

This section explains how NORA met the principal obligations and responsibilities that were placed on the Agency to implement and administer the RTFO, and the requirements of SI 160, over the 2024 obligation period.

3.1 ACCOUNT SET UP & CLOSURE

There was one new account set up during 2024, for Applegreen.

3.2 MANAGING RTFO ACCOUNTS

All the account files maintained for RTFO account holders employ a standard work-breakdown-structure (WBS) so that any of the matters referred to in Section 44E(2) of the legislation can be properly recorded. Account files are held electronically on Byrne Ó Cléirigh's server. Encrypted back-up copies are made daily to a secure off-site data centre.

The Control and Reconciliation (C&R) spreadsheet (7) and the RTFO Portal record all RTFO transactions. Data on disposals of petroleum-based transport fuels and biofuels are transferred to the C&R and the Portal from the monthly returns made by RTFO account holders⁵. The Portal is a web-based platform through which account holders submit applications for RTFO Certs & carbon savings, and transfer Certs & carbon savings between accounts. As part of the application process, the Portal accepts and stores the sustainability statements and independent verification reports. Sustainability statements are submitted in CSV format⁶ and are stored in a database. The system also provides account holders with data on their RTFO and SI 160 obligations, the number of RTFO Certs held in their respective account, and progress towards the 6% carbon intensity reduction target. It also enables them to view interim and final statements of account, as required under Part 5A of the NORA Act.

Unlike other transport fuels, there is no clear existing means of determining the proportion of gasoil supplied to the market that is intended for use in off-road vehicles (i.e. as a transport fuel). SI 160 only applies to gasoil supplied for transport purposes and not that supplied for generators or boilers, i.e. stationary machinery. NORA requires 10 ppm gasoil suppliers to report 80% of the total volume of gasoil as 'gasoil for transport'.

3.3 ISSUING RTFO CERTIFICATES AND CARBON SAVINGS

There is a standard procedure in place for issuing RTFO Certs and carbon savings (6). There is also a comprehensive guidance document to accompany the procedure (8). A standard template is used by the RTFO Team when checking all applications for RTFO Certs and carbon savings, and for recording NORA's authorisation or refusal.

⁵ Returns made to DECC via the OLA system.

⁶ CSV: Comma-separated value. It is a common file type which can be opened by many different programmes.

Under Section 44G of the Act, as amended by SI 350 of 2022, NORA is required to issue “... 2 Certificates in the case of such renewable transport fuel listed in Annex IX of the Directive, or whereby the Agency may from time to time determine in accordance with this section are so eligible... and one certificate in the case of all other renewable transport fuel, and such additional certificates as the Minister may provide for by regulations...”. The RTFO Team maintain a further set of procedures and guidance documents to meet this requirement.

Details of the number of applications for RTFO Certs and carbon savings received by NORA and the number of Certs issued and transferred are provided in Section 4. Section 5 reports on compliance with SI 160. In 2024, applications for multiple RTFO Certs per MJ were received in respect of twenty feedstocks, which are set out in Section 4.6.

3.4 CANCELLING RTFO CERTIFICATES

Section 44L of the NORA Act places an obligation on any RTFO account holder to whom a RTFO Cert was issued in respect of a specific MJ of renewable fuel to make an application to NORA to cancel such Certs, if the fuel is subsequently exported from the State. This obligation remains even if the renewable fuel has been sold to another party and/or the RTFO Cert has been transferred to another obligated party.

During 2024 no applications to cancel Certs were received.

3.5 REVOKING RTFO CERTIFICATES

Section 44M allows for NORA to revoke a RTFO Cert in certain circumstances. No RTFO Certs were revoked during the 2024 period.

3.6 OUT OF DATE CERTIFICATES

In total, approximately 2.1 billion RTFO Certs from 2023 were carried forward to the 2024 period – no 2022 Certs were carried forward and so no Certs could be rendered invalid at the start of the 2025 period as a consequence of being out of date. Approximately 0.5 billion 2023 Certs were again carried forward to 2025.

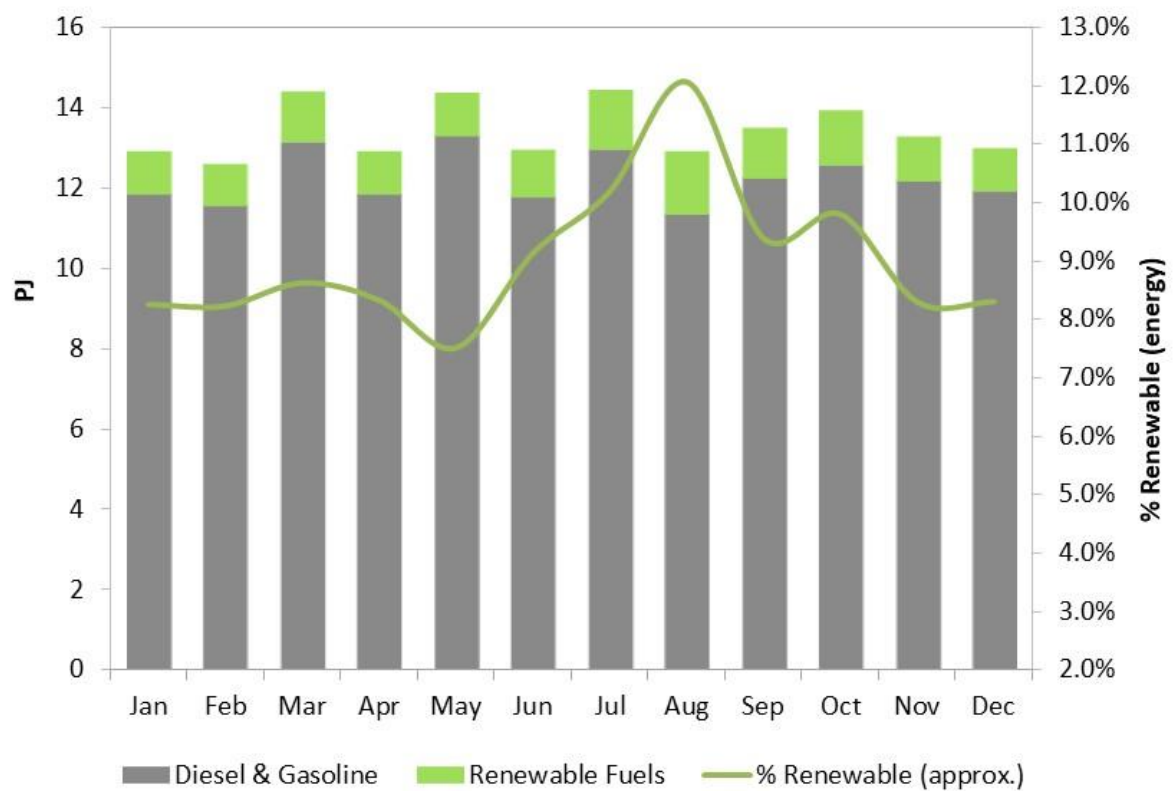
4 COMPLIANCE WITH THE RTFO

This section analyses the magnitude of the obligation and the level of compliance that was achieved by the obligated parties in respect of the 2024 obligation period.

4.1 RELEVANT DISPOSALS

According to the returns made by obligated parties throughout the obligation period – January to December 2024 – approximately 4.2 billion litres (147 PJ) of diesel and gasoline, and 471m equivalent litres (14.5 PJ) of renewable fuel were placed on the transport market (the distribution of these disposals over the period is illustrated in Figure 2).

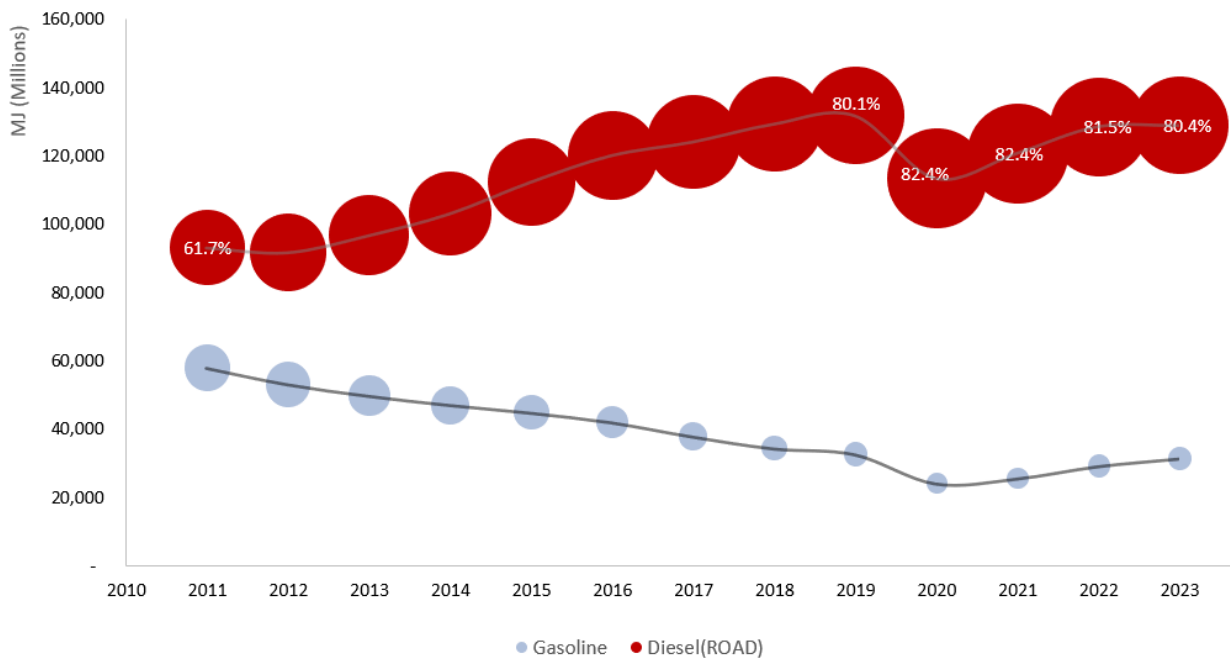
Figure 2: Monthly disposals



Average monthly sales of road transport fuels for the 2024 period were approximately 388m litres. This was an increase of 0.4% in comparison to average monthly sales during 2023.

