



Netherlands Enterprise Agency

Aspects of Sustainable Biomass Fuel Supply chains

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Content

- Context:
- Sustainability Issues
- Standards and Certification
- Sustainability criteria
- Implementation
- Discussion



Renewable Energy Directive (2009/28/EG)

- December 2010: Bring into force national laws, regulations
- Obligation for the year 2020 and reporting in between
- .EU Average 20% R.E. and 10% in transport sector
- . Sustainable biofuels and bioliquids
- . In 2012 publication on solid fuels





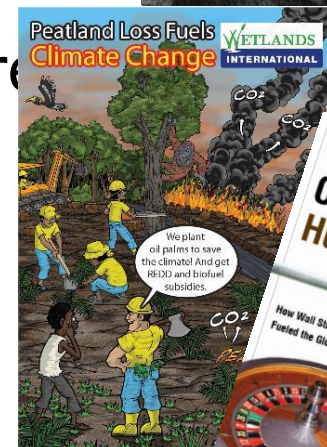
GROWING PUBLIC CONCERN (2006)





Concerns about biofuels

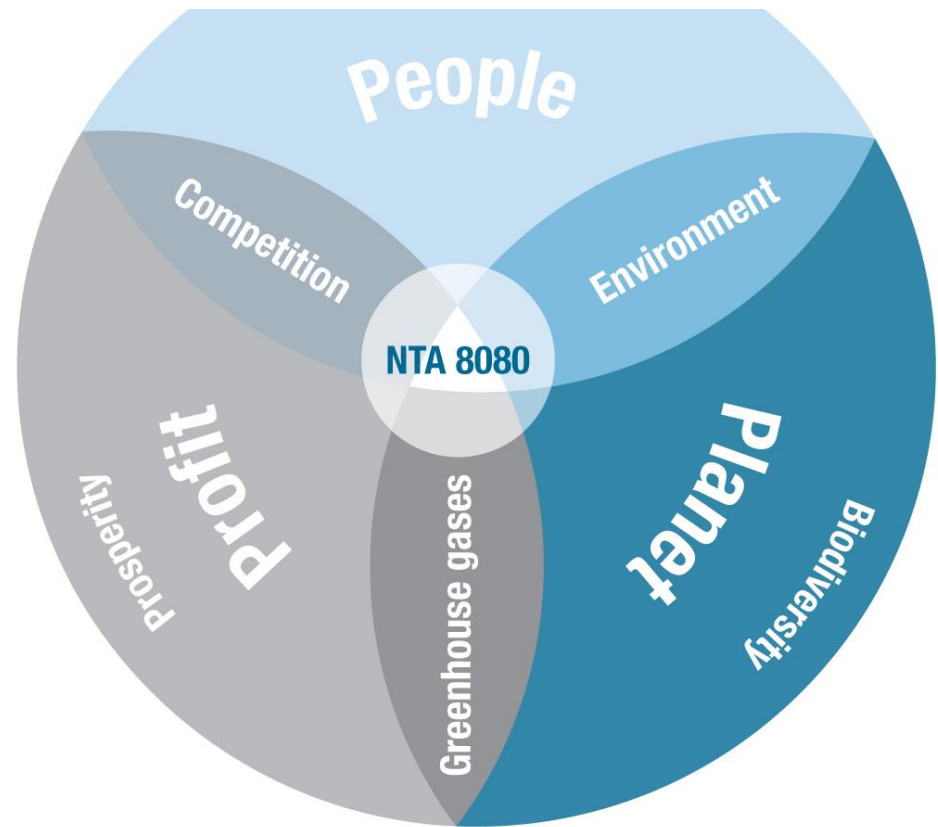
- Competition with food (price spikes 2007/2008)
- Land use change (direct and indirect)
- Loss of biodiversity
- Loss of GHG sinks
- Other sustainability effects:
 - Locally: soil, water, air
 - Social (poverty, land rights)





Sustainability criteria

- **Well-being**
- **Environment (soil, water and air)**
- **Biodiversity**
- **Greenhouse gases (emission and carbon stock)**
- **Prosperity**
- **Competition with other applications**





EU Sustainability Requirements

- **For biofuels and other bio liquids for energy purposes:**
 - GHG-emissions: \geq 35% better than fossil equivalent, 2017 50% existing and 60% new installations
 - Biodiversity: no go areas
 - Carbon sinks: preservation of status of areas
 - EU: cross compliance requirements (agriculture and nature protection)
 - Reporting requirements: food security and food prices, ILO, land security
- For waste, residues and solid biomass:
 - Waste and residues (not from agriculture, aquaculture, fishery, forest): only GHG-emission requirement
 - For solid biomass for energy possibility of national sustainability requirements





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Sustainability Certification





What is a Biomass Certification System?

- A biomass certification system is an independent seal showing that biomass or biomass-based products satisfy a certain sustainability standard.
- Certification systems give all those participating in the biomass chain precise information on how to comply with regulations to ensure the result will meet sustainability criteria."





Main elements of a Certification System?

