



Rijksdienst voor Ondernemend
Nederland



**CLEAN
FUEL
PROTOCOL**

DPP Festival

Yvo Hunink (Regen Studio)
9th of october 2025



Reason for the project



Implementation of the **Renewable Energy Directive II by the Dutch Emission Authority (NEa)** uses the Proof-of-Sustainability as evidence.



Traceability from the point of registration at the NEa to the tank is impossible, because the **Proof-of-Sustainability cannot be used again** and there is no unified and trusted way of tracing information through the chain, leading to double claims.



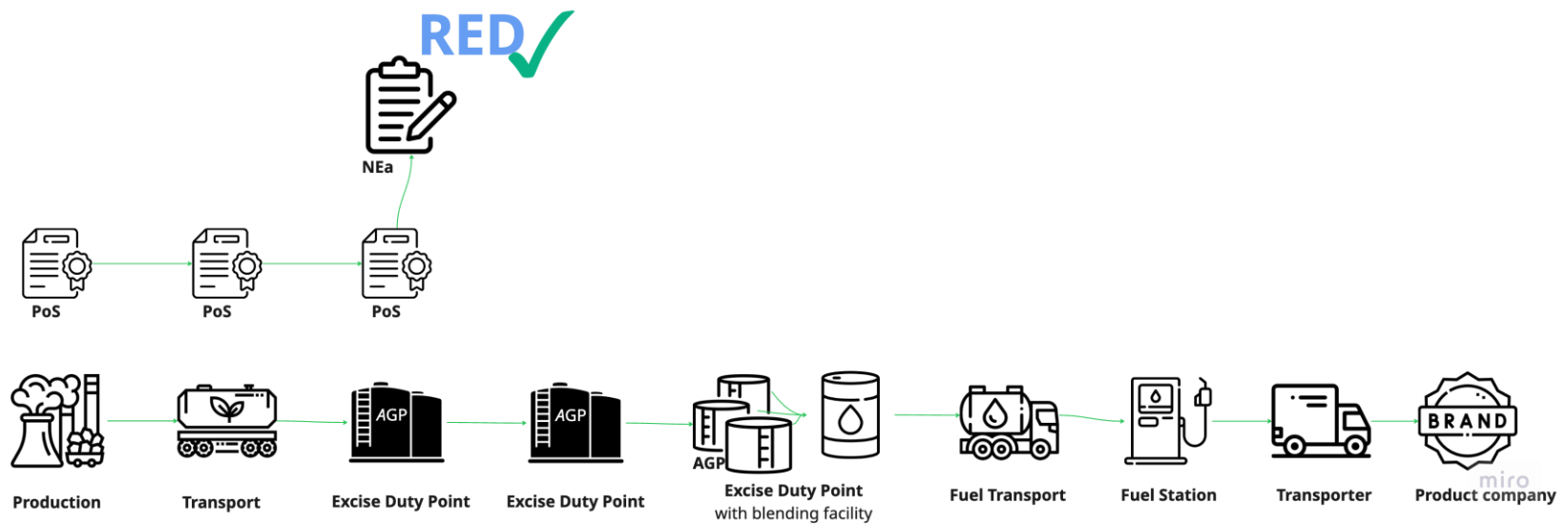
This means that **in the Netherlands there is no trustworthy information** for reporting sustainability and emission metrics of renewable fuel usage, without a self-certified tracing system.



Some years ago the market approached the government with the request to set up **a market governed, but government-recognised, standard for this traceability**, using the emission authority's registry as a trust anchor, leading to the Clean Fuel Contract project.