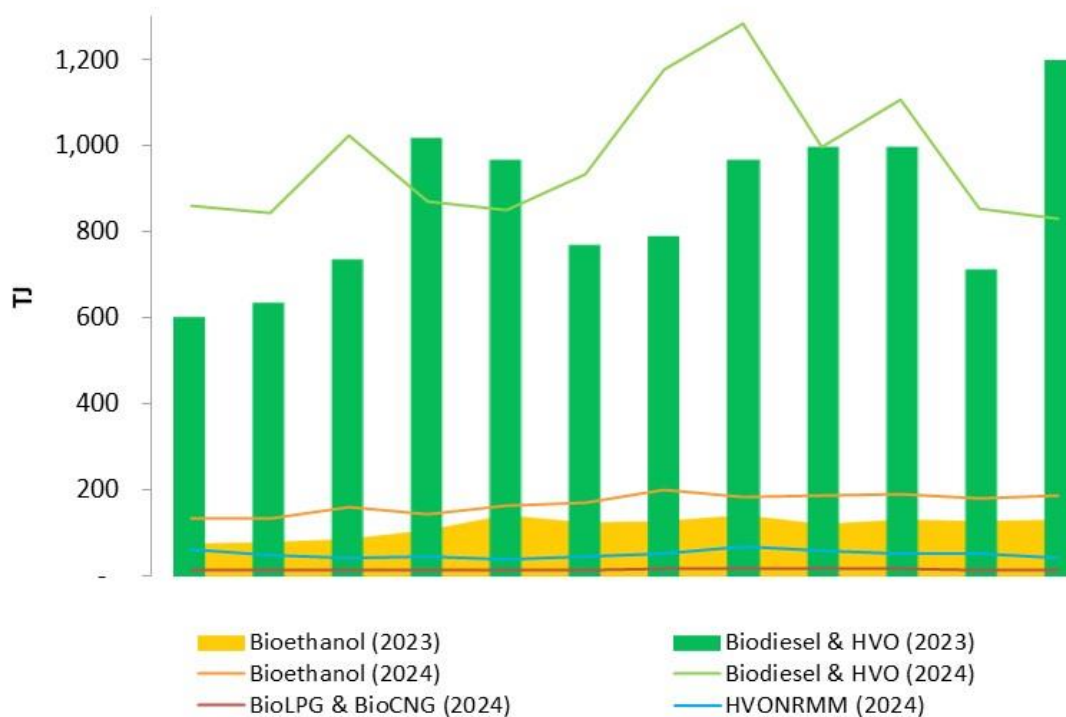
Figure 3 illustrates the trend in gasoline and diesel vehicle consumption since 2011 and the dominance of diesel consumption (illustrated by the size of the circle).

Figure 3: Diesel and gasoline road vehicle consumption (fossil and bio)



In total, approximately 14.5 PJ of renewable fuels were placed on the market in 2024, which was an increase of 15% in comparison to 2023. The following plot illustrates the breakdown between the monthly disposals of biodiesel (including HVO/CHVO), bioethanol, bioLPG, bioCNG, and HVO for non-road mobile machinery for the 2023 and 2024 periods.

Figure 4: Monthly disposals of renewable fuels, by energy



On average over the 2024 period, by energy, biodiesel and HVO/CHVO accounted for 85% of the total biofuel market, bioethanol 14%, and bioLPG and bioCNG 1%. By volume, biodiesel and HVO/CHVO accounted for 79%, bioethanol 20%, and bioLPG and bioCNG for the remaining 1%.

There were some fluctuations in biofuel blending in diesel during the year. By volume, it ranged from a maximum of 13% in August to a minimum of 8% in May. Over the year, the average blend rate was 9.7%⁷. The equivalent figure was 8.6% for the 2023 period.

Bioethanol blending in gasoline has been increasing since April 2023 when SI 142 of 2023 came into force. By volume, bioethanol blending has increased from 6.4% in 2023 to 9% in 2024.

There were also significant volumes of biofuel blended with gasoil for use in transport-related, non-road mobile machinery and in the marine sector. It accounted for approximately 2.5% of the renewable fuel supplied in Ireland. The trend over time for renewable fuel disposals is shown in Figure 5.

Figure 5: Renewable Fuel Disposals

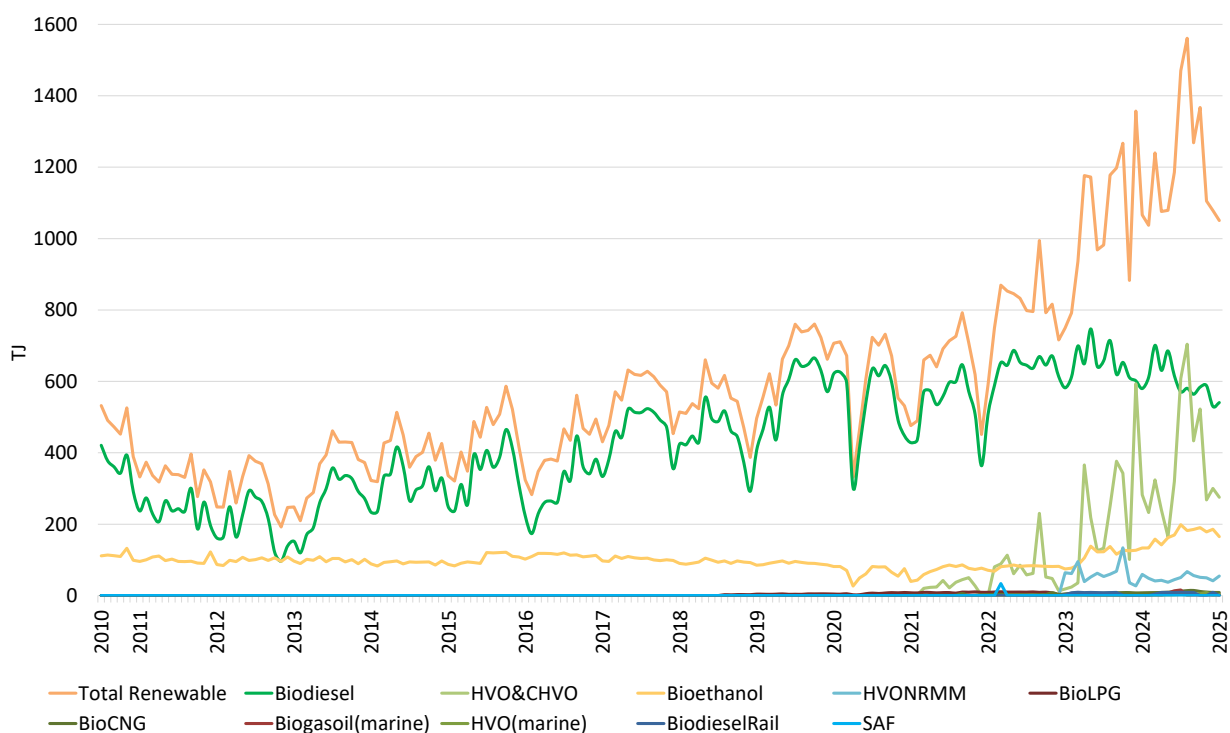


Table 2 provides the data on which Figure 3, Figure 4 and Figure 5 are based.

⁷ As a percentage of the total volume of diesel, and biodiesel, CHVO and HVO blended with diesel or sold as a diesel replacement.

Table 2: Breakdown of disposals, by energy

Year	% of Road Fossil		% of all Renewable Transport Fuel					% of all Road Fossil and all Renewable Transport Fuel			
	Diesel	Gasoline	Biodiesel/ HVO/CHVO in diesel	Bio-ethanol / biogasoline in gasoline	BioLPG & BioCNG	SAF	Biodiesel/HVO in rail & HVO/CHVO in gasoil	Diesel/biofuel in Diesel	Gasoline/bioetha nol/biogasoline	BioLPG/BioCNG/ SAF	Biodiesel rail & HVO/CHVO in gasoil
2011	61	39	70	30	-	-	-	62	38	-	-
2012	63	37	67	33	-	-	-	63	37	-	-
2013	66	34	72	28	-	-	-	66	34	-	-
2014	68	32	77	23	-	-	-	69	31	-	-
2015	71	29	77	23	-	-	-	72	29	-	-
2016	74	26	73	27	-	-	-	74	26	-	-
2017	76	24	82	18	-	-	-	77	23	-	-
2018	78.8	21.2	82.4	17.4	0.2	-	-	79.0	21.0	0	-
2019	79.8	20.2	85.7	13.7	0.6	-	-	80.1	19.9	0	-
2020	82.0	18.0	88.2	10.9	0.9	-	-	82.4	17.6	0	-
2021	82.1	17.9	87.4	11.0	1.5	-	-	82.4	17.6	<0.1	-
2022	80.9	19.1	88.1	10.0	1.5	0.3	-	81.5	18.5	<0.1	-
2023	79.7	20.3	81.9	10.7	0.8	-	6.6	79.9	19.5	<0.1	0.5
2024	78.9	21.1	79.9	13.9	1.1	-	5.2	79.0	20.5	0.1	0.5

Since 2011, the first full year of the RTFO, the quantity of biofuel blended in diesel has increased by 299% and the quantity of diesel has increased by 28%. The quantity of bioethanol placed on the market has increased by 67% whereas the quantity of gasoline has decreased by 45%.

