NORA
NATIONAL OIL RESERVES AGENCY
AN GHNÍOMHAIREACHT CHÚLTACA OLA NÁISIÚNTA

RTFO Briefing Session

22nd Mar 2023

(Ref: 457-23P0280)

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TODAY'S AGENDA

- Performance review (2022 period)
- BOS to RTFO (SI 350 changes)
  - Move to energy
  - Advanced obligation & crop cap
  - Double counting & revised determinations
  - Updates to BOSOS, carbon calculator & Cert calculator
  - Revised application procedure & guidance
  - Carry over of Certs from '22 to '23
- EU changes
  - EU database
  - Delegated Regulations and amendments to Annex IX
- DoT policy update

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‘BOS’ NOW ‘RTFO’

- Renewable Transport Fuel Obligation (RTFO)
  - RTFO portal (BOSOS)
  - RTFO Certs (BOS Certs)
  - RTFO Team (BOS Team)
  - RTFO (BOS Obligation)
  - Advanced biofuel obligation, or advanced RTFO

UPDATED WEBSITE

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Search

- Home
- Function
- Regulations/Legislation
- Financial Statements
- Corporate
- Statistics
- Tenders
- Information for Suppliers
- Emergency Oil Stocks
- Renewable Transport Fuel Obligation
- Careers
- Contact Us
- Useful Links
- Data Protection

FUNCTIONS

The National Oil Reserves Agency is responsible for ensuring that Ireland meets its obligations under EU Legislation and International Energy Agency (IEA) rules to maintain a minimum of 90 days stocks of oil for use in the event of a physical shortage of supplies. NORA is also responsible for administering Ireland's Biofuels Obligation Scheme.

READ MORE

OIL STOCKS

Under the National Oil Reserves Agency Act 2007 and associated legislation, NORA is responsible for ensuring that Ireland meets its obligations under EU legislation and International Energy Agency (IEA) rules to maintain a minimum of 90 days stocks of oil for use in the event of a physical shortage of supplies.

READ MORE

RENEWABLE TRANSPORT FUEL

On 1st July 2010, NORA commenced its administration of Ireland's Renewable Transport Fuel Obligation upon the introduction of the "Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010". It was introduced to give effect to the provisions of the Council Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

READ MORE

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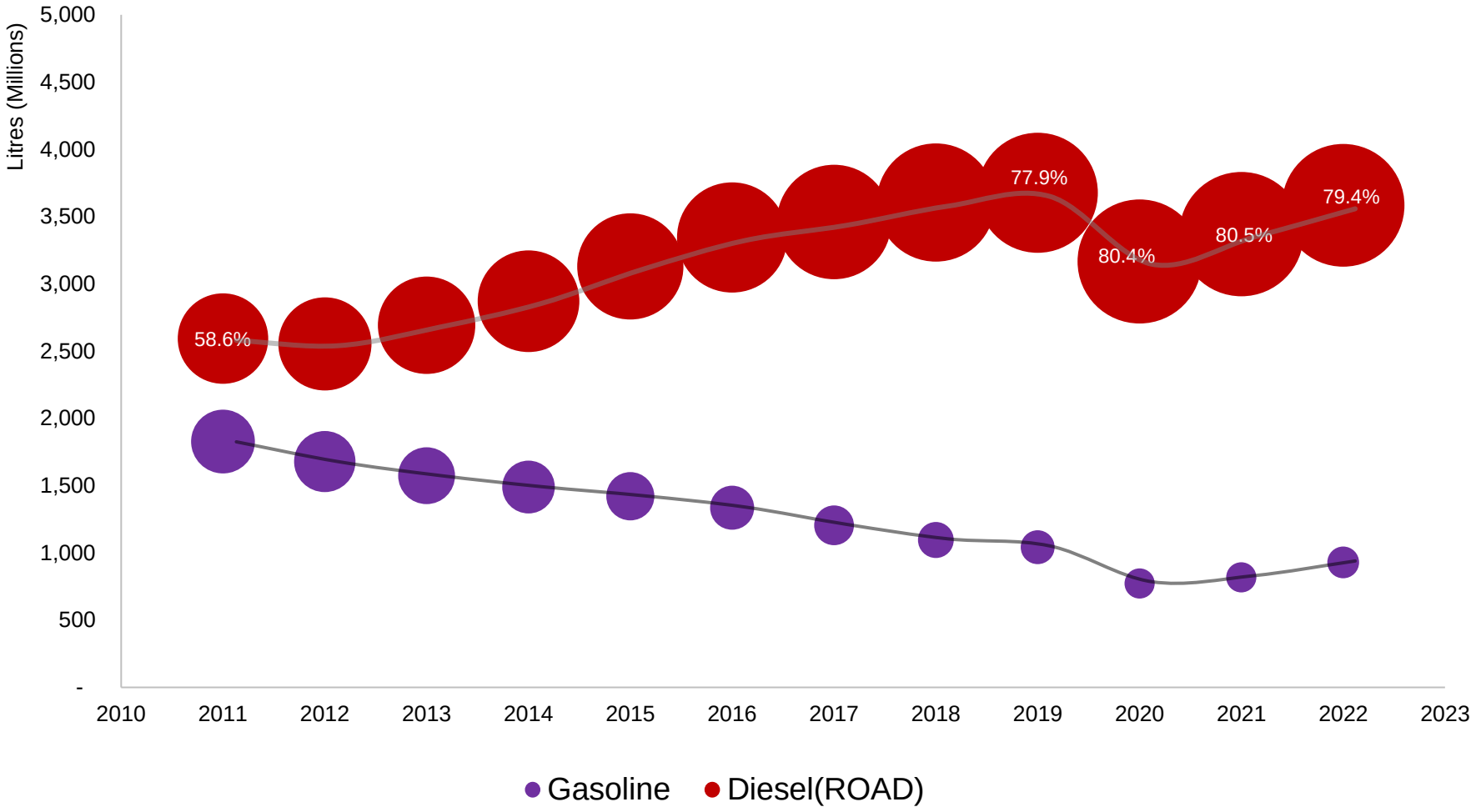
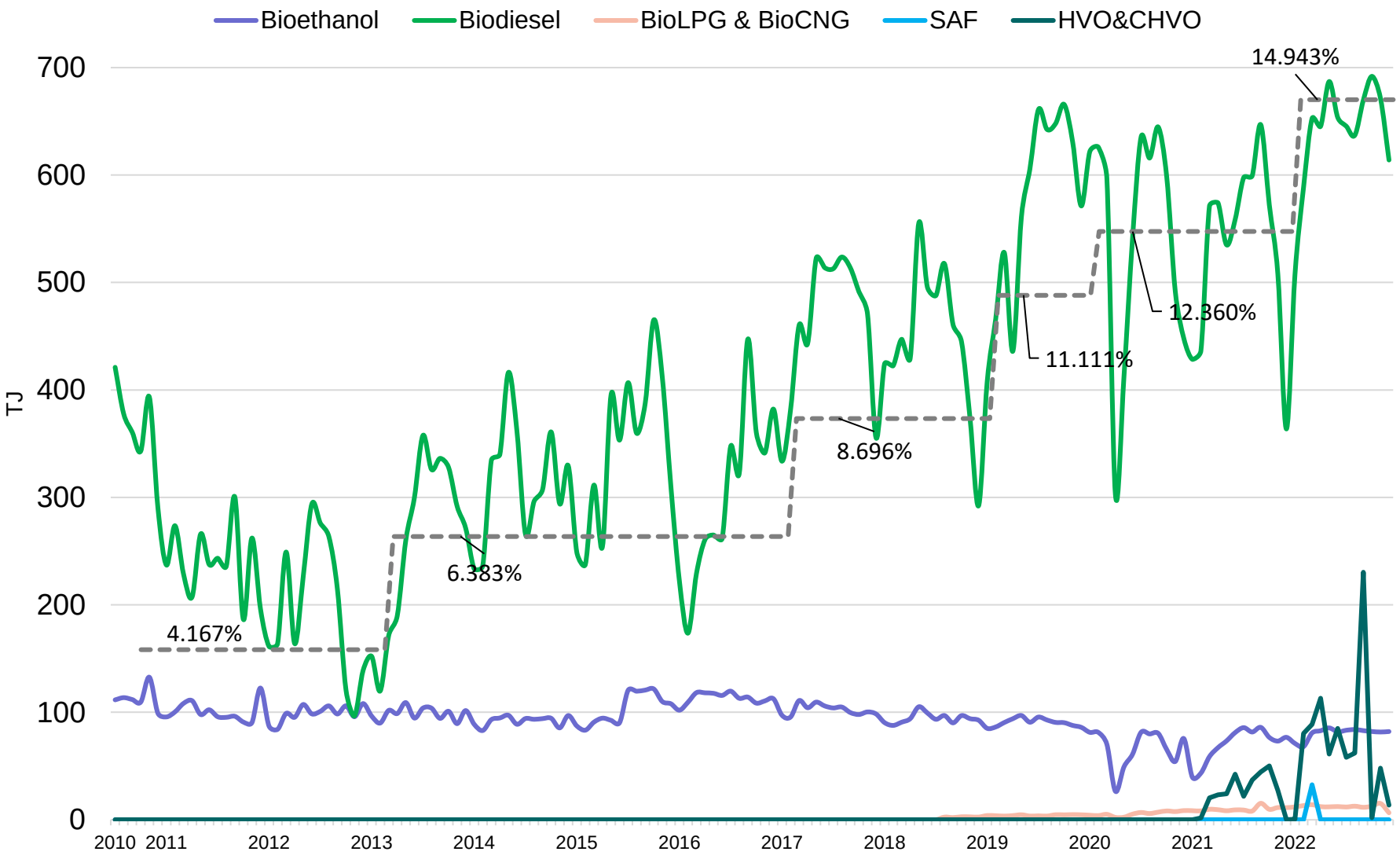
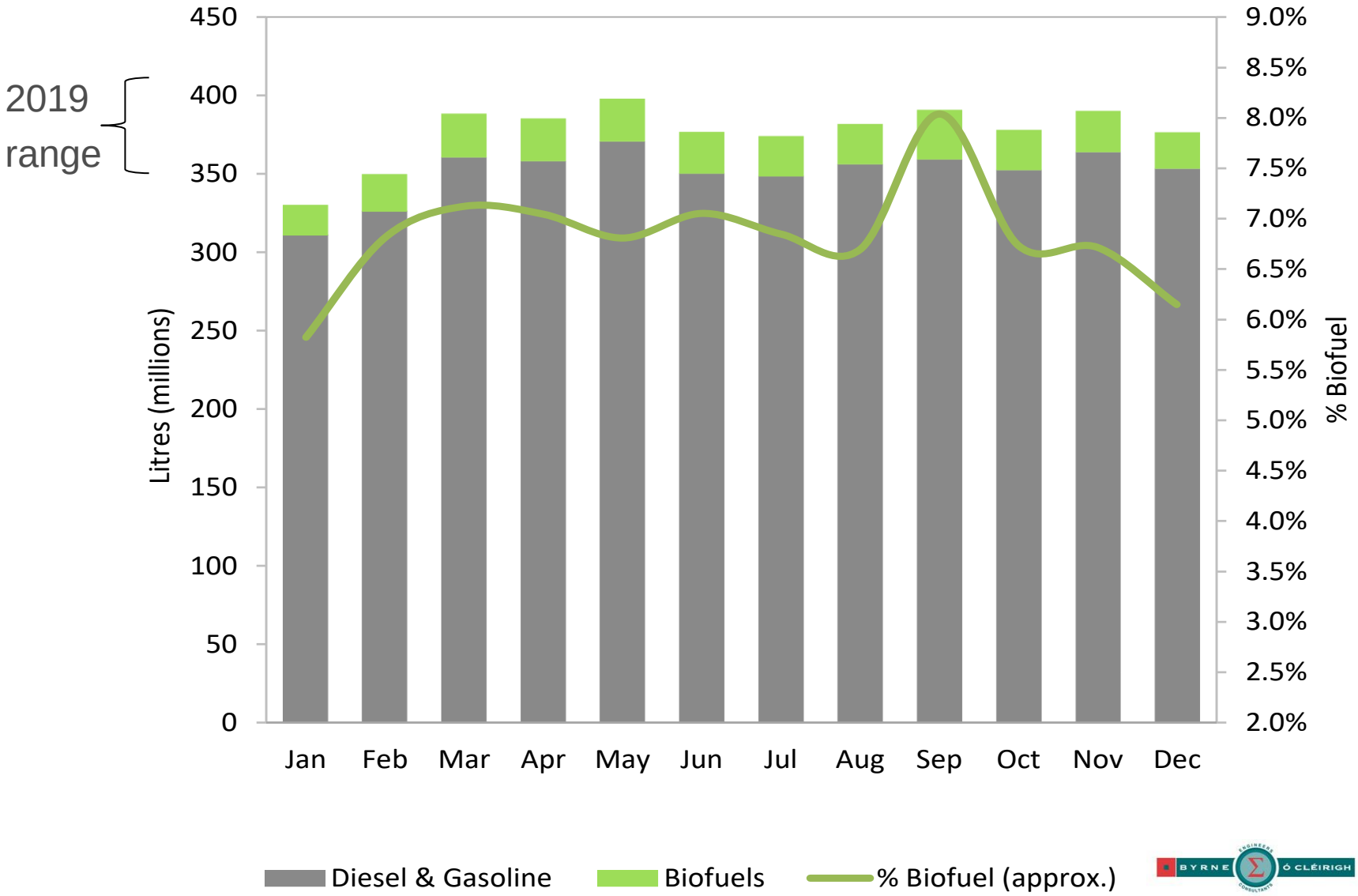
ROAD TRANSPORT VOLUME