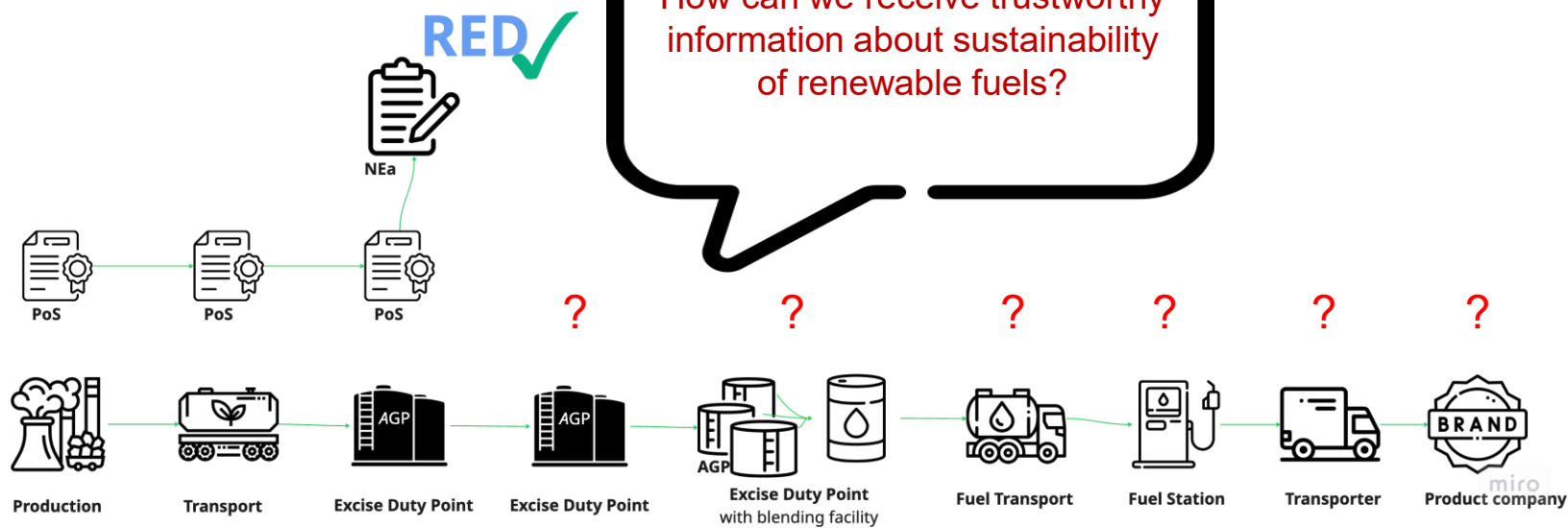


Supply chain slide





Supply chain slide





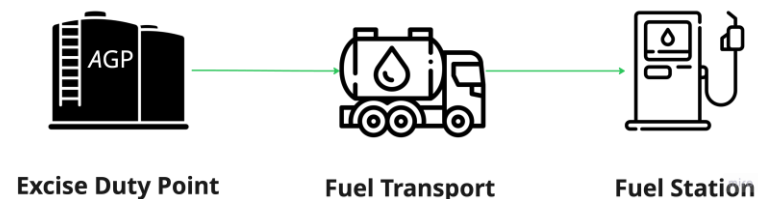
Scope Clean Fuel Contract

2025

Proving technical feasibility of transferring sustainability information and preventing double claims from **fuel supplier (AGP) to fuel station** by building a prototype of a technical system in order to develop a standard and a design for a governance model.

2026 (not yet financed)

Testing the prototype in a pilot and formalizing the standard that system providers will have to adopt and the governance model to keep the standard in place.





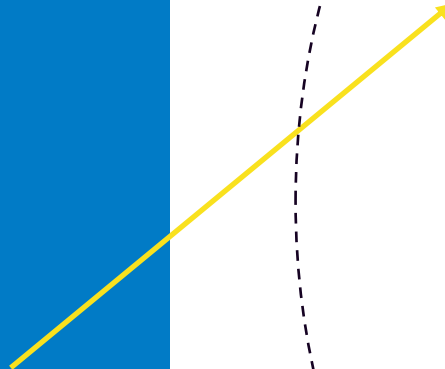
Assignment givers



Ministry of Infrastructure
and Water Management



Netherlands Enterprise Agency



Collaboration partners

TNO



FIDES.





