RED3 transposition in the Netherlands

Modelling energy demand in transport for 2026-2030

V1 - November 2025

PREVIEW VERSION

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About SQUARECO

Based on the Leman Lake shores in Switzerland, SquareCo develops market intelligence solutions designed to help players active in renewable fuels markets to gain a deeper understanding of regulatory frameworks, market dynamics and industry developments.

SquareCo delivers high-quality expertise through the publication of articles, market reports and thematic studies displayed on our Web Platform. Our strong emphasis on data monitoring allows us to supply our clients with access to a comprehensively organized database.

We help energy suppliers to the road, maritime and aviation sectors to navigate serenely the complexity of regulations applying to low carbon fuels markets. Relying on 30 years of experience and an extensive network of contacts at ministries and companies around the world, we keep our clients constantly updated about the current and coming rules.

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Summary

1 Introduction

Objectives of the study

To interpret the draft laws designed to transpose the RED3 Directive (2023/2413) based on SquareCo's expertise

To propose a transparent and credible forecast for the amounts of renewable energy required in the Dutch transport sector from 2026 to 2030.

Two interconnected models

Projecting the **evolution of the various pools** of transport fuels

Resolving the **compliance targets** under the three GHG mandates

The present document compiles the main outcomes of our modelling work in a visual and minimalist way. The methodology and assumptions used in our models are detailed in two separate documents (PDF + XLS).

Primary topics addressed by the study are the following:

- The evolution of energy pools included in both the national mandates and the RED3 2030 obligation, including a rigorous forecast of road electrification.
- A thorough analysis of all the elements of drafted regulations.
- The forecasted demand for low-carbon fuels, split by category (9A, 9B, crop, un-categorized)
- The forecasted contribution of renewable electricity to savings generation
- The forecasted amounts of RFNBOs required to meet the sub-targets
- The modality and impacts of compliance flexibility between the three mandates

2 Evolution of pools

Road

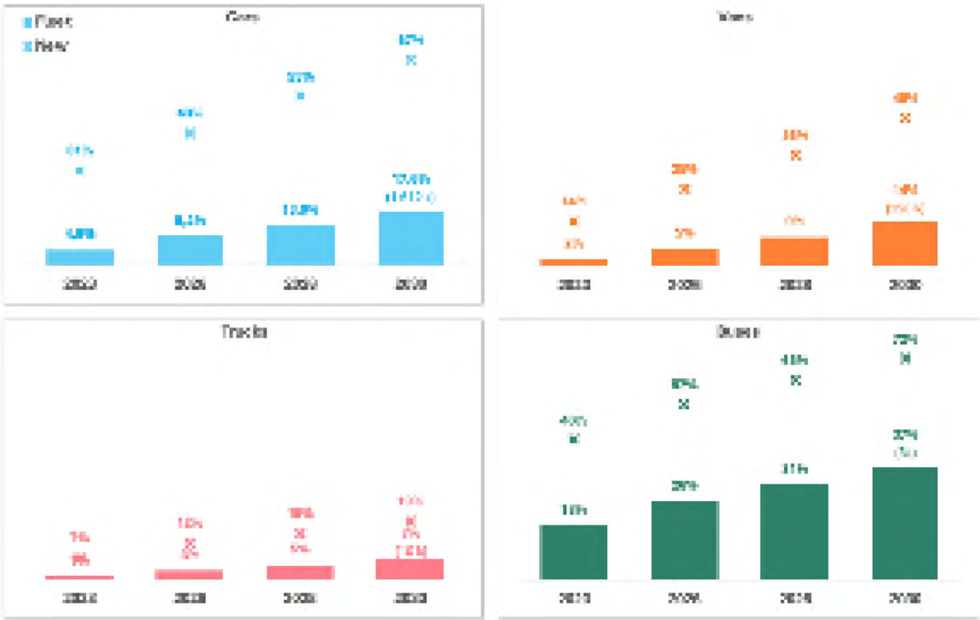

Fig.1 EV fleets and new sales evolution

- Dutch vehicles are electrifying rapidly in our baseline scenario.
  - BEV buses already make up over 20% of the fleet and rise to **XX%**.
  - C[redacted] X.X M [redacted] XXXX, [redacted] **XX%** [redacted].
  - V[redacted], [redacted] **XX%** [redacted].

T[redacted] XXXX, [redacted]

X%.

- Car electrification leads to **lower** total energy demand.
  - Diesel consumption falls sharply throughout the outlook as new sales remained near 1% since 2023 and older models retire.
  - Gasoline demand [redacted]; HEV [redacted] PHEV [redacted].
  - E[redacted] ([redacted]) [redacted], [redacted]

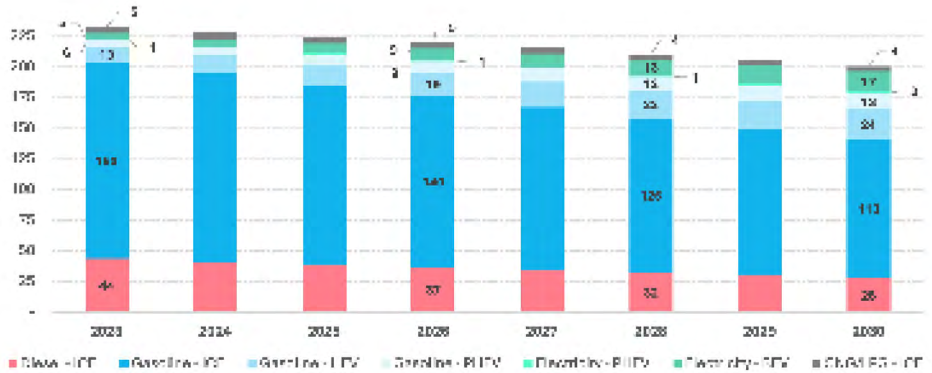

Fig.2 Car fuel demand by powertrain (PJ)

D[redacted] XXXX, [redacted] ([redacted]) [redacted].

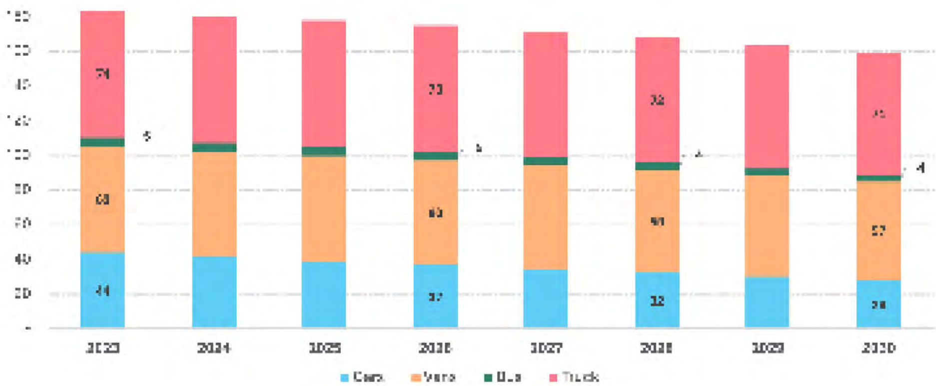

Fig.3 Road diesel demand per vehicle type (PJ)

- Trucks remain the dominant diesel consumers, accounting for roughly **XX%** [redacted] XXXX, [redacted]-[redacted].
- V[redacted], [redacted].
- C[redacted], [redacted]

