Zemo Partnership
Accelerating Transport to Zero Emissions

Renewable Fuels Assurance Scheme Fleet

RFAS Fleet: Renewable Fuel Verification Scheme for Fleet Operators

Technical Guidance

RFAS Fleet - Renewable Fuels Verification Scheme for Fleet Operators – Technical Guidance

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Date Published: 20th June 2025
Version 1.0

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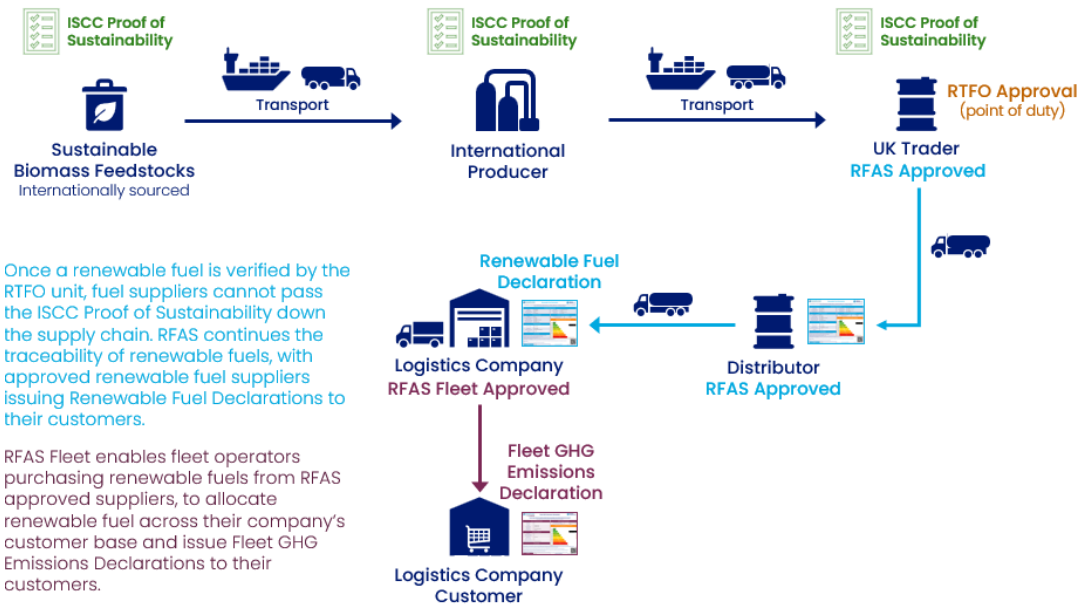
1. Introduction

The Renewable Fuel Verification Scheme for Fleet Operators (RFAS Fleet) is a chain of custody initiative managed by Zemo Partnership, that dovetails with the Renewable Fuels Assurance Scheme[1] (RFAS). RFAS Fleet aims to encourage the greater use of sustainable fuel in companies undertaking the distribution of goods and services. The initiative will independently verify the adoption of renewable fuel, and the associated greenhouse gas (GHG) emissions savings, across a fleet operator's vehicle/non-road mobile machinery fleet. This is intended to enhance the transparency and credibility of renewable fuels in decarbonising the fleet operator's customers' Scope 3 transport and distribution emissions[2]. The initiative will also aid fleet operators facing challenges in deploying renewable fuels at locations where their services are required: either due to depot bunkering constraints or the availability of renewable fuel at public refuelling sites. RFAS Fleet will facilitate the 'virtual' use of renewable fuel.

The RFAS Fleet is open to commercial fleet operators using renewable low carbon fuels such as biodiesel blends, renewable diesel including HVO (hydrotreated vegetable oil), biomethane and renewable hydrogen. The scheme facilitates the traceability of RTFO[3] and RFAS approved renewable fuel across the entire value chain. For example: biomass waste collection, HVO production, HVO distribution to fleet operator's depot, and the use of HVO in trucks transporting goods to a retailer.

Figure 1: example to show traceability throughout the renewable fuel supply chain



[1] Zemo's RFAS provides independent assurance of the GHG emissions and sustainability performance of renewable fuels supplied to commercial fleet and NRMM operators. Approved supplier list: https://www.zemo.org.uk/RFAS.

[2] Notes: (i) the fleet operators' Scope 1 plus Scope 3 emissions for the renewable fuel used in the customers journeys feeds into their customers' upstream/downstream Scope 3 transport and distribution emissions. Under RFAS and RFAS Fleet: (ii) 'Outside of Scopes' emissions are not included (e.g. biogenic CO_2 emissions from the combustion of biofuels, which are considered to be net '0' since the fuel source itself absorbs an equivalent amount of CO_2 during the growth phase); (iii) methane credits can be applied (as per REDII) for biomethane produced from manure feedstocks where fugitive emissions of methane are prevented.

[3] The Renewable Transport Fuel Obligation is the low carbon fuel policy for reducing GHG emissions from road transport (requiring fuel suppliers to ensure a percentage of their fuel sales are from renewable sources) in the UK (https://www.gov.uk/guidance/renewable-transport-fuels-obligation) and the Republic of Ireland (https://www.nora.ie/rtfo). Countries with similar regulatory frameworks and national quotas can also be included.

RFAS Fleet is underpinned by an independent audit framework that verifies compliance against the scheme's Performance Standards. Companies wishing to participate in RFAS Fleet must demonstrate their capability to meet compliance through an approval process. RFAS Fleet approval lasts for twelve months, with renewal taking place after an annual compliance audit. Following RFAS Fleet approval, fleet operators can issue their customers with a 'Fleet GHG Emissions Declaration' demonstrating renewable fuel supply chain traceability and providing GHG emissions data associated with their vehicle fleet.

Under RFAS Fleet, fleet operators are purchasing and using renewable fuel, with verified GHG emissions and sustainability credentials, and allocating the volumes of renewable fuel within their customer base. Zemo do not consider this to be a 'book and claim' chain of custody model, in which the characteristics of the product can be disconnected from the physical flow of materials, enabling companies to purchase the attributes of the product without taking physical custody. The scheme aligns more closely to the 'mass balance' model, as the volumes of renewable fuel are physically received by the fleet operator. While the boundary of this allocation is per company operations within one country, rather than per site, the sustainability credentials are always linked to physical transactions.

1.1 Scope

RFAS Fleet covers the allocation of RFAS-approved renewable fuel used exclusively in the vehicles managed by the approved fleet operator, within a single country.

The scheme does not include the following, although some of these scenarios are expected to be incorporated in the future:

- Non-RFAS approved fuels.
- Renewable electricity used in electric vehicles – Zemo plans to introduce a mechanism to verify renewable electricity used for electric fleet vehicles (using Guarantees of Origin or on-site production) in the next iteration of RFAS Fleet.
- Services provided outside of the country where the RFAS-approved renewable fuel is purchased and used[4].
- Pallet networks or other scenarios where some or all stages of the journey are carried out by other fleet operators or subcontractors - Zemo is exploring options to determine whether a suitable mechanism might be employed to allow for this in the future.
- Fuel sold by a fleet operator to their subcontractors or customers (this should be covered by approval under the Renewable Fuels Assurance Scheme) – Zemo may consider specific scenarios in future iterations of RFAS Fleet.

[4] At the time of issuing this Technical Guidance, RFAS approved suppliers can be found in the UK, Republic of Ireland, Spain, Germany and Austria; with expansion to include further countries planned. An up-to-date list of suppliers can be found on the RFAS webpage: https://www.zemo.org.uk/RFAS

2. RFAS Fleet Performance Standards

RFAS Fleet is underpinned by three Performance Standards.

1) Renewable fuel used in the fleet shall meet the GHG emissions, feedstock sustainability and traceability standards associated with the RFAS.

2) Renewable fuel volumes, and associated GHG emission and sustainability information, used in the fleet must be accurately allocated to each customer's journeys, accounting for the direct and/or virtual use of renewable fuel.

3) The fleet operator shall disclose to those customers who have been allocated renewable fuel:
   - The GHG emissions associated with the renewable fuel allocated to the customers' journeys;
   - The accompanying renewable fuel supply chain traceability information;
   - The quantity of, and/or GHG emissions associated with[5], any non-RFAS approved fuel (including electricity used in electric vehicles) accurately allocated for that customer[6].

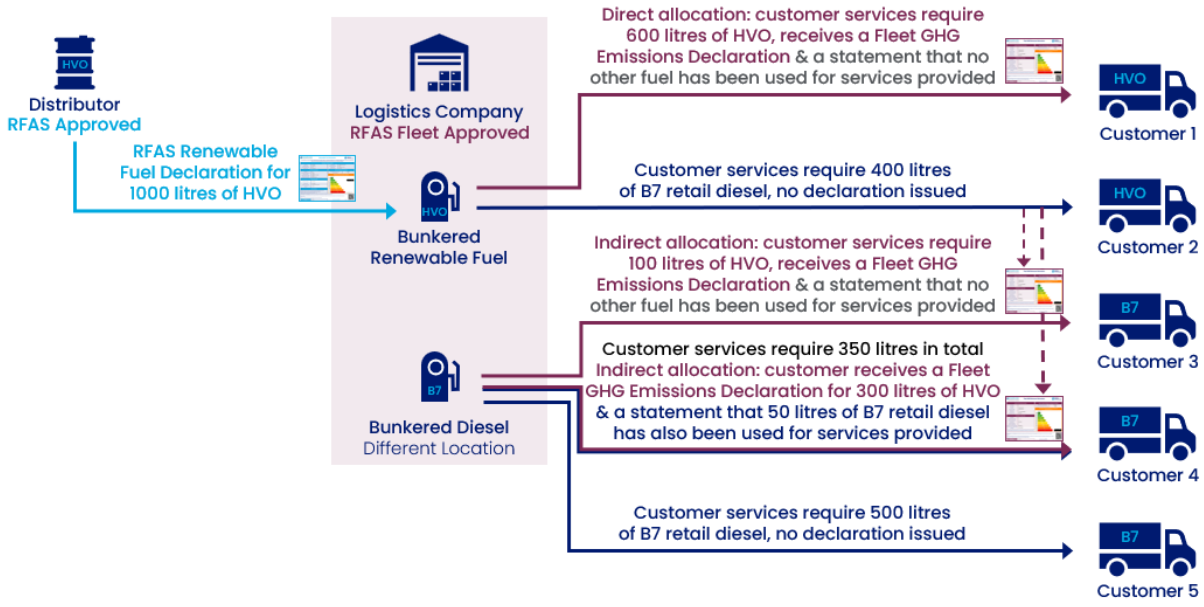
RFAS Fleet enables fleet operators purchasing bulk volumes of renewable fuels from RFAS approved suppliers[7] to allocate renewable fuel across their company's customer base. This essentially allows the fleet operator to provide those customers who wish to pay a premium for decarbonising their transport services, with traceability and GHG emissions savings information. The operator can allocate 100% renewable fuel and/or blends of renewable fuel to their customers. Two renewable fuel allocation approaches are permitted under the scheme:

- Direct allocation: the fleet operator allocates a volume of renewable fuel to fleet vehicles which directly use renewable fuel.

- Indirect allocation: the fleet operator allocates the sustainability and GHG emissions credentials of a volume of renewable fuel to fleet vehicles, irrespective of the fuel used in the vehicles (which could be renewable fuel or conventional fossil fuel[8]). This is termed as 'virtual' use. Where the vehicles are fuelled with conventional fuel, the equivalent volume of renewable fuel is physically used in vehicles which do not require low carbon fuels - the GHG emissions and sustainability benefits are disconnected[9]. This option enables the fleet operator to decarbonise services in locations where renewable fuel bunkering infrastructure and/or refuelling sites are inaccessible.