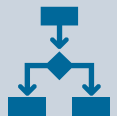
Changing Circumstances -> New user requirements



During the recent years of conceptualizing the Clean Fuel Contract, **the regulatory reality changed.**



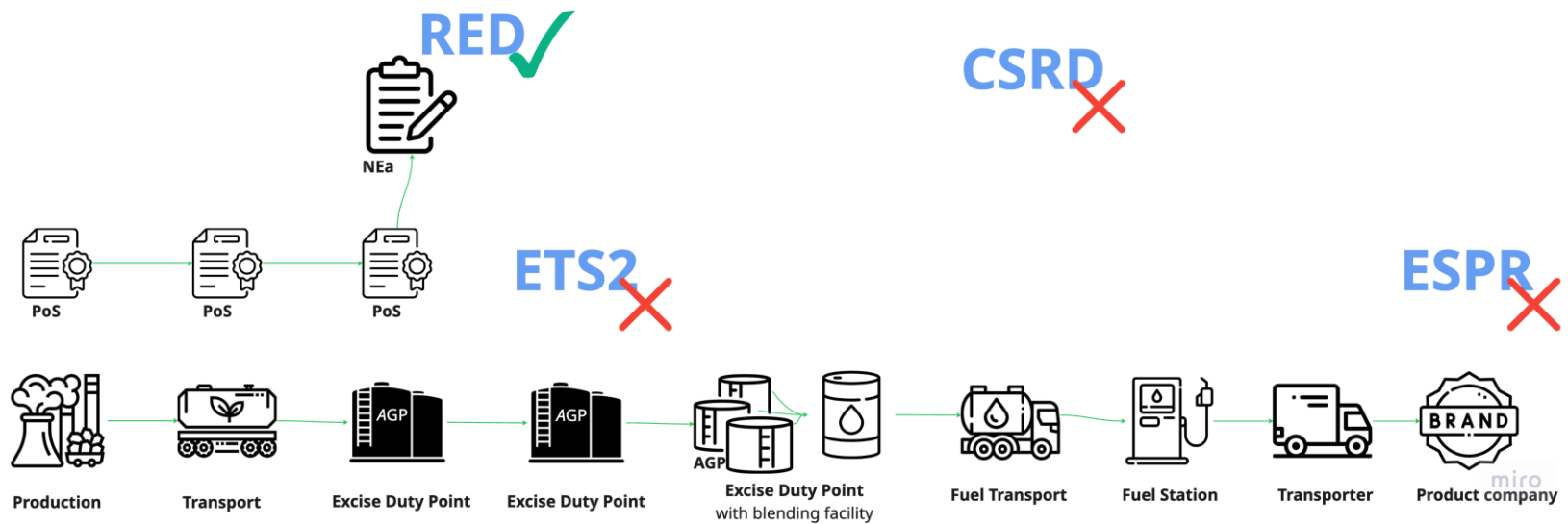
CSRD, ESPR, ETS2 were all introduced, leading to **information requirements that are compliance driven** instead of market driven.



This has completely changed the context of the Clean Fuel Contract and runs into a number of **'cascading' problems that have consequences with immense impact** for companies in the Netherlands that are looking to report on emissions.



Cascading problems





Extended Problem statement

No trustworthy proof of emission values for companies using renewable fuels

There is the potential of **double claiming** for CSRD and ESR if the fuel is not verifiably additional to the national RED obligation (← this will be checked with a legal analysis)

Because of a lack of traceable company dataset on renewable fuels that fits the Data Quality Rating standard, for **ESPR product environmental footprint calculations are required to use the fossil-fuel based calculations**, leading to higher reported emissions than in reality is the case.

There is **no incentive to use 'additional' renewable fuel in The Netherlands** (on top of the RED,) due to higher costs and no benefits in terms of reporting for

Small transport companies, when companies cannot switch to emission-free transport, will be **forced to drive combustion fuels**, and will likely stay with fossil fuels due to a better business case, unless ulterior motives apply.