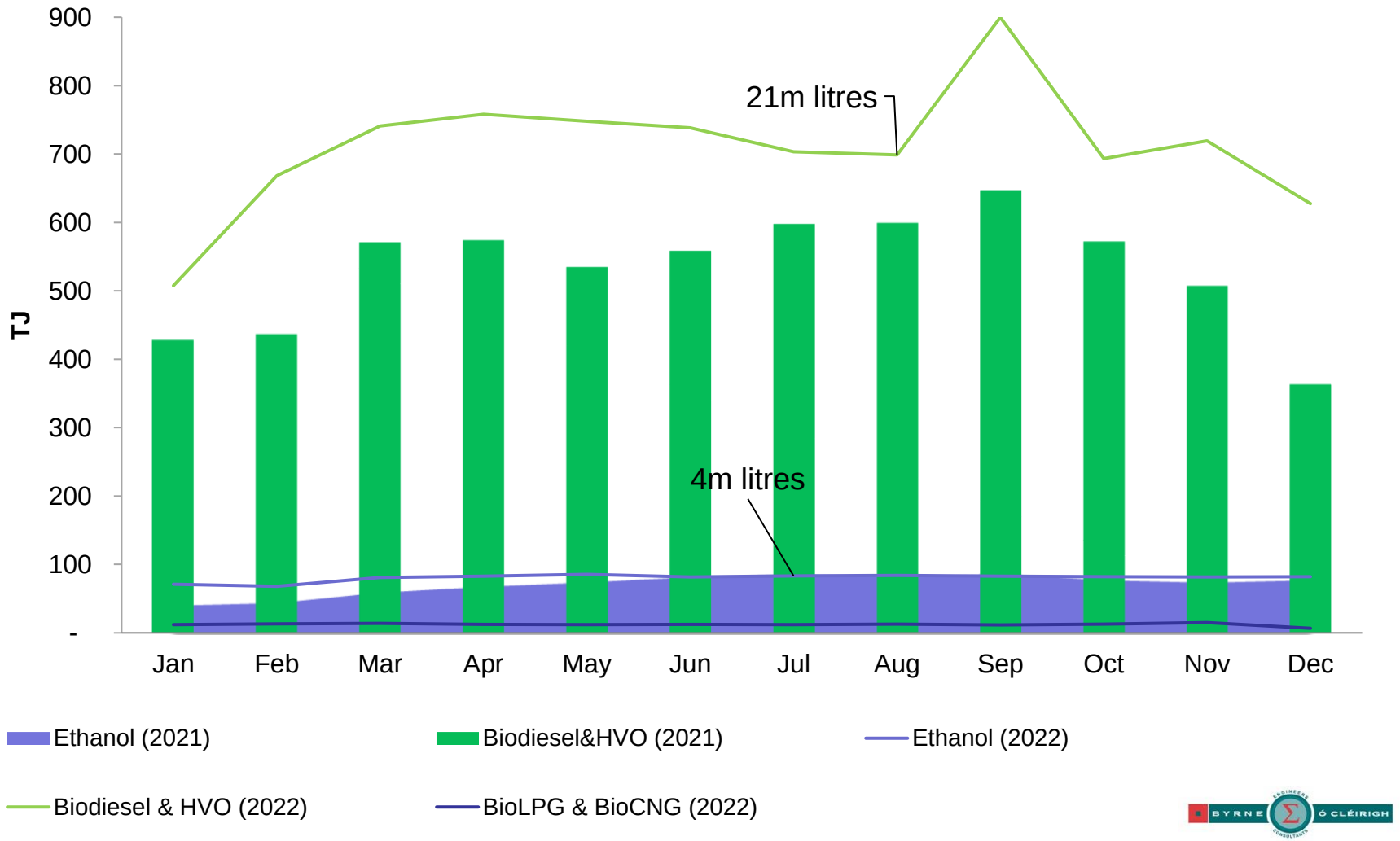
INCREASING BIOFUEL



2022 PERIOD – FOSSIL & BIO



2022 PERIOD – BIOFUEL

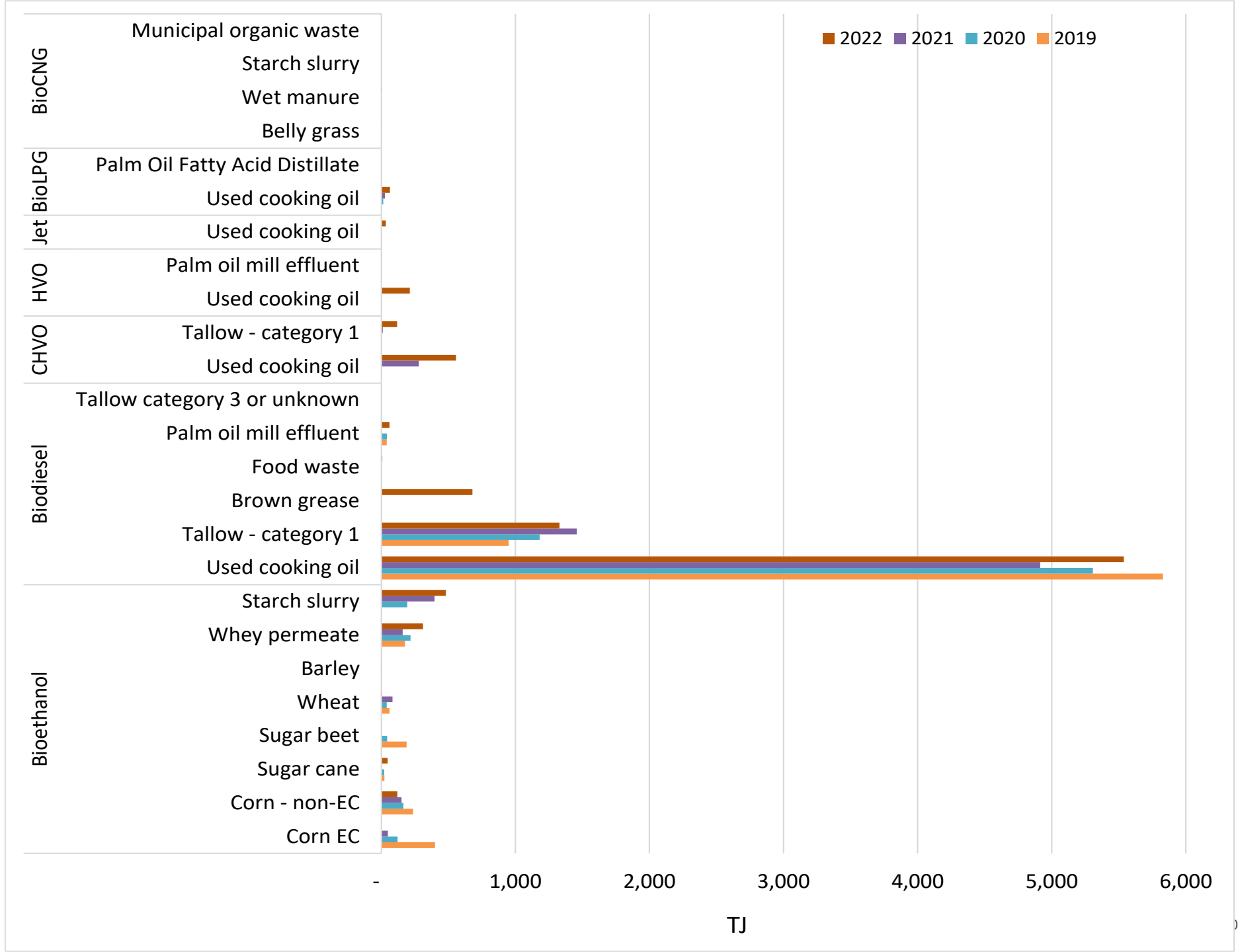


2022 PERIOD

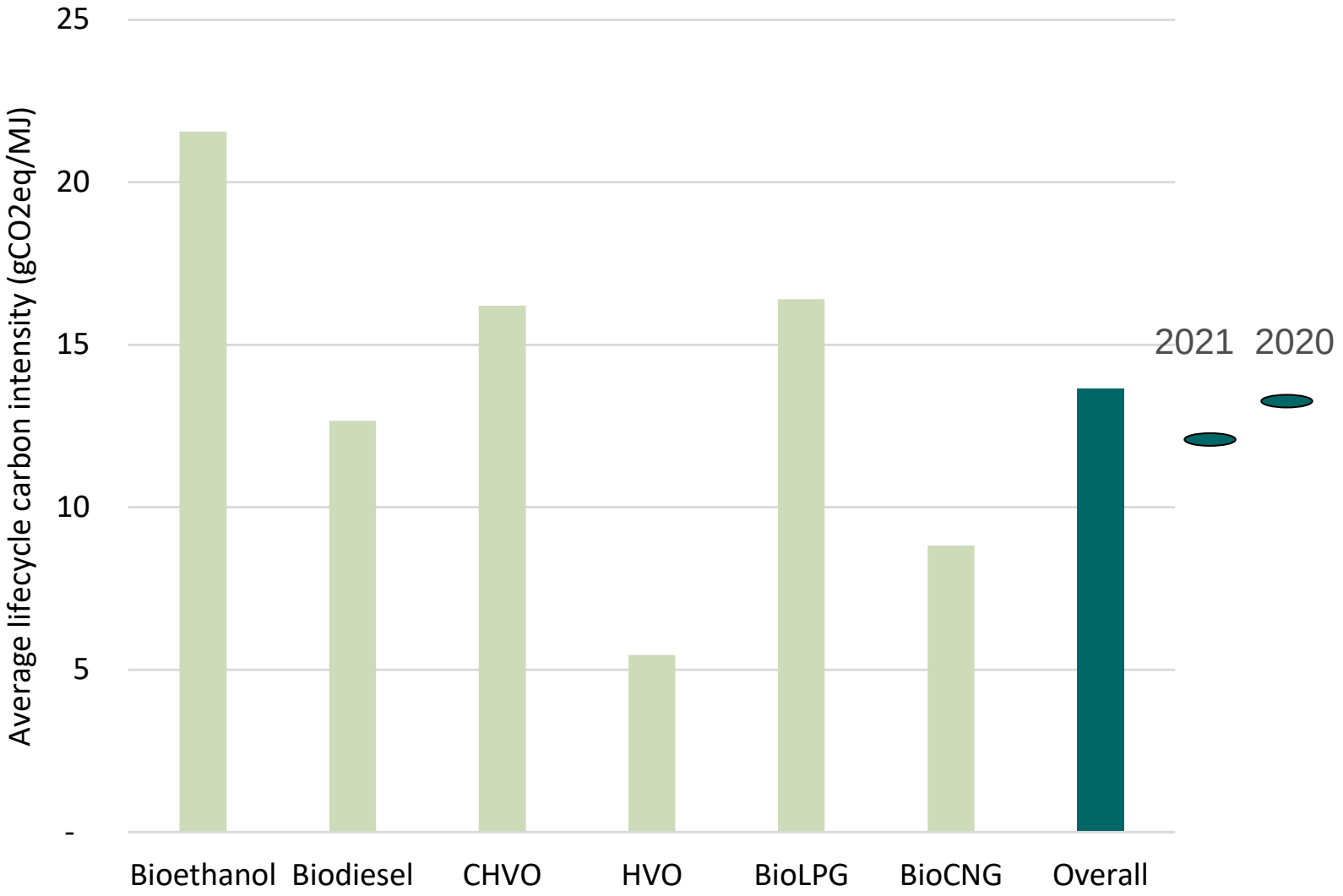
- The numbers

Fuel	Litres	TJ
BOS fossil	4,211	85,316
Additional SI 160 (rail & NRMM)	773	27,826
Biodiesel	232	7,661
Bioethanol	46	966
CHVO/HVO	24	843
BioLPG	4	107
SAF	1	33
BioCNG	1 (Nm^3)	39

- Obligation 14.942% vs c.14.4% (estimated, ex ’20 &’21 Certs)
- Approx 60 million BOS Cert carried forward to 2022


2022
2021
2020
2019
BioCNG
Municipal organic waste
Starch slurry
Wet manure
Belly grass
BioLPG
Palm Oil Fatty Acid Distillate
Used cooking oil
Jet
Used cooking oil
HVO
Palm oil mill effluent
Used cooking oil
CHVO
Tallow - category 1
Used cooking oil
Biodiesel
Tallow category 3 or unknown
Palm oil mill effluent
Food waste
Brown grease
Tallow - category 1
Used cooking oil
Bioethanol
Starch slurry
Whey permeate
Barley
Wheat
Sugar beet
Sugar cane
Corn - non-EC
Corn EC
-
1,000
2,000
3,000
4,000
5,000
6,000
TJ

CARBON INTENSITY



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SI 160 COMPLIANCE

- Requires designated fuel suppliers to reduce the carbon intensity of fuels by 6%, relative to FBS (94.1 gCO_{2eq}/MJ)
- For 2022, 3.8% CI saving achieved, in aggregate

Fossil Fuel	Carbon Savings ($ktCO_{2eq}$)
Gasoline	23
Diesel	(120)
LPG	1
Gasoil	(26)
Rail Diesel	(2)
CNG	1
Total	(123)

Biofuel	Est'd Carbon Savings ($ktCO_{2eq}$)
Bioethanol	70
Biodiesel	692 (620, 53, 19)
BioLPG	8
Electricity	0
UERs	0
BioCNG	3
Total	774

- Shortfall of 392 $ktCO_{2eq}$

SI 350 OF 2022 – OVERVIEW

- Moves to ‘renewable fuels’
- Moves to energy
- Commences advanced biofuel obligation (**Green Certs**)
- Brings in crop cap (**Red Certs**)
- Annex IX determines double counting
  - Annex IX Part A (and revised determinations), advanced & double counted (Green Certs)
  - Annex IX Part B, double counted (**Orange Certs**)

INCREASED SCOPE

- For 2022, biofuel (liquid and gaseous fuel produced from biomass)
- 2023 onwards, distinguishes between biofuel, biogas and advanced biofuels
- Will include:
  - Recycled carbon fuels (RCFs)
  - Renewable fuels of non-biological origin (RFNBOs)
- Methodology for determining GHG savings for RCFs and RFNBOs just published

MOVE TO ENERGY

- OLA reporting remains in litres / Nm^3
- Applications for RTFO Certs remain in litres / Nm^3
- RTFO Portal converts to energy upon submission of application
- Can use Sustainability Statement and Certificate and Carbon Savings calculator to estimate number and type of Certs to be awarded

CERTIFICATE & CARBON SAVINGS CALCULATOR (EXCEL)

Online & Software Resources

The RTFO Portal

The Portal is available at www.bos.nora.ie.

UK & Ireland Carbon Calculator

- Carbon Calculator (application zip file)
- UK and Ireland Carbon Calculator Guidance

Certificate & Carbon Savings Calculator

The purpose of this Excel tool is to assist account holders with determining the number and type of RTFO Certificates being applied for, and the quantity of carbon savings, and examining the level of compliance with the RTFO and SI 160 using forecasted/estimated bio and fossil fuel data.

- Calculator

The calculator is a macro enabled Excel file. Upon opening the macros will need to be enabled to allow the calculator to function correctly.

Summary

Carbon Savings

Fuel Type	Feedstock / fuel	RTFO & SI 160 transport fuels	Carbon Intensity	Lower Calorific Value	Total Energy	Total Carbon Emission	Carbon Savings	Shortfall to target	% reduction	Comment
		(litres or Nm^3)	(gCO_{2eq}/MJ)	(MJ/l) or (MJ/Nm^3)	(MJ)	(tonnes CO_{2eq})	(tonnes CO_{2eq})	(tonnes CO_{2eq})	%	
			(Fuel property)	(Fuel property)	(Volume x Calorific value)	(Energy x Carbon intensity)	((Energy x FBS) - Carbon Emisssions)	(Carbon Emissions - Target Carbon Emissions)		
Balance (including transactions, rows 20 to 23)			88.26			101,411	6,715	- 228	6.2%	% CO2 Reduction
All fuels		33,060,000	88.26	34.76	1,149,060,000	101,411	6,715	- 228	100.0%	
All biofuels		3,060,000	14.31	30.41	93,060,000	1,331	7,426		110.6%	
All fossil fuels		30,000,000	94.74	35.20	1,056,000,000	100,080	- 710		-10.6%	
Fossil	CNG		69.30	35.70	-	-	-		0.0%	Contribution towards % reduction. (Negative values arise when the carbon intensity is greater than the FBS of 94.1 gCO_{2eq}/MJ.)
	Gasoil		95.10	36.00	-	-	-		0.0%	
	Gasoline	6,000,000	93.30	32.00	192,000,000	17,914	154		2.3%	
	LNG		74.50	20.30	-	-	-		0.0%	
	LPG		73.60	24.00	-	-	-		0.0%	
	Methanol		73.60	16.00	-	-	-		0.0%	
	Rail Diesel		95.10	36.00	-	-	-		0.0%	
	Road Diesel	24,000,000	95.10	36.00	864,000,000	82,166	- 864		-12.9%	

Transactions	UERs, Electricty & Transfers			
Electricity				0.0%
UERs				0.0%
Transfers				0.0%

Certificate Allocation

RTFO fuel energy	Obligation	No. of Certs	Double	Single	Double	Single	Shortfall to target	Achieved
(MJ)	(Certs)	& % of obligation	Green	Orange	Orange	Red	(Certs)	%
	(Total energy road fossil x % obligation)	Σ (Biofuel energy x multiplier)					(Obligation - No. of Certs)	(No. of Certs/Fossil fuel energy)
		181,920,000	19,320,000	-	158,400,000	4,200,000	- 2,558,400	17.2%
1,149,060,000								
93,060,000		181,920,000	19,320,000	-	158,400,000	4,200,000	- 2,558,400	17.2%
1,056,000,000	179,361,600	101%	11%	0%	88%	2%		
	16.985%							
192,000,000	32,611,200							
864,000,000	146,750,400							