[5] This should include the Scope 1 (TTW) and Scope 3 (WTT) GHG emissions.
[6] Customers receiving RFAS Fleet GHG Emissions Fleet Declarations for renewable fuel, must also be provided with information about any other fuels/energy used in providing their overall services. It is not a requirement of RFAS Fleet that this information be provided to customers not receiving GHG Emissions Fleet Declarations. The GHG emissions associated with any fuel volumes (renewable or not) that have been used within the vehicle fleet but not allocated to customers, must be appropriately accounted for in the fleet operator's company carbon reporting. If the services provided to the customer include any journeys fulfilled by other companies (e.g. subcontractors or via pallet networks) the fleet operator should either provide the quantity of fuel used and/or associated GHG emissions assuming conventional fuel is used (e.g. retail diesel, CNG, LNG) if known, or should make it explicitly clear which services have not been included.
[7] Renewable fuel purchased from suppliers not approved under RFAS cannot be included within the allocation.
[8] For the purposes of RFAS Fleet, retail diesel (B7) is considered to be the conventional fuel for diesel vehicles. The renewable content from the biodiesel in retail diesel (up to 7%) cannot be allocated across the customer base.
[9] Indirect allocation is similar to the credit transfer between sites, within the same company, under the ISCC Plus: https://www.iscc-system.org/wp-content/uploads/2023/03/ISCC-PLUS-System-Document_V3.4.pdf

Figure 2: example to illustrate direct and indirect allocation



3. Compliance Requirements

3.1 Renewable Fuel Allocation Methodology

The renewable fuel allocation methodology is based on the volumes of RFAS approved renewable fuel purchased and used by the fleet operator.

- Direct allocation: renewable fuel volumes, and their corresponding sustainability and GHG credentials, are allocated to the vehicle directly using them. Therefore, renewable fuel volumes need to be aligned with the fleet operator's vehicle usage. Direct allocation will be simpler for cases where a dedicated bunker of renewable fuel is used for a single customer, or group of customers all requesting the renewable fuel.
- Indirect allocation: renewable fuel volumes, and their corresponding sustainability and GHG credentials, are allocated to certain customers, irrespective of the fuel used in the vehicles for those customers' journeys. The allocation is based on the renewable fuel used across the fleet operator's overall countrywide operations.[10]

The operator shall establish a twelve month fuel allocation accounting system and ensure that the output quantities of renewable fuel allocated do not exceed input quantities of renewable fuel purchased. Double counting of renewable fuel must be avoided. The twelve month period can be the calendar year, or aligned with the operator's financial year. It is strongly recommended that the allocation accounting period start on the 1st day of January, April, July or October, as this will tie in with the periods on the RFAS Renewable Fuel Declarations from the fuel suppliers. Operators who wish to use a different twelve month allocation period shall consult Zemo.

Information pertaining to the volume of renewable fuel purchased and its associated feedstock sustainability and GHG emissions, shall be sourced from the RFAS Renewable Fuel Declarations.

[10] For indirect allocation it is acceptable to allocate the equivalent volume of renewable fuel to that of the conventional fuel used; it is not necessary to adjust the volume to account for any difference in the energy density.

The renewable fuel volume allocation shall:

- Use a methodology and format of record keeping approved by Zemo (one option is to use the 'RF Allocation Tool' developed by Zemo);
- Be used exclusively in the vehicles managed by the legal entity as per the RFAS Fleet application submitted;
- Only include RFAS approved renewable fuels received and used in the vehicle fleet within the relevant country, e.g. UK *(requires a separate record keeping system for each country*);
- Identify the Renewable Fuel Declarations, the volumes of renewable fuels purchased, the type of renewable fuels (or blends) and the corresponding GHG emissions intensity;
- Be monitored and reconciled regularly, at least on a quarterly basis - unused renewable fuel volumes can be carried over within the twelve month allocation accounting period and operators are permitted to transfer up 25% of the renewable volume to the following twelve month allocation period (operators wishing to carry over a higher volume shall consult Zemo);
- Specify the allocation approach: indirect or direct;
- Account for all volumes supplied to customers that have been informed that renewable fuel has been used for the services they receive (contractually or otherwise).

The following data shall be used for the renewable fuel allocation process:

- Input inventory, including opening stock (unused fuel volume from previous period) and fuel purchased;
- RFAS Renewable Fuel Declarations;
- Output inventory, including fuel allocated and closing stock (unused fuel volume to carry over to next period where permitted);
- Usage inventories;
- Stock levels (if appliable).

The data used shall be consistent and reliable in terms of source and measurement units.

3.1.1 Allocation of Fuel for Multi-Customer Loads

Where a vehicle is used for multi-customer shared trips (e.g. delivering items for multiple customers within one trip), the total fuel used in the vehicle for the journey should be allocated between all the customers using a robust and consistent method. The methodology will need to be agreed by Zemo in advance and will ideally follow existing guidelines, such as the GLEC framework[11].

3.1.2 Allocation of Renewable Fuel Blends

The fleet operator may purchase renewable fuel blends (e.g. B20, 30%HVO) and/or allocate renewable fuel as 'virtual' blends based on the overall fuel purchases. If the blend purchased is allocated directly to the customer with the same blend percentage as purchased, the GHG emissions intensity from the Renewable Fuel Declaration can be used. For virtual allocation (allocated indirectly and/or allocated as a different blend percentage) it is necessary to calculate the GHG emissions intensity via one or both of the methods described in Appendix F.

[11] https://www.smartfreightcentre.org/en/our-programs/emissions-accounting/global-logistics-emissions-council/calculate-report-glec-framework/

3.1.3 Disclosure of GHG Emissions Data

Renewable fuel GHG emissions intensity

The fleet operator should use the GHG emissions intensity value[12] from the RFAS Renewable Fuel Declarations received for the period (taking into account the requirements in Section 3.1.2 and Appendix F for blends). If there is more than one applicable Renewable Fuel Declaration for the fuel being allocated (e.g. from different suppliers for the same period, or multiple declarations from a supplier), the operator shall calculate the weighted average GHG emissions intensity taking into account the volumes from the different declarations (see Appendix E).

Well-to-Wheel (WTW) GHG emissions

In addition to the renewable fuel supply chain specific GHG emissions intensity, the operator shall also provide their customers with the calculated WTW GHG emissions from the customer's journeys and the associated GHG emissions savings compared to using conventional fuel. For biodiesel and renewable diesel, including HVO, the conventional fuel is retail diesel. For gas trucks using compressed or liquified biomethane (bio-LNG or bio-CNG), the conventional fuel is CNG or LNG respectively. For hydrogen vehicles, the conventional fuel is fossil hydrogen produced by steam methane reformation of natural gas. Alternatively, the operator can choose to provide the associated GHG emissions savings compared to using retail diesel in all cases: for biomethane and renewable hydrogen this could be calculated using the relative energy densities of the fuels. In this case, the operator must request a different Fleet GHG Emissions Declaration template from Zemo. It is critical that the operator uses a consistent approach and that the GHG emissions savings value is accurately described in the declaration.

The fleet operator shall define their procedure for calculating and reporting GHG emissions and savings, and maintain all relevant records. This can be done within the allocation and record keeping system[13] or separately, and will be checked in the application and annual compliance audits to verify that the Performance Standards are met. See Appendix G for further details of the calculations.

Further information on how the RFAS GHG emissions intensity methodology compares with Company Carbon Reporting can be found in Appendix H.

3.2 Fleet GHG Emissions Declarations

Fleet operators approved under RFAS Fleet shall issue Fleet GHG Emissions Declarations, monthly, quarterly or annually, to those customers who have been allocated batches of renewable fuel for their journeys within the relevant period (grouping the renewable fuel volumes per customer). Operators who wish to issue declarations at a different frequency shall consult Zemo.

[12] The GHG emissions intensity is for the fuel lifecycle and as such accounts for the transport and distribution of the fuel to the fleet operator's depot or public refuelling station (based on default distances).

[13] 'RF Allocation Tool' developed by Zemo or another Zemo approved allocation record keeping system.

The operator shall use the Fleet GHG Emissions Declaration template issued by Zemo and complete the required fields (in line with allocation methodology described Section 3.1). The information includes: customer name and address[14], renewable fuel usage, whether direct or indirect allocation[15], description of feedstocks, GHG emissions intensity of fuel supply chain, WTW GHG emissions from customer journeys and GHG emissions savings. Declarations must not combine or include more than one renewable fuel type or blend, hence some customers may receive more than one declaration, one per RFAS-approved renewable fuel (or blend) allocated to them. Example declarations can be seen in Appendix C and a summary of where to source the data from is provided in Appendix D. If changes are required, Zemo approval must be sought.

All customers receiving Fleet GHG Emissions Declarations must also be provided with an accompanying statement (either within the email text or as an additional attachment[16]) confirming the quantity of, and/or GHG emissions associated with[17], any non-RFAS approved fuel/electricity used in the vehicle fleet and allocated to that customer during the same period. By providing this statement (even in cases where the volume of non-RFAS approved fuel allocated is zero), the fleet operator is making it clear to their customer whether or not the declaration includes all the GHG emissions attributed to the service provided.

Zemo would like to highlight that using data from the Renewable Fuel Declarations will typically result in a delay between using the renewable fuel and issuing the Fleet GHG Emissions Declaration (this may be as long as eight months due to national quota reporting processes). If the delays are unacceptable for the fleet operator, there are two options[18] to mitigate this:

1) The recommended approach is to create a 'virtual bank' of Renewable Fuel Declarations from an earlier period (up to three quarters prior). The renewable fuel volumes, and the corresponding GHG emissions and sustainability information, from these declarations is then allocated in the current period; e.g. declarations for fuel supplied in Q1 being allocated to fuel used for services in Q3. Should the operator find they have insufficient declarations to meet the entire volume used in the current period, they would need to use the 'default' values (see 2 below) until they receive their next Renewable Fuel Declarations. If a fleet operator is also approved under RFAS (in order to issue Renewable Fuel Declarations for fuel sold to subcontractors or customers), the renewable fuel volumes and corresponding sustainability information must be allocated to RFAS first (for fuel used in the same period as the declaration received); any remaining volumes can then be 'banked' for subsequent allocation under RFAS Fleet. Fleet operators who have only recently started to purchase RFAS approved renewable fuels would have to wait for six months or so, before they could commence fuel allocation under RFAS Fleet using this approach.

[14] The operator can request a template with 'customer reference' rather than 'customer address' if preferred.
[15] If the customers' journeys have been fulfilled by a combination of direct and indirect allocation, the operator may opt to: (i) issue one declaration for the total volume and enter 'Indirect' for 'Renewable fuel use'; or (ii) issue one declaration for the total volume and enter 'x litres/kg Direct and y litres/kg Indirect' for 'Renewable fuel use' (the sum of x and y should equal the total volume entered in 'Volume of renewable fuel used'); or (iii) issue two separate declarations to the customer at the same time, one with the volume of fuel allocated directly and one with the volume allocated indirectly.
[16] The fleet operator can determine the format of any additional document: this must not include the RFAS Fleet or Zemo logos.
[17] This should include the Scope 1 (TTW) and Scope 3 (WTT) GHG emissions.
[18] These options are only applicable to RFAS Fleet and must not be used for Renewable Fuel Declaration issuance by fleet operators who are also approved under RFAS.

2) The fleet operator may opt to use the 'default' GHG emissions intensity Scope 3 value from the latest[19] DESNZ UK Government GHG Conversion Factors for Company Reporting[20] dataset, in lieu of the GHG emissions intensity from Renewable Fuel Declarations. For blends, the default values can be used for both the renewable and fossil components. Where a default GHG emissions intensity has been used to calculate the Well-to-Wheel GHG emissions (see Appendix G), this should be made clear on the Fleet GHG Emissions Declaration by entering 'gCO_2e/MJ (default value)' after the numerical figure in the entry for 'GHG emissions intensity of fuel supply chain', and '(based on default value)' in the cell to the right of '$kgCO_2e$' in the field for 'GHG emissions from customer journeys'. 'Biomass wastes and residues' should be used for the entry for 'Renewable fuel feedstocks', and 'International' for the for 'Feedstocks country(s) of origin. Fleet GHG Emissions Declarations should not combine actual and default data (e.g. they should not report the GHG emissions intensity of fuel supply chain and feedstock data from the Renewable Fuel Declarations, while calculating the Well-to-Wheel GHG emissions from customer journeys using the company reporting Scope 3 value). The operator may chose to recall a declaration with default data and issue their customer with a new declaration with supply chain specific data (on receipt of the RFAS Renewable Fuel Declaration from their supplier), but this is not necessary.