ESPR – Product Environmental Footprint

- > Zie het PEF guiding document voor meer informatie.
- > **PEF = door de EU aanbevolen LCA-methodologie** voor het meten van milieu-impact van producten gedurende hun hele levenscyclus. De methodologie is vastgelegd in de *Commission Recommendation (EU) 2021/2279* met uitvoerige annexen.
- > Voor specifieke productgroepen worden **Product Environmental Footprint Category Rules (PEFCRs)** opgesteld. Voor batterijen en zuivel bestaat inmiddels een **PEFCR**, opgesteld i.v.m. de nieuwe EU Batterijenverordening.
- > Deze PEFCR schrijft voor dat je **alle upstream- en downstreamprocessen** moet meenemen: grondstoffenwinning, productie, transport, gebruik en end-of-life. Alle vormen van transport van de batterij of tussenproducten horen daar dus gewoon bij, gemodelleerd in **tonkilometers (tkm) per modaliteit**. Je vermenigvuldigt **afstand × gewicht × vervoermiddel**.
- > Voor de berekeningen van het PEF worden standaard gebruikt datasets uit de **Environmental Footprint (EF) database**. Dit zijn standaard datasets die de toekenbare emissies van transportvoertuigen bevatten, op basis van motortype (euroklasse).
- > Er kan alleen van de standaard datasets afgeweken worden als er bedrijfsspecifieke activiteitsdata is, die voldoet aan de datakwaliteitseisen (Data Quality Rating –DQR). **Het CFP/brandstofpaspoort en de resulterende data- en informatieproducten zullen in de toekomst aan deze eisen moeten voldoen, als de duurzaamheidsvoordelen van hernieuwbare brandstoffen ooit rapporteerbaar willen worden onder de ESPR.**
- > **De Digitale Productpaspoorten (DPP), onderdeel van de ESPR**, vormen een digitale identiteitsdrager die productinformatie bevat over duurzaamheid, circulariteit en traceerbaarheid. Binnen de gedelegeerde regelgeving kan de Europese Commissie voor productgroepen verplichten dat milieu-indicatoren op basis van **PEF** worden berekend en ontsloten via het paspoort.



CLEAN FUEL PROTOCOL



Architecture



Building a protocol



Based on **UNTP**



Includes Fuel Passport, conformity credentials, facility credentials and traceability events, all in the shape of a **verifiable credential**.



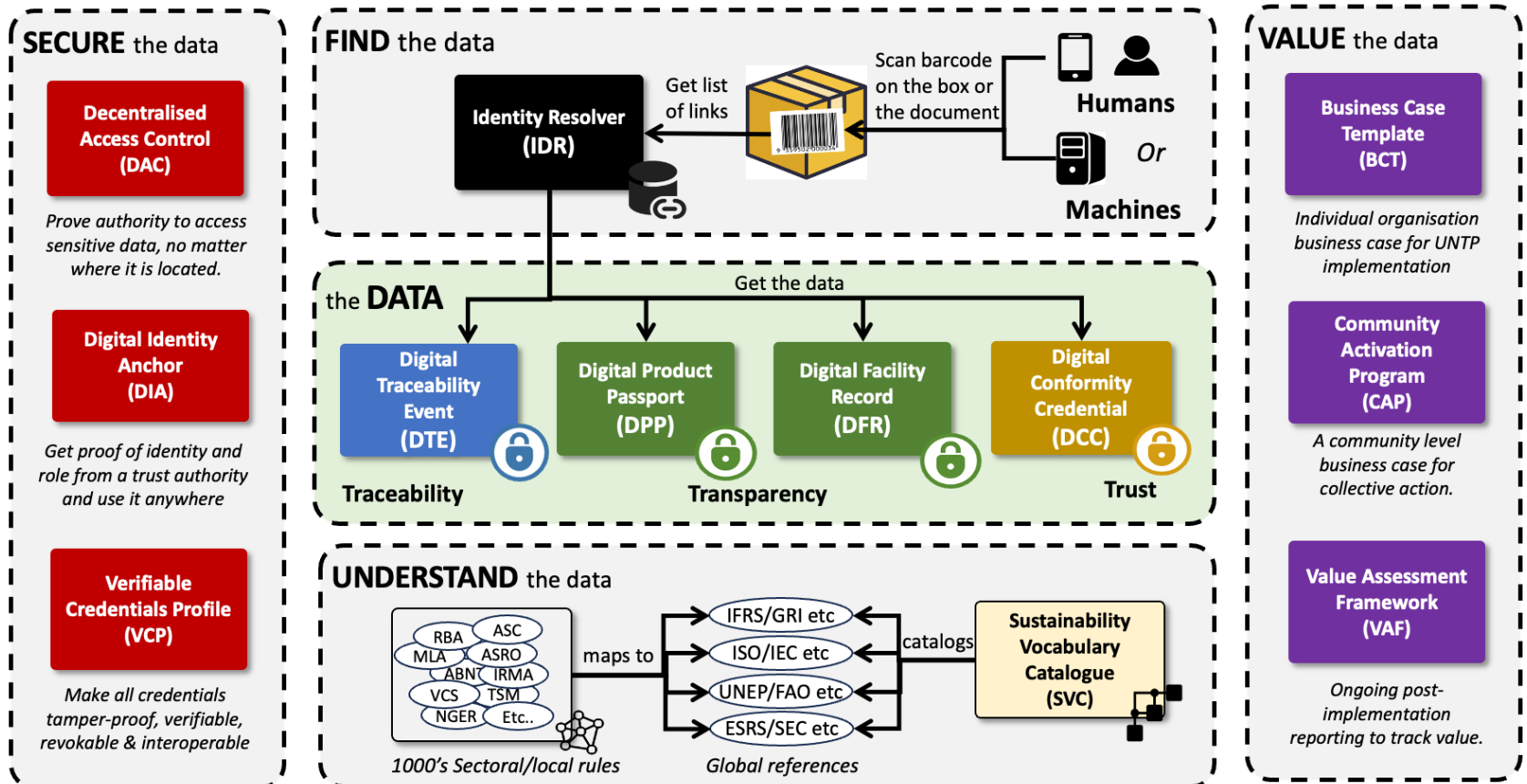
Makes use of a **registry** for preventing double claims