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International shipping

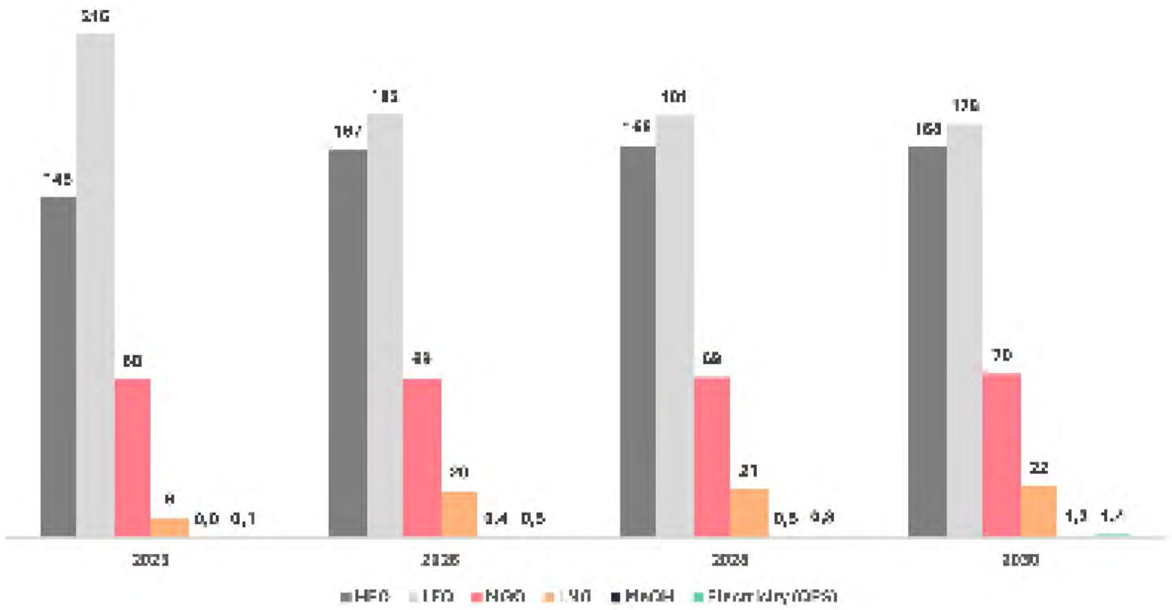

Fig.6 Dutch international shipping bunker fuel demand (PJ)

- The international shipping sector, which represents a disproportionately high share of the total energy demand in the Netherlands, is expected to [redacted].
- W[redacted] XXXX [redacted] FEUM [redacted] XXXX.
- OPS [redacted]

Aviation:

The aviation sector in the Netherlands has experienced its peak demand for jet fuel in our baseline scenario. R[redacted] S[redacted]

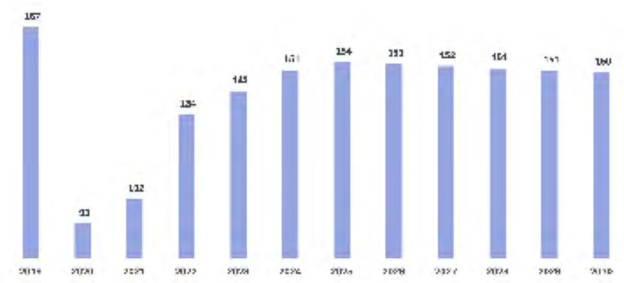

Fig.4 Jet fuel pool 2019-2030 projection (PJ)

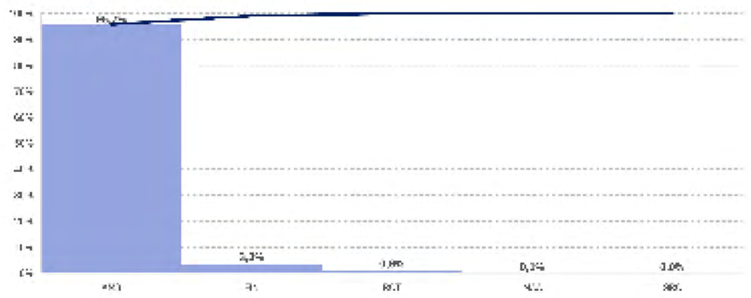

Fig.5 Dutch airports share of fuel pool (estimated)

The Netherlands has five airports, three of which qualify under RFEUA as Union Airports: Amsterdam, Eindhoven and Rotterdam. These concentrate **XX.X%** [redacted].

Overview

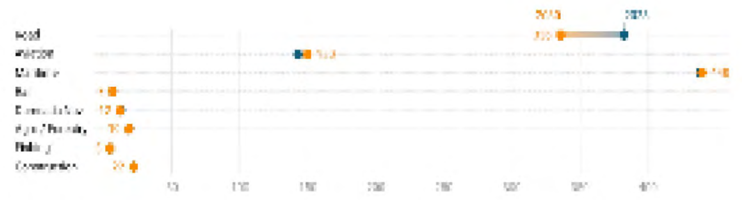

Fig.7 Sector pool under compliance evolution 2023-2030

We modelled all transport-related sectors in detail with specially focus in road, maritime, and aviation. F[redacted]. T[redacted] XXXX [redacted] XXXX [redacted].

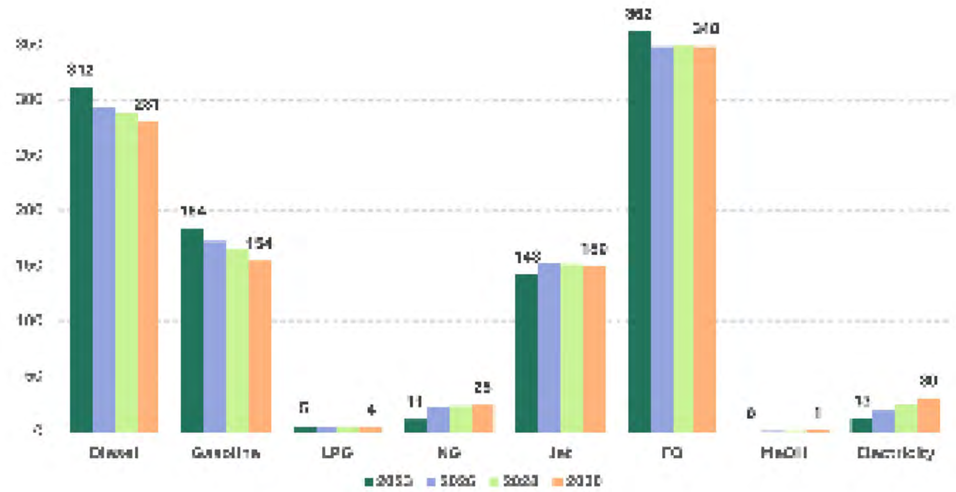

Fig.8 Fuel pools all sectors (PJ)

The aggregated fuel pools from the above sectors we modelled evolve as follows in our baseline scenario, with diesel and gasoline showing [redacted].

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3 RED3 implementation

The drafted rules are based on three distinct GHG reduction obligations, corresponding to the following scopes:

- **LAND**: gasoline, diesel, and fuel oil supplied to all destinations except inland shipping, maritime, and fuel oil in stationary installations. It notably includes all diesel and gasoline consumed in rail, agriculture and construction. It also includes fuels supplied to recreational shipping (most of the gasoline used in domestic navigation), as they are assimilated to mobile machinery.
- **INLAND SHIPPING**: Gasoil supplied to inland shipping.
- **MARITIME:** Marine Gas oil, Marine Diesel Oil and fuel oils supplied to maritime

U[redacted], [redacted] (LPG, CNG/LNG, [redacted]) [redacted]. T[redacted] ([redacted]LPG, [redacted]CNG/[redacted]LNG, [redacted] RE [redacted] + [redacted]) [redacted], [redacted].