Fleet operators using renewable fuel from public refuelling stations supplied by RFAS approved suppliers, via a fuel card system[21], may receive an RFAS Renewable Fuel Declaration for the volume purchased. Where it is not possible for the operator to receive a declaration, they may use the default values, described in the preceding paragraph.

Zemo strongly encourages fleet operators to list all of the renewable fuel feedstocks and feedstock countries of origin, as per the relevant RFAS Renewable Fuel Declarations. However, if this proves challenging in terms of administration, the fleet operator is permitted to use the default entries of 'Biomass wastes and residues' and 'International'.

Operators are required to use a unique declaration number for each declaration issued and have a record keeping system that enables customers to be matched with these specific numbers. The operator shall ensure:

- All allocation quantities are traceable throughout the process and are supported by the fuel allocation and record keeping system.
- Fleet GHG Emissions Declarations have only been issued to customers receiving services in the country where the RFAS-approved renewable fuel is purchased and used (and covered by the operator's RFAS-Fleet approval).
- The declarations are made available to the auditor at the time of the compliance audit, for a sample to be taken and compliance assessed.

Fleet operators can only issue declarations to their customers, they cannot be traded or transferred to another operator. Declarations are only valid for the periods they cover and are specific to each customer. The GHG and feedstock sustainability information presented on the declaration is not transferable to any other national scheme or activity related to decarbonising road vehicles or NRMM. RFAS Fleet declarations cannot be used as evidence of chain of custody verification for any other sector than road transport (NRMM covered by the RTFO is included within the road transport sector).

[19] The same dataset can be used for the twelve month allocation accounting period if preferred.
[20] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
[21] Third-party fuel card providers would need to be approved under RFAS.

Issuing declarations for this purpose could result in the operator being suspended or withdrawn from the scheme.

If a fleet operator also sells renewable fuel to their subcontractors or customers, this fuel cannot be included within the allocation and Fleet GHG Emission Declarations cannot be issued (the operator must ensure that there is no double counting of volumes). In this case, the fleet operator would also need to become approved under the Renewable Fuels Assurance Scheme, in order to supply their customers with Renewable Fuel Declarations.

Any alteration of the Zemo template and/or manipulation of the data presented on the declarations once issued, will result in the operator being automatically withdrawn from the RFAS Fleet, and their approval terminated.

3.2.1 Declaration Recall Process

If a declaration has been issued with inaccurate information, the fleet operator shall:

- Notify the customer and Zemo within five working days;
- Analyse the root cause and implement corrective action;
- Implement measures to avoid reoccurrence;
- Use new declaration numbers for any reissued/corrected declarations (a new version of the previous declaration number is recommended, e.g. Ref001 might become Ref001_v2).

The fleet operator shall maintain records of all declarations and recall situations. These will be subject to inspection during the compliance audit.

3.3 RFAS Approved Renewable Fuel Suppliers

The fleet operator shall maintain an approved RFAS renewable fuel supplier list for their inputs, including:

- RFAS supplier name;
- RFAS supplier reference number;
- Renewable fuels / blends supplied.

The approved supplier list shall be monitored at least on an annual basis to ensure the information is up to date.

Where a fleet operator is purchasing renewable fuel from a public refuelling station, they should contact the RFAS approved fuel supplier to verify that they do indeed supply the refuelling station: in some cases it may be a different legal entity within the fuel supplier's group which is not approved under RFAS. The operator should contact Zemo for further guidance if required.

3.4 Company Profile and Operations

To support compliance with the RFAS Fleet Performance Standards, operators shall provide the requested information in the RFAS Fleet Application Form. This will help the auditor to understand the company's operations and tailer the audit process accordingly to ensure the appropriate evidence is gathered and assessed. The RFAS Fleet Pre-Audit Questionnaire should be completed prior to each compliance audit.

The operator must contact Zemo if they wish to make any changes to the renewable fuel allocation methodologies or related operations, such as:

- Types of renewable fuels and blends used.
- Allocation approach (e.g. changing from all indirect to a mix of direct and indirect).
- Allocation period and/or frequency of Fleet GHG Emissions Declaration issuance.
- Methodology for fuel volume, GHG emissions and sustainability information allocation.
- Methodology for allocating fuel volumes for multi-customer loads.
- Methodology for calculating GHG emissions and savings.
- Personnel responsible for RFAS Fleet.

3.5 Record Control

Approved fleet operators shall implement and maintain records to demonstrate compliance with the RFAS Fleet for at least five years, or longer if required by legislation. These shall include but are not be limited to pre-audit questionnaires, renewable fuels allocation accounting records and GHG calculations.

3.6 Logos and Claims

3.6.1 Company Statements

Fleet operators might be interested in marketing their approval status under RFAS Fleet. In order to do this, the following disclaimers can be used:

- Company 'x' is an approved fleet operator under the RFAS Fleet, our reference number is XXXXX.
- Company 'x' has been verified under the RFAS Fleet to allocate renewable fuel used in our fleet. Our RFAS Fleet reference number is XXXXX.

Operators shall be mindful of their marketing claims and avoid using misleading GHG emissions savings for renewable fuels and blends approved under RFAS Fleet.

3.6.2 RFAS Fleet Logo Use

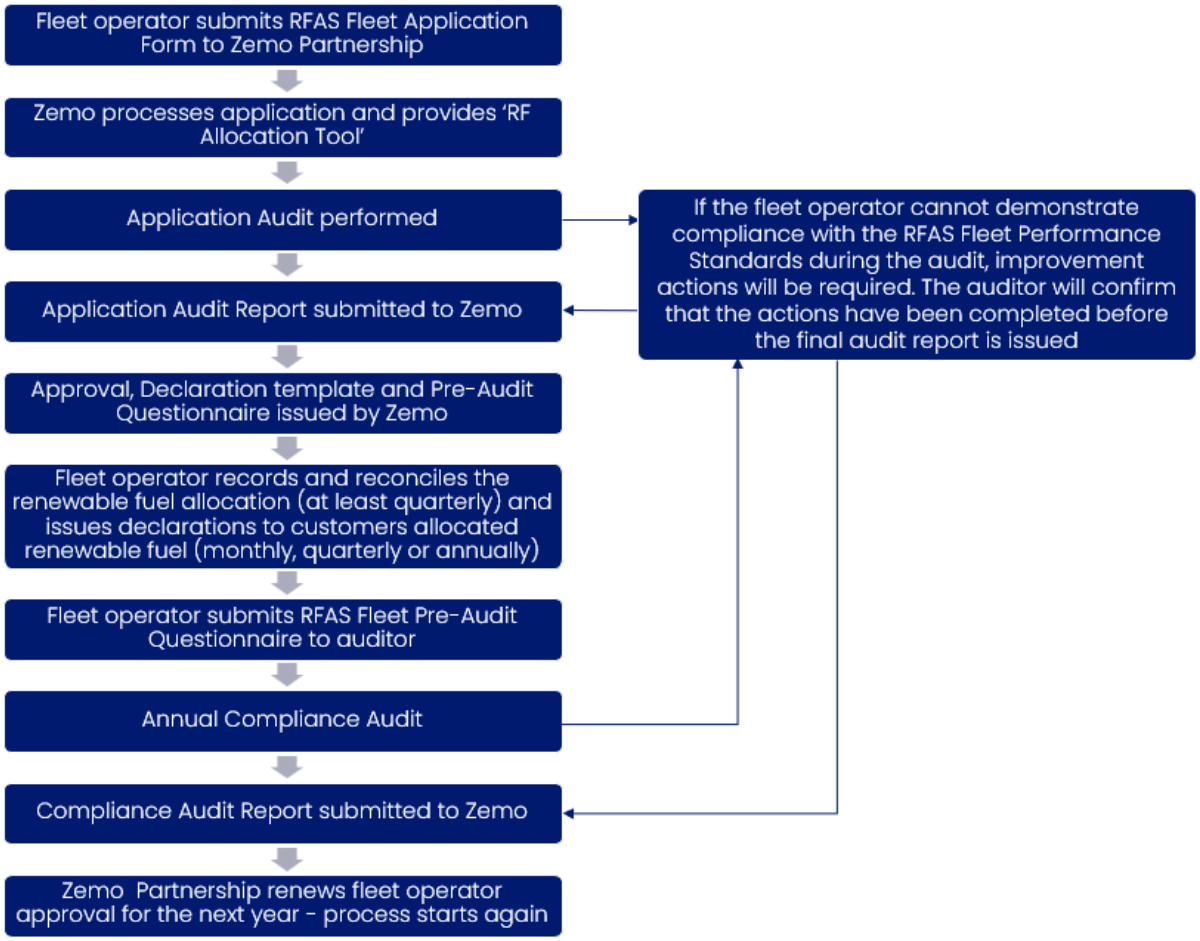
Operators will be issued with the RFAS Fleet logo. The following requirements shall be met:

- The operator's RFAS Fleet reference number shall be included wherever the logo is used to allow a validity verification.
- The following actions are not allowed:
  - Changing the proportions of the design, the content, or the colour.
  - Changing the logo orientation.
  - Combining any logos or designs in a way that implies association.

The logo can only be used by the approved operator and signposted on their company website and reports, such as corporate sustainability reports.

4. RFAS Fleet Approval Process and Compliance Monitoring

Figure 3: RFAS Fleet scheme process flow diagram



4.1 Application and Approval

To become approved under the scheme, the fleet operator will need to complete the RFAS Fleet Application Form and submit this to Zemo. If a company comprising of multiple legal entities or brands under one parent company, wishes for more than one entity to be approved under RFAS Fleet, they should provide an explanation of the group structure at the time of application.

An 'Application Audit', determining compliance against the RFAS Fleet Performance Standards, will be undertaken by the auditor appointed by Zemo. The Application Audit will be arranged between the operator and the auditor within one month of submitting the application.

Once the compliance has been verified, Zemo will approve the fleet operator within two weeks of the paperwork being submitted. Zemo will send the following documents to the approved operator:

- RFAS Fleet Approval document with a unique reference number for the company (Appendix A).
- RFAS Fleet Agreement to be signed by the fleet operator (Appendix B). This document will present a set of conditions that the company is requested to agree to.
- The Fleet GHG Emissions Declaration template with the unique reference (Appendix C).

The operator can start to issue declarations (on a monthly, quarterly or annual basis) for renewable fuel used after the approval date, as shown in the Approval Document. If the fleet operator has

sufficiently comprehensive renewable fuel allocation records available (using the 'RF Allocation Tool' developed by Zemo or another Zemo approved allocation record keeping system) and is able to demonstrate full compliance during the application audit, Zemo will permit the operator to issue Fleet GHG Emissions Declarations for volumes used in the current declaration period (e.g. if an operator is approved in November and opts to issue annual declarations on a calendar year basis, in the following March they could issue a declaration for the entire previous year). Written evidence of this permission will be required during the first compliance audit.

4.2 RFAS Fleet Compliance Monitoring

Compliance verification against the RFAS Fleet Performance Standards will be conducted by Zemo's appointed auditor on an annual basis. The timing of the first compliance audit will be determined at the time of approval and will vary depending on the frequency of declaration issuance, whether the operator is using declarations from the same period or an earlier period, and whether Zemo has permitted declarations to be issued for volumes used prior to the date of approval.