Makes use of **organizational wallets** to hold data and create digital signatures attached to verifiable information.



UNTP

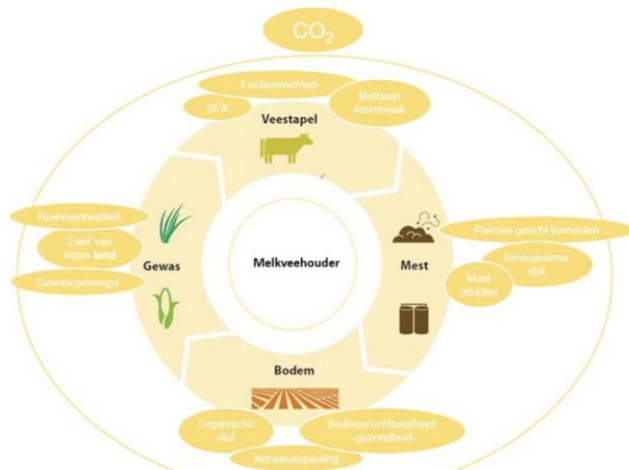




From Fuel to Dairy



KRINGLOOP
WIJZER



Integrale benadering



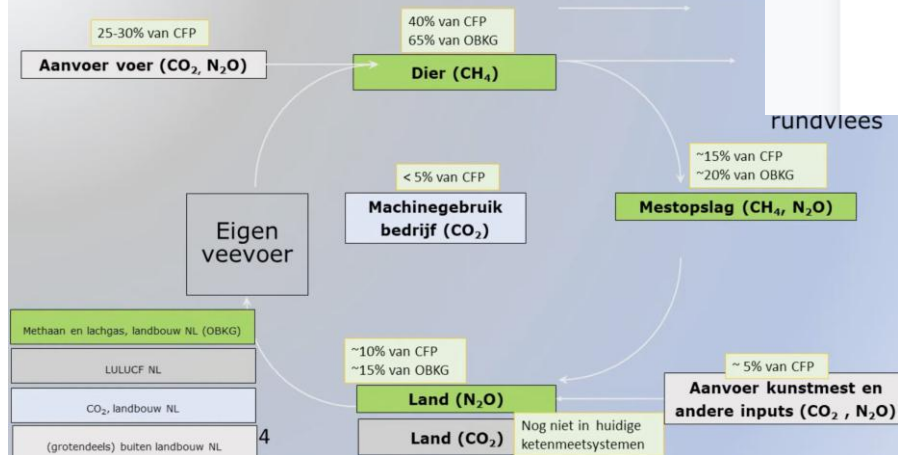
Home / Aan de slag / Automatische invoer gegevens in de CDKLW