4.2 RENEWABLE TRANSPORT FUEL OBLIGATION CERTIFICATES

During the 2024 obligation period, approximately 32 billion Certs were awarded in respect of disposals of 471m equivalent litres of renewable fuels. The majority of the renewable fuel was blended in diesel with approximately 347m litres of biodiesel (including HVO/CHVO) placed on the market – approximately 148m litres was produced from UCO, 132m litres from category 1/2 tallow and 50m litres from POME.

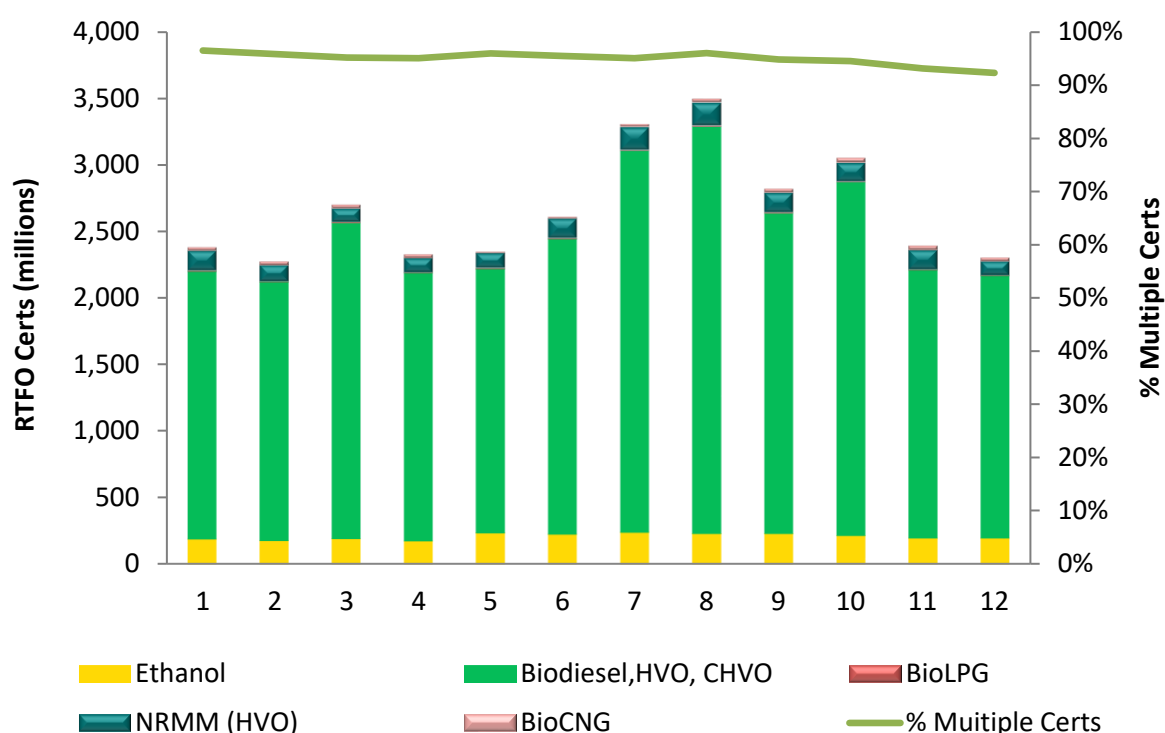
There was approximately 96m litres of bioethanol placed on the market and 20m litres of it was awarded two RTFO Certs per MJ. All double-counted bioethanol was produced from liquid whey permeate, waste starch slurry or food waste.

There was a significant volume of HVO supplied to the non-road sector, including rail, marine and non-road mobile machinery (approximately 19m litres). The majority was produced from UCO or POME.

There was over 3m equivalent litres of bioCNG placed on the market. A portion of this has not yet been awarded Certs, because the applications for Certs was delayed pending the submission of supporting supply chain information. All the remaining volume was awarded 3.4 RTFO Certs per MJ because it was produced from either food waste, starch slurry, animal manure or liquid whey permeate (all listed, or determined to be listed, on Annex IX Part A).

There was over 1m litres of bioLPG placed on the market; it was all produced from UCO and awarded two RTFO Certs per MJ. The number of RTFO Certs awarded each month is illustrated in Figure 6.

Figure 6: No. of RTFO Certs awarded

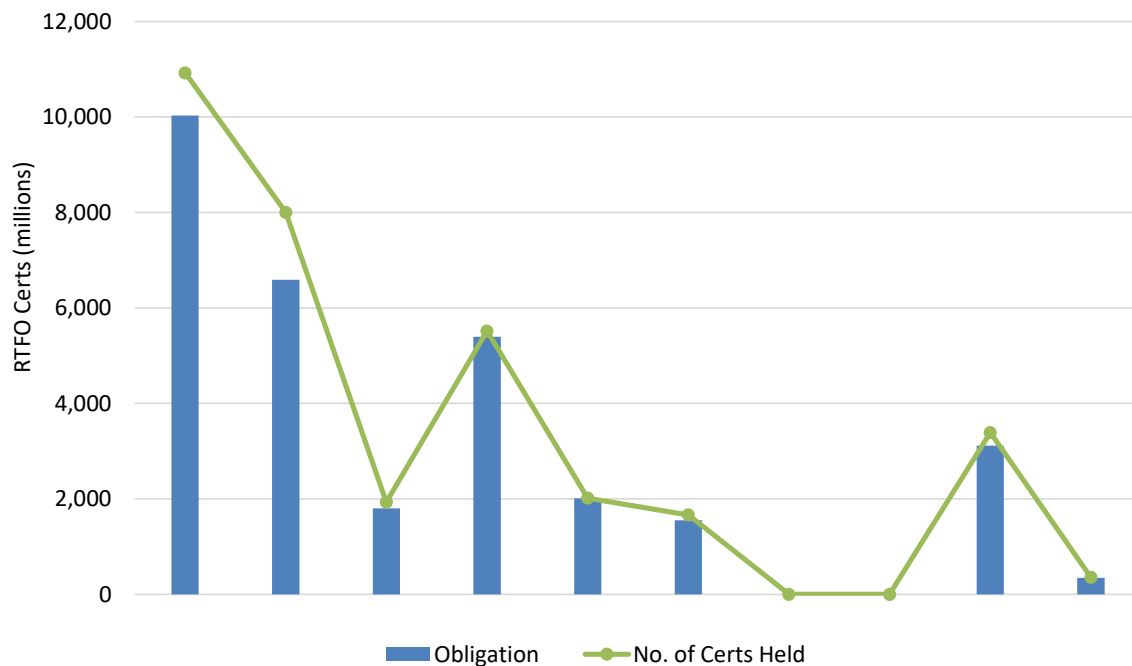


4.3 RTFO ACCOUNT HOLDER POSITION

There were twenty-two open RTFO accounts at the start of 2024: ten were held by obligated parties, eight by biofuel producers/suppliers, three by designated fuel suppliers (under SI 160 of 2017) and one by an electricity supplier (opted to participate, under SI 160 of 2017). One account, for Applegreen, was opened during the period.

The number of RTFO Certs held by each obligated party at the time of discharge and their respective obligations are illustrated in Figure 7.

Figure 7: 2024 Obligation

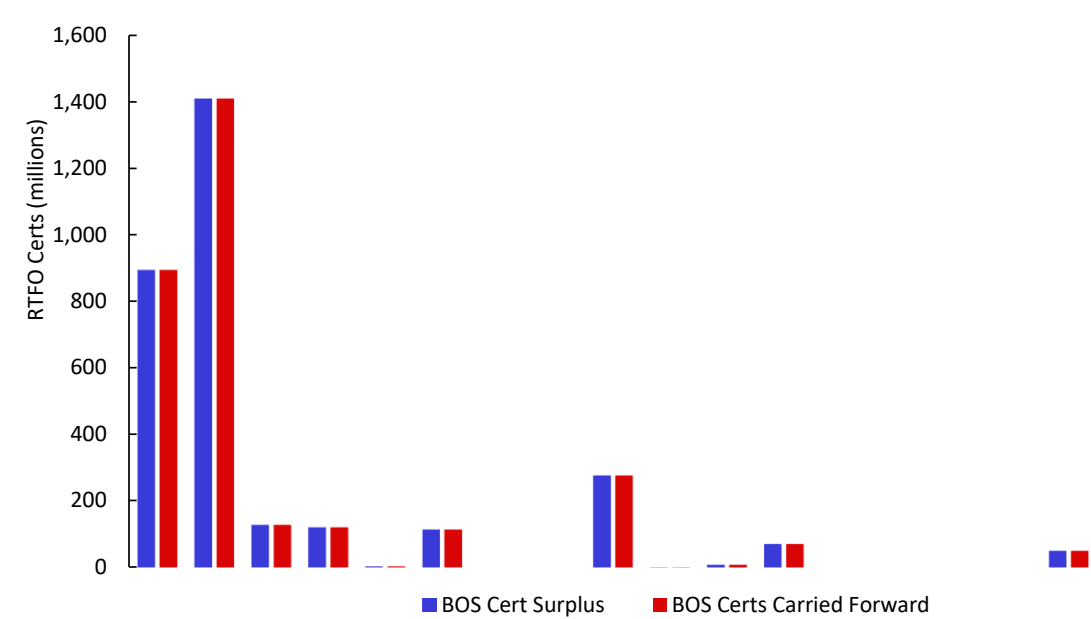


Companies that choose to participate in the RTFO because they are producers or suppliers of renewable fuels do not have a renewable fuel obligation as they are not liable for the NORA Levy on fossil fuel disposals. If they wish to claim the RTFO Certs in their own name, they must pay the RTFO Levy. Between them, the eight biofuel producers / suppliers paid the Levy on approximately 16m equivalent litres and were awarded 1.3 billion Certs, which accounted for 4% of the RTFO Certs awarded during 2024.