Prior to each annual compliance audit the operator should submit a RFAS Fleet Compliance Questionnaire. The audit will include verifying the fuel allocation methodology, checking the GHG emissions calculations and reviewing the company's fleet management system, selected RFAS Renewable Fuel Declarations received and selected Fleet GHG Emissions Declarations issued. The information to be provided during compliance audit can include:

- RFAS Fleet Pre-Audit Questionnaire.
- Allocation of incoming Renewable Fuel Declarations against customers and operators' usage.
- GHG emissions and savings.
- Approved supplier list and RFAS validation on Zemo website[22].
- Incoming documents, including, but not limited to:
  - Renewable fuel purchase logs.
  - Contractual volumes with renewable fuel suppliers.
  - Renewable Fuel Declarations.
  - Renewable fuel invoices.
  - Renewable fuel stock readings.
- Usage documentation:
  - Fuel management system usage reports.
  - Telemetry.
  - Fuel load reports.
  - Fuel load receipts.
- Allocation documentation:
  - Renewable fuel allocation records (in the 'RF Allocation Tool' developed by Zemo or another Zemo approved allocation record keeping system.).
  - Contracts with customers for renewable fuel volumes or evidence of customers' requests to use renewable fuel.
  - Fleet GHG Emissions Declarations.

A Compliance Audit Report will be prepared by the auditor and sent to Zemo and the operator within ten working days of the audit.

If nonconformities are raised, the operator has forty days to take action. A follow-up audit report will be issued if compliance is then demonstrated. The operator will be required to cover any additional

[22] https://www.zemo.org.uk/RFAS

auditor costs for closing nonconformities (potentially where there are multiple and/or more complex nonconformities). If action is not taken, approval under the scheme can be terminated. If Zemo deems an operator to be a high risk for repeated non-compliance, an interim compliance audit may be required. The annual participation fee includes one compliance audit per year; the operator will be required to cover the cost of an additional audit if Zemo deems this necessary.

Zemo will issue the operator with a new RFAS Fleet Approval Document at the start of the second year of RFAS Fleet, providing the compliance audit has been reviewed and approved. This process will continue each year. The first renewal will occur twelve months after the approval date or the start of the period for which declarations have been issued, whichever comes first.

5. Governance

Zemo is responsible for managing the day-to-day delivery of the scheme and engagement with relevant stakeholders, including RFAS Fleet approved operators, auditors and the RFAS Technical Committee. Further details of roles and responsibilities below.

Zemo Partnership

- Processing operator application approval.
- Processing operator suspension and withdrawal.
- Liaising with relevant stakeholders to harmonise the approach with RFAS Fleet.
- Providing and/or engaging with technical support when required.
- Informing fleet operators of Technical Guidance updates.
- Processing complaints and appeals as per RFAS Fleet Technical Guidance Section 5.2.
- Managing public information shared on the website.
- Appointing audit providers.

Fleet Operator

- Making its application to the scheme.
- Engaging with the audit provider.
- Ensuring on-going compliance with RFAS Fleet Performance Standards.
- Informing Zemo about any changes affecting their status, such as contact personnel, company name, change in operations or similar.
- Ensuring compliance audit checks are conducted within the timeframes.
- Determining corrective actions and sending evidence to the auditor for nonconformity closure.
- Reporting to Zemo any complaints received related to the compliance and performance within the scope of the scheme operations.

RFAS Fleet Audit Provider

- Conducting application and compliance audits.
- Providing opportunities for improvement.
- Raising nonconformities when RFAS Fleet requirements are not met.
- Reviewing corrective actions and related evidence for nonconformities closure within forty days of issuance.
- Reporting to Zemo any complaints or concerns relating to the scheme, that could compromise the reputation of the RFAS Fleet and/or Zemo.

5.1 Fleet Operator Suspension and Withdrawal

Suspension

Failure to comply with the clauses stipulated in the RFAS Fleet agreement signed by each fleet operator once approved under the RFAS Fleet may result in suspension from the scheme.

The fleet operator approval will be suspended if any of the following scenarios arise:

- Renewable fuels and/or blends used by the operator are no longer in compliance with the RFAS Fleet. This can be due, but not limited to, failure to close corrective action requests or the fuel no longer meeting the RFAS Fleet criteria.
- Evidence of serious misuse and/or fraudulent behaviour against RFAS Fleet requirements during verification audit checks, or ongoing monitoring.
- Failure to provide the documents required for on-going monitoring.

Documentation related to major non-compliances shall be collated by Zemo. This includes RFAS Fleet compliance audit reports, correspondence between Zemo and the fleet operator, or any information provided by the operator in relation to the non-compliant matters. Deadlines for meeting RFAS Fleet compliance shall be clearly identified, in conjunction with the nonconformities.

Zemo shall trigger a concern regarding an operator's failure to meet compliance and recommend RFAS Fleet suspension to the RFAS Technical Committee, the decision-making body that oversees the technical management and delivery of the RFAS. All relevant documentation related to the non-compliance shall then be forwarded to the Technical Committee. The group shall determine whether the suspension should be approved. The review period is fourteen days.

At the end of the fourteen-day period, the operator shall be informed of the suspension in writing, and within seven days of the suspension notice the company will be removed from the RFAS Fleet website and prohibited from issuing Fleet GHG Emissions Declarations. The RFAS Fleet logo must be removed from the company website and all marketing materials.

The fleet operator shall be offered fourteen days to appeal the suspension in writing. This shall be emailed to rfas@zemo.org.uk. If a written appeal is submitted, the RFAS Technical Committee shall review any new evidence and determine whether to uphold the suspension or not, as the final decision. This shall take twenty-one days. If the operator is permitted to return to the RFAS Fleet following their appeal, the company will be required to go through the formal RFAS Fleet application process including a compliance audit, for which there will be a fee.

Zemo will review the suspension with the RFAS Technical Committee and RFAS Technical Lead. If all parties agree on suspension being the best course of action, the operator will be notified within five working days of the decision being taken. Once notified, the operator will have ten working days to appeal. Upon appeal receipt, Zemo will distribute the appeal to the RFAS Technical Committee and RFAS Technical Lead so that a final decision can be reached based on the evidence provided in the RFAS appeal and input received from RFAS Technical Committee and RFAS Technical Lead.

Once the suspension decision is taken and appeal process finalised, Zemo will formalise the suspension and update their records to show 'suspension date DD/MM/YYYY'. A final letter will be sent to the operator and the operator will remove all logos and RFAS Fleet references from all marketing material within five working days of the suspension date. The operator suspension date will be shown on the Zemo website for a period of six months. The operator will not be eligible for a refund of the RFAS Fleet participation fee.

Withdrawal

In the event that a fleet operator does not intend to continue being approved under RFAS Fleet, written notification shall be sent to Zemo. The withdrawal will be processed within ten days. Zemo will update their records to show the operator has withdrawn its participation in the scheme 'withdrawn date DD/MM/YYYY'. The operator will remove all logos and RFAS Fleet references from all marketing material within thirty days of the date of a signed confirmation of withdrawal letter from Zemo. The operator's withdrawal date will be presented on Zemo's website for a period of six months. The operator will not be eligible for a refund of the RFAS Fleet participation fee.

5.2 Complaints and Appeals

Zemo will ensure that complaints and appeals received in relation to audit check results, fees, suspension and withdrawals are considered, processed and monitored. The following steps will be followed:

- Acknowledge receipt of the complaint or appeal to the complainant within five working days of receiving the complaint.
- Investigate the complaint and specify its proposed actions in response to the complaint within one month.
- Take appropriate action with respect to complaints and any weaknesses found in processes.
- Notify the complainant when the complaint is successfully addressed and closed.

5.3 Public Information and Enquiries

Zemo will make the following information publicly available on their website:

- Fleet operator company name and renewable fuel blend(s) used;
- Fleet operator reference number.

RFAS Fleet application forms and other enquires should be sent to rfas@zemo.org.uk.

5.4 RFAS Fleet Application and Participation Fees

RFAS Fleet requires companies to pay an application fee and annual participation fees to maintain on-going approval under the scheme, which includes the auditor compliance checks. Suppliers approved under both RFAS and RFAS Fleet will pay a combined participation fee, with a discount to account for the overlap in administration and auditing costs.

Appendix A: RFAS Fleet Approval Document

Zemo Partnership
Accelerating Transport to Zero Emissions

Renewable Fuels Assurance Scheme
Fleet

Fleet Operator Approval

#CompanyName#,
#CompanyAddress#

#ComapnyName# is approved under the Renewable Fuel Verification Scheme for Fleet Operators (RFAS Fleet), reference number ##/F##/25, to allocate #Renewable Diesel - HVO with 100% renewable fuel content# across their #UK# customer base.

Approval period
#th #Month# 2025 to #th #Month# 2026

Zemo Partnership signature
Gloria Esposito, Director of Sustainable Business

G. Esposito

Approval date: #th #Month# 2025

Appendix B: Terms and Conditions

The Fleet Operator agrees to the following Terms of Reference:

1) Acknowledges and agrees with the general obligations and responsibilities for participation in the Renewable Fuel Verification Scheme for Fleet Operators, as stipulated in the RFAS Fleet Technical Guidance Document including appendices. This includes annual payment of the RFAS Fleet participation fee.

2) Agrees to conform to all applicable requirements and contractual obligations, corrective actions and related data requests within the RFAS Fleet scope.

3) Acknowledges and agrees to provide records as requested by Zemo Partnership and the appointed auditor to demonstrate compliance with the scheme.

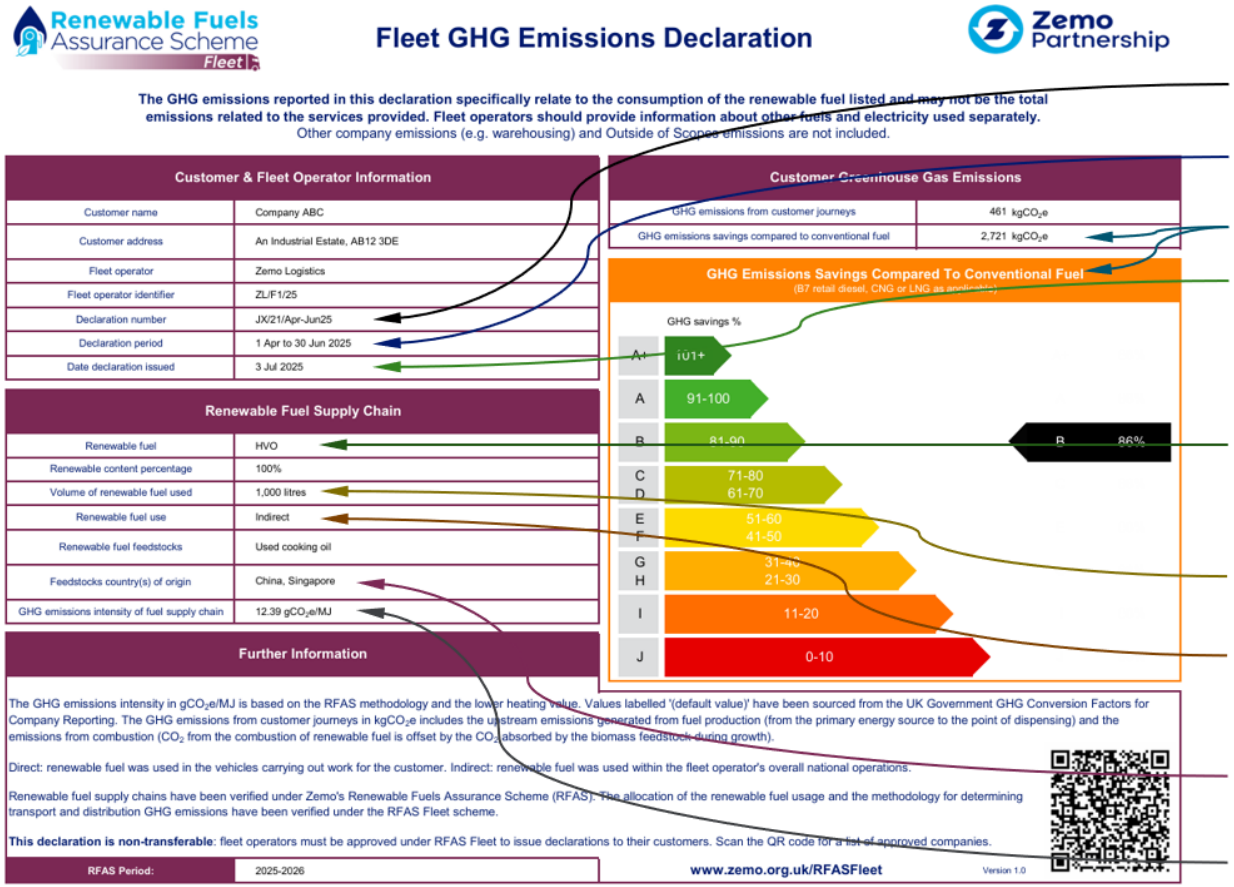
4) Commits to and agrees that the quantities of renewable fuel covered by RFAS Fleet have not been counted towards any form of carbon accounting scheme.