Automatische invoer gegevens in de CDKLW

Datakoppelingen met brondata

Veel gegevens voor het berekenen van de KringloopWijzer zijn via datakoppelingen automatisch in te

Over welke emissies hebben we het?



Welke maatregelen nemen?

Bronnen	Global Warming Potential (GWP) CH4 bio=34 en N2O=298	Bedrijf excl. stallieren (kg CO2-eq)	Graasdielen melkvee (kg CO2-eq)	Productie van FPCM (g CO2-eq/kg)	Bron aandeel (%)
Personeelactiviteit	Melkvee: vers gras, grasland producten	159428	159428	213	16 %
	Melkvee: snijmais producten	76909	76909	103	8 %
	Melkvee: ov ruwvoer, natte bijproducten	31086	31086	41	3 %
	Melkvee: krachtvoerders, melkproducten	90771	90771	121	9 %
	Overige graasdielen	0	0	0	0 %
Stal en mestopslag	Opgeslagen mest: methaan	93063	93063	124	10 %
	Opgeslagen mest: lachgas	11401	11401	15	1 %
Voerproductie	Veldemissies bij grasland	103165	103165	138	11 %
	Veldemissies bij snijmais	19700	19700	26	2 %
	Veldemissies bij akkerbouw	0	0	0	0 %
Energiebronnen	Elektriciteit	17255	17255	23	2 %
	Aardgas	8172	8172	11	1 %
	Diesel	27928	27928	37	3 %
	Overige fossiele brandstoffen	0	0	0	0 %
	Energieproductie op bedrijf	0	0	0	0 %
Aanvoerbronnen	Extern voedergroen en productie werktuigen	58834	58834	78	6 %
	Grasland en snijmais producten	0	0	0	0 %
	Overig ruwvoer en natte bijproducten	2350	2350	3	0 %
	Krachtvoerders en melkproducten	225616	225616	301	23 %
	Kunstmest en organische mest	41802	41802	56	4 %
	Water, vee, strooisel, plastic, gewasb.	2375	2375	3	0 %