There were approximately 2.1 billion Certs carried forward to the 2024 obligation period, all of which were from the 2023 period. These Certs from previous periods represented 6% of all Certs held at the end of the 2024 period.

Figure 8 shows the surplus/deficit positions for all active account holders and the number of RTFO Certs that have been carried forward to the 2025 obligation period. The surplus represents the Certs held in excess of the obligation less those Certs that could not be discharged because of the 15% limit – the Certs carried forward includes those Certs held in excess of the 15% limit. No company held enough Certs from previous periods to exceed the 15% limit, so the Cert surpluses match the number of RTFO Certs carried forward in all cases.

Figure 8: RTFO Cert surpluses & carried forward



No obligated party was in a deficit position at end of the obligation period.

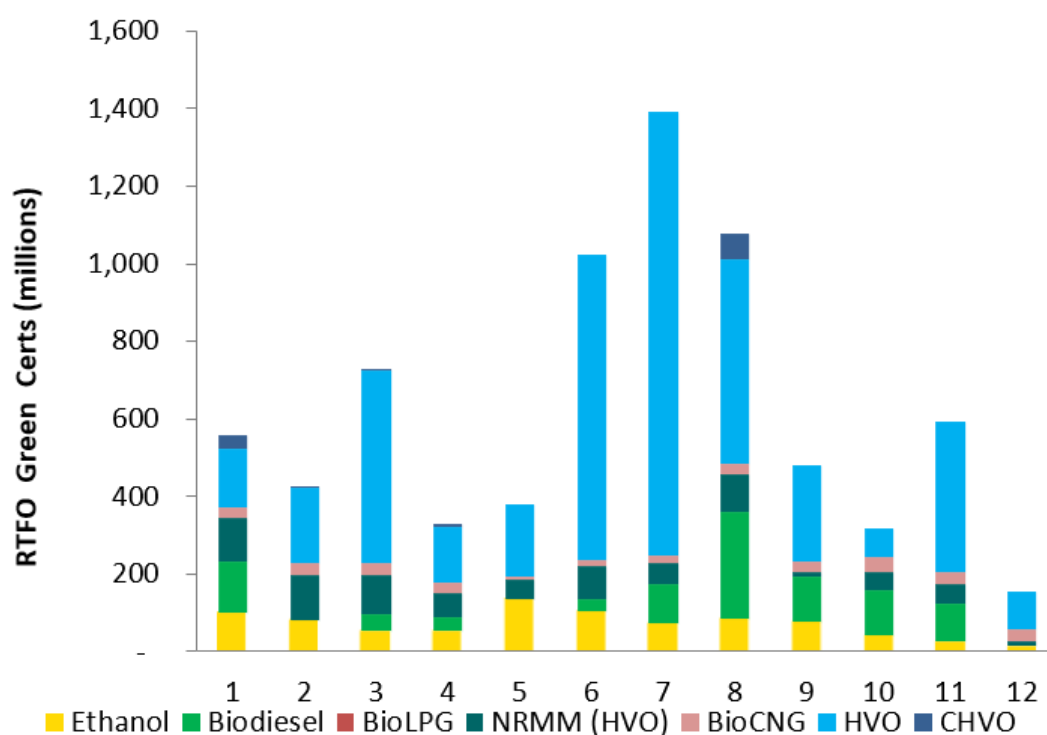
4.4 ADVANCED BIOFUEL OBLIGATION CERTIFICATES

During the 2024 obligation period, approximately 7.5 billion Green Certs were awarded in respect of disposals of 100m equivalent litres of renewable fuel produced from the feedstocks listed in Annex IX, Part A of RED II, and those determined to satisfy the feedstock descriptions contained therein. Green Certs accounted for 23% of RTFO Certs awarded during 2024.

All advanced biofuels are awarded two Green Certs per MJ, as a consequence of being produced from the feedstocks listed in Annex IX, Part A of RED II. Under the RTFO, additional Green Certs are also awarded, depending on type of advanced biofuel and its end use, e.g. HVO produced from Annex IX feedstocks was awarded 2.5 Certs per MJ, as was biodiesel produced from category 1 tallow, and bioCNG produced from Annex IX feedstock was awarded 3.4 Certs per MJ.

The number of Green Certs awarded each month are illustrated in Figure 9.

Figure 9: Green Certs Awarded



4.5 OVERALL PERFORMANCE AGAINST OBLIGATION AND ADVANCED OBLIGATION

The 2024 obligation amounted to 30.8 billion Certs. The advanced biofuel obligation was 1.5 billion Certs. In aggregate, the obligations were achieved. Table 3 provides a breakdown of the key RTFO metrics for the 2024 period.

Table 3: RTFO Metrics

Description	Volume (litre equivalent)	Energy (MJ)
Disposal of petroleum-based, road transport fuel*	4,186,890,342	146,846,433,428
<i>Gasoline</i>	<i>970,404,721</i>	<i>31,052,951,072</i>
<i>Diesel</i>	<i>3,216,485,621</i>	<i>115,793,482,356</i>
Disposal of renewable fuel**		14,571,180,350
<i>bioethanol</i>	<i>96,138,635</i>	<i>2,018,911,335</i>
<i>biodiesel</i>	<i>219,446,420</i>	<i>7,241,731,860</i>
<i>biodiesel (rail)</i>	<i>2,029,510</i>	<i>66,973,830</i>
<i>biogasoil (Marine)</i>	<i>1,102,927</i>	<i>36,396,591</i>
<i>HVO</i>	<i>102,468,535</i>	<i>3,483,930,190</i>
<i>HVO (Rail)</i>	<i>1,039,860</i>	<i>35,355,240</i>
<i>HVO (NRMM)</i>	<i>17,357,664</i>	<i>590,160,576</i>
<i>HVO (Marine)</i>	<i>656,431</i>	<i>22,318,654</i>
<i>CHVO</i>	<i>25,424,446</i>	<i>915,280,056</i>
<i>bioLPG</i>	<i>1,478,734</i>	<i>35,489,616</i>
<i>bioCNG</i>	<i>3,481,352</i>	<i>124,632,402</i>
RTFO Certs required to meet obligation		30,837,751,020
RTFO Certs issued during 2024		32,246,227,843
RTFO Certs carried forward from previous period		2,140,910,588
No. of Certs held in excess of 15% limit		0
RTFO Cert surplus/deficit		3,549,387,411
RTFO Certs carried forward		3,549,387,411
Energy applied for but not yet awarded		32,763,119
Liability for RTFO Buy-out Charge		€0
Advanced obligation (Green Certs)		1,468,464,334
No. of Green Certs issued during 2024		7,458,619,608
Green Certs carried forward from previous period		1,704,051,757
No. of Green Certs held in excess of 15% limit		1,486,262,954
Green Cert surplus/deficit		6,207,944,076
Liability for advanced Buy-out Charge		€0
* Quantity liable for the NORA Levy. ** Quantity on which the RTFO Levy was paid.		

The quantity of renewable fuel produced from Annex IX feedstocks represented 92% of the biofuel supplied to the market during the 2024 period. When the renewable fuel produced from Annex IX feedstocks is multiple counted, the total amount of renewable fuel placed on the market as a percentage of gasoline and diesel for road transport was 22%. When the RTFO Certs carried forward from the 2023 period are included, this value increases to 23.4% – the RTFO was 21% in 2024.

Each obligated party discharged its obligation using RTFO Certificates (the buy-out charge was not paid by any company). In total, approximately 3.5 billion RTFO Certs have been carried forward to the 2025 period.

4.6 BIOFUEL FEEDSTOCK

Table 4 overleaf provides a breakdown of all the renewable fuel feedstocks reported in the sustainability statements, and their country of origin. Most of the feedstocks were sourced from Europe (56%). The country that supplied the greatest quantity of feedstocks for biofuels placed on the Irish market was the UK (13%); 10% was sourced from Ireland.