From 2030, electricity used in maritime (incl. OPS) will [redacted]. E[redacted].

I[redacted] REDX [redacted], [redacted], [redacted], RFNBO[redacted] RCF[redacted].

S[redacted]:

- XX[redacted] COX[redacted]/MJ [redacted], RFNBO[redacted], [redacted] RCF[redacted]
- XXX[redacted] COX[redacted]/MJ [redacted] E[redacted] RE

T[redacted] ([redacted], [redacted], [redacted], [redacted]-[redacted] BXXX [redacted] HVOXXX) [redacted] (XX[redacted]C[redacted]/MJ). I[redacted] T[redacted] X ([redacted] XX), [redacted] “R[redacted]” [redacted] C[redacted] ([redacted] COX).

A[redacted], [redacted]-[redacted], [redacted] **%** [redacted] **GHG** [redacted], [redacted] “[redacted]” [redacted].

All mandates

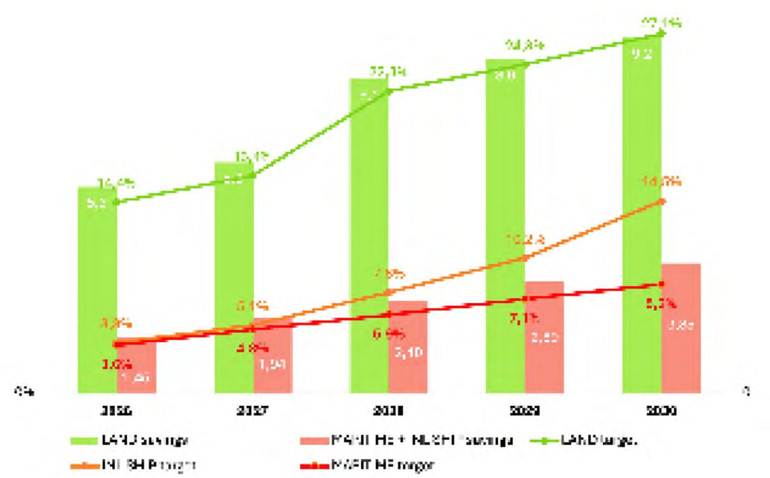

Fig.9 Targets trajectory and required savings (% GHG)

I[redacted], [redacted] RFNBO[redacted]-[redacted].

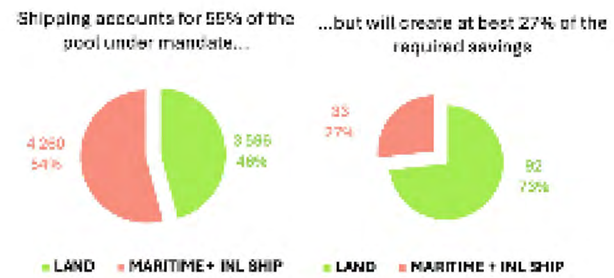

Fig.10 Shipping vs Land svings contributions (PJ, M t Co2, %GHG)

D[redacted], [redacted] ~XX% [redacted]

T[redacted], [redacted] X%

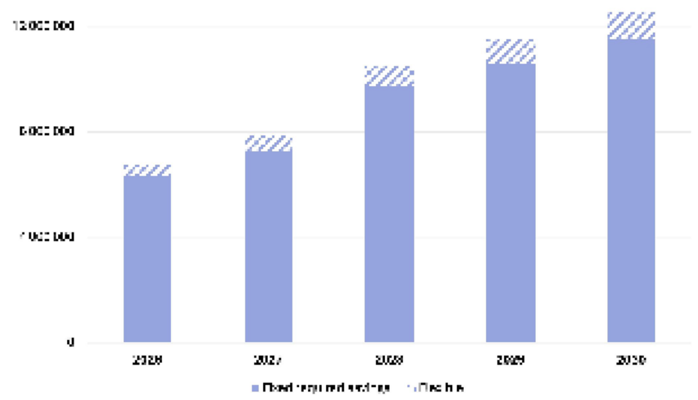

Fig.11 Required savings for all mandates - fixed vs flexible (t CO2)

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Land

- Elec RE, Fame coverage of the blend wall, B100, HVO100, ethanol coverage of the blend wall and biomethane are fixed by assumptions (see XLS).
- Crop and 9B caps are optimized.
- S[redacted] XA [redacted], [redacted] XA [redacted].
- HVO [redacted] ([redacted] X% [redacted] HVO [redacted]) [redacted].
- T[redacted] X.X [redacted] AF CX [redacted], [redacted] N[redacted].
- T[redacted] RFNBO [redacted]-[redacted]-[redacted]; [redacted]. I[redacted]

LAND				2026	2027	2028	2029	2030
Targets	Overall	min	%GHG	14.4%	18.4%	22.4%	24.9%	27.1%
	9A	min	%GHG	3.07%	4.42%	5.92%	7.34%	8.78%
	RFNBO	min	%GHG	0.05%	0.06%	0.36%	0.77%	1.07%
Caps	Crop	max	%GHG	1.2%	1.2%	1.2%	1.2%	1.2%
	9B	max	%GHG	4.39%	4.39%	4.29%	4.39%	4.29%
Reference	Overall	(F)	tCO2	35'945'172	36'247'283	35'449'444	34'641'007	33'526'560
Required savings	Overall	min (F)	tCO2	5'330'105	5'944'554	8'002'473	8'560'170	9'085'700
	9A	min (F)	tCO2	1'134'217	1'527'508	2'098'607	2'585'810	2'830'928
	RFNBO	min (F)	tCO2	18'478	21'748	127'618	265'965	358'734
Caped savings	Crop	max (F)	tCO2	443'342	434'967	435'383	414'492	402'318
	9B	max (F)	tCO2	1'584'946	1'556'508	1'520'781	1'481'809	1'438'290

Tab.1 Targets and required savings (LAND)

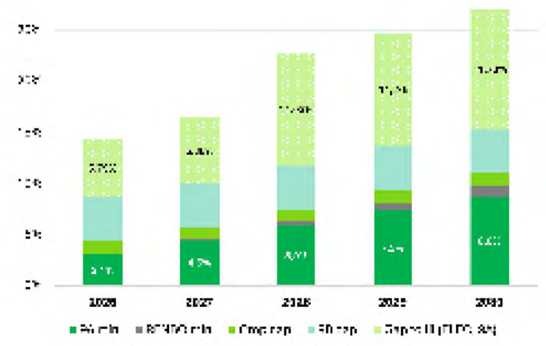

Fig.12 Savings potential for each category (% GHG)

Due to the contraction of gasoline and diesel pools, the reference value will slump by ~X% [redacted] XXXX [redacted] XXXX.

O[redacted], [redacted]-[redacted] + [redacted] **XX.X% GHG [redacted] XXXX**.

Inland shipping

- All savings would be generated first as 9B, until the cap is reached in 2030.
- 9A would be required only in 2030 to close the gap between the main target and the XB [redacted].
- W[redacted].
- O[redacted].