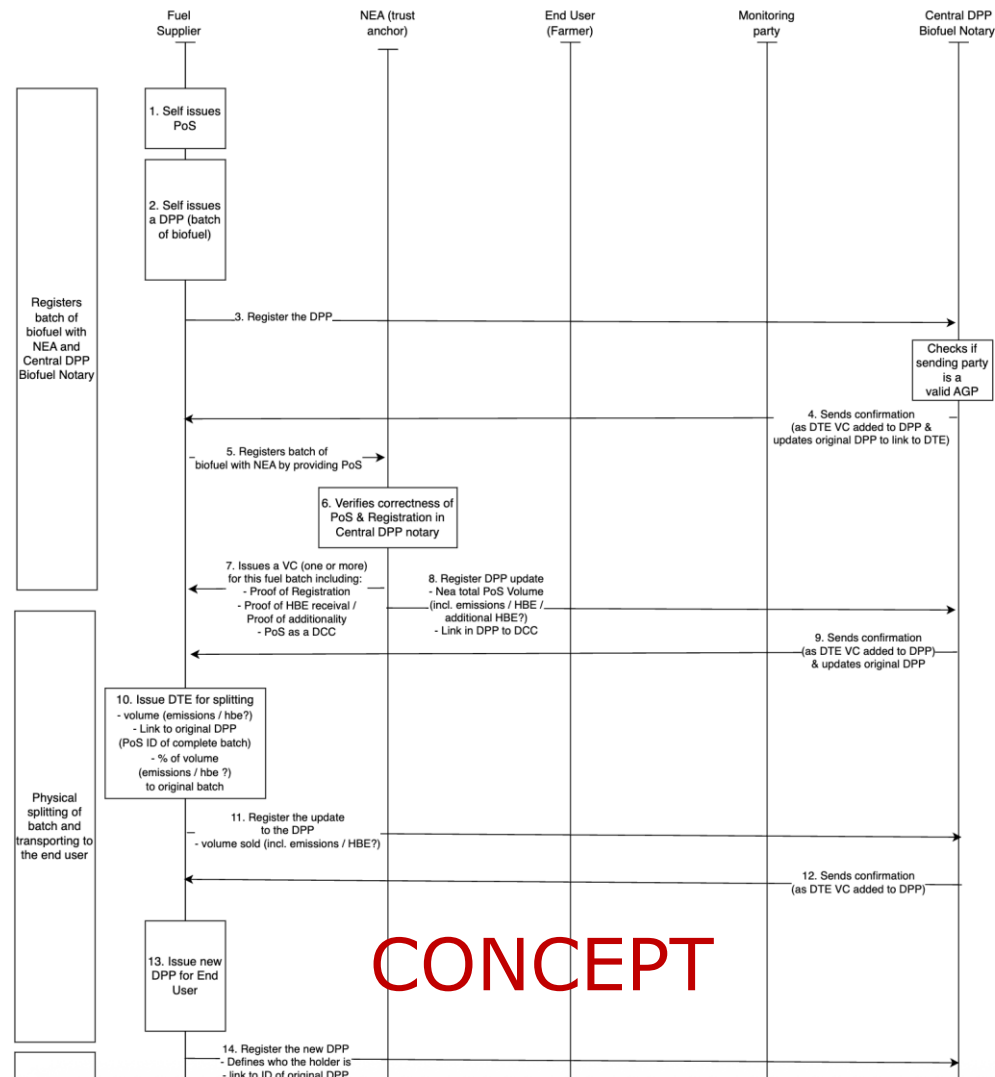
Knoppen om aan te draaien:

Onderdeel	EF berekening
Graskuil	NDF
Snijmais	NDF en zetmeel
Ov ruwvoer/bijproducten	Bijlage 4 in Kringloopwijzer
Krachtvoerders	o b v. grondstoffen
Stikstof excretie van veestapel	
Stikstof toediening via bemesting	
CO2 aanvoer product specifiek	
Kunstmest stikstof: ammonium, nitraat en ureum	



Sequence Diagram

- Helpful way to get high detail of each required step in the information flow.





Information in the DPP

Fuel Batch

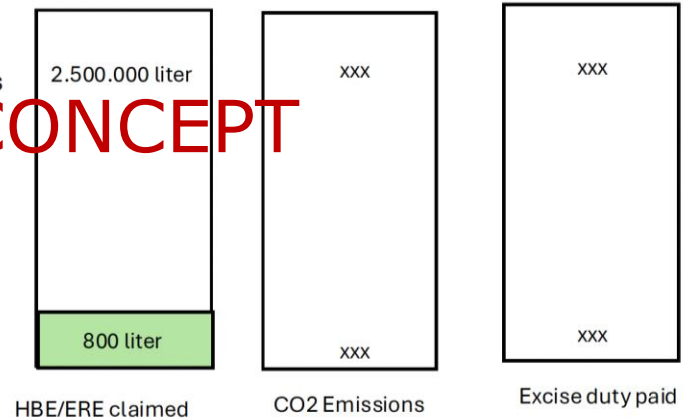
Batch nr HVO-FIN-2025-00045
Volume 2.500.000 liter
Energy content ~86,000 MWh

PoS-ID ISCC-POS-2025-NL-987654321
ISCC-certificate nr ISCC-EU-123-45678901
Feedstock Used Cooking Oil (UCO)
Country of origin (feedstock): Malaysia + Indonesia (mix, via mass balance)
GHG-intensity (PoS value): 18 gCO₂e/M
Reduction vs. fossil diesel (94 g/MJ): ~81%