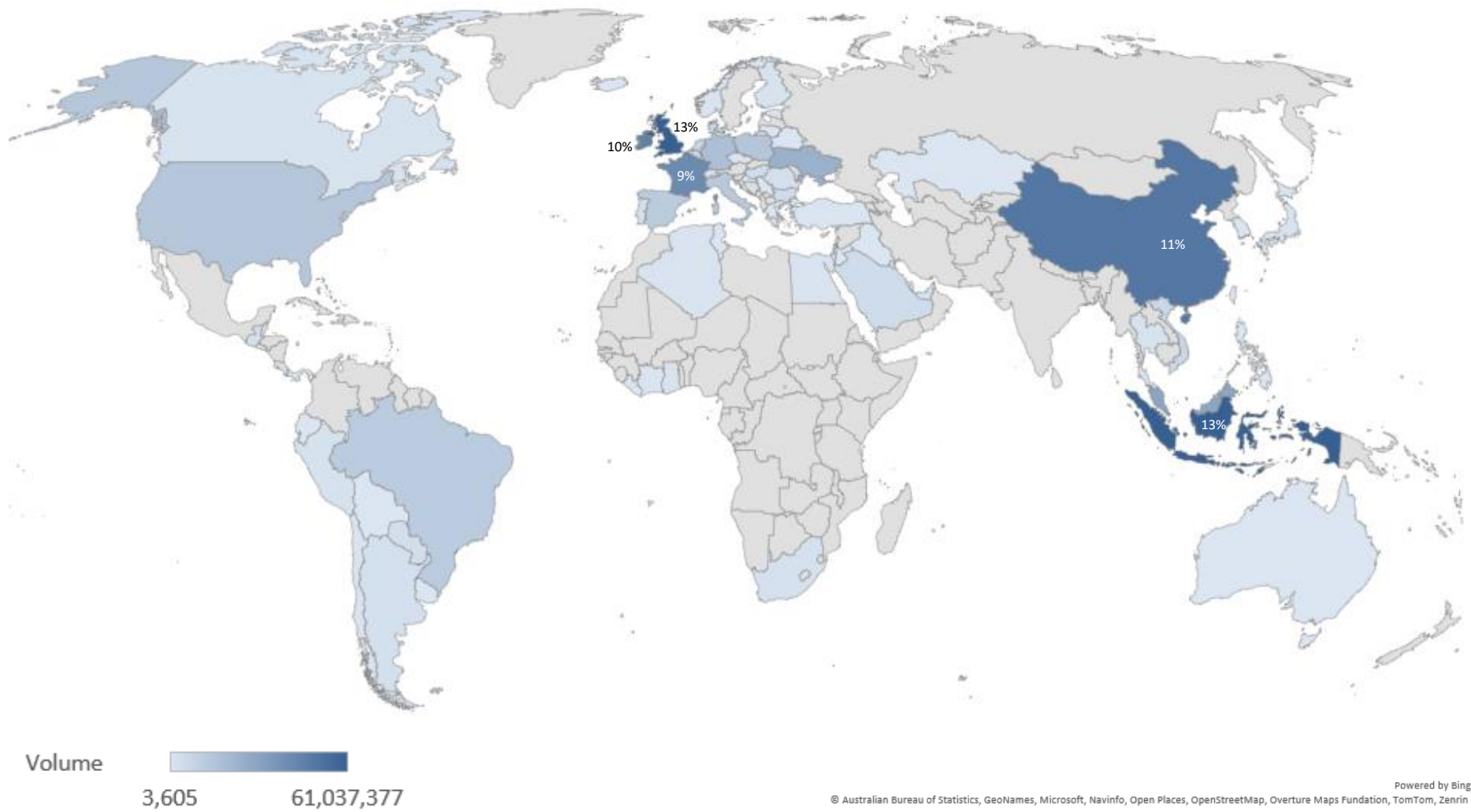
It is also worth noting that 34% of all the biofuel placed on the market in Ireland was produced from UCO – this is a notable reduction in comparison to 2023 (47%) and 2022 (62%). The UCO was replaced by category 1 tallow and POME. The share of renewable fuels produced from category 1 tallow has increased from 14% in 2022 to 19% in 2023 and 28% in 2024. The share of renewables produced from POME has also increased from c. 1% in 2022 to 14.5% in 2023 and 12% in 2024.

Figure 10 on page 22 illustrates the locations from which the biofuel feedstocks are sourced and the proportion that comes from those locations.

2Table 4: Breakdown Biofuel Feedstocks (page size A3)

[illegible]

Figure 10: Sources of Biofuel Feedstocks



4.7 VOLUNTARY SCHEMES

There are 18 EU Commission recognised voluntary and national schemes in operation. However, renewable fuel from just two was reported in RTFO Sustainability Statements: ISCC (International Sustainability and Carbon Certification) accounted for 99% of the fuel, and REDCert accounted for 1%. All the renewable fuel that was placed on the market in Ireland and awarded Certs was certified by a voluntary scheme.

4.8 GHG SAVINGS

4.8.1 Overview

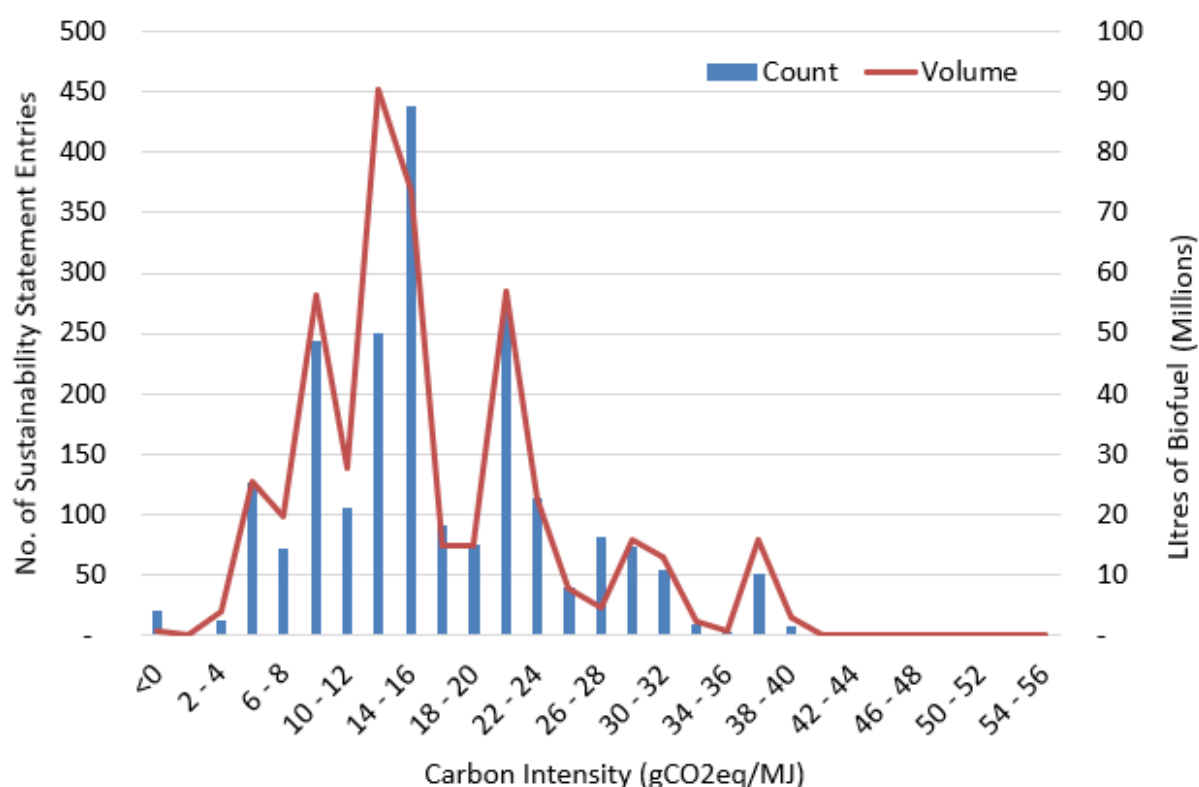
A central requirement of the Renewable Energy Directive and the Sustainability Regulations is that biofuels achieve a 50% or 60% reduction in carbon intensity (GHG emissions) in comparison to fossil fuels⁸. A fossil fuel comparator of 83.8 gCO_{2eq}/MJ for petrol and diesel was specified in Annex V of the RED. The RED was revised in 2018 and transposed into Irish law in July 2022, via SI 350 of 2022. The revised RED (RED II) changed the comparator from 83.8 gCO_{2eq}/MJ to 94 gCO_{2eq}/MJ, but it maintained the GHG saving thresholds at 50% for biofuel produced in installations that came into operation before October 2015 and 60% for installations that came into operation between October 2015 and December 2021. It also introduced a new threshold of 65% for installations that started operating from January 2021.

The weighted average lifecycle carbon intensity of all the biofuel placed on the market in Ireland in 2024 was c. 15.2 gCO_{2eq}/MJ, which represents an 82% reduction in comparison to the fossil fuel comparator of the RED (83.8 gCO_{2eq}/MJ), and an 84% reduction in comparison to the fossil fuel comparator of RED II (94 gCO_{2eq}/MJ).

There were approximately 2,150 individual consignments (entries) reported in the sustainability statements. The volume reported in each entry ranged from of a single litre of biofuel to almost 4 million litres. The following plot illustrates the range of carbon intensity values reported and how those in the 8 to 16 gCO_{2eq}/MJ range dominate. (The bar chart represents the number of entries; the line represents the volume of biofuel.)

⁸ 60% for biofuel production plants coming into operation after October 2015 and 50% for plants in operation before then.

Figure 11: Profile of Carbon Intensities



There is no methodology provided in the RED for calculating the national GHG savings. In previous Annual Reports, the RTFO Team's approach has been to calculate the GHG emissions from the biofuels placed on the road transport market and to compare that to the total GHG emissions that would have been emitted from the road transport sector⁹ had there been no biofuels consumed. Taking into account the lower calorific content of biofuel in comparison to fossil fuel¹⁰, approximately 390m litres of fossil fuel were displaced by biofuel as a consequence of placing 449m equivalent litres of biofuel on the road market¹¹. Based on a weighted average biofuel carbon intensity of 16 gCO₂eq/MJ¹² and using the RED II fossil fuel comparator (94 gCO₂eq/MJ), substituting road transport fossil fuel with biofuel resulted in a reduction of around 1,100kt of CO₂eq emissions. (Further emission savings were achieved by supplying biodiesel and HVO to rail, marine sector and non-road mobile machinery sectors.)

This equates to an overall saving of approximately 7.1% in lifecycle GHG emissions from the road transport sector as a consequence of achieving a physical biofuel penetration rate of 9.5%, by volume (8.5% by energy) in road transport. It is worth noting that these emission savings are over the lifecycle of the fuel, which includes, *inter alia*, feedstock extraction and

⁹ While RED II requires energy consumed in road and rail to be taken into account, the RTFO only applies to road transport.