Tab.2 Targets and required savings (INL SHIP)

INL SHIP				2026	2027	2028	2029	2030
Targets	Overall	min	% GHG	3.8%	5.1%	7.0%	10.2%	14.5%
	Sector specific	min	% GHG	3.00%	4.10%	6.10%	8.20%	11.60%
	RFNBO	min	% GHG	0.02%	0.04%	0.09%	0.17%	0.34%
Caps	Crop	max	% GHG	0.0%	0.0%	0.0%	0.0%	0.0%
	9B	max	% GHG	11.07%	11.07%	11.07%	11.07%	11.07%
Reference	Overall	(F)	t CO2	1'183'505	1'176'420	1'168'590	1'162'745	1'156'155
Required savings	Overall	min (F)	t CO2	44'973	59'957	88'882	118'600	167'843
	RFNBO	min (F)	t CO2	237	471	1'053	1'977	3'931
Caped savings	Crop	max (F)	t CO2	0	0	0	0	0
	9B	max (F)	t CO2	131'014	130'230	129'464	128'716	127'985

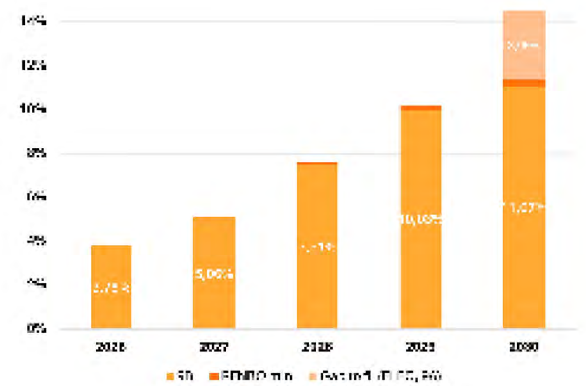

Fig.13 Savings potential for each category (% GHG)

Until the end of 2029, the overall target can be filed **exclusively with XB** [redacted] RFNBO [redacted]. F[redacted] XXXX, [redacted] XA [redacted] **X.X% GHG** [redacted].

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Maritime

- Amounts of Elec RE available through OPS until 2029 and bioLNG evolution are set in our assumptions (see XLS).
- T[redacted] XA FAME [redacted].
- T[redacted], [redacted] X% [redacted] L[redacted] XXXX [redacted] XX% [redacted] XXXX.

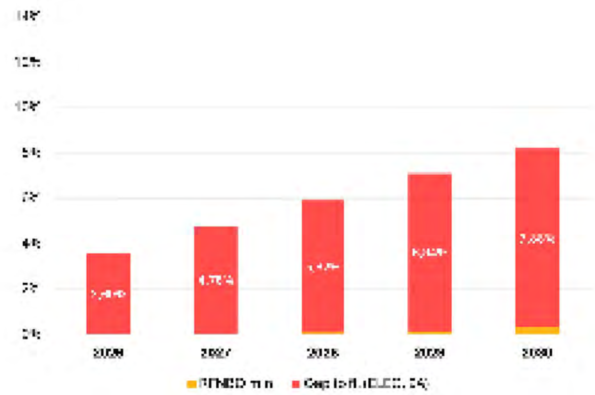

Fig.14 Savings potential for each category (% GHG)

Tab.3 Targets and required savings (MARITIME)

MARITIME				2026	2027	2028	2029	2030
Targets	Overall	min	% GHG	3.6%	4.8%	5.8%	7.1%	8.2%
	Sector specific	min	% GHG	2.50%	3.30%	4.10%	4.90%	5.70%
	RFNBO	min	% GHG	0.00%	0.02%	0.08%	0.16%	0.32%
Caps	Crop	max	% GHG	0.0%	0.0%	0.0%	0.0%	0.0%
	SB	max	% GHG	0.00%	0.00%	0.00%	0.00%	0.00%
Reference	Overall	[F]	tCO2	39'201'855	39'264'436	39'357'598	39'328'864	39'053'874
Required savings	Overall	min (F)	tCO2	1'411'267	1'884'699	2'322'116	2'792'349	3'202'565
	RFNBO	min (F)	tCO2	0	7'853	31'486	62'926	124'976
Capped savings	Crop	max [F]	tCO2	0	0	0	0	0
	SB	max [F]	tCO2	0	0	0	0	0

- C[redacted] XA [redacted] RE, [redacted] RFNBO[redacted].
- A[redacted] LAND, AF CX [redacted] X.X [redacted].

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4 Demand forecasts 2025-2030

Scenarios

We limited the variability of our projections to three scenarios designed to model the potential impact of the flexibility mechanism between the three sectors' mandates:

- **S1**: LAND, INL SHIP and MARITIME mandates are **strictly** [redacted].
- **SX**[redacted]: INL SHIP [redacted] MARITIME [redacted] **ERE**[redacted] **ROAD**.
- **SX**[redacted]: INL SHIP [redacted] MARITIME [redacted] **ERE**[redacted] **MARITIME**.

F[redacted] X, ERE[redacted], [redacted]. I[redacted] SX[redacted], [redacted] HVO [redacted] ([redacted] HVO). I[redacted] SX[redacted], [redacted] FAME [redacted].

** A[redacted] XLS [redacted]*

Savings required

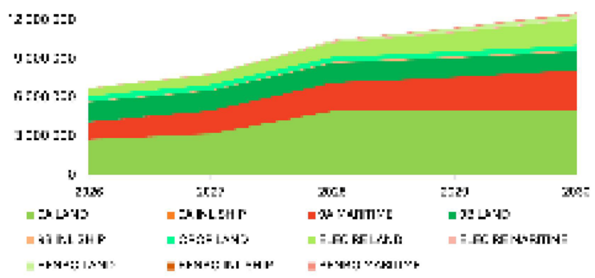

Fig.15 Projected savings per category (t CO2)

T[redacted] X.X [redacted] XXXX [redacted] XX.X M [redacted] COX [redacted]

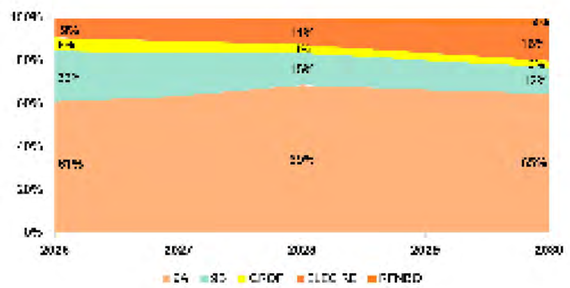

Fig.16 Shares of savings per category (%)

T[redacted] XA [redacted] ~X/X [redacted]

Fig.17 Savings required under each mandate (M t CO2)

T[redacted] L[redacted] XX% [redacted] XXXX, XX%

Products demand - FAME

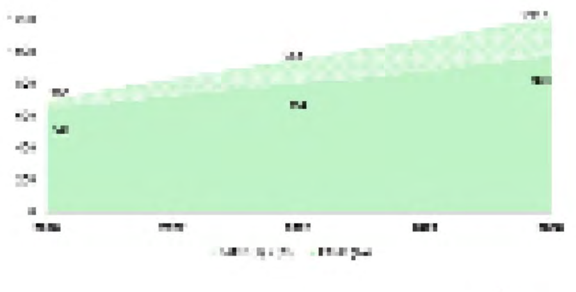

Fig.18 Fame demand forecasted per scenario (kt)

T[redacted] FAME [redacted] X.X [redacted]