Cert Transfers

Biof

Biofuel data - extracted from consignment data

										Cert Type	Multiplier	No. Certs
ME	UCO	2,400,000	14	33.00	79,200,000	1,109	6,344		94.5%	Orange	2	158,400,000
EtOH	WHEAT	200,000	30	21.00	4,200,000	126	269		4.0%	Red	1	4,200,000
EtOH	LWHEYP	460,000	10	21.00	9,660,000	97	812		12.1%	Green	2	19,320,000
0	0	-	-	0.00	-	-	-		0.0%	-	-	-

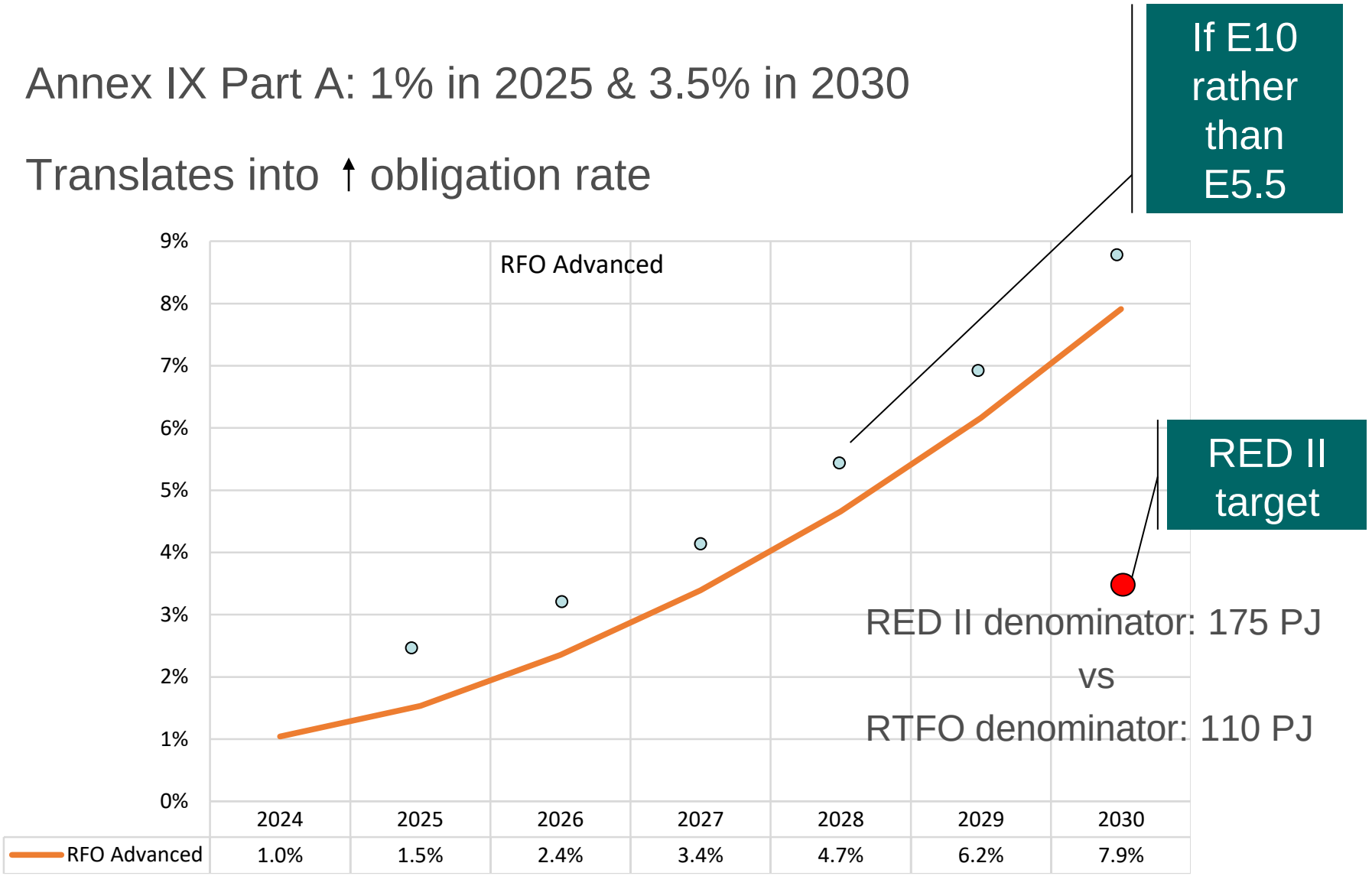
Contribution towards % reduction

ADVANCED BIOFUEL OBLIGATION

- Sustainable biofuel and biogas produced from feedstocks listed in Annex IX Part A: RED II, 1% in 2025 & 3.5% in 2030
- To be ‘translated’ into advanced obligation (i.e. expressed as percentage of fossil diesel and gasoline)
- Discharged with **Green Certs**
- 15% limit on Green Certs from previous periods towards advanced obligation
- Green Certs also used to meet renewable fuel obligation

ADVANCED BIOFUEL OBLIGATION

- Annex IX Part A: 1% in 2025 & 3.5% in 2030
- Translates into ↑ obligation rate



CROP CAP

- Biofuels and biogas produced from food and feed crops limited to 2% in 2023 and thereafter
- To be ‘translated’ into a RTFO equivalent limit (i.e. expressed as percentage of fossil diesel and gasoline, c. 2.3%)
- Compliance with limit measured using **Red Certs**

DOUBLE COUNTING (FOR 2023 AND ON)

- All renewable fuels produced from Annex IX (Part A and Part B) feedstocks double counted
  - Part A advanced feedstocks, x2 Green Certs per MJ
  - Part B feedstock, x2 Orange Certs per MJ
- All other renewable fuels produced from other feedstocks that meet the sustainability criteria, **single** counted – could be Red Certs (crop-based feedstock) or Orange Certs (not crop-based & not on Annex IX)

REVISED DETERMINATIONS

Feedstock	Revised Determination	Note	Cert Colour
UCO	n.a.	Part B (a)	Orange
Cat 1 tallow	n.a.	Part B (b)	Orange
POME	n.a.	Part A (g)	Green
Sewage sludge	n.a.	Part A (f)	Green
Animal manure	n.a.	Part A (f)	Green
Crude glycerine	n.a.	Part A (i)	Green
SBE	Y	Part A (d)	Green
Whey permeate	Y	Part A (d)	Green
Waste starch slurry	Y	Part A (d)	Green
Brewer's spent yeast	Y	Not in Annex IX	Orange
Brown grease	Y	Part A (d)	Green
Belly grass (paunch)	Y	Part A (d)	Green
Food waste not fit for use in the food or feed chain	Y	Part A (d)	Green

DETERMINATIONS (FOR 2023 AND ON)

- Feedstocks not explicitly listed may fall under the following:

(b) Biomass fraction of mixed municipal waste, but not separated household waste subject to recycling targets under point (a) of Article 11(2) of Directive 2008/98/EC;

(c) Biowaste as defined in point (4) of Article 3 of Directive 2008/98/EC from private households subject to separate collection as defined in point (11) of Article 3 of that Directive;

(d) Biomass fraction of industrial waste not fit for use in the food or feed chain, including material from retail and wholesale and the agro-food and fish and aquaculture industry, and excluding feedstocks listed in part B of this Annex;

(o) Biomass fraction of wastes and residues from forestry and forest-based industries, namely, bark, branches, pre-commercial thinnings, leaves, needles, tree tops, saw dust, cutter shavings, black liquor, brown liquor, fibre sludge, lignin and tall oil;

(p) Other non-food cellulosic material;

(q) Other ligno-cellulosic material except saw logs and veneer logs.

DETERMINATION PROCESS

- Determinations required for feedstocks for which two RTFO Certs per MJ are being sought and determination not previously carried out
- Biofuel must be placed on the market – advise a small volume initially
- Advise the RTFO Team you intend to apply for RTFO Certs for a feedstock not listed in Annex IX and not previously determined

DETERMINATION PROCESS

- Application submitted as normal on the RTFO Portal, but additional information needs to be submitted by email:
  - The Annex IX Part A description you believe the feedstock meets
  - Justification for this claim, i.e. set out the rationale / logic / argument / supporting documentation or opinion, to convincingly demonstrate that the feedstock meets the description

DETERMINATION PROCESS

- Consult with:
  - SEAI
  - NSAI
  - EPA
  - DoT
  - DECC
  - And others we consider appropriate
- Examine position of other Member States and UK
- Review data gathered (from applicant, from consultees, from RTFO Team research)

DETERMINATION PROCESS

- If feedstock is listed, no need for determination

(a) Algae if cultivated on land in ponds or photobioreactors;

(e) Straw;

(f) Animal manure and sewage sludge;

(g) Palm oil mill effluent and empty palm fruit bunches;

(h) Tall oil pitch;

(i) Crude glycerine;

(j) Bagasse;

(k) Grape marcs and wine lees;

(l) Nut shells;

(m) Husks;

(n) Cobs cleaned of kernels of corn;

(a) Used cooking oil;

(b) Animal fats classified as categories 1 and 2 in accordance with Regulation (EC) No 1069/2009.

REVISION TO ANNEX IX

- Food waste
- Waste starch slurry
- Liquid whey permeate
- Brown Grease

- Double counting remains, but moves from Green to Orange Certs

ANNEX

Annex IX to Directive (EU) 2018/2001 is amended as follows:

(1) in Part A, the following feedstocks are added:

"

(r) Alcoholic distillery residues and wastes (fusel oils) not fit for use in the food or feed chain;

(s) Raw methanol from kraft pulping stemming from the production of wood pulp;

(t) Non-food crops grown on severely degraded land, not suitable for food and feed crops.".

(2) in Part B, the following feedstocks are added:

"

(c) Bakery and confectionary residues and waste not fit for use in the food and feed chain;

(d) Drink production residues and waste not fit for use in the food and feed chain;

(e) Fruit and vegetable residues and waste not fit for use in the food and feed chain, excluding tails, leaves, stalks and husks;

(f) Starchy effluents with less than 20% starch content not fit for use in the food and feed chain;

(g) Brewers' Spent Grain not fit for use in the food and feed chain;

(h) Liquid whey permeate;

(i) Deoiled olive pomace;

(j) Damaged crops that are not fit for use in the food or feed chain, excluding substances that have been intentionally modified or contaminated in order to meet this definition;

(k) Municipal wastewater and derivatives other than sewage sludge;

(l) Brown grease;

(m) Cyanobacteria;

(n) Vinasse excluding thin stillage and sugarbeet vinasse;

(o) Dextrose ultrafiltration retentate from sugar refining;

(p) Intermediate crops, such as catch crops and cover crops that are grown in areas where due to a short vegetation period the production of food and feed crops is limited to one harvest and provided their use does not trigger demand for additional land and provided the soil organic matter content is maintained.".

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ADDITIONAL MULTIPLE COUNTING (DEVELOPMENT FUELS)

- **Provisional**

Annex IX feedstock	Annex IX multiplier	Additional Certs	Certs per MJ
BioCNG	2	1	3
HVO / CHVO blended in diesel/gasoil	2	1	3
Sustainable aviation fuel	2	0.4	2.4
Renewable fuel used in maritime	2	0.4	2.4

- E.g. 1 MJ of bioCNG produced from crude glycerine (listed in Annex IX Part A) will be awarded: (1 MJ x 2) + 1 MJ = 3 Green Certs per MJ

ADDITIONAL MULTIPLE COUNTING (DEVELOPMENT FUELS)

- **Provisional**

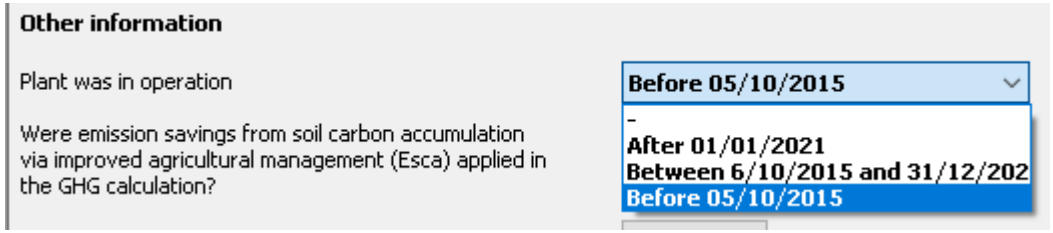
Feedstocks not in Annex IX	Annex IX multiplier	Additional Certs	Certs per MJ
BioCNG	1	0.5	1.5
HVO / CHVO blended in diesel/gasoil	1	0.5	1.5
Sustainable aviation fuel	1	0.2	1.2
Renewable fuel used in maritime	1	0.2	1.2

- E.g. 1 MJ of HVO produced from soy will be awarded: (1 MJ x 1)

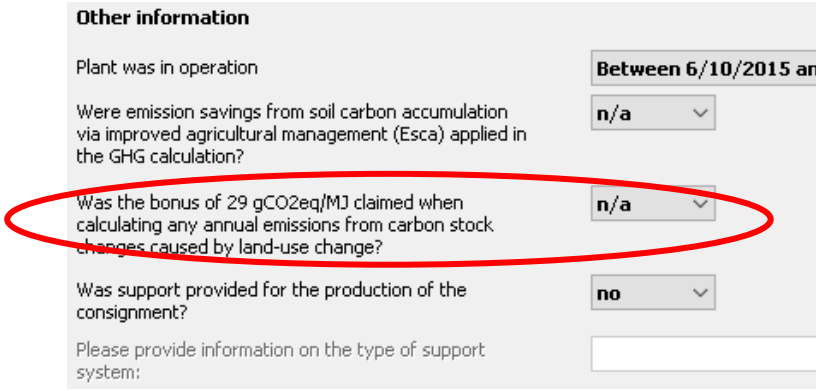
  + 0.5 MJ = 1.5 Red Certs per MJ

RED II – FOSSIL FUEL COMPARATOR

- RED II changes the fossil fuel comparator to 94 gCO_{2eq}/MJ (from 83.8 gCO_{2eq}/MJ)
  - Installations operating prior to Oct ‘15, 50% GHG savings (47 gCO_{2eq}/MJ)
  - Installations coming into operation between Oct ’15 and Dec ‘20, 60% GHG savings (37.6 gCO_{2eq}/MJ)
  - Installations coming into operation after Dec ‘21, 65% GHG savings (32.9 gCO_{2eq}/MJ)
  - Calculator modified:



CARBON CALCULATOR CHANGES

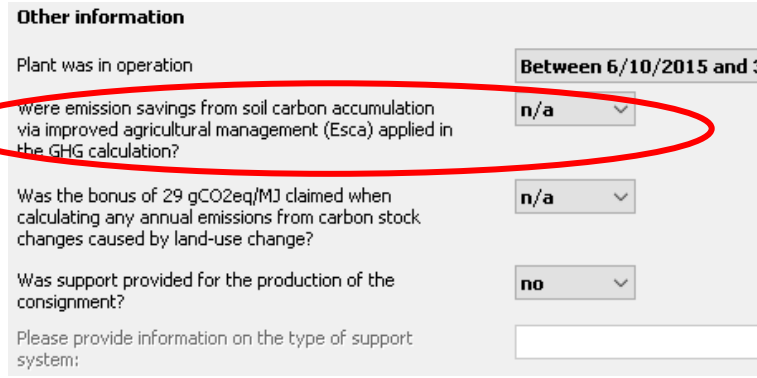


- Regulation 6 of SI 33 of 2012
  - Bonus from carbon stock changes caused by land-use change (restored degraded land) – part of $\mathbf{e_l}$ calculation

$$e_l\left[\frac{kg\ CO_2eq}{ton}\right] = \left(\frac{CS_R\left[\frac{kg\ C}{ha}\right] - CS_A\left[\frac{kg\ C}{ha}\right]}{yield\ raw\ material\left[\frac{ton}{ha * yr}\right] * 20\ [yr]} * 3.664\right) - eB$$

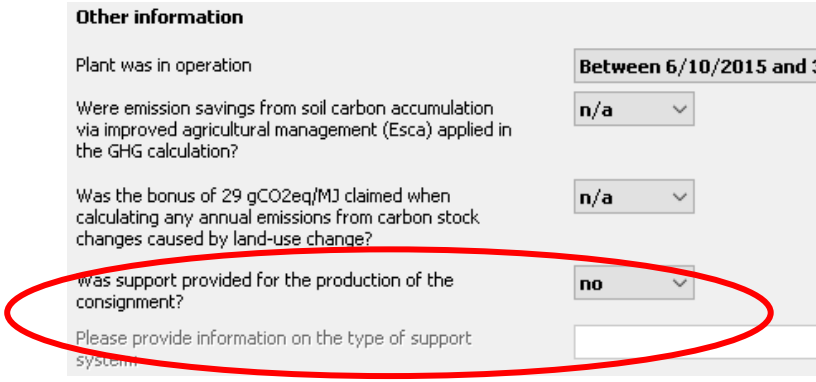
  - If land was not in use (agricultural or other) in Jan '08, was severely degraded, and a steady increase in soil carbon stock and reduction in erosion is achieved, then can claim $\mathbf{e_B}$ (29 gCO_{2eq}/MJ)
  - If a farm/plantation meets the requirements, the info needs to be forwarded through the supply chain via voluntary scheme Sustainability Declarations and the final biofuel producer can deduct the bonus from the total GHG value of the final product in the final biofuel proof of sustainability (PoS).