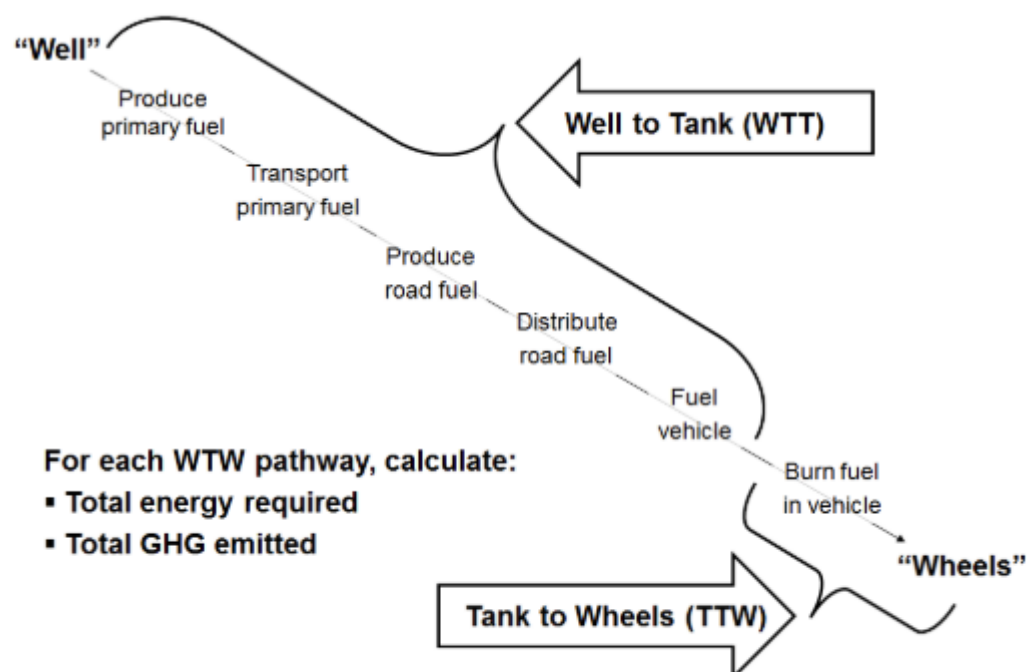
¹⁰ 32 & 36 MJ/l for gasoline and diesel versus 21 & 33 MJ/l for bioethanol and biodiesel, respectively. The calorific value of bioLPG is 24 MJ/l, BioCNG 35.8 MJ/Nm³, HVO 34 MJ/l, and CHVO 36 MJ/l.

¹¹ Assumes no change in engine efficiency as a consequence of consuming a fossil/biofuel blend. There was also biofuel supplied to rail, marine and to non-road mobile machinery, which is not included in this calculation.

¹² The weighted average carbon intensity of biofuel supplied to road transport is marginally higher than the weighted average carbon intensity of renewable fuel supplied to all transport (15.2 gCO₂eq/MJ). This is because bioethanol, which has an higher carbon intensity on average than biodiesel/HVO, accounts for a greater proportion of road transport fuel.

cultivation, fuel production, transportation and consumption (the calculation methodology is set out in Annex V of the RED/RED II). For biofuels, the emissions from using the fuel, i.e. tank-to-wheel emissions, are assumed to be zero. The concept is illustrated in Figure 12 and is different from tailpipe, or tank-to-wheel, emissions.

Figure 12: Well-to-wheel (WTW) illustration



Graphic representation of Well-to-Wheels Analysis

©EU, 2016

Article 7a of the Fuel Quality Directive (FQD) (4), which was transposed into Irish law by SI 160 of 2017 and also applies to road transport fuel, requires a 6% reduction in carbon intensity by 2020. Compliance with SI 160 is described further in Section 5.

4.8.2 Analysis of Sustainability Statements

The following tables illustrate the range of carbon intensities of the fuel types (Table 5) and the feedstocks (Table 6) that were reported in the sustainability statements in 2024.

Table 5: Range of carbon intensity reported in sustainability statements, by fuel type

Fuel Type / End-use	Description	Carbon Intensity (gCO _{2eq} /MJ)			
		Min	Avg	Weighted Avg	Max
ME	Methyl Ester ¹³ (biodiesel)	7.1	13.8	13.8	23.8
ME-Rail	Methyl Ester (biodiesel for rail use)	7.4	9.1	9.3	11.4
ME-Marine	Methyl Ester (biodiesel for marine use)	11.3	15.4	17.9	20.8
EtOH	Bioethanol	3.0	26.6	26.6	40.2
BioLPG	LPG produced from biomass	4.7	4.8	4.8	5.5
BioCNG	Biomethane produced from biomass	-95.7	-17.3	-9.6	30.1
HVO	Hydrogenated vegetable oil for road	3.6	14.2	13.3	31.6
HVO-Rail	Hydrogenated vegetable oil for rail	5.5	8.4	10.6	16.0
HVO-Marine	Hydrogenated vegetable oil for marine	5.7	14.1	15.7	18.6
HVO-NRMM	Hydrogenated vegetable oil for non-road mobile machinery use	4.7	15.5	13.9	31.6
CHVO	Co-processed hydrogenated vegetable oil	2.0	13.6	13.0	27.0

Article 29 of RED II specifies that a biofuel must achieve:

1. a 50% reduction in carbon intensity for biofuel produced in installations that were in operation on or before the 5th of October 2015, which equates to a maximum carbon intensity value of 47 gCO_{2eq}/MJ;
2. a 60% reduction in carbon intensity for biofuel produced in installations that were in operation on from the 6th of October 2015 until 31st December 2021, which equates to a maximum carbon intensity value of 37.6 gCO_{2eq}/MJ;
3. a 65% reduction in carbon intensity for biofuel produced in installations that started operations from the 1st of January 2021, which equates to a maximum carbon intensity value of 32.9 gCO_{2eq}/MJ.

¹³ Also known as Fatty Acid Methyl Ester, or FAME

Table 6: Range of carbon intensity reported in sustainability statements, by feedstock

Fuel Type	Feedstock - Description	Carbon Intensity (gCO _{2eq} /MJ)			Default Values (gCO _{2eq} /MJ)	Quantity (equivalent litres)
		Min	Avg*	Max		
Bioethanol	CORN - Corn	9.6	28.9	38.2	30 to 68	50,417,717
	SCANE - Sugar cane	19.5	23.4	28.6	27	13,616,167
	WHEAT - Wheat	21.5	30.8	40.2	31 to 71	9,722,401
	STSL - Starch slurry	7.8	7.8	7.8	-	3,104,627
	LWHEYP - Liquid whey permeate	16.0	25.7	30.1	-	13,973,062
	FW - Food waste	3.0	9.7	17.9	-	2,973,809
	SBEET - Sugar beet	38.2	38.2	38.2	23 to 50	2,330,834
Biodiesel	UCO - Used cooking oil	7.1	12.0	16.5	15	76,940,481
	TALL1 - Tallow – category 1	8.6	14.9	20.8	21	127,637,412
	BRGR - Brown Grease	11.8	11.8	11.8	-	1,964,272
	POME - Palm oil mill effluent	11.4	13.7	19.4	-	5,357,397
	FW - Food waste (not fit for use as food or feed)	12.7	15.8	16.0	-	893,777
	TALL2 - Tallow – category 2	13.0	14.6	15.2	21	563,309
	WPVAO - Waste pressings from vegetable and animal oil	10.3	12.0	19.3	-	915,691
	SAOCS - Soapstock acid oil contaminated with sulphur	9.5	13.2	23.8	-	5,174,069
Biodiesel Rail	TALL1 - Tallow – category 1	11.3	15.4	20.8	21	1,102,927
Biodiesel Marine	TALL1 - Tallow – category 1	7.4	9.3	11.4	21	2,029,510

Fuel Type	Feedstock - Description	Carbon Intensity (gCO _{2eq} /MJ)			Default Values (gCO _{2eq} /MJ)	Quantity (equivalent litres)
		Min	Avg*	Max		
HVO	UCO - Used cooking oil	3.6	10.4	24.0	16	50,142,441
	TALL1 - Tallow – category 1	12.4	14.7	21.8	22	122,017
	TALL2 - Tallow – category 2	12.4	18.6	21.8	22	18,780
	SBE - Spent bleached earth	9.2	18.3	31.6	-	6,657,125
	EFB - Empty palm fruit bunches	7.5	9.5	12.1	-	1,120,197
	POME - Palm oil mill effluent	7.0	15.9	21.7	-	44,375,751
CHVO	UCO - Used cooking oil	2.0	12.0	27.0	-	20,566,681
	FW - Food waste (not fit for use as food or feed)	4.6	4.9	6.1	-	725,388
	FBIWR - Forest-based industrial waste and residue	6.4	6.4	6.4	-	192,155
	TALL1 - Tallow – category 1	14.0	20.0	25.7	-	3,640,163
	POME - Palm oil mill effluent	16.8	20.5	24.4	-	300,063
BioCNG	WMANU - Wet manure	-95.7	-87.9	-83.0	- 96 to 26	1,036,017
	FW - Food waste (not fit for use as food or feed)	15.6	16.8	17.9	-	2,248,143
	LWHEYP - Liquid whey permeate	16.0	29.6	30.1	-	558,698
HVO-Other	UCO - Used cooking oil	4.7	11.5	24.0	16	7,709,324
	SBE - Spent bleached earth	9.2	16.3	31.6	-	1,138,681
	EFB - Empty palm fruit bunches	7.5	9.5	12.1	-	137,545
	TALL1 - Tallow – category 1	12.4	14.9	21.8	22	83,058
	TALL2 - Tallow – category 2	12.4	18.6	21.8	22	13,882
	POME - Palm oil mill effluent	7.5	15.8	21.7	-	8,275,176
HVO Rail	UCO - Used cooking oil	5.5	10.6	16.0	16	1,039,860
BioLPG	UCO - Used cooking oil	4.7	4.8	5.5	-	1,478,734
HVO Marine	UCO - Used cooking oil	5.7	15.4	16.0	16	582,741
	POME - Palm oil mill effluent	16.8	17.7	18.6	-	73,690
* Weighted average						

Where actual carbon intensity values were provided, a Voluntary Scheme was also reported. This is significant because under Article 18 (7) of the RED, and Article 30 (9) of RED II, once an account holder provides proof that the data submitted in a Sustainability Statement is covered under a Voluntary Scheme, the Member State is not entitled to further investigate the sustainability of the biofuel¹⁴.