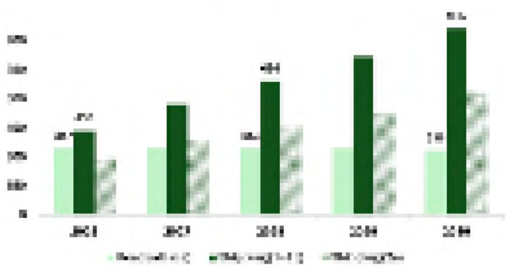

Fig.19 Fame demand expected by sector, per scenario (kt)

O[redacted] X, XX% [redacted] FAME [redacted]

Fig.21 Products used under MARITIME compliance (t CO2)

M[redacted] FAME

Products demand - HVO

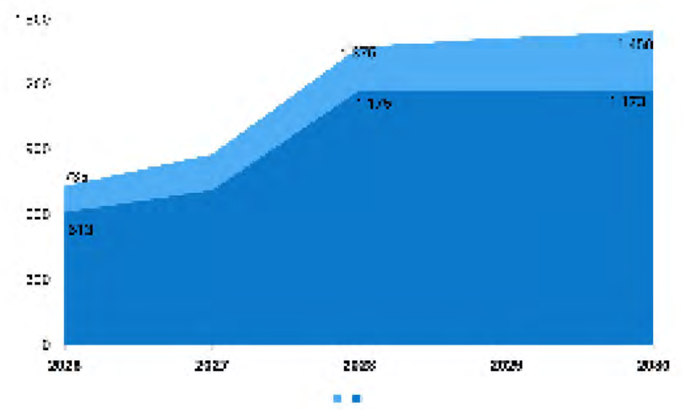

Fig.22 HVO demand forecasted per scenario (kt)

In the most likely scenario (S1), the potential for HVO demand is forecasted at 1.11 Mt by 2030. If Road would generate more tickets for maritime compliance, the potential could top 1.45 M t, and ensure some growth beyond 2028.

O[redacted] HVO [redacted] **XXXX** [redacted]. T[redacted] XXXX [redacted].

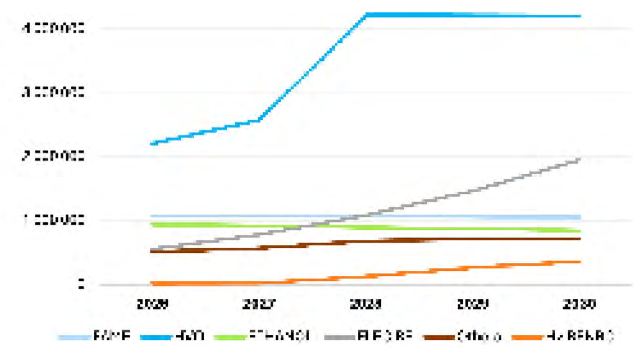

Fig.23 Savings generated per product under LAND compliance (t CO2)

- HVO [redacted] XXXX [redacted] LAND [redacted].
- I[redacted] XXXX, HVO [redacted] XX% [redacted].
- F[redacted] XXXX, [redacted]

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Products demand - FAME/HVO

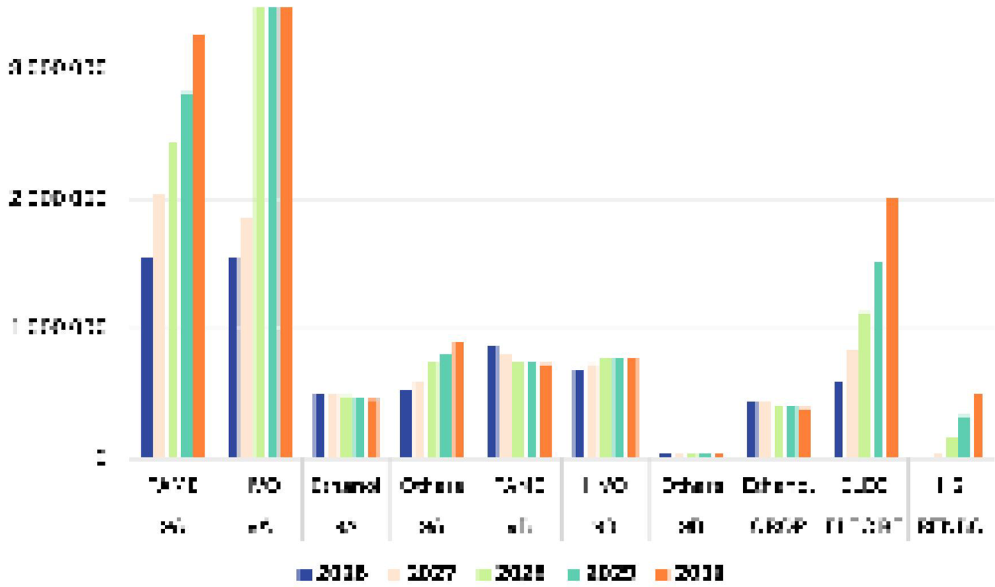

Fig.24 Savings generated per product for all mandates (t CO2)

Across the three mandates, **HVO and FAME based on 9A feedstocks** will be [redacted]

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Products demand - Ethanol & others

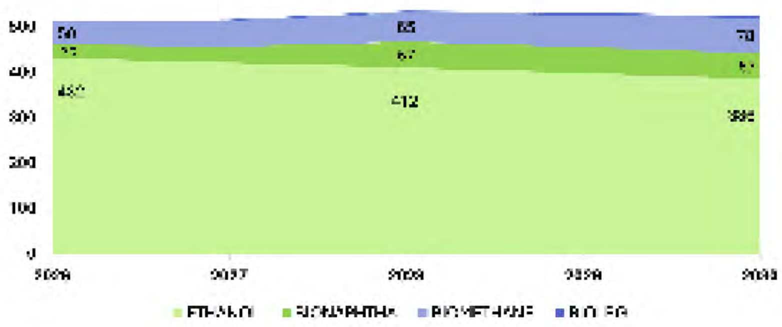

Fig.25 Other biofuels demand forecast under all scenarios (kt)

As the E10 potential was optimized before 2026, we forecast a gradual [redacted] XXXX. T[redacted].

T[redacted] HVO [redacted], [redacted] XX [redacted] XXXX. B[redacted]LPG [redacted] N[redacted].

A[redacted] CNG [redacted]-CNG [redacted] GHG [redacted], [redacted]

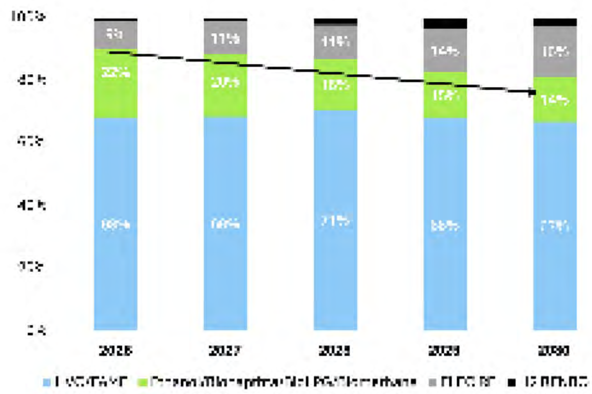

Fig.26 Contribution of each product category accross all mandates (% GHG)

T[redacted], [redacted] “[redacted]” [redacted] XX% [redacted] XXXX [redacted] XX%

Products demand - Electricity RE

Restrictive rules imposed for electricity supplied in the private sector will limit the generation of savings from renewable electricity (ERE E).