CARBON CALCULATOR CHANGES



- Regulation 6 of SI 33 of 2012
  - Factor for emission savings from soil carbon accumulation ($\mathbf{e_{sca}}$)
  - Refers to practices that may increase carbon content in soil, such as:
    - Shifting to reduced or zero-tillage.
    - Improved crop rotations and/or cover crops, including crop residue management.
    - Improved fertiliser or manure management (e.g. using organic fertilisers).
    - Using soil improver (e.g. compost, manure fermentation digestate).
  - For biogas/biomethane, where animal manure is used as a feedstock, bonus of 45 gCO_{2eq}/MJ.

CARBON CALCULATOR CHANGES



- Regulation 5 of SI 33
  - Was support provided for the production of the consignment?
  - Support can include, for example, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes
  - Is included in PoS for biogas supply chains – querying why biogas only

SUSTAINABILITY STATEMENT

- New additions to be reported in Sustainability Statement

General Information										Sustainability				GHG Savings					Indicative Compliance			
Internal Ref	Admin Co. No. No.	Fuel type	Quantity of fuel	Feedstock	Production process	Country of origin	Place of purchase	Support provided	Type of support	VS 1	VS 2	VS 3	Land use 1 Jan 2008	Carbon intensity	Type of GHG data	Soil carbon	Bonus degraded land	Plant in operation date	RED GHG	RED Biodiversity	RED C-stock	RED compliant (indicative)
AA–1	01	EtOH	300,000	Wheat	NGCHP	POL	DEU	No	-	ISCC	-	-	CROPNP	76	FullChain	Yes	No	Before 2015	No	Yes	Yes	No
BB-1	02	ME	200,000	UCO	-	IRL	IRL	No	-	ISCC	-	-	W/NAR	14	-	n/a	n/a	Between 2015 and 2021	Yes	Yes	Yes	Yes
CC-1	03	G591	150,000	WMANU	-	IRL	IRL	No	-	REDCER	-	-	W/NAR	16	FullChain	n/a	n/a	Between 2015 and 2021	Yes	Yes	Yes	Yes
DD-1	04	CHVO-Road	100,000	TALL1	-	GBR	IRL	No	-	RSBRED	-	-	W/NAR	15	FullChain	n/a	n/a	After 2021	Yes	Yes	Yes	Yes
EE-1	05	ME	175,000	PALM	MetCap	MYS	NLD	No	-	ISCC	-	-	FST10	52	-	n/a	n/a	After 2021	No	Yes	Yes	No

Fuel types: Ethanol (EtOH), Methyl Ester (ME) (biodiesel), Biomethane (G591)

Feedstocks: Used Cooking Oil (UCO), wet manure (WMANU), Category 1 tallow (TALL1), Palm oil (PALM)

Production process: Natural gas in a CHP plant (NGCHP), process with methane capture at oil mill (MetCap)

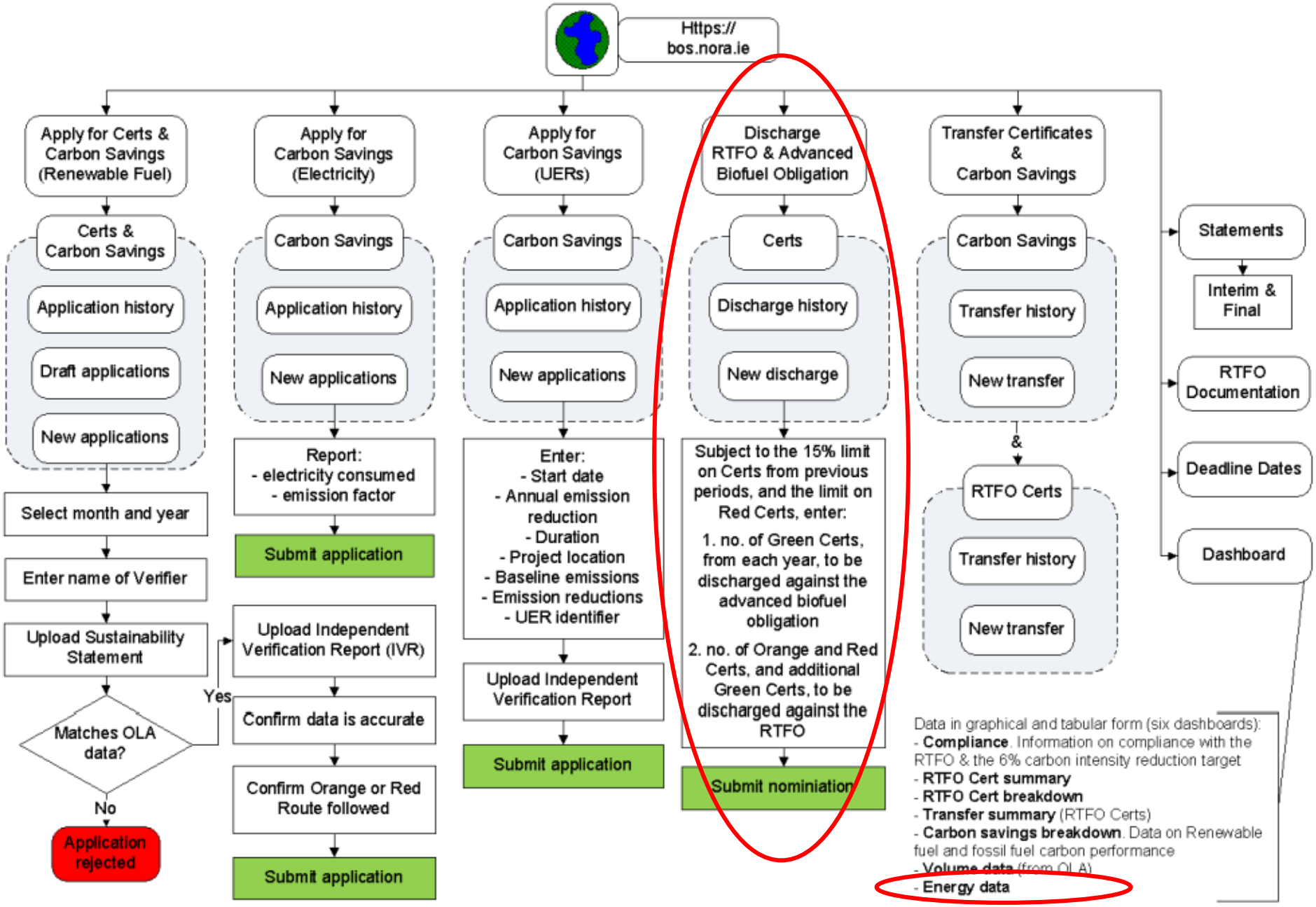
Country of origin/place of purchase: Poland (POL), Ireland (IRL), Great Britain (GBR), Malaysia (MYS), Germany (DEU), Netherlands (NLD)

Voluntary scheme: International Sustainability & Carbon Certification (ISCC), REDcert-EU (REDCER), Roundtable on Sustainable Biomaterials (RSB) EU RED (RSBEU)

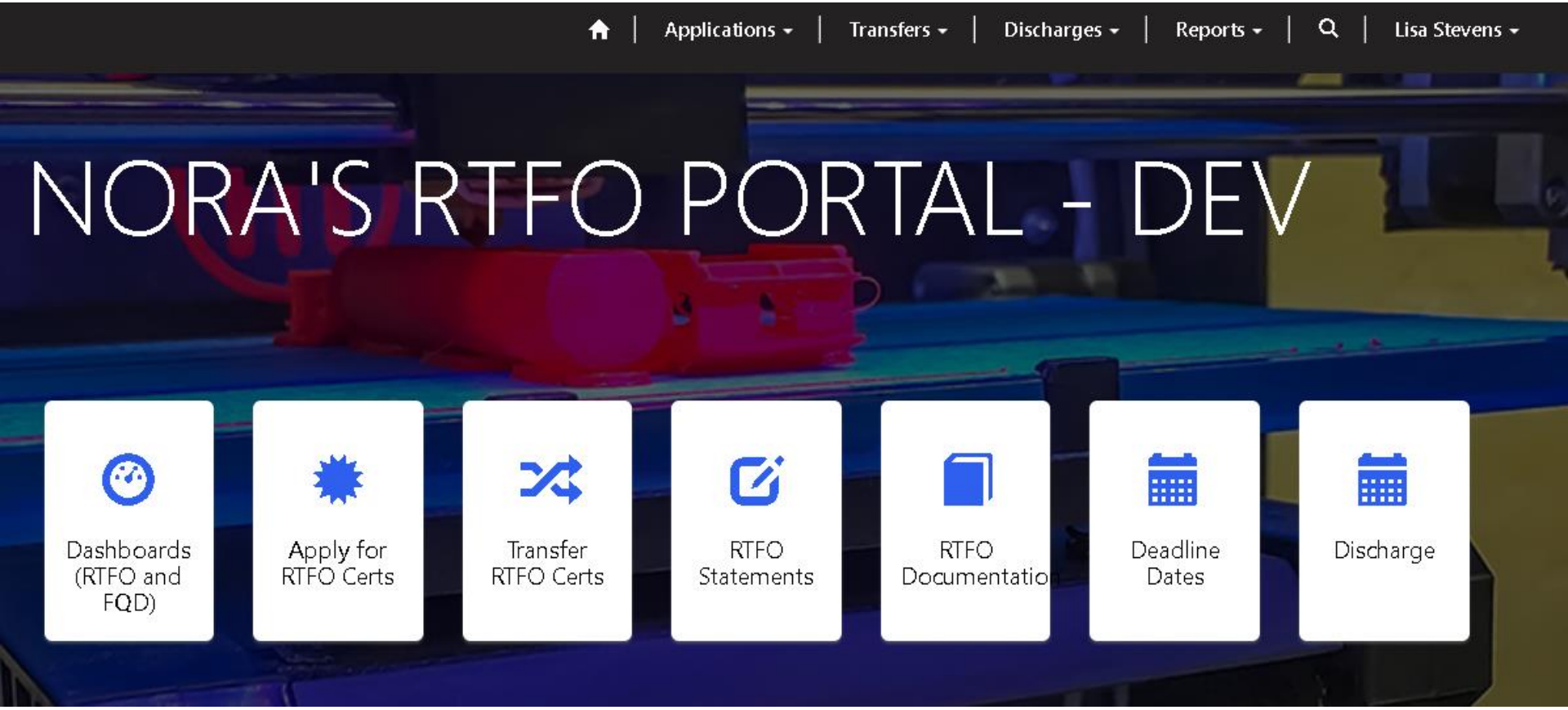
Land use: Cropland non-protected (CROPNP), Waste/non-agricultural residue (W/NAR), Forest 10% - 30% (FST10)

Type of GHG data: Actual value for the entire fuel chain (FullChain), default (-)

BOSOS – RTFO PORTAL



RTFO PORTAL


Applications
Transfers
Discharges
Reports
Lisa Stevens
NORA'S RTFO PORTAL - DEV
Dashboards (RTFO and FQD)
Apply for RTFO Certs
Transfer RTFO Certs
RTFO Statements
RTFO Documentatio
Deadline Dates
Discharge

RTFO PORTAL

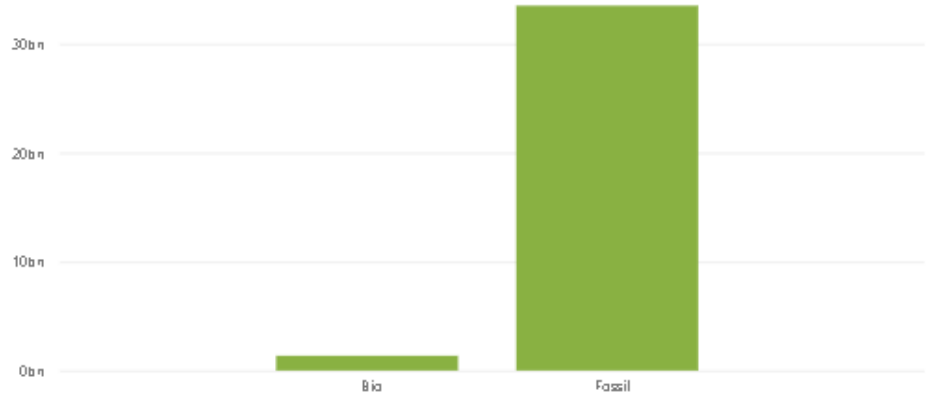
BOS Team

Last Updated: 07-Mar-23 16:17

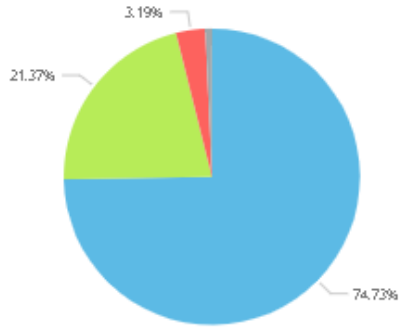
OLA Data as Reported to DECC

2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022

Fuel Quantity by Fuel Category



Fuels Value by Fuel Type



Fuel Type	January	February	March	April	May	June	July	August	September	October	November	December	To
BioCNG	0	0	0	0	0	0	0	0	0	0	0	0	
Biodiesel	91,724,282	93,953,012	90,934,530	129,591,884	120,137,538	131,942,950	135,554,260	124,691,770	111,579,432	67,689,546	13,652,700	0	
Bioethanol	20,410,425	19,876,941	20,249,733	21,402,389	22,674,120	20,776,455	20,481,804	21,182,405	19,990,635	20,899,368	20,437,221	20,833,785	
Biogasoil	0	0	0	0	0	0	0	0	0	0	0	0	
Biogasoil (Marine)	0	0	0	0	0	0	0	0	0	0	0	0	
BioLNG	0	0	0	0	0	0	0	0	0	0	0	0	
BioLPG	0	0	0	0	0	0	0	0	0	0	0	0	
Biomethanol	0	0	0	0	0	0	0	0	0	0	0	0	
CHVO (Aviation)	0	0	0	0	0	0	0	0	0	0	0	0	
CHVO (Marine)	0	0	0	0	0	0	0	0	0	0	0	0	
CHVO (Other)	0	0	0	0	0	0	0	0	0	0	0	0	
CHVO (Rail)	0	0	0	0	0	0	0	0	0	0	0	0	
CHVO (Road)	0	0	0	0	0	0	0	0	0	0	0	0	
CNG	0	0	0	0	0	0	0	0	0	0	0	0	
Gasoil	0	0	0	0	0	0	0	0	0	0	0	0	