¹⁴ RED and RED II expressly **prohibits** Member States from requiring economic operators (account holders) to provide further evidence of compliance with the sustainability criteria, if the economic operator can provide proof that the biofuel is covered by a Voluntary Scheme approved by the Commission.

4.9 AUDITING COMPLIANCE WITH PART 5A OF THE NORA ACT

Auditing of compliance by oil companies, oil consumers and biofuel producers with the renewable fuel obligations under Part 5A of the NORA Act 2007 was carried out during 2024.

A Summary Audit Report describes the findings from the plenary, desk-based audit and the on-site audits, and contains recommendations on what actions could be undertaken to rectify any errors found. It also makes recommendations on what improvements could be made to the systems and procedures for submitting and processing the Levy Returns and applications for RTFO Certs and carbon savings.

While the RTFO account holders were generally well prepared for the audits and were able to substantiate the data contained in the Levy Returns and in the applications for RTFO Certs, discrepancies were found and one account holder's performance during the audit was poor (it was not prepared for the audit and it was not able to provide substantiation for most of the data contained in its Levy Returns during the on-site audit). Notwithstanding this, the Audit Team was able to extract the necessary information from the data package provided thereafter and confirm the quantities reported in OLA. Where RTFO Certs were awarded, sufficient back-up documentation was found to substantiate the claims.

Findings and recommendations of particular note from the remaining audits include the following.

1. There are a large number of discrepancies arising between inter-company purchase and sales data. While these generally did not impact on the NORA and Biofuel levy liabilities, there is the potential for discrepancies of this nature to do so. It was recommended that DECC should seek more interactions with the companies (and personnel) completing the Levy Returns to try and reduce common reporting discrepancies. One way of reducing the reporting discrepancies would be for DECC to push obligated parties to check with exchange partners before submitting the Return, to ensure the quantities and fuel categories are aligned.
2. There are several examples where companies did not retain Revenue's 1132 form to substantiate all marine gasoil refunds, as required by DECC's '*NORA Levy Returns Guidelines and Online Levy Application (OLA) User Manual*'. It was recommended that DECC should update the OLA Manual to ensure it reflects Revenue's requirements and engage with companies to ensure they understand the requirements to maintain appropriate records.

There were also several other findings and recommendations applicable to specific companies.

In relation to supervision of CBs, under Regulation 7G of SI 33 of 2012, NORA has responsibility for supervising the operation of CBs. This is discussed in Section 6.4.

4.10 CROP CAP

The RED limits the contribution from biofuels produced from '*cereal and other starch-rich crops, sugars and oil crops and from crops grown as main crops primarily for energy purposes on agricultural land*' to 7% of final energy consumption in transport. This limit was transposed into Irish law by SI 169 of 2018. In previous obligation periods the limit was not imposed on fuel suppliers, i.e. fuel suppliers could take into account all sustainable crop-based biofuels placed on the market to meet their RTFO obligations. With the transposition of RED II via SI 350 of 2022, for the 2023 obligation period and thereafter, the contribution of crop-based biofuels was reduced to 2% and the limit was imposed on all obligated parties.

Under RED II, where the crop-based contribution was less than 1% in a Member State in 2020, the country is required to limit the contribution to 2%. There is a mechanism in RED II (and RED III) which allows Member States that have crop-based limits of less than 7% to reduce the transport target by a corresponding amount. For example, for Ireland with a crop-based limit of 2%, it could reduce the RED III 29% transport target by 5 percentage points to 24%, where the 5 percentage points are the difference between 7% and 2%.

Total energy consumption (fossil & renewable) in road transport in 2024 was approximately 160 PJ – in addition, 0.9 PJ of renewable fuel that was rewarded Certs under the RTFO was supplied to non-road transport sectors. Of the total 14.6 PJ of renewable fuels awarded Certs, there were approximately 1.6 PJ (76m litres) of crop-based renewable fuels placed on the market in 2024. Thus, crop-based biofuels contributed approximately 1% towards final energy consumption in road transport – if the energy consumed in rail was also included, the contribution of crop-based biofuels would reduce marginally.

There is also a limit on high indirect land-use change (ILUC) risk biofuels to the amount consumed in 2019, and only those companies that placed it on the market in 2019 may do so. Currently, the only high ILUC-risk feedstock identified by the EU Commission is palm oil. In 2019, approximately 2m litres (0.05 PJ) of palm oil derived biofuel was placed on the market; in 2024, no biofuel produced from palm oil was placed on the market.

5 COMPLIANCE WITH SI 160

5.1 OVERVIEW

Article 7a of the FQD was transposed into Irish law in April 2017 by SI 160¹⁵. It requires fuel suppliers to achieve at least a 6% reduction in the carbon intensity of fuels used in road vehicles, non-road mobile machinery, agricultural and forestry tractors, and recreational craft, by 2020 and thereafter. Compliance with SI 160 is administered via the RTFO.

The fuel suppliers responsible for complying with SI 160 of 2017 are, in general, the same companies responsible for complying with the RTFO and applications for RTFO Certs are combined RTFO Cert and carbon savings applications. The RTFO portal also accepts applications for carbon savings from electricity used in electric vehicles (EVs) and upstream emission reductions (UERs¹⁶).

As is the case with the RTFO where Certs can be transferred between account holders, fuel suppliers can trade carbon savings to assist with meeting the 6% target. However, unlike the RTFO, there are no double counting provisions contained in SI 160 for complying with the 6% target, there is no mechanism for buying-out of an obligation, and there is no carry over of carbon savings between compliance periods in the event of exceeding the target.

The scope of SI 160 is broader than the RTFO, which only includes for diesel and gasoline used for road transport purposes. In addition to these fuels, SI 160 includes the following fossil fuels currently used for transport purposes in Ireland: rail diesel, gasoil, CNG, and LPG.

5.2 COMPLIANCE WITH TARGET

While the 6% target is an individual fuel supplier target, the following table sets out the important compliance metrics, when considering the fuel suppliers in aggregate.

¹⁵ SI 160 of 2017 was amended by SI 670 of 2020 to make it clear the requirement to achieve the 6% carbon intensity reduction target applied not only in 2020, but every year thereafter.

¹⁶ Upstream emissions are all GHG emissions occurring at any facility or infrastructure in the supply chain prior to the facility at which the finished transport fuel is produced. NORA understands that a typical UER project is one that reduces flaring or venting of associated petroleum gases produced during oil extraction.

Table 7: SI 160 Metrics

Description	Energy (PJ)	Carbon Savings (ktonnes CO _{2eq})
Total disposal of petroleum-based transport fuel	174.7	-117.9
<i>Gasoline</i>	31.1	24.8
<i>Diesel</i>	115.8	-115.8
<i>Gasoil</i>	26.2	-26.2
<i>Rail Diesel</i>	1.6	-1.7
<i>LPG</i>	0.03	0.5
<i>CNG</i>	0.01	0.4
Total disposal of renewable fuel	14.6	970.2
<i>Bioethanol & biogasoline (in gasoline)</i>	2.0	136.2
<i>Biodiesel, HVO & CHVO (in diesel)</i>	11.6	933.0
<i>Biodiesel & HVO (in rail diesel)</i>	0.1	8.6
<i>Biodiesel & HVO (in marine & other transport)</i>	0.6	51.9
<i>BioLPG & CNG</i>	0.2	12.7
Applications in respect of electricity consumed in EVs	0	0
Applications in respect of UERs		0
Carbon savings revoked		0
Total	0	851
% savings achieved	5.8%	

If all the fuel suppliers are considered as one, a carbon intensity reduction of approximately 5.8% was achieved in 2024. No carbon savings from electricity supplied to road vehicles or UERs were claimed in 2024.

Just over half the of fuel suppliers achieved the 6% carbon intensity reduction target. NORA has not applied to the High Court for compliance orders for fuel suppliers that did not achieve the 2024 target.

6 CHANGES IN 2025 AND THEREAFTER

6.1 UNION DATABASE

RED II requires the Commission to develop a Union database (UDB) to track and trace biofuels through the supply chain. The database is partially operational and we understand that it is not being used by the majority of economic operators. Under Regulation 7F of SI 33 of 2012, RTFO account holders are required to enter sustainability and GHG savings information, and transactional data, into the UDB.

According to Annex I of Commission Implementing Regulation 2022/996, the sustainability and GHG savings information to be entered in the UDB includes the following:

- (a) name of the voluntary or national scheme;
- (b) proof of sustainability (PoS) number;
- (c) sustainability and GHG emission savings characteristics, including:
 - (i) a statement on whether the raw material or fuel complies with the sustainability criteria;
 - (ii) the GHG emission data;
 - (iii) a description of when the installation started operation (for fuels only).
- (d) The feedstock;
- (e) waste or animal by-product permit number (if applicable);
- (f) fuel type (for fuels only);
- (g) country of origin of feedstock;
- (h) country of fuel production;
- (i) statement on whether the feedstock or fuel complies with the criteria set out for low indirect land-use change-risk biofuels;
- (j) information on whether support has been provided for the production of that consignment, and if so, the type of support scheme.

The transactional data that needs to be entered in the UDB includes the following:

- (a) supplier company name and address;
- (b) buyer company name and address;
- (c) date of (physical) loading;
- (d) place of (physical) loading or logistical facility or distribution infrastructure entry point;
- (e) place of (physical) delivery or logistical facility or distribution infrastructure exit point;
- (f) volume (for fuels, the energy quantity of the fuel must also be included).