As home chargers will be required to install a **MID-meter*** to measure the specific consumption delivered to EVs (vs other uses in the households), the accountability ratio within the private sector should remain limited from 2026. In 2030, it is unlikely that all EV owners will have a MID certifier at home, making it impossible to account for all electricity used by the road sector eligible for the mandates.

C[redacted], [redacted] EV [redacted] MID [redacted]. A[redacted] MID [redacted], [redacted]. T[redacted] MID M[redacted] (ERE E) [redacted]. T[redacted] ERE E [redacted].

I[redacted] XXXX, [redacted]-[redacted] NE[redacted] EV [redacted], [redacted] XX% [redacted] N[redacted], [redacted].

I[redacted] XXXX, [redacted] **XX%** [redacted] ERE E. A[redacted] MID [redacted], [redacted] (% [redacted]) [redacted] X% [redacted]

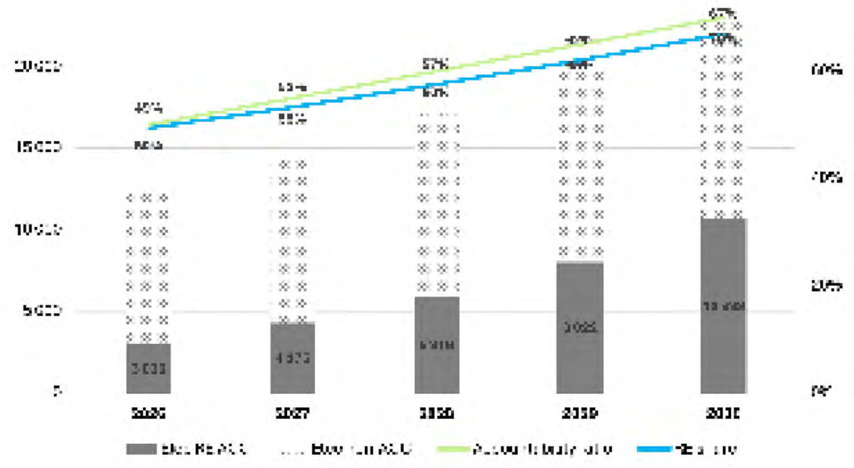

Fig.27 Accountable and non-accountable electricity under the LAND mandate (TJ)

I[redacted], [redacted] (RE ACC) [redacted] XX% [redacted] (X.X TW[redacted]). T[redacted] REDX[redacted] MS [redacted].

I'[redacted] MS [redacted] EV[redacted] REDX [redacted] XXXX. T[redacted], [redacted] REDX [redacted]

Products demand - Green H2

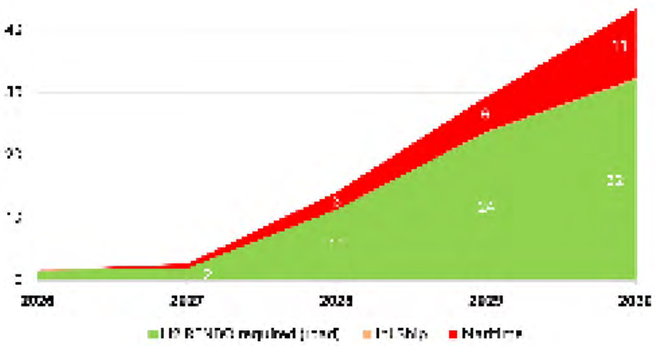

Fig.28 RFNBO required under each mandate (kt)

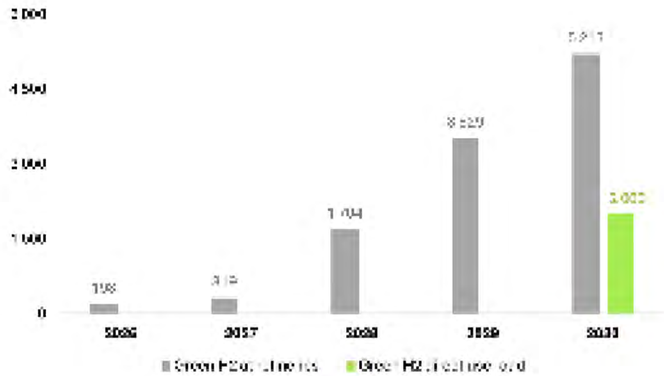

Fig.29 Green H2 required per type (PJ)

Once drafted at 0.4, the concept of a “correction factor” for green hydrogen (H2) used at refineries has finally been discarded, owing to the poor outlook for the development of e-fuels by 2030.

W[redacted] HX [redacted] XXXX.

T[redacted] RFNBO [redacted] L[redacted], [redacted] X [redacted] XXXX [redacted] XX [redacted] XXXX. O[redacted], [redacted] HX [redacted] D[redacted]

Early October, at the start of the Parliament examination of the draft, an amendment was passed by the lower Chamber to include a 2 PJ green H2 quota for “direct use” in the road sector.

A[redacted] XXXX [redacted], [redacted], [redacted].

T[redacted] HX [redacted]

5 RED3 compliance

The fulfilment of the national mandates does not exactly match the Dutch compliance under the RED3 targets, for the following reasons:

- Diesel, gasoline and fuel oil supplied to the **non-road sector** (i.e construction, agriculture, etc) are obliged under [redacted] REDX [redacted].
- S[redacted], [redacted] LPG/CNG/LNG/[redacted]/ [redacted]-[redacted].
- W[redacted] E[redacted] RE [redacted] REDX, [redacted] MS [redacted] XXXX [redacted] EV[redacted].
- E[redacted].
- A[redacted].