5) Acknowledges and agrees that the Zemo Partnership, RFAS and RFAS Fleet names and logos will not be used:
   - In a way that could cause confusion, misinterpretation, or loss of credibility;
   - In a way that implies Zemo Partnership endorses, participates in, or is responsible for activities performed by the Company, outside the scope of RFAS Fleet.

6) Acknowledges and agrees that suspension of RFAS Fleet participation may occur if:
   - Renewable fuels covered and systems are not in compliance with the Performance Standard.
   - Evidence of misuse and/or fraudulent behaviour regarding RFAS Fleet requirements is detected.
   - It fails to provide the documents required for ongoing monitoring.

Appendix C: Fleet GHG Emissions Declaration Examples

Example 1: example with GHG emissions savings compared to conventional fuel, indirect fuel use and GHG emissions from customer journeys calculated using the fuel supply chain GHG emissions intensity shown



Renewable Fuels Assurance Scheme Fleet

Fleet GHG Emissions Declaration

Zemo Partnership

The GHG emissions reported in this declaration specifically relate to the consumption of the renewable fuel listed and may not be the total emissions related to the services provided. Fleet operators should provide information about other fuels and electricity used separately.
Other company emissions (e.g. warehousing) and Outside of Scope emissions are not included.

Customer & Fleet Operator Information

Customer name	Company ABC
Customer address	An Industrial Estate, AB12 3DE
Fleet operator	Zemo Logistics
Fleet operator identifier	ZL/F1/25
Declaration number	JX/21/Apr-Jun25
Declaration period	1 Apr to 30 Jun 2025
Date declaration issued	3 Jul 2025

Renewable Fuel Supply Chain

Renewable fuel	HVO
Renewable content percentage	100%
Volume of renewable fuel used	1,000 litres
Renewable fuel use	Indirect
Renewable fuel feedstocks	Used cooking oil
Feedstocks country(s) of origin	China, Singapore
GHG emissions intensity of fuel supply chain	12.39 gCO_2e/MJ

Customer Greenhouse Gas Emissions

GHG emissions from customer journeys	461 $kgCO_2e$
GHG emissions savings compared to conventional fuel	2,721 $kgCO_2e$

GHG Emissions Savings Compared To Conventional Fuel
(B7 retail diesel, CNG or LNG as applicable)

GHG savings %

A+ 101+
A 91-100
B 81-90
C 71-80
D 61-70
E 51-60
F 41-50
G 31-40
H 21-30
I 11-20
J 0-10

B 86%

Further Information

The GHG emissions intensity in gCO_2e/MJ is based on the RFAS methodology and the lower heating value. Values labelled '(default value)' have been sourced from the UK Government GHG Conversion Factors for Company Reporting. The GHG emissions from customer journeys in $kgCO_2e$ includes the upstream emissions generated from fuel production (from the primary energy source to the point of dispensing) and the emissions from combustion (CO_2 from the combustion of renewable fuel is offset by the CO_2 absorbed by the biomass feedstock during growth).

Direct: renewable fuel was used in the vehicles carrying out work for the customer. Indirect: renewable fuel was used within the fleet operator's overall national operations.

Renewable fuel supply chains have been verified under Zemo's Renewable Fuels Assurance Scheme (RFAS). The allocation of the renewable fuel usage and the methodology for determining transport and distribution GHG emissions have been verified under the RFAS Fleet scheme.

This declaration is non-transferable: fleet operators must be approved under RFAS Fleet to issue declarations to their customers. Scan the QR code for a list of approved companies.

RFAS Period:	2025-2026

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Each declaration must have a unique number: the format can be determined by the fleet operator.

The first declarations issued may be for a partial period, starting from the date of approval.

Comparator used to calculate GHG emissions savings must be accurately described in the declaration.

Date declaration issued is the date the declaration is sent to the customer (±2 days is acceptable if declarations are generated in batches).

Operators using renewable diesel may enter 'renewable diesel' here, even if the Renewable Fuel Declarations they receive list 'HVO'. However, if the received declaration lists 'renewable diesel' the operator must check with their supplier to confirm that the renewable diesel is HVO, before entering 'HVO'. The production process and feedstocks also give a good indication of whether the renewable diesel is HVO.

Remember to include the units for fuel volume.

Enter 'Direct' or 'Indirect' as appropriate. If both apply and opting to issue combined declaration, enter 'x litres Direct and y litres Indirect', ensuring the sum of x and y equals the total volume entered above.

Write countries in full (common abbreviations such as UK and USA are acceptable) rather than using country codes. Contact Zemo if there is insufficient space to list all countries.

Use 2 decimal places for GHG emissions intensity.

Example 2: example with GHG emissions savings compared to conventional fuel, direct fuel use and GHG emissions from customer journeys calculated using default GHG emissions intensity from DESNZ GHG Conversion Factors for Company Reporting

Renewable Fuels Assurance Scheme Fleet

Fleet GHG Emissions Declaration

Zemo Partnership

The GHG emissions reported in this declaration specifically relate to the consumption of the renewable fuel listed and may not be the total emissions related to the services provided. Fleet operators should provide information about other fuels and electricity used separately.
Other company emissions (e.g. warehousing) and Outside of Scopes emissions are not included.

Customer & Fleet Operator Information

Customer name	Company ABC
Customer address	An Industrial Estate, AB12 3DE
Fleet operator	Zemo Logistics
Fleet operator identifier	ZL/F1/25
Declaration number	JX/22/Apr-Jun25
Declaration period	1 Apr to 30 Jun 2025
Date declaration issued	3 Jul 2025

Renewable Fuel Supply Chain

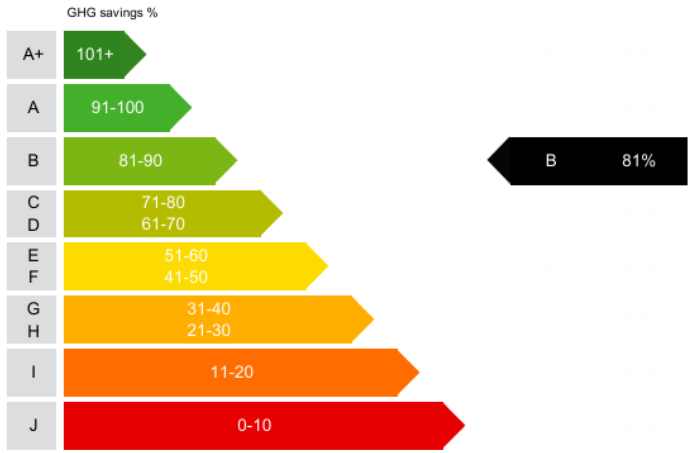
Renewable fuel	HVO
Renewable content percentage	100%
Volume of renewable fuel used	1,000 litres
Renewable fuel use	Direct
Renewable fuel feedstocks	Biomass wastes and residues
Feedstocks country(s) of origin	International
GHG emissions intensity of fuel supply chain	16.44 gCO_2e/MJ (default value)

Customer Greenhouse Gas Emissions

GHG emissions from customer journeys	600 $kgCO_2e$ (based on default value)
GHG emissions savings compared to conventional fuel	2,582 $kgCO_2e$

GHG Emissions Savings Compared To Conventional Fuel

(B7 retail diesel, CNG or LNG as applicable)



Further Information

The GHG emissions intensity in gCO_2e/MJ is based on the RFAS methodology and the lower heating value. Values labelled '(default value)' have been sourced from the UK Government GHG Conversion Factors for Company Reporting. The GHG emissions from customer journeys in $kgCO_2e$ includes the upstream emissions generated from fuel production (from the primary energy source to the point of dispensing) and the emissions from combustion (CO_2 from the combustion of renewable fuel is offset by the CO_2 absorbed by the biomass feedstock during growth).

Direct: renewable fuel was used in the vehicles carrying out work for the customer. Indirect: renewable fuel was used within the fleet operator's overall national operations.

Renewable fuel supply chains have been verified under Zemo's Renewable Fuels Assurance Scheme (RFAS). The allocation of the renewable fuel usage and the methodology for determining transport and distribution GHG emissions have been verified under the RFAS Fleet scheme.

This declaration is non-transferable: fleet operators must be approved under RFAS Fleet to issue declarations to their customers. Scan the QR code for a list of approved companies.

RFAS Period:	2025-2026

www.zemo.org.uk/RFASFleet Version 1.0

Example 3: example with GHG emissions savings compared to retail diesel (rather than CNG which is the conventional fuel comparator for compressed biomethane)

Renewable Fuels Assurance Scheme Fleet

Fleet GHG Emissions Declaration

Zemo Partnership

The GHG emissions reported in this declaration specifically relate to the consumption of the renewable fuel listed and may not be the total emissions related to the services provided. Fleet operators should provide information about other fuels and electricity used separately.
Other company emissions (e.g. warehousing) and Outside of Scopes emissions are not included.

Customer & Fleet Operator Information

Customer name	Company ABC
Customer address	An Industrial Estate, AB12 3DE
Fleet operator	Zemo Logistics
Fleet operator identifier	ZL/F1/25
Declaration number	JX/23/Apr-Jun25
Declaration period	1 Apr to 30 Jun 2025
Date declaration issued	3 Jul 2025

Renewable Fuel Supply Chain

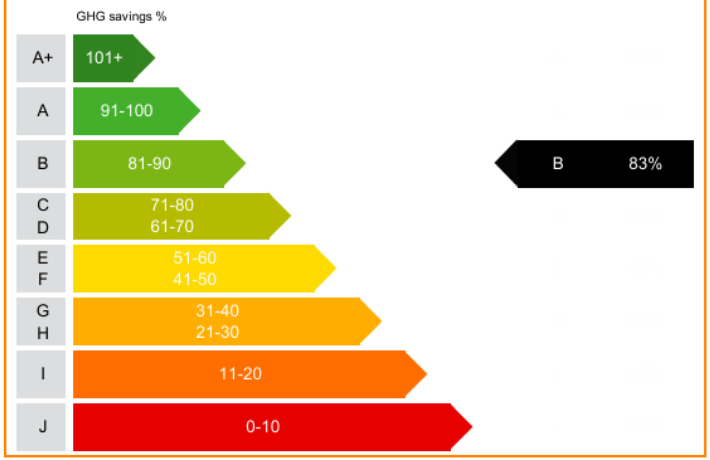
Renewable fuel	Compressed biomethane
Renewable content percentage	100%
Volume of renewable fuel used	1,000 kg
Renewable fuel use	Direct
Renewable fuel feedstocks	Food waste, organic municipal solid waste, sewage sludge
Feedstocks country(s) of origin	Netherlands, UK
GHG emissions intensity of fuel supply chain	15.08 gCO_2e/MJ

Customer Greenhouse Gas Emissions

GHG emissions from customer journeys	744 $kgCO_2e$
GHG emissions savings compared to retail diesel (B7)	3,628 $kgCO_2e$

GHG Emissions Savings Compared To Retail Diesel

(calculated using the relative energy densities)



Further Information

The GHG emissions intensity in gCO_2e/MJ is based on the RFAS methodology and the lower heating value. Values labelled '(default value)' have been sourced from the UK Government GHG Conversion Factors for Company Reporting. The GHG emissions from customer journeys in $kgCO_2e$ includes the upstream emissions generated from fuel production (from the primary energy source to the point of dispensing) and the emissions from combustion (CO_2 from the combustion of renewable fuel is offset by the CO_2 absorbed by the biomass feedstock during growth).