Compliance Summary | RTFO Cert Summary | RTFO Cert Breakdown | Transfers Summary | Carbon Savings Breakdown | Volume Data | Energy Data

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NORA NATIONAL OIL RESERVES AGENCY
AN GHNÍOMHAIREACHT CHÚLTACA OLA NÁISIÚNTA

evelyn PARTNERS

RTFO PORTAL

BOS Team

Last Updated: 07-Mar-23

2022

RTFO & SI 160 Compliance

Achieving RTFO?	Crop Cap	Advanced Biofuel Obligations	SI 160 Savings
2,054,572	11,300	0	-0.64
Not achieving RTFO Obligation		Not achieving Biofuel Target	% Carbon Savings Achieved
118,232,952	70,084,849	2,503,030	Less than 6%

Compliance Summary | RTFO Cert Summary | RTFO Cert Breakdown | Transfers Summary | Carbon Savings Breakdown | Volume Data | Energy Data

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NORA NATIONAL OIL RESERVES AGENCY AN GHNÍOMHAIREACHT CHÚLTACA OLA NÁISIÚNTA

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RTFO PORTAL - STATEMENT OF ACCOUNT

Account Holder: BOS
Account No.: 500
Date of Issue: 10/3/23

This Interim Statement of Account is provided for illustrative purposes only. It is NOT the final 'Statement of Account' which will be issued in March.

		Levy-paid mineral oil & biofuel		
Parameter		**Litres**	**Nm^3**	**MJ**
Levy-paid mineral oil & biofuel		1,001,212,130		32,664,766,558
Levy-paid mineral oil		956,654,682		31,336,779,478
	Gasoline	232,825,028		7,450,400,896
	Diesel	723,829,654		23,886,378,582
Levy-paid biofuel		44,557,448	0	1,327,987,080
	Bioethanol	11,867,392		249,215,232
	Biomethanol	0		0
	Biodiesel	32,690,056		1,078,771,848
	HVO	0		0
	CHVO	0		0
	Biogasoil	0		0
	HVOAviation	0		0
	BioCNG		0	0
	BioLNG	0		0
	BioLPG	0		0

RTFO PORTAL - STATEMENT OF ACCOUNT

Type/Year	Quantity	Certs held: Advanced Discharge	RTFO Discharge	For Carry-over	No longer valid
Green - 2022	0	0	0	0	0
Green - 2021	0	0	0	0	0
Green - 2020	0	0	0	0	0
Orange - 2022	0	0	0	0	0
Orange - 2021	2,000,000	0	2,000,000	0	0
Orange - 2020	43,272	0	43,272	0	0
Red - 2022	0	0	0	0	0
Red - 2021	0	0	0	0	0
Red - 2020	11,300	0	11,300	0	0

RTFO PORTAL - STATEMENT OF ACCOUNT

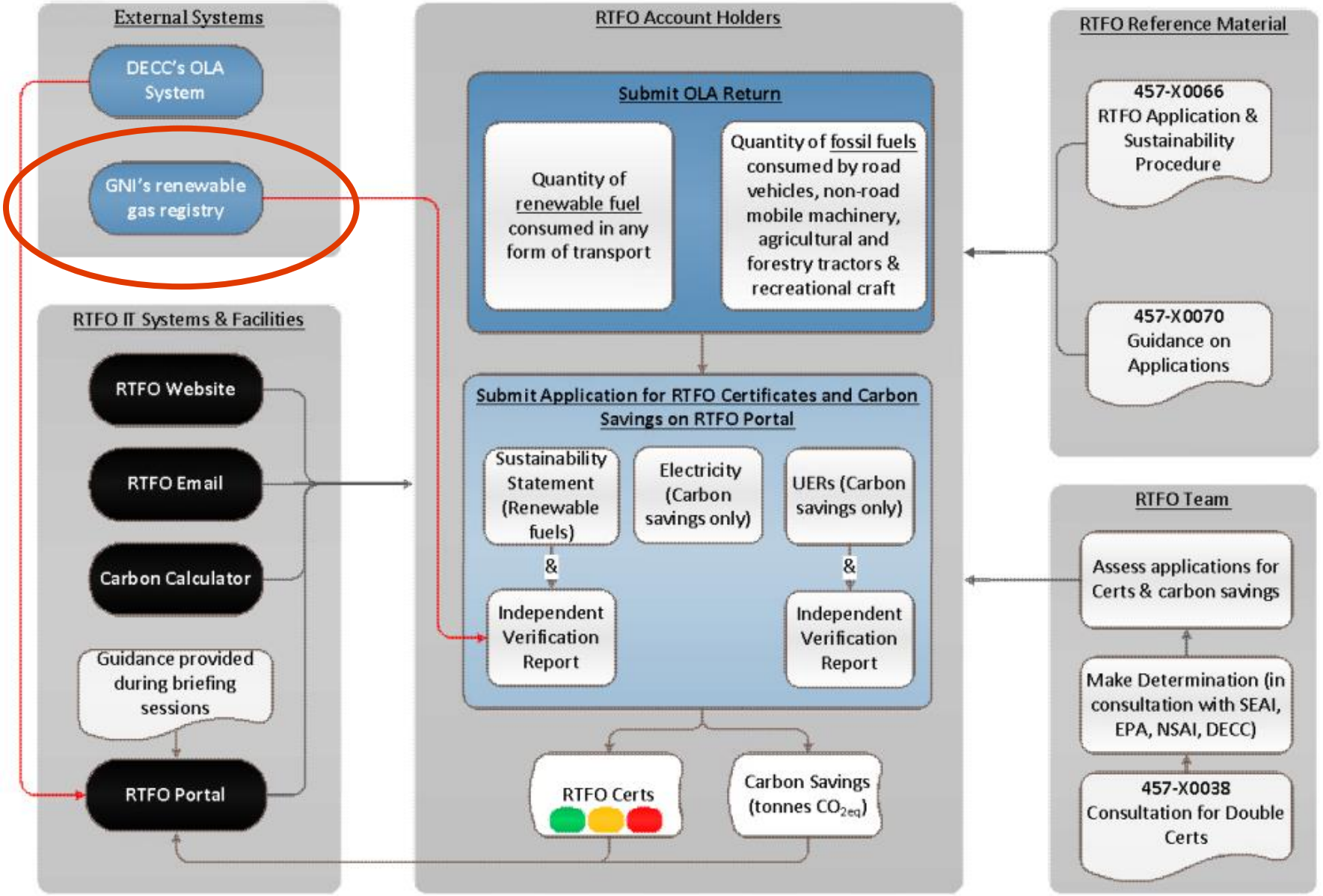
Discharge performance

Parameter	Limit/Target		Performance	Target excess/deficit, Limit exceedance/buffer	
Renewable fuel obligation (All Certs)	4,682,341,590		2,054,572	-4,680,287,018	Caution, BOS obligation may not be met.
Crop cap (Red Certs)	626,735,590		11,300	626,724,290	You are below the ILUC indicator.
15% limit on BOS Certs from previous periods	702,351,238		2,054,572	700,296,666	You are below the 15% limit on BOS Certs from previous periods.
Buyout Charge	1	(per litre shortfall)			
Estimated buyout charge	4,680,287,017.6	Euros			
Advanced biofuel target (Green Certs)	62,673,559		0	-62,673,559	
15% limit on Certs from previous periods	9,401,034		0	9,401,034	
Advanced buy-out price (per MJ shortfall):	0	(per litre shortfall)			
Estimated advanced buy-out charge:	0	Euros			

REVISED PROCEDURE

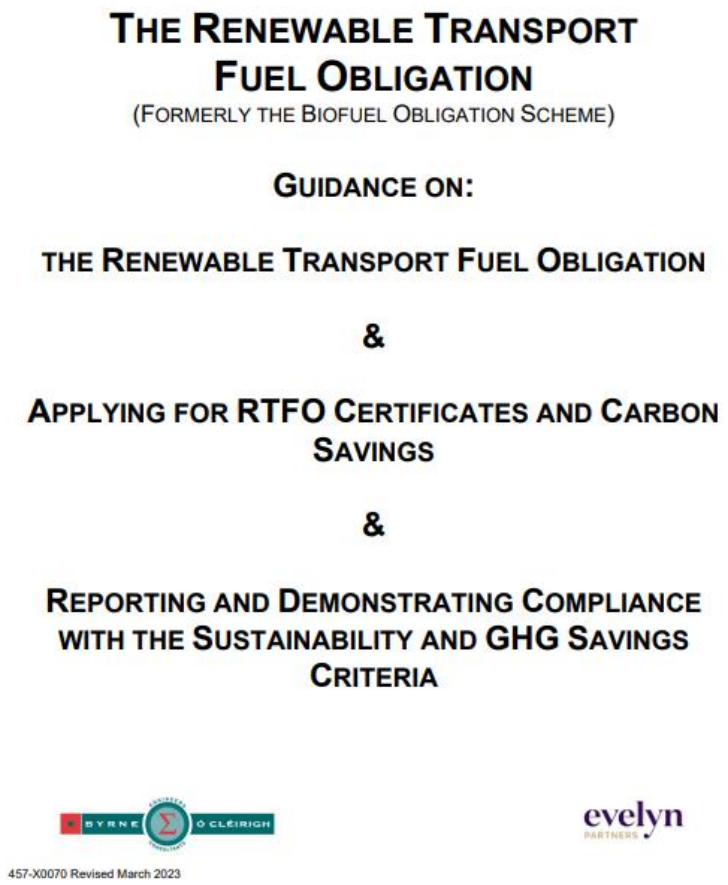
- Process of applying for RTFO Certs & carbon savings
- Reporting compliance with the sustainability and GHG savings criteria
- Verification and auditing

REVISED PROCEDURE



REVISED GUIDANCE

- Now covers:
  - Overview of RTFO & how compliance works
  - The process of preparing applications for Certs & carbon savings
  - Demonstrating compliance with sustainability
  - Verification and auditing


THE RENEWABLE TRANSPORT FUEL OBLIGATION

(FORMERLY THE BIOFUEL OBLIGATION SCHEME)

GUIDANCE ON:

THE RENEWABLE TRANSPORT FUEL OBLIGATION

&

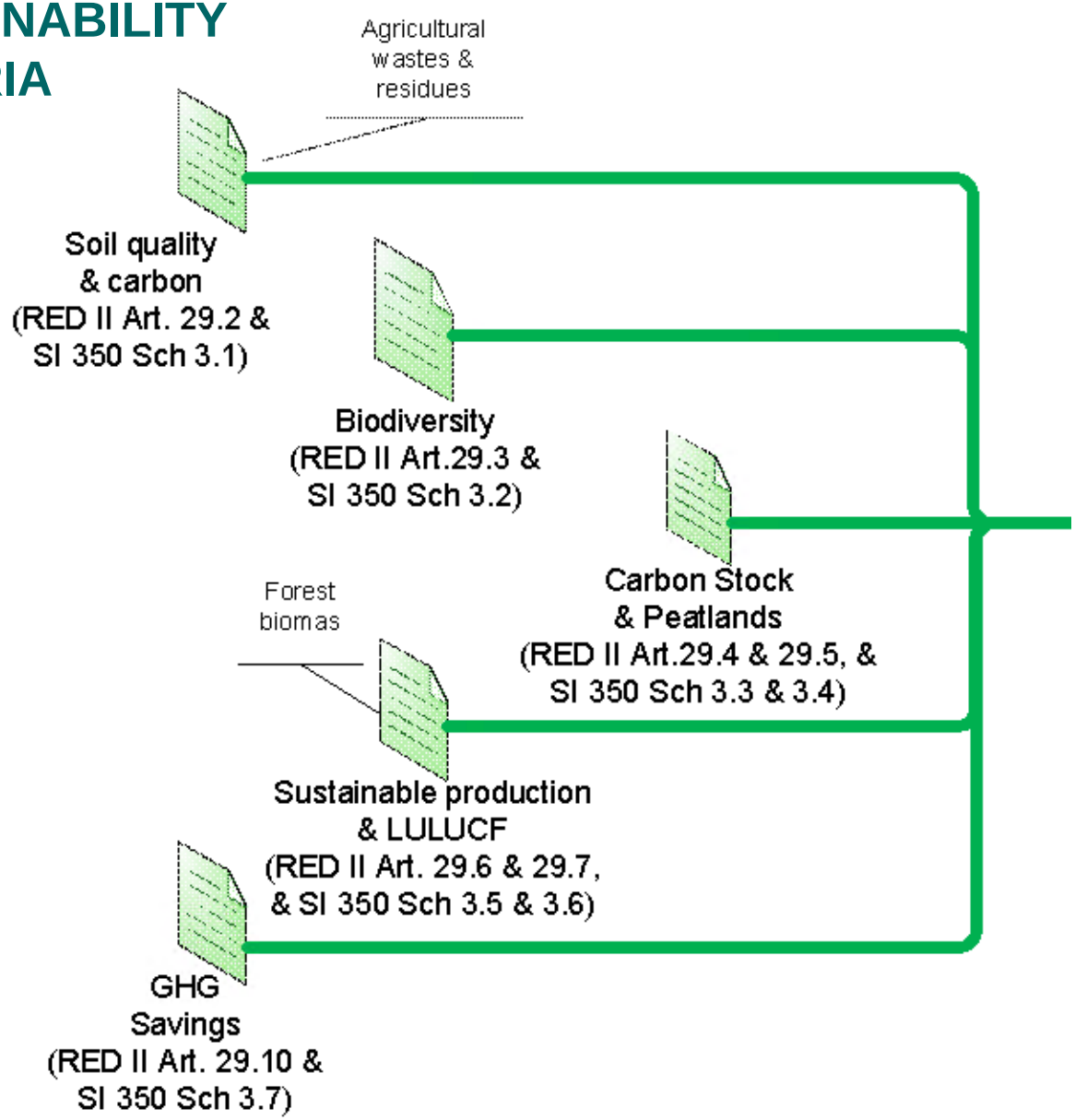
APPLYING FOR RTFO CERTIFICATES AND CARBON SAVINGS

&

REPORTING AND DEMONSTRATING COMPLIANCE WITH THE SUSTAINABILITY AND GHG SAVINGS CRITERIA

457-X0070 Revised March 2023

SUSTAINABILITY CRITERIA

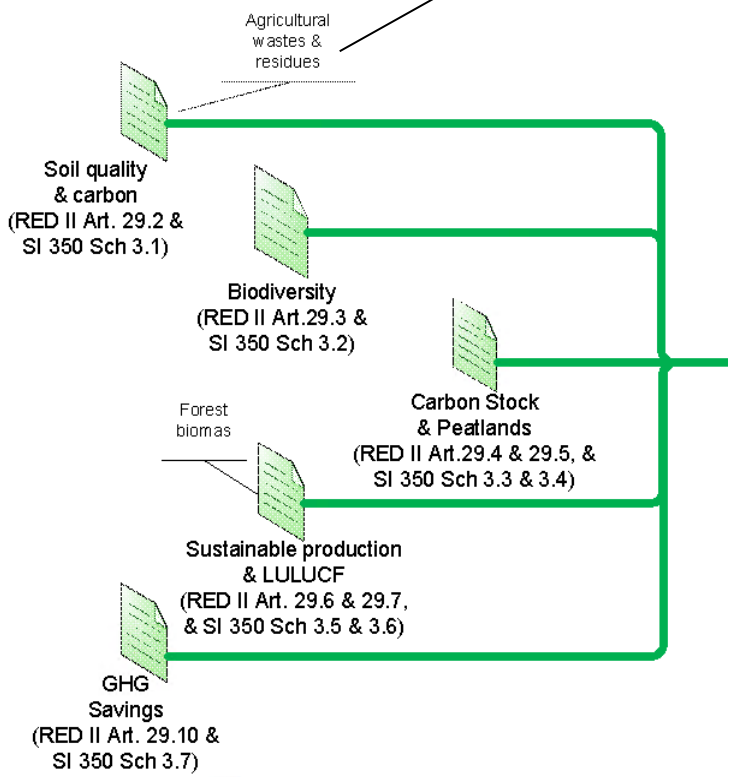


European Commission

Voluntary schemes

SUSTAINABILITY CRITERIA – SOIL QUALITY & CARBON

Agricultural wastes and residues only allowed where operators or national authorities have monitoring and management plans in place to address the impact on soil quality and soil carbon