Traceability Events

- DTE – FuelTransportDTE
- DTE – OwnershipTransferDTE1a
- DTE – OwnershipTransferDTE1b
- TaxExciseDTE
- HBEAllocationDTE
- FuelConsumptionDTE
- etc

CONCEPT





Organizational Wallet



Hi Klaas
Welcome to the organization wallet of Van Kessel

 **Van Kessel**
Klaas Jansma

Overview

Issuer

Issued

Holder

Wallet

Request credential

Public profile

Verifier

Received data

Miscellaneous

Inbox

Contacts

Welcome to your organisation wallet

An organization wallet provides a secure and decentralized way to manage and verify digital credentials. This system allows organizations and individuals to store, share, and validate credentials in a reliable and privacy-friendly manner.

Issuer

Create digital credentials, like certificates or identity proofs, for other persons, organizations or products.

[Issued →](#)

Holder

Store all your organizations credentials in one place. Keep them safe, organized, and ready to share when needed.

[Wallet →](#)

Verifier

Securely receive and validate credentials of persons, organizations and products, ensuring authenticity and trust.

[Received data →](#)

Messages

Here you can find all received and sent items. Use your inbox to accept issued credentials, or receive and view credentials, like invoices.

[Inbox →](#)

Manage

Here are actions or applications you can do to manage or establish a company

No active actions or applications

CONCEPT

17

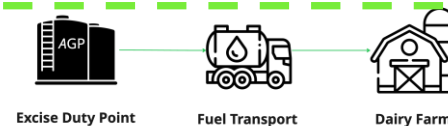
Intern gebruik



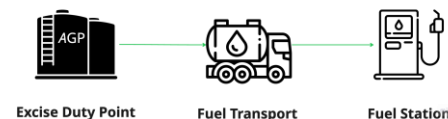
POSSIBLE Roadmap for the CFP

In scope 2025

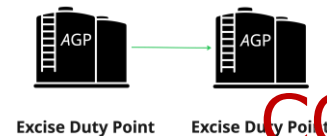
V1 – Dairy Use Case



V1 – Fuel Delivery

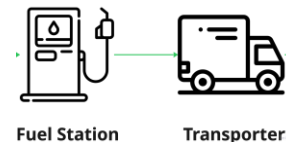


V2 – ABC transaction for ETS2

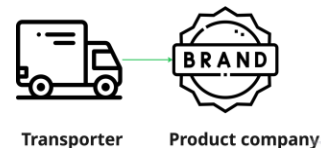


CONCEPT

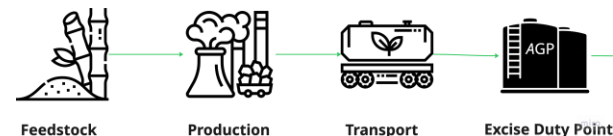
V3 – Fuel Receipt



V4 – Brand CSRD/ESPR compliancy

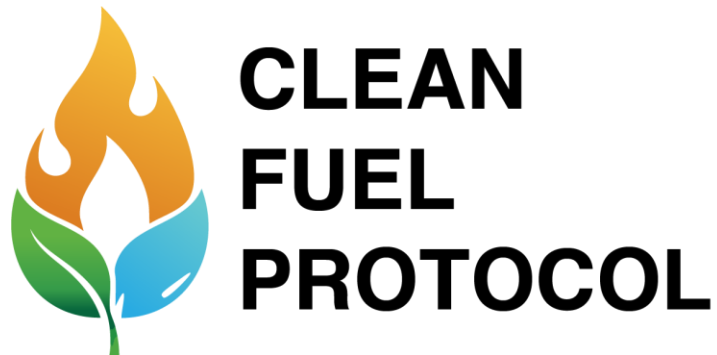


V5 – Upstream fuel production



Out of scope but
determined necessary
based on user
requirements

Others: Hydrogen, Certificates of Origin, Customs activities, SAF



Towards a Dutch / EU / Global standard?

1. We are doing this for a specific **Dutch context**.
2. However, the desire from the market is to come up with a **European or global standard**.
3. Should we set up the governance to be ready for an international context?
4. If yes, how? Should ISCC take this up, or govern through UNTP?
5. We would be open to international discussions