Direct: renewable fuel was used in the vehicles carrying out work for the customer. Indirect: renewable fuel was used within the fleet operator's overall national operations.

Renewable fuel supply chains have been verified under Zemo's Renewable Fuels Assurance Scheme (RFAS). The allocation of the renewable fuel usage and the methodology for determining transport and distribution GHG emissions have been verified under the RFAS Fleet scheme.

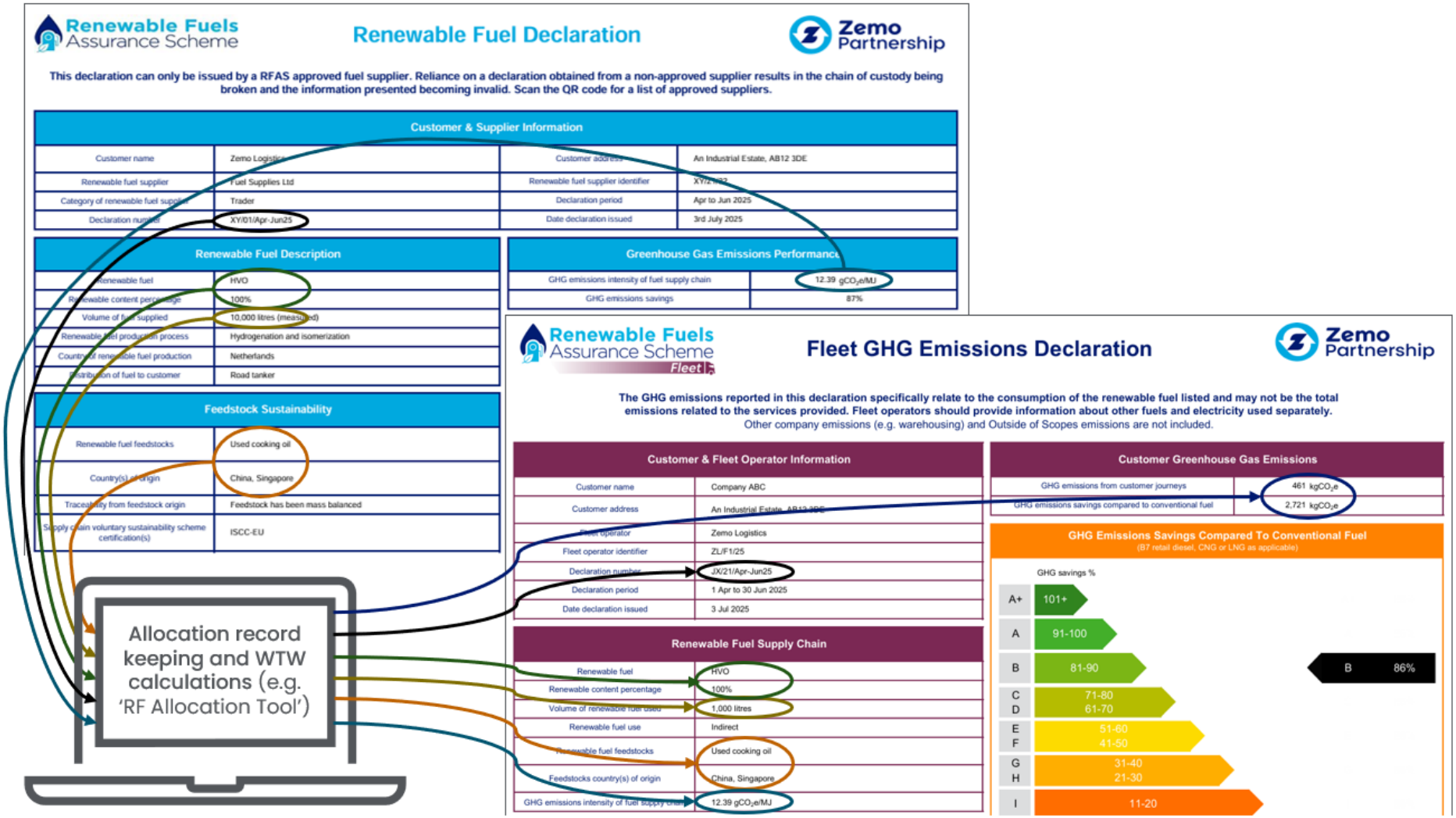
This declaration is non-transferable: fleet operators must be approved under RFAS Fleet to issue declarations to their customers. Scan the QR code for a list of approved companies.

RFAS Period:	2025-2026

www.zemo.org.uk/RFASFleet

Version 1.0

Appendix D: Where to Source Data for Fleet GHG Emissions Declaration



Appendix E: GHG and Sustainability Information Approach

Fleet operators should allocate the 'sustainability ID', i.e. the information relating to a batch of renewable fuel, including GHG emissions intensity, feedstocks, countries of origin (sourced from the RFAS Renewable Fuel Declarations received), using the following weighted average approach where possible. If this proves overly challenging a second approach using 'default' values is permitted.

1. Weighted average: This the preferred approach. The sustainability ID for the batches of renewable fuel used during the period are combined and the GHG intensity is calculated as a weighted average for all customers. Weighted average GHG intensity = (volume 1 * GHG intensity 1 + volume 2 * GHG intensity 2 + volume 3 * GHG intensity 3 + … etc.) / (volume 1 + volume 2 + volume 3 + … etc.). This approach can also be used for consolidating the sustainability ID from four consecutive quarters if issuing a single declaration for the year.

2. Defaults: The sustainability ID uses the default GHG emissions intensity from the latest DESNZ UK Government GHG Conversion Factors for Company Reporting dataset. This should be made clear on the Fleet GHG Emissions Declaration by entering 'gCO_2e/MJ (default value)' after the numerical figure in the entry for 'GHG emissions intensity of fuel supply chain', and '(based on default value)' in the cell to the right of '$kgCO_2e$' in the field for 'GHG emissions from customer journeys'. In this case 'Biomass wastes and residues' should be used for the entry for 'Renewable fuel feedstocks' and 'International' for the for 'Feedstocks country(s) of origin'.

Example: The following worked example illustrates the difference between the two approaches. Note: this example is for illustration only and does not include the calculations for WTW GHG emissions from the customer journeys or GHG emissions savings.

1. Weighted average:
Renewable Fuel Declarations for initial stock and fuel received show:

- (Batch 1) 2,200 litres, 15 gCO_2e/MJ, feedstock: UCO, country: China.
- (Batch 2) 7,000 litres, 16 gCO_2e/MJ, feedstock: tallow, country: Singapore.

Fuel used during period: 8,300 litres (2,200 litres of Batch 1 and 6,100 litres of Batch 2).
Weighted average calculation:

- $\left(15 \times \frac{2{,}200}{2{,}200+6{,}100}\right) + \left(16 \times \frac{6{,}100}{2{,}200+6{,}100}\right) = 15.73$ gCO_2e/MJ

Fleet GHG Emissions Declarations issued to customers for this period show:

- 15.73 gCO_2e/MJ, feedstocks: UCO and tallow, countries: China and Singapore.

Unused fuel carried over into next period:

- 900 litres (Batch 2), 16 gCO_2e/MJ, feedstock: tallow , country: Singapore.

2. Default approach:
Initial stock and fuel received:

- (Batch 1) 2,200 litres.
- (Batch 2) 7,000 litres.

Fuel used during period: 8,300 litres (2,200 litres of Batch 1 and 6,100 litres of Batch 2).
Fleet GHG Emissions Declarations issued to customers for this period show:

- 16.44 gCO_2e/MJ (default value), feedstocks: biomass wastes and residues, country: international.

  Value for GHG emissions intensity of fuel supply chain is sourced from the latest DESNZ UK Government GHG Conversion Factors for Company Reporting dataset.

Unused fuel carried over into next period: 900 litres (Batch 2).

Appendix F: GHG Emissions Intensity for Renewable Fuel Blends

This appendix describes the method for calculating the GHG emissions intensity for blends. Worked examples can be found in the 'RF Allocation Tool' developed by Zemo. Zemo plans to update the tool following the annual publication of the DESNZ company GHG reporting conversions factors. Fleet operators should check that they are using the latest version of the 'RF Allocation Tool' (where applicable) and sourcing data from the latest[23] RFAS Technical Guidance[24] and DESNZ UK Government GHG Conversion Factors for Company Reporting[25] dataset.

F1. Determining the GHG emissions intensity of the renewable component in a blend purchased

If the operator purchases renewable fuel blends and allocates these as 100% renewable, or as 'virtual' blends with different renewable content percentages from those purchased, the allocation must take into account the volume of the renewable component and the GHG emissions intensity of the fossil component in the blend. This will require back-calculating the GHG emissions intensity of the renewable component from the RFAS Renewable Fuel Declaration data, and in the case of renewable diesel and biodiesel, adding an adjustment to account for the difference in standard retail diesel compared to the fossil diesel used in the blend.

The GHG emissions intensity of the renewable component in the blend, in gCO_2e/MJ[26], shall be calculated as:

$$E_{RF} = \left(E_D - \left(E_{FF} \times \frac{Q_{FF}}{Q_{Fuel}}\right)\right) \times \frac{Q_{Fuel}}{Q_{RF}}$$

- E_D: GHG emissions intensity of the blend in gCO_2e/MJ, sourced from the RFAS Renewable Fuel Declaration.
- E_{FF}: GHG emissions intensity of the fossil component in the blend in gCO_2e/MJ, sourced from the version of the RFAS Technical Guidance in operation at the time the RFAS Renewable Fuel Declaration was issued (*'Table D2'* in the RFAS Technical Guidance).
- Q_{FF}: Fossil fuel quantity.
- Q_{Fuel}: Total renewable fuel blend quantity ($Q_{FF} + Q_{RF}$).
- Q_{RF}: Renewable fuel quantity.

The adjusted GHG emissions intensity of the renewable fuel supplied in a blend, to account for the difference in standard retail diesel compared to the fossil diesel used in the blend, in gCO_2e/MJ, shall be calculated as:

$$E_{RFAD} = E_{RF} + \left((E_{FF} - E_{B7}) \times \frac{Q_{FF}}{Q_{Fuel}}\right)$$

- E_{RF}, Q_{FF} and Q_{Fuel}: as above.
- E_{B7}: WTW GHG emissions intensity of retail diesel in gCO_2e/MJ, calculated from the values for '*Diesel (average biofuel blend)*' in DESNZ GHG Conversion Factors for Company Reporting.

[23] The same dataset can be used for the twelve month allocation accounting period if preferred.
[24] Available from https://www.zemo.org.uk/RFAS
[25] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
[26] RFAS GHG emissions intensity in gCO_2e/MJ is based on the LHV (Lower Heating Value or Net Calorific Value).

- E_{FF}: WTW GHG emissions intensity of fossil diesel in gCO_2e/MJ, calculated from the values for '*Diesel (100% mineral diesel)*' in DESNZ GHG Conversion Factors for Company Reporting.
- For both E_{B7} and E_{FF}, the Scope 1 ('*Fuels*' tab) and Scope 3 ('*WTT-fuels*' tab) values in $kgCO_2e$/litre should be added and then converted to gCO_2e/MJ (using the values for Net CV and density from the '*Fuel properties*' tab). A worked example can be found in the 'Data' tab of the 'RF Allocation Tool' developed by Zemo.