European Commission

Voluntary schemes

… voluntary schemes shall verify that the harvesting of agricultural waste and residues does not have a negative impact on the soil quality and the soil carbon stock. Such verification shall ensure that a relevant set of essential soil management or monitoring practices is applied on the land to promote soil carbon sequestration and soil quality, in accordance with Annex VI Art 21.5, 2022/996

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SOIL QUALITY & CARBON

ANNEX VI

NON-EXAUSTIVE LISTS OF EXAMPLES OF ESSENTIAL MANAGEMENT AND MONITORING PRACTICES TO PROMOTE AND MONITOR SOIL CARBON SEQUESTRATION AND SOIL QUALITY

Table 1

Examples of essential soil management practices to promote soil carbon sequestration (given the absence of residues) and promote soil quality

Requirement	Soil quality parameter
At least a 3-crop rotation, including legumes or green manure in the cropping system, taking into account the agronomic crop succession requirements specific to each crops grown and climatic conditions. A multi-species cover crop between cash crops counts as one.	Promoting soil fertility, soil carbon, limiting soil erosion, soil biodiversity and promoting pathogen control
Sowing of cover/catch/intermediary crops using a locally appropriate species mixture with at least one legume. Crop management practices should ensure minimum soil cover to avoid bare soil in periods that are most sensitive.	Promoting soil fertility, soil carbon retention, avoiding soil erosion, soil biodiversity
Prevent soil compaction (frequency and timing of field operations should be planned to avoid traffic on wet soil; tillage operation should be avoided or greatly reduced on wet soils; controlled traffic planning can be used).	Retention of soil structure, avoiding soil erosion, retaining soil biodiversity
No burning of arable stubble except where the authority has granted an exemption for plant health reasons.	Soil carbon retention, resource efficiency
On acidic soils where liming is applied, where soils are degraded and where acidification impacts crop productivity.	Improved soil structure, soil biodiversity, soil carbon
Reduce tillage/no tillage – Erosion control – addition of organic amendments (biochar, compost, manure, crop residues) – use of cover crops, rewetting Revegetation: planting (species change, protection with straw mulch) – landscape features – agroforestry	Increase soil organic carbon

Table 1

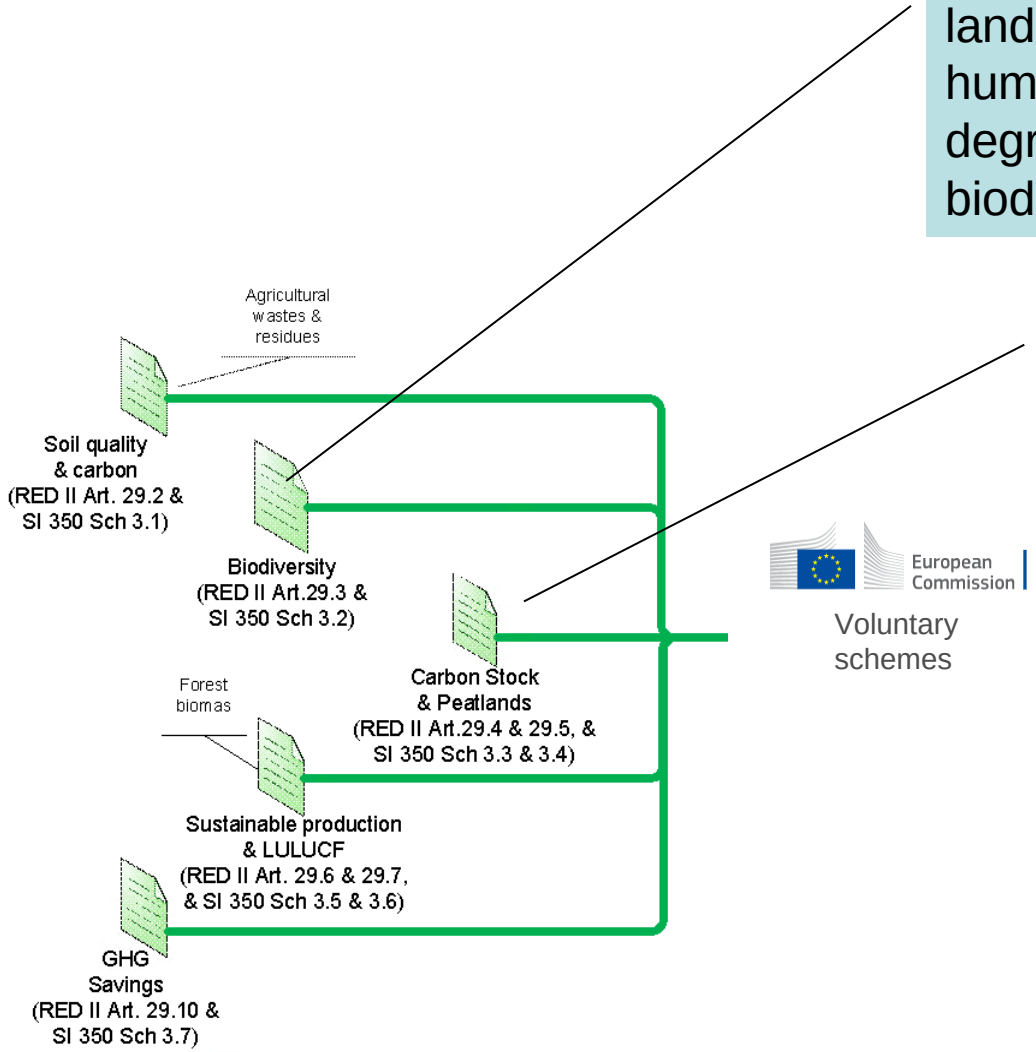
Examples of monitoring practices for soil quality and carbon mitigation impacts

Monitoring approach	Method of verification/demonstration
Risk assessment	Identifying areas with high risk of soil quality decline helps prevent these risks and focus on areas with the greatest impact.
Soil organic matter analysis	Consistent sampling of soil organic matter improves monitoring so that this matter can be maintained or improved.
Soil organic carbon analysis	Soil organic carbon is seen as a good marker for wider soil quality.
Soil conditioning index sampling	A positive value indicates the system is expected to have increasing soil organic matter.
Soil erosion assessment	Ensures that erosion is below a tolerable level, e.g. USDA Agricultural Research Service 't' levels.
Nutrient management plan	A plan outlining nutrient strategy (focusing mostly on N, P, K) and fertiliser regimes can prevent nutrient imbalances.
Regular soil pH analysis	Monitoring pH helps identify imbalances in pH.

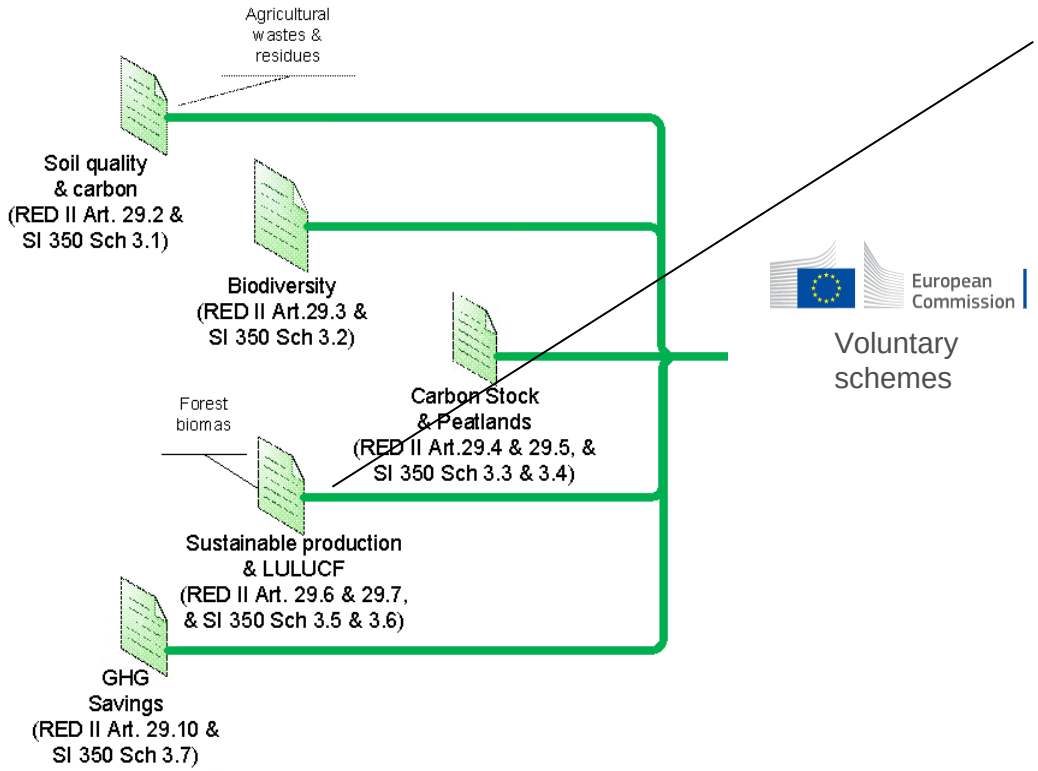
SUSTAINABILITY CRITERIA – SOIL QUALITY & CARBON

Agricultural biomass not grown on land that was/is primary forest, highly biodiverse forest, wooded land (native species & no clear human activity, species rich and not degraded), SPAs SACs, highly biodiverse grassland

Agricultural biomass not grown on wetlands, continuously forested areas or land with trees higher than 5m & canopy cover between 10% and 30%



SUSTAINABILITY CRITERIA – FOREST BIOMASS



Applies to forest biomass. (1) Laws or management systems in place to manage forests (harvesting, regeneration, protected areas, soil quality, biodiversity, forest capacity). (2) LULUCF – is party to Paris Agreement, submitted nationally determined contribution to UNFCC, carbon stock and sink conservation laws (or management systems that maintain/strengthen carbon stock & sinks)

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GHG SAVINGS CRITERIA

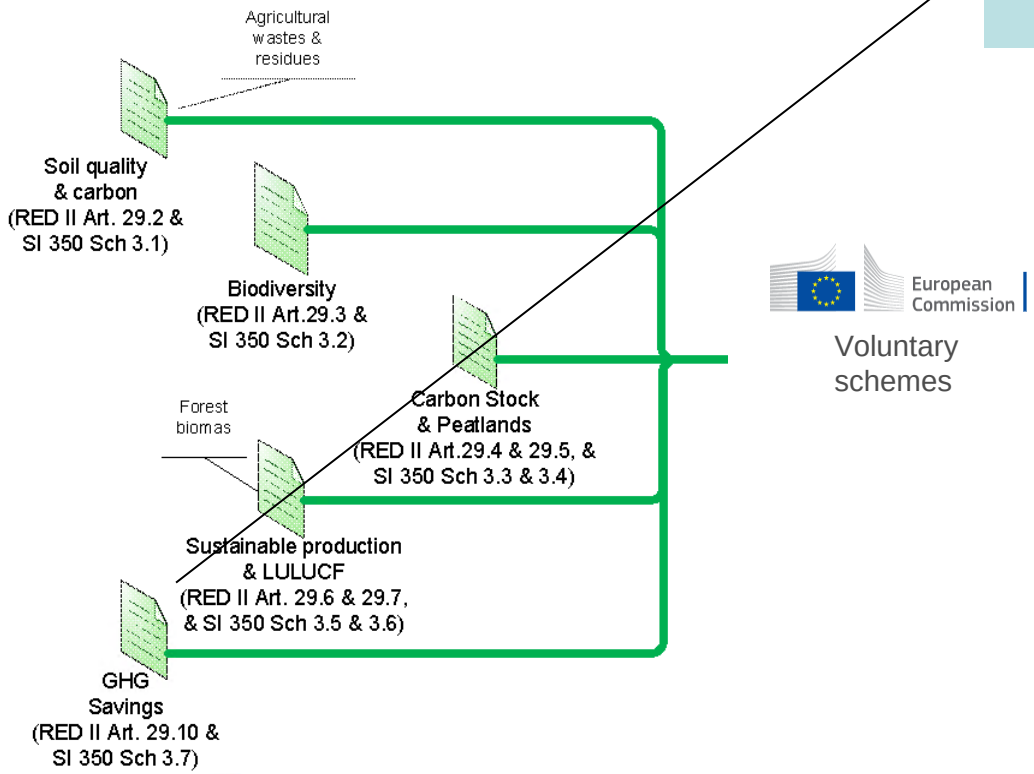
For biofuels and biogas:

(1) 50%, before Oct ’15

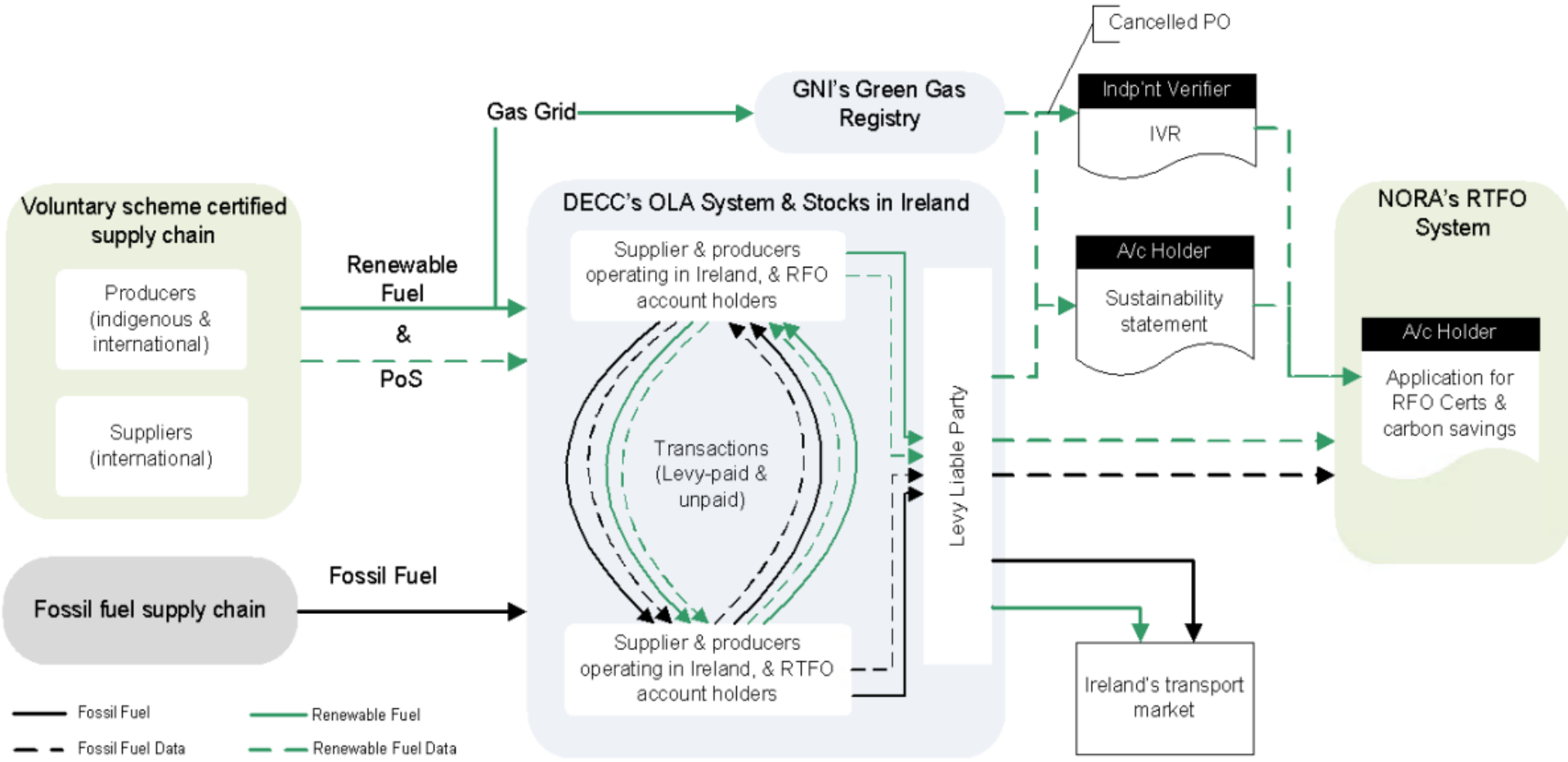
(2) 60%, after Oct ’15 until Dec ‘20

(3) 65%, from Jan ’21

RFNBOs & RCFs: 70%



MASS BALANCE & OLA

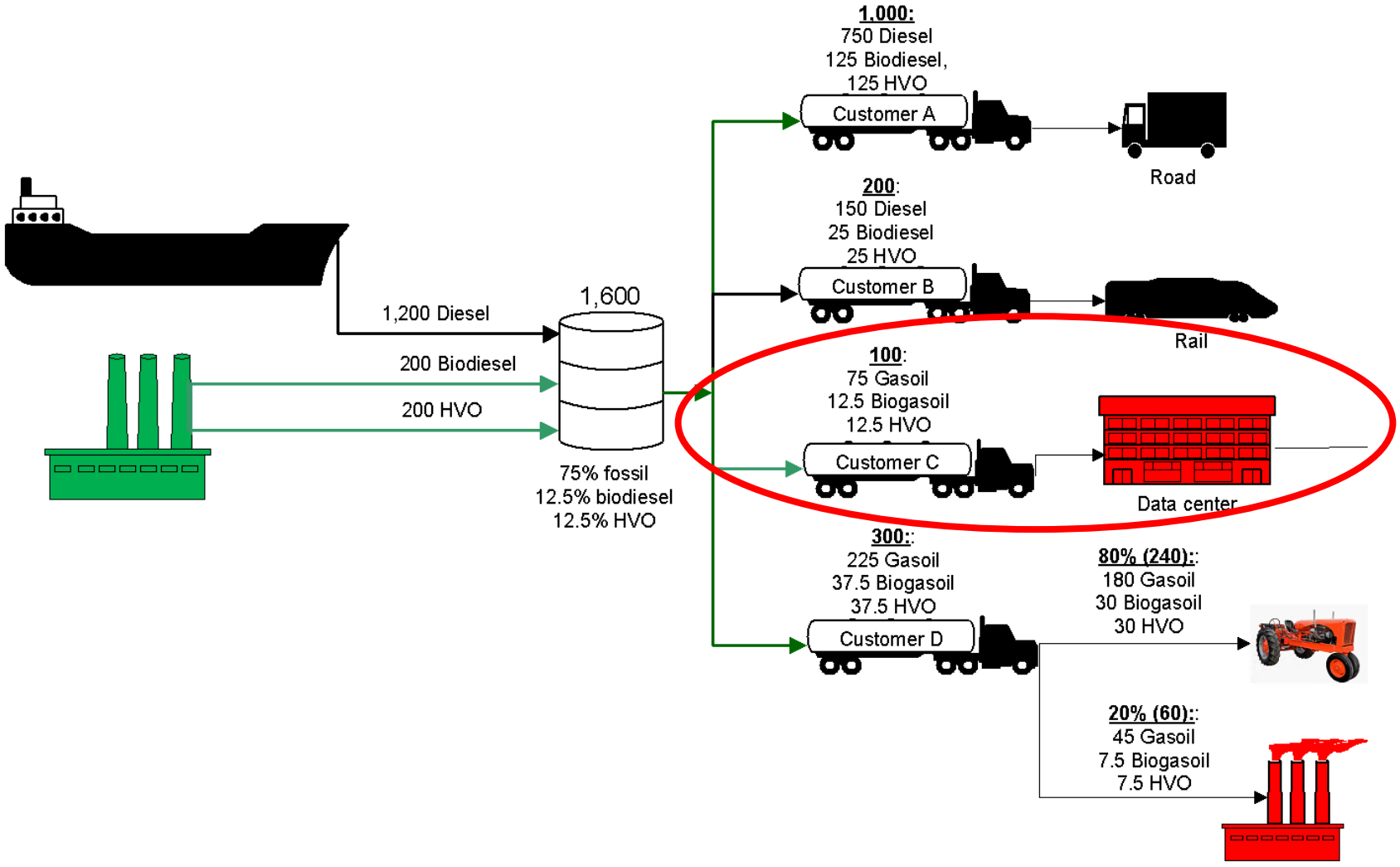


MASS BALANCE

- There is flexibility in the system. However, there are rules:
  - Biofuel cannot be claimed under more than one compliance scheme
  - The sum of consignments into OLA must match consignments out
  - Sustainability characteristics remain fixed
  - While transformations in OLA can be carried out (e.g. biodiesel-road to biogasoil-non road), can't transform one renewable fuel to another (e.g. bioethanol can't become biodiesel)
  - If report biofuel in gasoil in OLA and it is liable for the Biofuel Levy, then must report 80:20 transport:non-transport (same as fossil gasoil)
  - If biofuel is sold to marine, then can report all going to marine, subject to evidence requirements

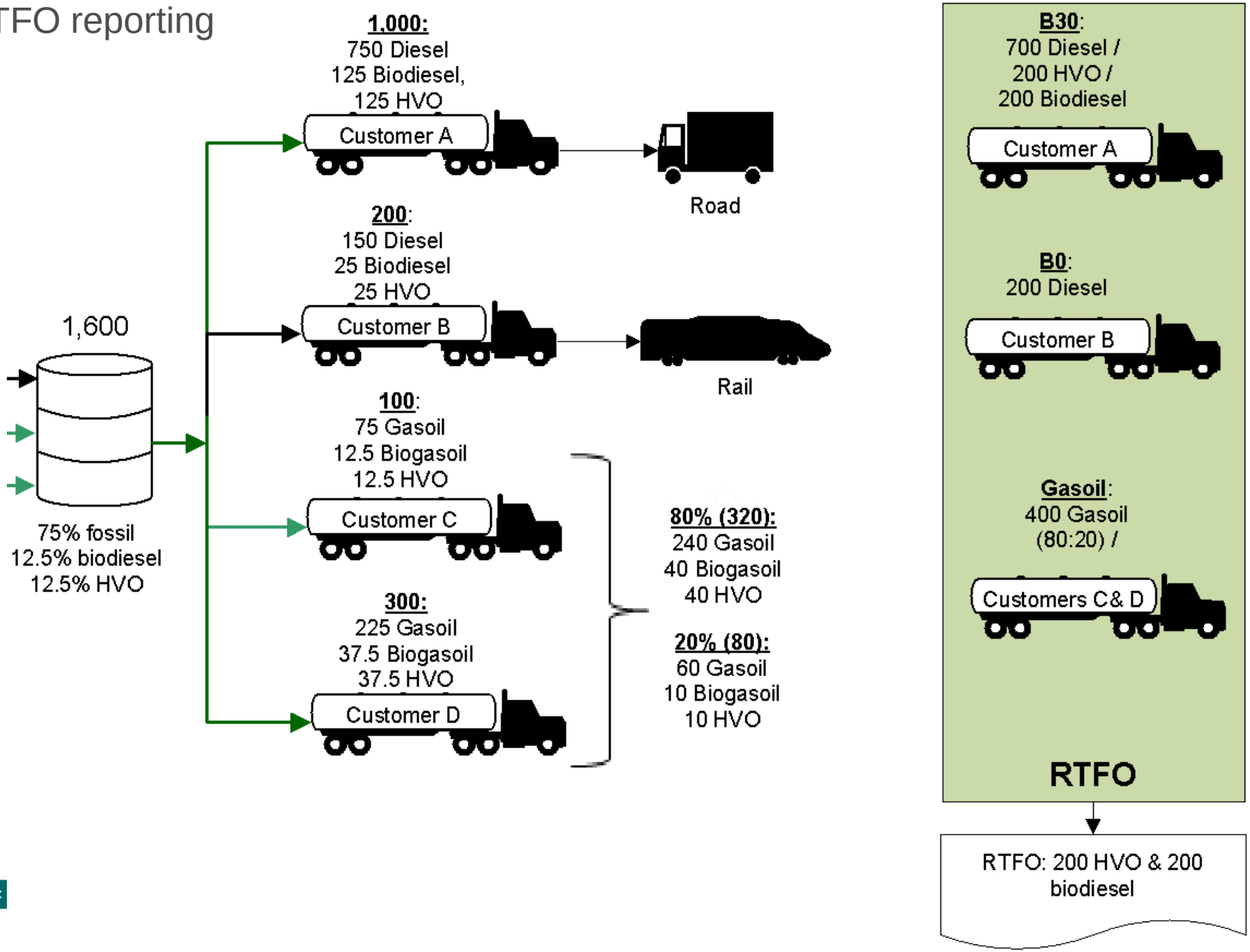
MASS BALANCE

- Where renewable fuel blended with gasoil is sold for non-transport purposes and it is sold as renewable fuel, then must report sale as non-transport.