There have been problems with introducing the UDB across the entire supply chain so very little transactional data is being recorded in the UDB; thus, proofs of sustainability are not yet being produced in the UDB. For the RTFO to start relying on the UDB as the source of sustainability data, all the voluntary scheme certified companies need to be recording the sustainability and transactional data in the UDB. Members of the RTFO Team, the Department of Transport and the Department of Environment, Climate and Communications have been engaging with the European Commission on amending and seeking to fully implement use of the UDB. We understand that the following is the current schedule for adopting its use.

Figure 13: UDB implementation schedule (based on European Commission communications)

Activity	2025												2026		
	Q2				Q3				Q4				Q1		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar			
I. General steps for system deployment for all fuels															
1. Transposition of RED III		21 st													
2. Complete onboarding of all economic operators and MS institutional users		21 st													
3. Agree a deadline for mandatory use by raw material EOs															
4. Adopt DR on extension of UDB traceability on raw materials															
5. Implementation of mandatory use															
a) Registration of residues/ waste															
b) Registration of food/ feed biomass															
6. Adopt UDB provisions in the revised IR on certification															
7. Connection of National Databases with UDB															
c) Unidirectional connections															
d) Bi-directional connections															
II. Specific additional steps for system deployment for gaseous fuels															
1. Complete onboarding of all EOs and EU stakeholders with verification role		21 st													
2. Establish connection with EU GO registries and UDB															

The UDB team in the European Commission is also working on incorporating compliance with the ReFuelEU Aviation Directive into the UDB (see Section 6.6).

6.2 ELECTRICITY

It is a requirement of RED III that renewable electricity supplied via public charge points to electric vehicles be eligible for RTFO Certs. In anticipation of awarding RTFO Certs for electricity, the RTFO has been modified to enable charge point operators (CPOs) apply for Certs. While the RTFO Procedure and Guidance have been updated and published, it is noted therein that Certs cannot be awarded until the legislation is in effect.

Once the legislation is published and in effect, the process of applying for Certs from renewable electricity will be the same as for other renewable fuels, with some changes:

1. on a quarterly basis, charge point operators (CPOs) will submit applications for RTFO Certs;
2. the application will contain data on the quantity of renewable electricity supplied for each charge point (in kWh), and it will quantify the amount that was sourced from the grid and sourced from direct connections;
3. the application will be accompanied by an independent verification report (similar to that submitted for other renewable fuels);
4. the RTFO system will convert the quantities to MJ and award Certs;
5. the RTFO system will be populated by the RTFO Team with data on the percentage RES-E¹⁷.

¹⁷ For grid sourced electricity, the number of Certs to be awarded will depend on the quantity of electricity supplied to EVs via public charge points and the average renewable energy share (RES-E) over the previous two years (RED III, Article 25 (4)).

The RTFO Team has held preliminary consultations with CPOs, to raise awareness and outline the envisaged process and requirements, noting that the detailed requirements and the implementation date are subject to national legislation being published.

6.3 RENEWABLE FUELS OF NON-BIOLOGICAL ORIGIN (RFNBOs)

While RED II included targets and requirements for RFNBOs, to enable RFNBOs to be counted towards the RED targets, two Implementing Regulations were published by the European Commission defining and setting the sustainability and GHG emissions savings criteria and methodology for RFNBOs:

- Implementing Regulation 2023/1184 – sets out the detailed rules for producing RFNBOs; and
- Implementing Regulation 2023/1185 – establishes a minimum threshold for GHG savings of recycled carbon fuels, and specifies a methodology for assessing GHG emissions savings from RFNBOs, and from recycled carbon fuels.

Several voluntary schemes were recognised in December 2024 to cover RFNBOs. Thus, with the RTFO relying on voluntary schemes to certify compliance with the sustainability and GHG emission savings criteria, following recognition of the voluntary schemes, RFNBOs could be claimed under the RTFO. The RTFO application procedure and guidance were updated during 2024 to cater for RFNBOs; however, the DoT is currently preparing national legislation to set out how RFNBOs will be incorporated into the RTFO, to ensure compliance with RED III.

In the short term, a new Cert type has been created ([Blue Certs](#)) to identify Certs awarded for RFNBOs. It is planned to count Blue Certs towards both the advanced biofuel obligation and the RTFO. Eventually, similar to the advanced biofuel obligation, which is discharged with Green Certs only, Blue Certs will be used to discharge a distinct RFNBO obligation (i.e. only Blue Certs will count). Blue Certs will also be used to discharge the RTFO but not the advanced biofuel obligation.

In support of RFNBOs, several new fuels have been added to OLA, namely:

- i. RFNBO H₂ – Road
- ii. RFNBO H₂ – Intermediary
- iii. RFNBO Diesel
- iv. RFNBO Gasoline
- v. RFNBO SAF
- vi. RFNBO Methanol – Marine
- vii. RFNBO Methanol – Intermediary

6.4 SUPERVISION OF CERTIFICATION BODIES

It is a RED II requirement that Member States supervise the operation of certification bodies (CBs) carrying out audits to certify economic operators to voluntary scheme standards. This requirement was elaborated on in an Implementing Regulation (EU 2022/996) adopted in March 2022. The Implementing Regulation places obligations on Member States to establish a formal cooperation framework for supervising CBs and to appoint one Member State as a *lead audit supervisor* for each CB, where CBs carry out certification activities in more than one Member State. The requirements were transposed by Regulation 7G (1) of SI 33 of 2012 and it made NORA responsible for supervising CBs.

There has been uncertainty among Member States on interpreting and applying the RED II and Implementing Regulation requirements. Consequently, a CA-RES¹⁸ task force was established to examine how the supervision requirements of RED II and the Implementing Regulation could be implemented in practice. The recommendations of the task force are being incorporated in to draft revisions currently being prepared by the European Commission to strengthen Implementing Regulation 2022/996. In the interim, the RTFO Team will be implementing its supervision procedure (ref. 457-25X0036) that will come into effect until a more comprehensive EU-wide system is agreed and put in place.

It is worth noting that NORA's supervision of CBs will be focused on the activities carried out by CBs – it will not be an audit of RTFO account holders or other economic operators.

6.5 RED III

RED III was published in the Official Journal (OJ) on the 31st October 2023 ([link](#)). The deadline for transposition is the 21st May 2025. Along with proposals for a revised RED II, several related proposals, including regulations (and amendments to regulations) on land use, forestry and agriculture, energy efficiency, stronger CO₂ emissions standards for cars and vans, and revised alternative fuels infrastructure regulation were also published.

Some of the highlights from RED III include:

1. Member States are required to set an obligation on fuel suppliers to ensure that the amount of renewables in transport leads to either a share of renewable energy of at least 29% by 2030 or to a GHG intensity reduction of at least 14.5% by 2030. *'Each Member State shall set an obligation on fuel suppliers to ensure that: (a) the amount of renewable fuels and renewable electricity supplied in the transport sector leads: (i) to a share of renewable energy within the final consumption of energy in the transport sector of at least 29 % by 2030; or (ii) to a greenhouse gas intensity reduction of at least 14,5 % by 2030, compared to the baseline set out in Article 27(1), point (b), in accordance with an indicative trajectory set by the Member State.'*

¹⁸ Concerted Action – Renewable Energy Sources Directive

In the short term at least, Ireland will be maintaining the share of renewable energy approach rather than the GHG intensity method. The renewable energy target will also be a reduced 24%, as allowed under Article 26.

2. While blending targets/limits remain for advanced biofuels, high-ILUC risk biofuels and crop-based biofuels, and a new RFNBO sub-target is also introduced: *‘the combined share of advanced biofuels and biogas produced from the feedstock listed in Part A of Annex IX and of renewable fuels of non-biological origin in the energy supplied to the transport sector is at least 1 % in 2025 and 5,5 % in 2030, of which a share of at least 1 percentage point renewable fuels of non-biological origin in 2030.’*

The Directive also notes: *‘Member States are encouraged to set differentiated targets for biofuels and biogas produced from the feedstock listed in Part A of Annex IX and renewable fuels of non-biological origin at national level in order to fulfil the obligation... in a way that the development of both fuels is incentivised and expanded.’*

3. The scope of the Directive has been expanded to include for more than just road and rail. RED III includes all transport sectors (road, rail, navigation, aviation, etc.) and all fuels used in transport.
4. As set out in Section 6.2, under Article 25 (4), *‘economic operators that supply renewable electricity to electric vehicles through public recharging points shall receive credits,..., and may sell those credits to fuel suppliers... Member States may include private recharging points in that mechanism provided it can be demonstrated that renewable electricity supplied to those private recharging points is provided solely to electric vehicles.’*
5. The provision to limit the share of renewable fuel produced from Annex IX, Part B feedstocks to 1.7% is retained. This limit is not currently incorporated into the RTFO and the DoT’s draft renewable transport fuel policy statement (2025 - 2027) does not plan for its inclusion.
6. Article 7a of the Fuel Quality Directive is deleted. This will give rise to SI 160 of 2017 being repealed and the end of the requirement on fuel suppliers to achieve a 6% reduction in the carbon intensity of the transport fuels.

6.6 ReFUELEU AVIATION REGULATIONS

The RTFO procedure for applying for RTFO Certs, and the associated guidance, have been modified to incorporate aviation fuel suppliers’ compliance with the ReFUELEU Aviation Regulations (2023/2405). While compliance with the Regulations does not fall under NORA’s remit under the NORA Act, the Agency is to be appointed as the competent authority for aviation fuel suppliers in Ireland under the ReFUELEU Regulations. The SAF supplied and counted towards compliance with the Regulations will also be awarded RTFO

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Certs, and counted towards RED III transport targets and obligated parties' compliance with the RTFO. The minimum share set out in the Regulations for 2025 is 2% (by energy).

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