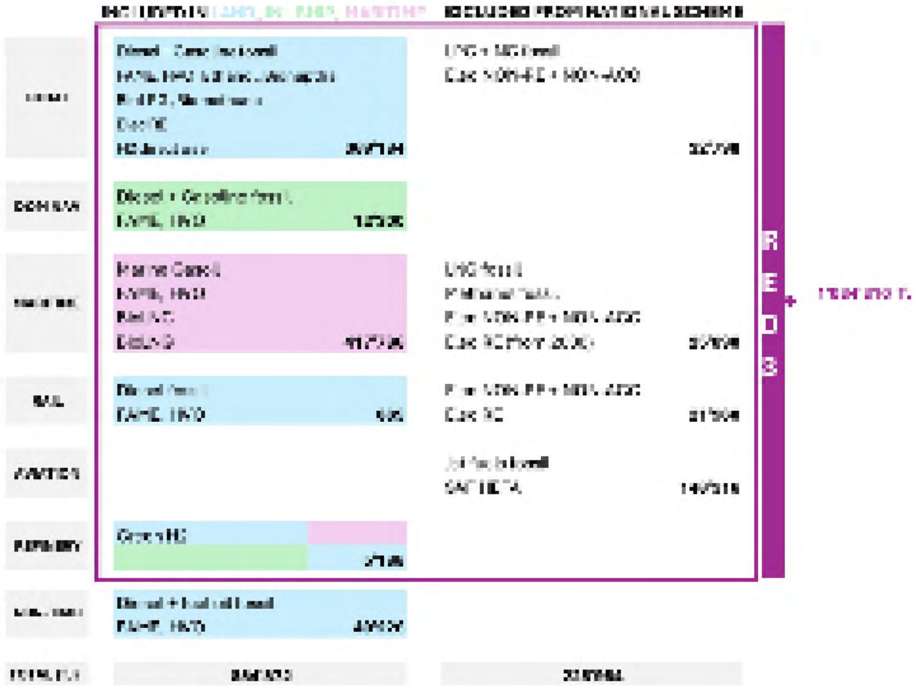

Fig.30 Scheme mandates vs RED3 scopes

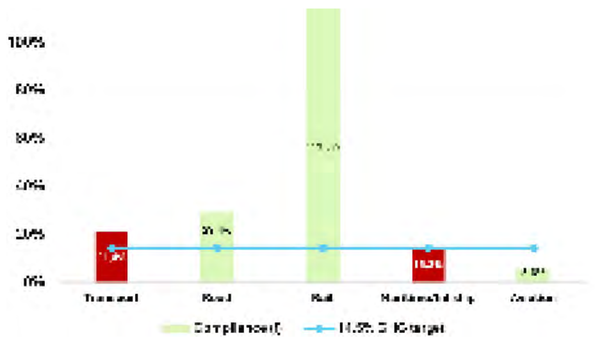

Fig.31 Projected compliance under GHG target with excess energy in maritime (% GHG)

O[redacted] D[redacted] REDX [redacted] GHG [redacted] XX.X%, [redacted].

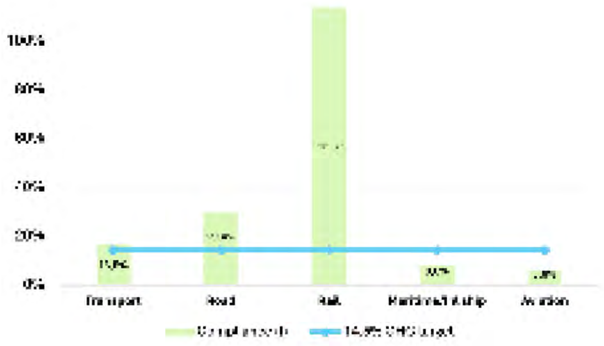

Fig.32 Projected compliance under GHG target without excess energy in maritime (% GHG)

W[redacted], [redacted] D[redacted] REDX [redacted] XX.X%.

The drivers explaining why the Netherlands will largely overcome the 14.5% GHG target are related to the excess energy on top of the 13% cap for maritime and to the national Climate action.

T[redacted] D[redacted] XX% [redacted] ~XX.X% [redacted]. **T[redacted] XX% [redacted] REDX [redacted], [redacted] A[redacted] XX(X)**. T[redacted] (XXX PJ) [redacted] REDX [redacted] (XXX PJ) [redacted] XX%.

A[redacted] M[redacted] I[redacted] (X.X%), [redacted] GHG [redacted] (M[redacted] – [redacted]) [redacted] XX.X%.

W[redacted] D[redacted] P[redacted] J[redacted], M[redacted] GHG [redacted] LAND [redacted] (XX.X%) [redacted]:

- T[redacted] (XX.X%).
- T[redacted] (X.X%).
- T[redacted] C[redacted] A[redacted] C[redacted] A[redacted] XXXX

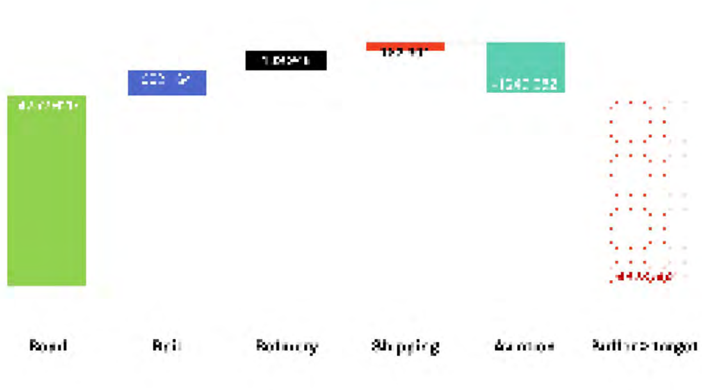

Fig.33 Surplus and Deficits generated in 2030 under RED3 rules (t CO2)

Fig.34 Projected compliance under 9A/RFNBO sub-target (% e.c)

A[redacted] N[redacted] REDX, [redacted] X.X% [redacted].[redacted]-[redacted] RFNBO[redacted]. T[redacted]

Because a large share of the energy used by the rail sector will be renewable electricity, which savings are calculated against a fossil fuel comparator (183) much higher than the baseline (94), the GHG reduction hit a massive XXX.X%.

O[redacted], [redacted], [redacted] XX.X% [redacted]. R[redacted], [redacted], [redacted] ([redacted] HX – [redacted] REDX) [redacted] X.XX M[redacted] COX [redacted]. S[redacted] X.XX M[redacted] COX [redacted]. T[redacted] X.XX M[redacted] COX [redacted] XX.X% [redacted].

U[redacted], [redacted]-[redacted] XA [redacted] RFNBO [redacted] D[redacted]. A[redacted], [redacted] X.X% [redacted].[redacted] XA-RFNBO [redacted]-[redacted], [redacted] X.X [redacted] X. T[redacted] X% [redacted].[redacted] RFNBO [redacted]-[redacted] (+X.X%).

Road electrification pace

The ELEC scenario assumes a faster roll-out of electric vehicles, reducing liquid fuel demand. The RENF scenario reflects a plateau in electrification, increasing the need for low-carbon fuels to meet mandates.

[redacted] HVO [redacted]. [redacted], [redacted] FAME [redacted]. [redacted] HVO [redacted], [redacted] ELEC [redacted] X.XX [redacted] (HVO [redacted]) [redacted] GW [redacted]. [redacted], [redacted], [redacted] RENF, [redacted] X.XX [redacted] GW [redacted]. [redacted]-

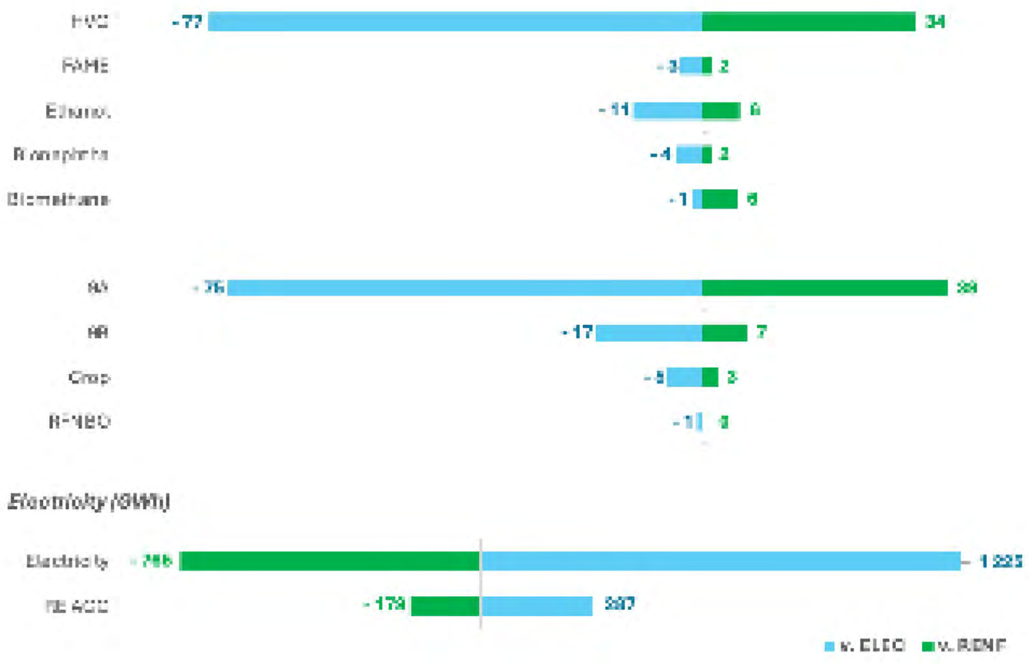

Fig.35 Electrification pace sensitivities 2030 vs BASE scenario (kt)

Low-carbon fuel CI

We modelled a ±3 gCO2e/MJ variation in the average carbon intensity of ethanol, and HVO to assess its impact on compliance and overall emissions.