F2. Determining the GHG emissions intensity for an actual blend allocated to the customer

The operator may purchase renewable fuel blends and allocate these at the same renewable percentage (e.g. purchasing B20 and allocating this as B20 to a customer). In this case, the WTW (Well-to Wheel) GHG emissions intensity of the blend, in gCO_2e/litre for diesel engines, or gCO_2e/kg for gas engines, shall be calculated as:

$$E_{AB} = \left((E_{FF3} + E_{FF1}) \times \frac{Q_{FF}}{Q_{Fuel}} \right) + \left((E_{RF} + E_{RF1}) \times \frac{Q_{RF}}{Q_{Fuel}} \right)$$

- E_{FF3}: WTT GHG emissions intensity of the fossil fuel component in the blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 3 emissions factors in the '*WTT-fuels*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/tonne to gCO_2e/litre or gCO_2e/kg). The fossil fuel is *'Diesel (100% mineral diesel)'* for blends of biodiesel and renewable diesel, including HVO; CNG or LNG for gas engines using compressed or liquified biomethane respectively.
- E_{FF1}: TTW GHG emissions intensity of the fossil fuel component in the blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 1 emissions factors in the '*Fuels*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/tonne to gCO_2e/litre or gCO_2e/kg).
- Q_{FF}: Fossil fuel quantity.
- Q_{Fuel}: Total fuel quantity ($Q_{FF} + Q_{RF}$).
- E_{RF}: WTT GHG emissions intensity of the renewable fuel component in the blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). The back-calculated value for E_{RF} in gCO_2e/MJ (see section 'F1. Determining the GHG emissions intensity of the renewable component in a blend purchased') is converted using the LHV for the renewable fuel in MJ/litre or MJ/kg (using Net CV and density sourced from the DESNZ GHG Conversion Factors *'Fuel properties'* tab). Where there are multiple RFAS Renewable Fuel Declarations for a specific renewable fuel blend % (e.g. B20) in the allocation period, these can be combined using a weighted average approach.
- E_{RF1}: TTW GHG emissions intensity of the renewable fuel component in the blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 1 emissions factors in the *'Bioenergy'* tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/kg to gCO_2e/litre or gCO_2e/kg). Note: biodiesel (FAME) is listed as *'Biodiesel ME'*; HVO is listed as *'Biodiesel HVO'* which can also be used for other types of renewable diesel in the absence of other data.
- Q_{RF}: Renewable fuel quantity.

For actual blends the entry for 'GHG Emissions intensity of fuel supply chain' on the Fleet GHG Emissions Declaration issued should be for that of the blend not the 100% renewable fuel.

F3. Determining the GHG emissions intensity for a 'virtual' blend allocated to the customer

If an operator's customer cannot afford 100% renewable fuel but is willing to pay a small premium for some GHG emissions savings, the operator has two options. The first option is to issue a declaration that allocates 100% renewable fuel for a proportion of the total volume used: this is the simplest method (declarations must not be issued for the remaining volume of conventional fuel). The second option is to issue a declaration that allocates the renewable fuel as 'virtual' blend (e.g. offering customers 20% or 50% HVO). The same options also apply if the operator has not purchased sufficient volumes of renewable fuel to allocate 100% renewable fuel to a particular customer (e.g. if renewable fuel was only used for part of the customer's journey due to renewable fuel not being available at a public refuelling station). To allocate the renewable fuel as a 'virtual' blend the following must apply:

- Virtual blends must have 15% or more renewable content.
- The total renewable fuel volume allocated must not exceed the total renewable fuel used.

The WTW (Well-to Wheel) GHG emissions intensity of the virtual blend, in gCO_2e/litre for diesel engines, or gCO_2e/kg for gas engines, shall be calculated as:

$$E_{VB} = \left((E_{CF3} + E_{CF1}) \times \frac{Q_{CF}}{Q_{Fuel}} \right) + \left((E_{RF} + E_{RF1}) \times \frac{Q_{RF}}{Q_{Fuel}} \right)$$

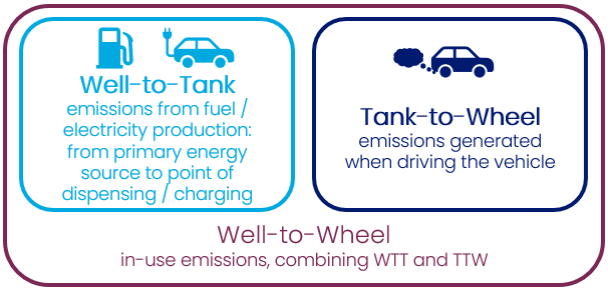
- E_{CF3}: WTT GHG emissions intensity of the conventional fuel component in the virtual blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 3 emissions factors in the '*WTT-fuels*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/tonne to gCO_2e/litre or gCO_2e/kg). The conventional fuel is retail diesel listed as '*Diesel (average biofuel blend)*' for blends of biodiesel and renewable diesel, including HVO; CNG or LNG for gas engines using compressed or liquified biomethane respectively.
- E_{CF1}: TTW GHG emissions intensity of the conventional fuel component in the virtual blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 1 emissions factors in the '*Fuels*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/tonne to gCO_2e/litre or gCO_2e/kg).
- Q_{CF}: Conventional fuel quantity.
- Q_{Fuel}: Total fuel quantity ($Q_{CF} + Q_{RF}$).
- E_{RF}: WTT GHG emissions intensity of the renewable fuel component in the virtual blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This is calculated as a weighted average from the RFAS Renewable Fuel Declarations for renewable fuel purchased in gCO_2e/MJ (taking into account any adjustments for blends purchased, as per section F1) and converted using the LHV in MJ/litre or MJ/kg (using Net CV and density sourced from the DESNZ GHG Conversion Factors '*Fuel properties*' tab).
- E_{RF1}: TTW GHG emissions intensity of the renewable fuel component in the virtual blend in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 1 emissions factors in the '*Bioenergy*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/kg to gCO_2e/litre or gCO_2e/kg). Note: biodiesel (FAME) is listed as '*Biodiesel ME*'; HVO is listed as '*Biodiesel HVO*' which can also be used for other types of renewable diesel in the absence of other data.
- Q_{RF}: Renewable fuel quantity.

For virtual blends the entry for 'GHG Emissions intensity of fuel supply chain' on the Fleet GHG Emissions Declaration issued should be 'N/a' and the entry for 'Renewable fuel use' should be 'Indirect'.

Appendix G: GHG Emissions Calculations

This appendix describes the method for calculating the GHG emissions and savings. Worked examples can be found in the 'RF Allocation Tool' developed by Zemo. Zemo plans to update the tool following the annual publication of the DESNZ company GHG reporting conversions factors. Fleet operators should check that they are using the latest version of the 'RF Allocation Tool' (where applicable) and sourcing data from the latest[27] DESNZ UK Government GHG Conversion Factors for Company Reporting[28] dataset.

Figure F1: Well-to-Tank, Tank-to-Wheel and Well-to Wheel



The WTW GHG emissions from the allocated renewable fuel (excluding blends), in $kgCO_2e$, shall be calculated as:

$$WTW_{RF} = WTT_{RF} + TTW_{RF} = \left((E_{RF} \times LHV_{RF} \times FC_{RF}) + (E_{RF1} \times FC_{RF})\right) / 1000$$

- WTT_{RF}: Well-to-Tank GHG emissions generated from fuel production in $kgCO_2e$.
- TTW_{RF}: Tank-to-Wheel GHG emissions generated during vehicle use in $kgCO_2e$ (see Appendix I for more details).
- E_{RF}: WTT GHG emissions intensity of the allocated renewable fuel in gCO_2e/MJ[29]. This is the value listed in the Fleet GHG Emissions Declaration being issued, which is calculated as a weighted average of the GHG emission intensity values from the RFAS Renewable Fuel Declarations for renewable fuel purchased during the allocation period (e.g. quarterly).
- LHV_{RF}: Lower Heating Value of the allocated renewable fuel in MJ/litre (for diesel engines) or MJ/kg (for gas engines). For 100% renewable fuels, this can be sourced from the *'Fuel properties'* tab in the DESNZ GHG Conversion Factors for Company Reporting (using Net CV and density).
- FC_{RF}: Quantity of fuel consumed in litres (for diesel engines) or kg (for gas engines), as listed in the Fleet GHG Emissions Declaration.
- E_{RF1}: TTW GHG emissions intensity of the allocated renewable fuel in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). For 100% renewable fuels, this can be sourced from the Scope 1 emissions factors in the *'Bioenergy'* tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/kg to gCO_2e/litre or gCO_2e/kg). Note: biodiesel (FAME) is listed as *'Biodiesel ME'*; HVO is listed as *'Biodiesel HVO'* which can also be used for other types of renewable diesel in the absence of other data.

[27] The same dataset can be used for the twelve month allocation accounting period if preferred.
[28] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
[29] RFAS GHG emissions intensity in gCO_2e/MJ is based on the LHV (Lower Heating Value or Net Calorific Value).

If using 'default' values (from the latest DESNZ UK Government GHG Conversion Factors for Company Reporting dataset, as described in Section 3.2 and Appendix E), the WTW GHG emissions from the allocated renewable fuel, in kgCO_2e, shall be calculated as:

$$WTW_D = WTT_D + TTW_D = (E_{D3} + E_{D1}) \times FC$$

- WTT_D: Default Well-to-Tank GHG emissions generated from fuel production in kgCO_2e.
- TTW_D: Default Tank-to-Wheel GHG emissions generated during vehicle use in kgCO_2e.
- E_{D3}: WTT GHG emissions intensity of the allocated renewable fuel in kgCO_2e/litre (for diesel engines) or kgCO_2e/kg (for gas engines). For 100% renewable fuels, this can be sourced from the Scope 3 emissions factors in the *'WTT - bioenergy'* tab of DESNZ GHG Conversion Factors for Company Reporting. Note: biodiesel (FAME) is listed as *'Biodiesel ME'*; HVO is listed as *'Biodiesel HVO'* which can also be used for other types of renewable diesel in the absence of other data.
- E_{D1}: TTW GHG emissions intensity of the allocated renewable fuel or blend in kgCO_2e/litre (for diesel engines) or kgCO_2e/kg (for gas engines). For 100% renewable fuels, this can be sourced from the Scope 1 emissions factors in the *'Bioenergy'* tab of DESNZ GHG Conversion Factors for Company Reporting.
- FC: Quantity of fuel consumed in litres (for diesel engines) or kg (for gas engines).

If using 'default' values for renewable fuel blends, the WTW GHG emissions for the respective volumes of the renewable and fossil components should be calculated separately, using the above approach, and then added together. For example, the WTW GHG emissions for 1000 litres of B20 (20% biodiesel) can be calculated by adding the emissions from 200 litres of 100% biodiesel and 800 litres of fossil diesel. The emissions intensities for the fossil component can be sourced from the *'Fuels'* and *'WTT – fuels'* tabs of DESNZ GHG Conversion Factors for Company Reporting. Note: fossil diesel is listed as *'Diesel (100% mineral diesel)'.*

For renewable fuel blends, including virtual blends, the WTW GHG emissions in kgCO_2e, shall be calculated as:

$$WTW_B = (E_B \times FC_B) / 1000$$

- E_B: WTW GHG emissions intensity of the blend in gCO_2e/litre (for diesel engines), or gCO_2e/kg (for gas engines), using the calculation for either E_{AB} for fuel blends used, or E_{VB} for virtual blends, as described in Appendix F.
- FC_B: Quantity of fuel consumed in litres (for diesel engines) or kg (for gas engines), as listed in the Fleet GHG Emissions Declaration.

The GHG emissions savings compared to using conventional fuel, in kgCO_2e, shall be calculated as:

$$GHG\ savings = WTW_{CF} - WTW_{RF} = \left(\left((E_{CF3} + E_{CF1}) \times FC_{RF}\right)/1000\right) - WTW_{RF}$$

- WTW_{RF}: WTW GHG emissions from the allocated renewable fuel in kgCO_2e. For blends use WTW_B from the above calculation.
- WTW_{CF}: WTW GHG emissions from the equivalent volume of conventional fuel (retail diesel, CNG, LNG, hydrogen from natural gas) in kgCO_2e.
- E_{CF3}: WTT GHG emissions intensity of the conventional fuel in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 3 emissions factors in the '*WTT-fuels*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert kgCO_2e/litre or kgCO_2e/tonne to gCO_2e/litre or gCO_2e/kg). The conventional fuel is retail diesel listed as

'*Diesel (average biofuel blend)*' for blends of biodiesel and renewable diesel, including HVO; CNG or LNG for gas engines using compressed or liquified biomethane respectively.[30]

- E_{CF1}: TTW GHG emissions intensity of the conventional fuel in gCO_2e/litre (for diesel engines) or gCO_2e/kg (for gas engines). This can be sourced from the Scope 1 emissions factors in the '*Fuels*' tab of DESNZ GHG Conversion Factors for Company Reporting (convert $kgCO_2e$/litre or $kgCO_2e$/tonne to gCO_2e/litre or gCO_2e/kg).
- FC_{RF}: Quantity of fuel consumed in litres or kg, as listed in the Fleet GHG Emissions Declaration. (This assumes the same fuel consumption with conventional fuel, neglecting any difference in the energy density between the fuels.)