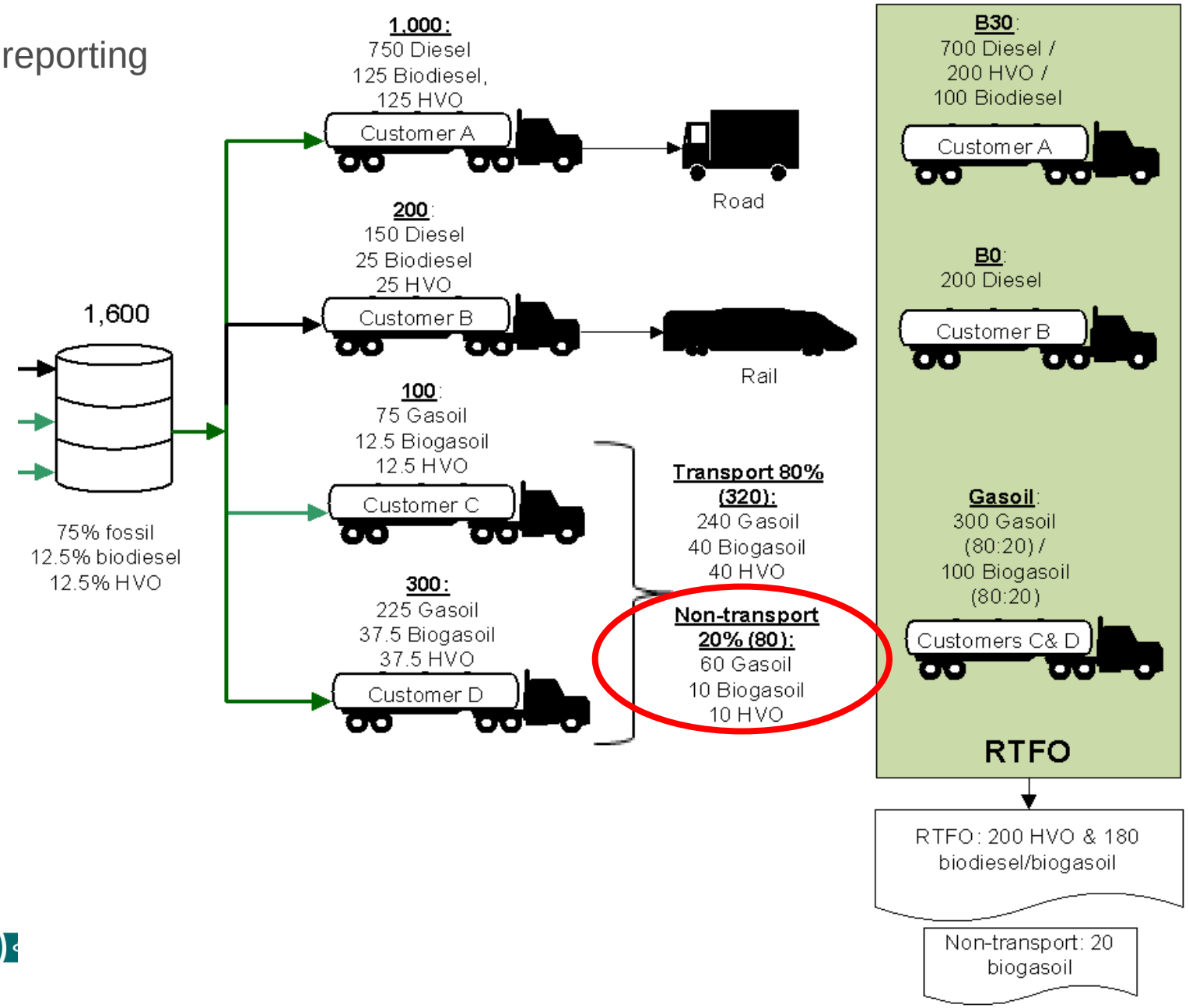
MASS BALANCE

- RTFO reporting

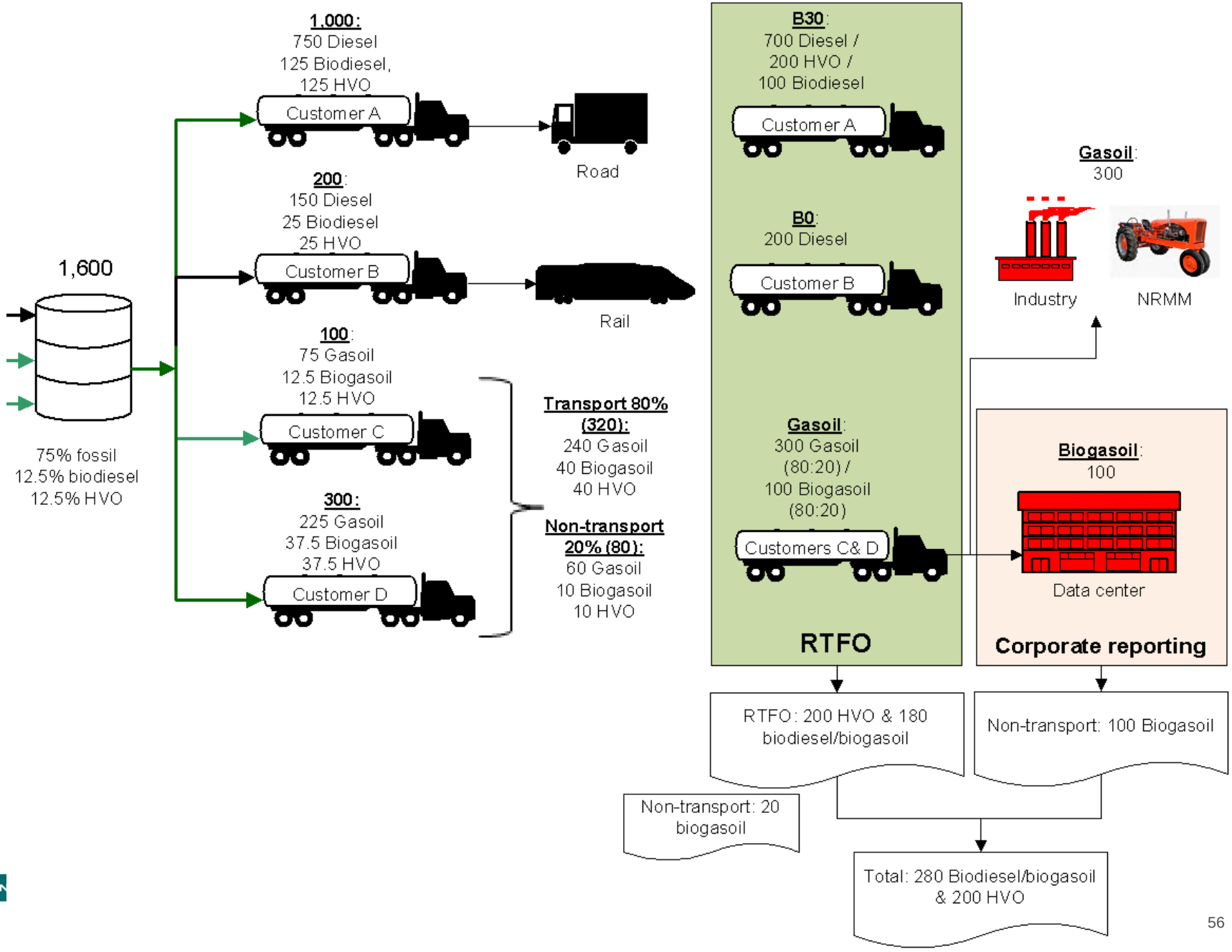


MASS BALANCE

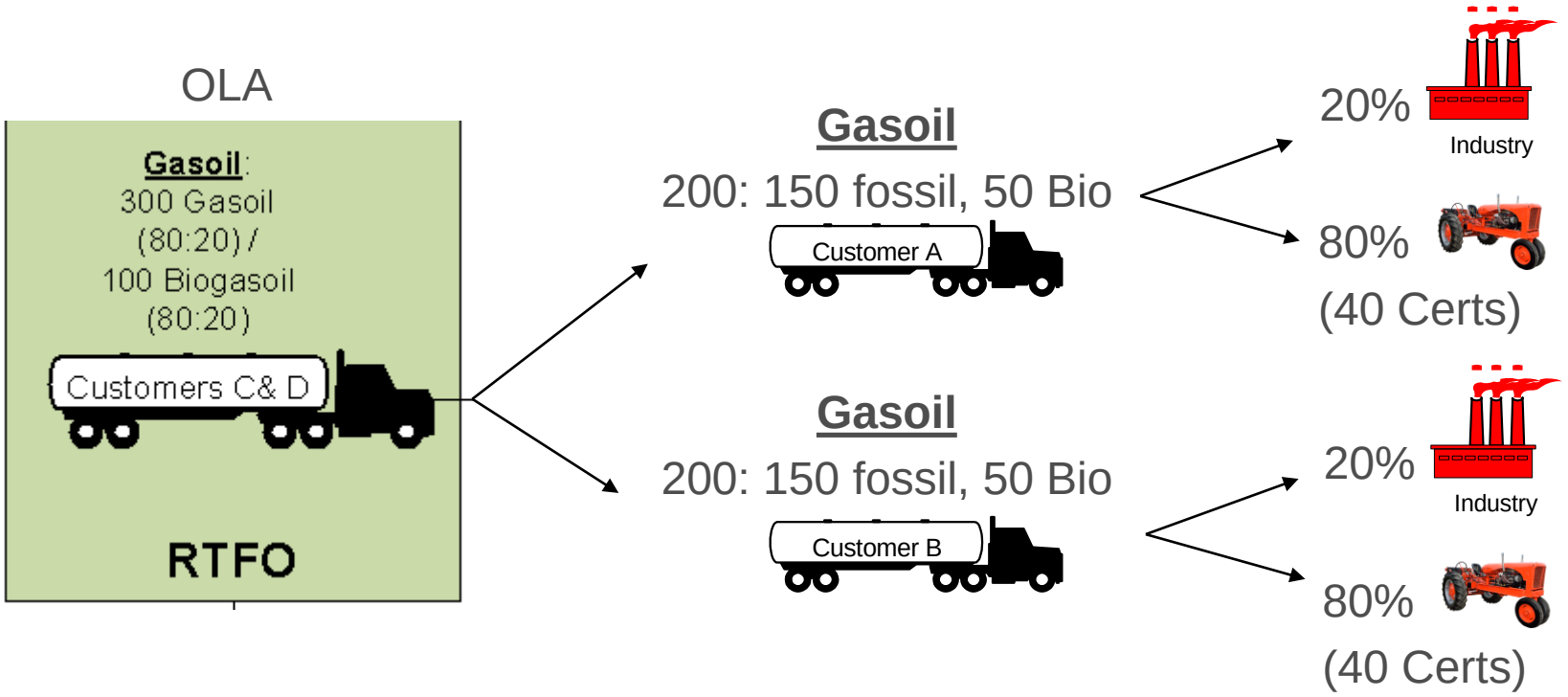
- RTFO reporting



MASS BALANCE - CONCERN



MASS BALANCE - CONCERN



80 Certs = 80 Certs ✓

MASS BALANCE - CONCERN

OLA

Gasoil:
300 Gasoil
(80:20) /
100 Biogasoil
(80:20)

Customers C& D

Gasoil

200: 150 fossil, 50 Bio

Customer A

20% Industry

80% (40 Certs)

Gasoil

50 Bio

Data center

(0 Certs)

40 Certs X

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Record deforestation in Brazilian Amazon in February

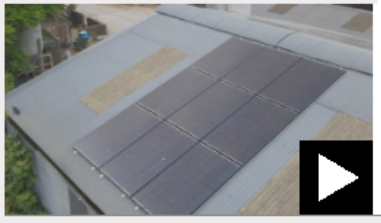
Deforestation in the Brazilian Amazon and fragile Cerrado savanna hit record highs in February, according to government figures released this morning, showing the challenges President ...

World ▪ 42 Mins

BP CEO Looney's 2022 pay more than doubles to £10m

BP's chief executive Bernard Looney's total remuneration for 2022 more than doubled to £10.03m from £4.46m in 2021, BP's annual report published today showed.

Business ▪ 5 Hrs



HVO supported by RTFO used in Data Centers

Millions of litres of biofuel counted towards Ireland's transport emission reductions being claimed by corporate giants

Ireland ▪ 3 Hrs

Completely fictious

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INDEPENDENT VERIFICATION REPORT (IVR)

- ISAE 3000 – applications for RTFO Certs, limited assurance
- Additional RTFO requirements:
  - Statement that ISAE 3000 relied upon and carried out to *limited* assurance
  - Copy of Sustainability Statement
  - 'Connected person' statement
  - For grid supplied biogas, copy of cancellation statement for proofs for origin from GNI's renewable natural gas registry
  - For Levy-unpaid purchases, confirmation mass balance applied correctly
  - For low ILUC-risk feedstock, confirmation that the voluntary scheme is recognised to demonstrate compliance with low ILUC-risk criteria
  - Where resubmission required, acknowledge in resubmitted IVR

INDEPENDENT VERIFICATION REPORT (IVR)

- Avoid AIR (follow Orange Route) by including the following:
  a. evaluate the frequency and methodology of sampling & robustness of sustainability criteria related data
  b. verify the systems used are accurate, reliable and protected against fraud
  c. Include verification of 'additional sustainability information':
     a. whether the bonus for improved agriculture was used
     b. whether emission savings from soil carbon accumulation via improved agricultural management (Esca) was applied
  d. Report how the impacts on soil quality and soil carbon are monitored and managed (applies to waste and residues derived from agricultural land where the operators or national authorities have monitoring or management plans in place)

MOVE TO ENERGY

- OLA reporting remains in litres / Nm^3
- Applications for RTFO Certs remain in litres / Nm^3
- RTFO Portal converts to energy upon submission of application
- Can use Sustainability Statement and Certificate and Carbon Savings calculator to estimate number and type of Certs to be awarded

MOVE TO ENERGY – CERT CONVERSION

- Certs converted based upon the **highest calorific value** of biofuels placed upon the market in the respective year, within a colour category, by the respective company, to a limit of that placed on the market
- If no Certs were awarded, and Certs are in the account, transfer history will be used to identify source
- Certs will retain the year they were awarded identifier
  - E.g. 2021 Certs stay as 2021 Certs
- Certs will remain in their colour categories
  - E.g. Orange Certs will stay as orange

CERT CONVERSION - EXAMPLE

Example A								
		Red		Orange			Green	
		BioLPG	**EtOH**	**Me**	**EtOH**	**HVO**	**Me**	**G592**
2021	Certs Awarded	-	1,500	750	750	-	750	750
	Certs Carried		1,000			1,000		1,000
2022	Certs Awarded	750	750	1,050	150	300	-	-
	Certs Carried		1,000			1,000		1,000

- BioLPG = 24 MJ/l EtOH = 21 MJ/l
- Me = 33 MJ/l HVO = 34 MJ/l
- G592 (BioCNG) = 35.8 MJ/l
- How many Red, Orange, and Green Certs will Company A carry forward into 2023?

*BioCNG Certs transferred from another company

CERT CONVERSION - EXAMPLE

Example A								
		Red		Orange			Green	
		BioLPG	**EtOH**	**Me**	**EtOH**	**HVO**	**Me**	**G592**
2021	Certs Awarded	-	1,500	750	750	-	750	750
	Certs Carried		1,000			1,000		1,000
2022	Certs Awarded	750	750	1,050	150	300	-	-
	Certs Carried		1,000			1,000		1,000

- Red Certs = $Cert\ total * [(\%_{BioLPG} * CI_{BioLPG}) + (\%_{EtOH} * CI_{EtOH})]$
- 2021 Red Certs = $1{,}000 * [\left(0 * 24 \frac{MJ}{L}\right) + \left(1 * 21 \frac{MJ}{L}\right)]$ = 21,000
- 2022 Red Certs = $1{,}000 * [\left(0.75 * 24 \frac{MJ}{L}\right) + \left(0.25 * 21 \frac{MJ}{L}\right)]$ = 23,250

CERT CONVERSION - EXAMPLE

Example A								
		Red		Orange			Green	
		BioLPG	**EtOH**	**Me**	**EtOH**	**HVO**	**Me**	**G592**
2021	Certs Awarded	-	1,500	750	750	-	750	750
	Certs Carried		1,000			1,000		1,000
2022	Certs Awarded	750	750	1,050	150	300	-	-
	Certs Carried		1,000			1,000		1,000

- Orange Certs = $Cert\ total * [(\%_{Me} * CI_{Me}) + (\%_{EtOH} * CI_{EtOH}) + (\%_{HVO} * CI_{HVO})]$
- 2021 Orange Certs = $1{,}000 * [\left(0.75 * 33 \frac{MJ}{L}\right) + \left(0.25 * 21 \frac{MJ}{L}\right)]$ = 30,000
- 2022 Orange Certs = $1{,}000 * [\left(0.7 * 33 \frac{MJ}{L}\right) + \left(0.3 * 34 \frac{MJ}{L}\right)]$ = 33,300

CERT CONVERSION - EXAMPLE

Example A								
		Red		Orange			Green	
		BioLPG	**EtOH**	**Me**	**EtOH**	**HVO**	**Me**	**G592**
2021	Certs Awarded	-	1,500	750	750	-	750	750
	Certs Carried		1,000			1,000		1,000
2022	Certs Awarded	750	750	1,050	150	300	-	-
	Certs Carried		1,000			1,000		1,000

- Green Certs = $Cert\ total * [(\%_{Me} * CI_{Me}) + (\%_{G592} * CI_{G592})]$
- 2021 Green Certs = $1{,}000 * [\left(0.25 * 33\frac{MJ}{L}\right) + \left(0.75 * 35.8\frac{MJ}{L}\right)]$ = 35,100
- 2022 Green Certs = $1{,}000 * [\left(1 * 35.8\frac{MJ}{L}\right)]$ = 35,800

CERT CONVERSION - EXAMPLE A

Example A								
		Red		Orange			Green	
		BioLPG	**EtOH**	**Me**	**EtOH**	**HVO**	**Me**	**G592**
2021	Certs Awarded	-	1,500	750	750	-	750	750
	Certs Carried		1,000			1,000		1,000
2022	Certs Awarded	750	750	1,050	150	300	-	-
	Certs Carried		1,000			1,000		1,000

Method Rate			
	Red	Orange	Green
2021	21.00	30.00	35.10
2022	23.25	33.30	35.80

Example A - Carried Certs				
		Red	Orange	Green
2021	Carried Certs	21,000	30,000	35,100
2022	Carried Certs	23,250	33,300	35,800

RED II – UNION DATABASE

- Commission preparing database – some account holders have registered
- Implementing Regulation (link) published. Deals with certification and rules for Voluntary Schemes to support UDB – stipulates legal obligations for economic operators, certification bodies, voluntary schemes and Member States.
- Information to be reported included in revised procedure and guidance

IMPLEMENTING REGULATIONS (DELEGATED ACTS)

- RFNBOs
  - Sub-target
  - Methodology (Delegated Regulation (C(2023) 1087)
    - Direct connection (Article 3)
    - Grid connection (Article 4)
      - Bidding zone > 90% renewable elec in previous year
      - RFNBO production relies on grid electricity produced during an imbalance settlement period where renewable energy curtailed and RFNBO production reduces curtailment
      - Bidding zone emission intensity < 18 gCO_{2eq}/MJ, provided RFNBO has Power Purchase Agreement that covers electricity needs, and there is temporal and geographical correlation

IMPLEMENTING REGULATIONS (DELEGATED ACTS)

- RFNBOs, Grid connection (Article 4) continued:
  - Where > 18 gCO_{2eq}/MJ provided RFNBO has Power Purchase Agreement that covers electricity needs, there is temporal and geographical correlation, **and** satisfies additionality.
- *Additionality*: new renewable energy
- *Temporal correlation*: the renewable electricity is placed on the market when the RFNBO is produced (until 2029, within same calendar month, thereafter within the same one-hour period)
- *Geographical correlation*. Relies on bidding zones – must be in the same bidding zone, or an adjacent bidding zone when electricity prices are higher in the adjacent zone.

NEXT UP

-- Thank you for your attention --