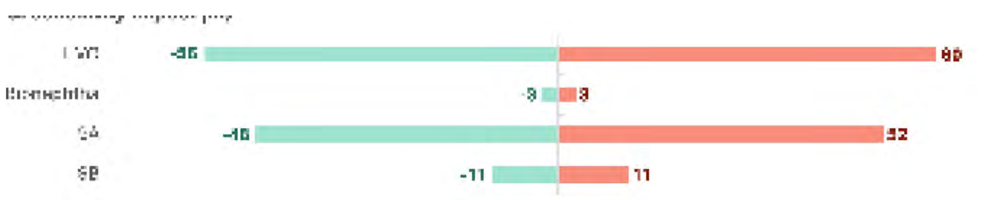

Fig.36 CI sensitivity impact (kt)

HVO [redacted] FAME [redacted]. A [redacted] XX [redacted] COX [redacted] /MJ [redacted], [redacted] XA [redacted] XB [redacted]. T [redacted]-[redacted], [redacted]

7 Conclusion

The Dutch policy proposed in 2025 and to be enforced, most likely, from 1 January 2026, will guarantee that the most important obligations under RED3 will be largely respected, at the exception of the 1.2% e.c sub-target for RFNBOs supplied directly to the maritime sector.

T[redacted], [redacted] XX% [redacted] XXXX [redacted] XXXX [redacted] X.X M [redacted]. F[redacted], [redacted] XX% [redacted] X.X M [redacted].

E[redacted] HVO [redacted] X M[redacted] XXXX. O[redacted] XXXX [redacted] XXXX, [redacted].

T[redacted] FAME [redacted], [redacted] XX% [redacted] XXXX. S[redacted] N[redacted], [redacted]-[redacted].

A[redacted]

[redacted], [redacted] X[redacted] ([redacted]) [redacted].

T[redacted] RFNBO [redacted]-[redacted]-[redacted] HX [redacted].

A[redacted] S[redacted], [redacted] N[redacted] XA [redacted]. A[redacted], [redacted] XX% [redacted] XA. L[redacted]-[redacted] XB [redacted] (XX%) [redacted] (XX%) [redacted].

I[redacted], [redacted] RFNBO (X%) [redacted]-[redacted] (X%).

T[redacted].

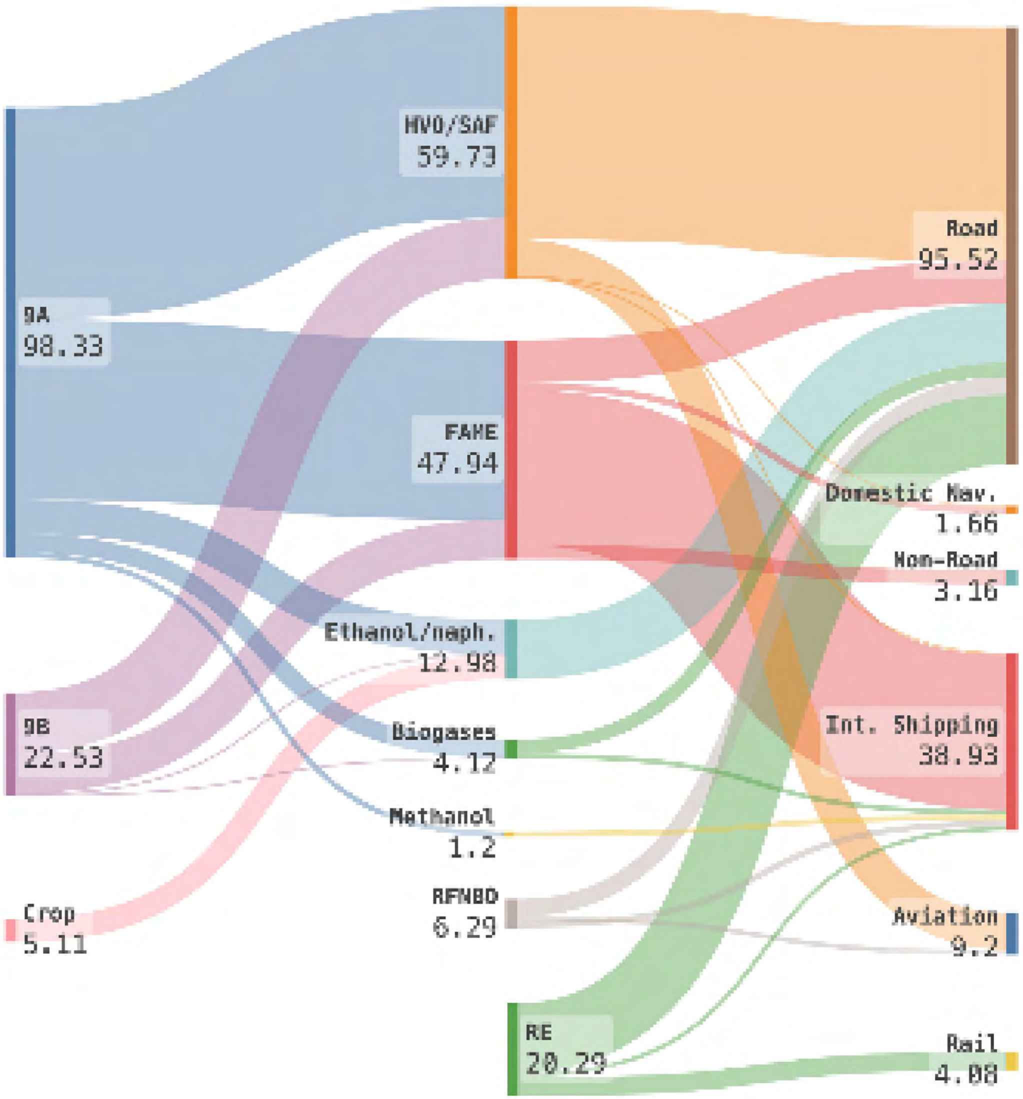

Fig.37 Feedstocks, products, sectors compliance - 2030 (PJ)

Abbreviations

BEV Battery Electric Vehicle

DOM Domestic

F Forecast

ERE Emission Reduction Unit

Elec RE Renewable Electricity

EV Electric Vehicle

FEUM Fuel EU Maritime

HEV Hybrid Electric Vehicle

PHEV Plug-in Hybrid Electric Vehicle

INL SHIP Inland Shipping

OPS Onshore Power Supply

RCF Recycled Carbon Fuels

RFNBO Renewable Fuels from Non Biomass Origin

AF C1, C2, C3 Animal Fats category 1, 2, 3

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RED3 transposition in the Netherlands

Modelling energy demand in transport for 2026-2030

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