The above formula for GHG savings cannot be used if the operator is using biomethane or renewable hydrogen and has chosen to report the GHG emissions savings compared to using retail diesel. In this case, the GHG savings could be calculated using the relative energy densities of the renewable fuel and of retail diesel.

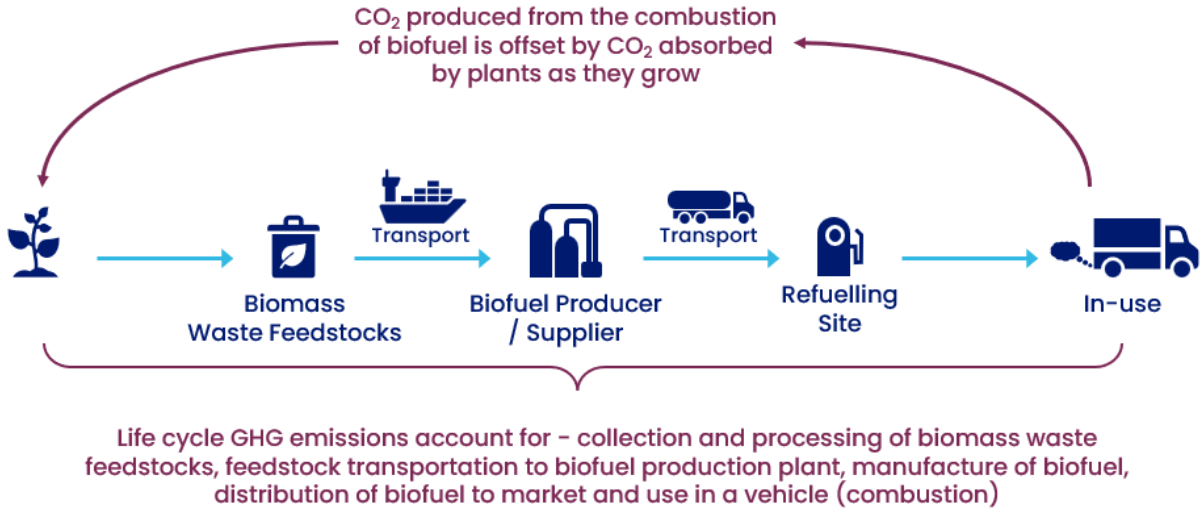
If the operator has an alternative methodology for calculating the GHG emissions savings (e.g. incorporating the relative energy densities of different fuels) this will need to be approved by Zemo in advance.

[30] The DESNZ GHG Conversion Factors for Company Reporting do not currently include emissions factors for hydrogen. The emission factor from Zemo's WTT model for hydrogen produced in the UK by steam methane reformation of natural gas, transported as a compressed gas using tube trailers, and dispensed from a hydrogen refuelling station at 350bar is 12,562 gCO_2e/kg.

Appendix H: GHG Emissions Methodology

RFAS Renewable Fuel Declarations provide the fleet operator with Well-to-Wheel GHG emissions intensity data for the renewable fuel, or blend, supplied (in gCO_2e/MJ). The GHG emissions intensity is based on a fuel lifecycle methodology, aligned with the RTFO methodology, whereby all GHG emissions from the combustion of renewable fuels (or the renewable fuel component of a blend) are accepted as zero. This differs slightly from the GHG Protocol methodology used in company carbon reporting, whereby the Scope 1 (vehicle in-use or Tank-to-Wheel) GHG emissions for biofuels are based on N_2O and CH_4 emissions, while CO_2 emissions are set to zero. CO_2 from combustion is offset by the CO_2 absorbed by the biomass feedstock during growth[31] as per Figure H1.

Figure H1: Example biofuel supply chain life cycle



Thus, the renewable fuel specific carbon intensity found on the Renewable Fuel Declarations could be used to calculate the supply chain specific Well-to-Tank emissions, in lieu of the Scope 3 (WTT) company reporting emissions factor. The Scope 1 (TTW) emissions factor can be sourced from DESNZ company reporting data, updated annually.

Zemo's fleet operator calculator uses emissions factors and LHV (Lower Heating Value) data, sourced from the DESNZ GHG Conversion Factors for Company Reporting dataset where available, to estimate three values for the WTW GHG emissions ($kgCO_2e$) using:

1. RFAS declaration data only (as per the RTFO methodology)
2. RFAS declaration and Scope 1 company reporting data
3. Scope 3 and Scope 1 company reporting data

The calculator also shows the WTW GHG emissions savings compared to conventional fuels. Please visit https://www.zemo.org.uk/RFAS to download the latest version of the calculator and user guide (Zemo plans to update the calculator each year, following the publication of the DESNZ company GHG reporting conversions factors). **Disclaimer: whilst every effort has been made to ensure the accuracy of this tool, Zemo Partnership take no responsibility or liability whatsoever for the results provided.**

[31] Biogenic CO_2 emissions from the combustion of biofuels are considered 'Outside of Scopes' emissions and are not included.

The fleet operator's Scope 1 and Scope 3 GHG emissions from using fuel for a particular customer, form part of the customers' Scope 3 Upstream (Category 4) and/or Downstream (Category 9) Transport and Distribution GHG emissions.

The information provided in the Fleet GHG Emissions Declarations issued by RFAS Fleet approved operators (e.g. indication of the volume of renewable fuel used) may support their customers' company reporting activities. It is the customer's responsibility to ensure that they comply with company reporting requirements[32].

[32] Companies wishing to use the attributed GHG emissions from transport and distribution services, provided by the fleet operator, in their carbon reporting activities should contact the relevant body (e.g. Streamline and Energy Reporting, SECR, administration team reporting@DESNZ.Gov.UK, Environmental Agency) for approval for use of alternative emissions factors.

Appendix I: Acronyms and Glossary

Chain of Custody: A process of documenting and monitoring the transfer and custody of materials or products (and information on those materials or products) through every step of the supply chain.

Conventional Fuel: The fossil or predominantly fossil fuel typically used in the vehicle or machine. For biodiesel and renewable diesel, including HVO, the conventional fuel is retail diesel (average biofuel blend, may be referred to as B7). For gas engines using compressed or liquified biomethane, the conventional fuel is CNG or LNG respectively. For hydrogen vehicles, the conventional fuel is fossil hydrogen produced by steam methane reformation of natural gas.

DESNZ: UK Government Department for Energy Security and Net Zero.

Feedstock: Raw material used to produce renewable fuel. Approved feedstocks under the RFAS are aligned with the RTFO[33] (or applicable national quota if preferred).

Fleet GHG Emissions Declaration: A declaration issued by fleet operators approved under the RFAS Fleet, identifying the type and volume of renewable fuel allocated to their customers journeys, the types and origin of the raw material feedstocks, and the GHG emissions and GHG savings.

Fleet Operator Identifier: This is a unique reference number linked to one operator, traceable to a validity status under a certification or a scheme.

gCO_2e: Grams of CO_2 equivalent. Unit of measurement for GHG emissions.

GHG: Greenhouse Gas.

HVO: Hydrotreated vegetable oil is a renewable diesel, made by the hydrotreatment of vegetable oils or other lipids. HVO can be referred to as renewable diesel, but not all renewable diesel should be described as HVO.

LHV: Lower Heating Value, also known as Net Calorific Value. A measure of the energy provided from combustion of a fuel.

NRMM, Non-Road Mobile Machinery: Defined by the RTFO as any vehicle which falls within the scope of Regulation (EU) 2016/1628 and includes any mobile generator, machinery (including construction and loading vehicles), tractor, rail vehicle, inland waterways vessel (excluding ferries) or inshore pleasure craft (that does not need a maritime safety certificate) which makes use of an internal combustion engine. Mobile generators are only considered NRMM if they are truly mobile and are regularly moved (rather than simply "moveable").

Organisation: The person or legal entity applying for compliance with RFAS Fleet.

Renewable Diesel: Renewable paraffinic diesel, including HVO.

Renewable Fuel Declaration: A declaration issued by renewable fuel suppliers approved under the RFAS, identifying the type and volume of renewable fuel purchased, the types and origin of the raw material feedstocks, and the GHG emission intensity and GHG savings.

[33] https://www.gov.uk/government/publications/rtfo-and-saf-mandate-feedstock-materials-used-for-creating-low-carbon-fuels

Renewable Fuel: A fuel from a source that is either inexhaustible or can be indefinitely replenished at the rate at which it is used. For the purposes of this document, it refers to biofuels, advanced fuels and renewable fuels from non-biological origin (RFNBOs).

Retail Diesel: Standard retail diesel available at public refuelling stations. This consists of up to 7% biodiesel (FAME, Fatty Acid Methyl Esters) blended with fossil diesel and may be referred to as B7.

RFAS, Renewable Fuel Assurance Scheme: Initiative designed and managed by Zemo Partnership to provide independent assurance of the GHG emissions and sustainability performance of renewable fuels supplied to commercial fleet and NRMM operators.

RTFO, Renewable Transport Fuel Obligation: UK or ROI Government's low carbon fuel policy for reducing GHG emissions from road transport.

Scope 1: Scope 1 of company GHG reporting covers emissions from sources that an organisation owns or controls directly. DESNZ Scope 1 fuel and bioenergy conversion factors are used for primary fuel sources combusted at a site or in an asset owned or controlled by the reporting organisation (e.g. TTW emissions from combusting fuel in a fleet vehicle).

Scope 3: Scope 3 of company GHG reporting covers emissions that are not produced by the company itself, and not the result of activities from assets owned or controlled by them, but by those that it's indirectly responsible for, up and down its value chain. DESNZ WTT fuels and bioenergy conversion factors are used to account for the upstream Scope 3 emissions associated with extraction, refining and transportation of the raw fuel and bioenergy sources to an organisation's site (or asset), prior to combustion.

Supplier: An individual, company or other legal entity providing feedstocks or low carbon fuels to an organisation.

Sustainability ID: The sustainability information relating to a batch of renewable fuel, including GHG emissions intensity, feedstocks and countries of origin.

TTW, Tank-to-Wheel emissions: Emissions generated when driving the vehicle. For renewable fuels, TTW emissions are not the same as the emissions measured from the vehicle tailpipe. This is because the CO_2 emissions from combustion are offset by the CO_2 captured by the biomass feedstock during growth. Where biomethane is produced from biogenic waste feedstock comprising of manure, fugitive emissions of methane are prevented and a methane credit can be applied (as per REDII), resulting in a negative carbon intensity value.

Weighted average GHG emissions intensity: Where the operator has multiple RFAS Renewable Fuel Declarations for the same type of renewable fuel within an allocation period (quarterly or monthly), the average GHG emissions intensity should take into account the volumes of each batch. For example, if the supplier allocates 1000 litres of renewable fuel supplied with a GHG emissions intensity of 14.45 gCO_2e/MJ and 4000 litres with a GHG emissions intensity of 14.55 gCO_2e/MJ, the weighted average is 14.53 gCO_2e/MJ ((14.45*1000+14.55*4000)/(1000+4000).

WTT, Well-to-Tank emissions: Emissions generated from fuel production, from the primary energy source to the point of dispensing.

WTW, Well-to-Wheel emissions: All the emissions generated by a vehicle in-use. This is the sum of the WTT and TTW emissions. (This differs from the vehicle lifecycle emissions which also includes vehicle production and disposal/recycling at end-of-life.)