1. The sustainability standard

coverage of sustainability principles/criteria (People, Planet, Profit)

2. The chain of custody

connects sustainability information from source to products

3. The certification management system system

sets out the rules by which it operates e.g.
the audit system, level of transparency,
stakeholder engagement





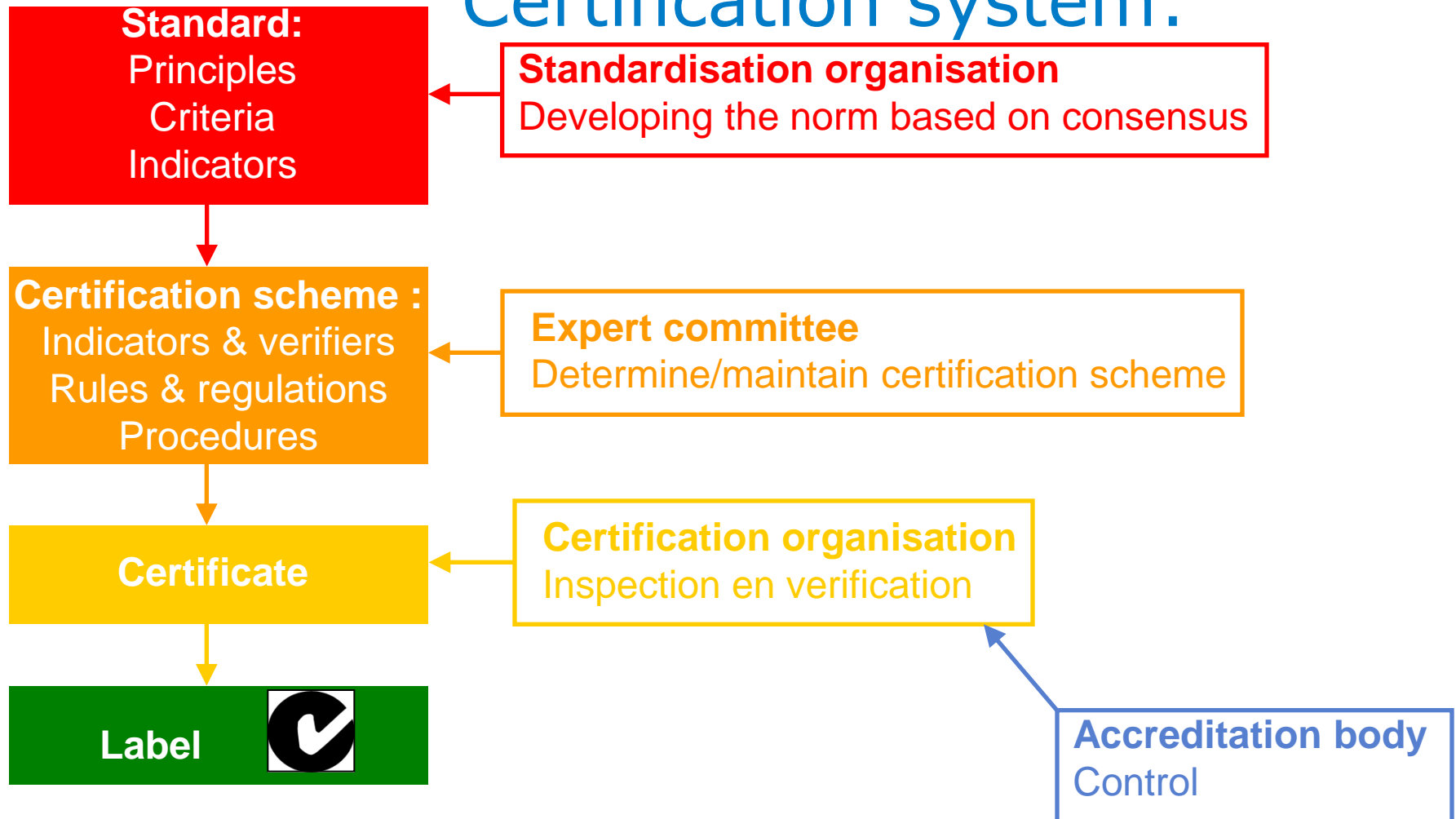
Certification management system

Management system that sets out the rules by which the certification system operates.

- The audit frequency and validity, which determines how often the auditors determine the validity of the certificates;
- Audit types which can range from self-declarations to full field audits;
- The audit management which sets out specific procedures and the rules for their execution.
- The transparency and accessibility of the system should be achieved by making information publicly available;
- Stakeholder involvement needs to be possible during the audit process, in terms of either participating in or observing the audit process;
- A complaint system needs to be set in place and to be easily accessed by anyone.



Certification system:





Voluntary certification schemes

- Schemes being developed by consortia / roundtables
 - **Bonsucro (formerly BSI, sugarcane)** – www.betersugarcane.com
 - **ISCC** – www.iscc-system.org
 - NTA 8080/8081 – www.sustainable-biomass.org
 - **REDcert** – www.redcert.org
 - **RSB** – www.rsb.epfl.ch
 - RSPO (palm oil) – www.rspo.org
 - **RTRS (soy)** – www.responsiblesoy.org
- Schemes being developed by companies
 - **Abengoa (RED Bioenergy Sustainability Assurance)**
 - **Greenenergy:** www.greenenergy.com
 - **French stakeholders – 2BSvs**
 - Nesté Oil
 - Red Tractor – <http://www.nfuonline.com/News/Red-Tractor-scheme-proposed-for-biofuels/>
 - SEKAB/UNICA – www.sustainableethanolinitiative.com



ROUNDTABLE ON SUSTAINABLE BIOFUELS

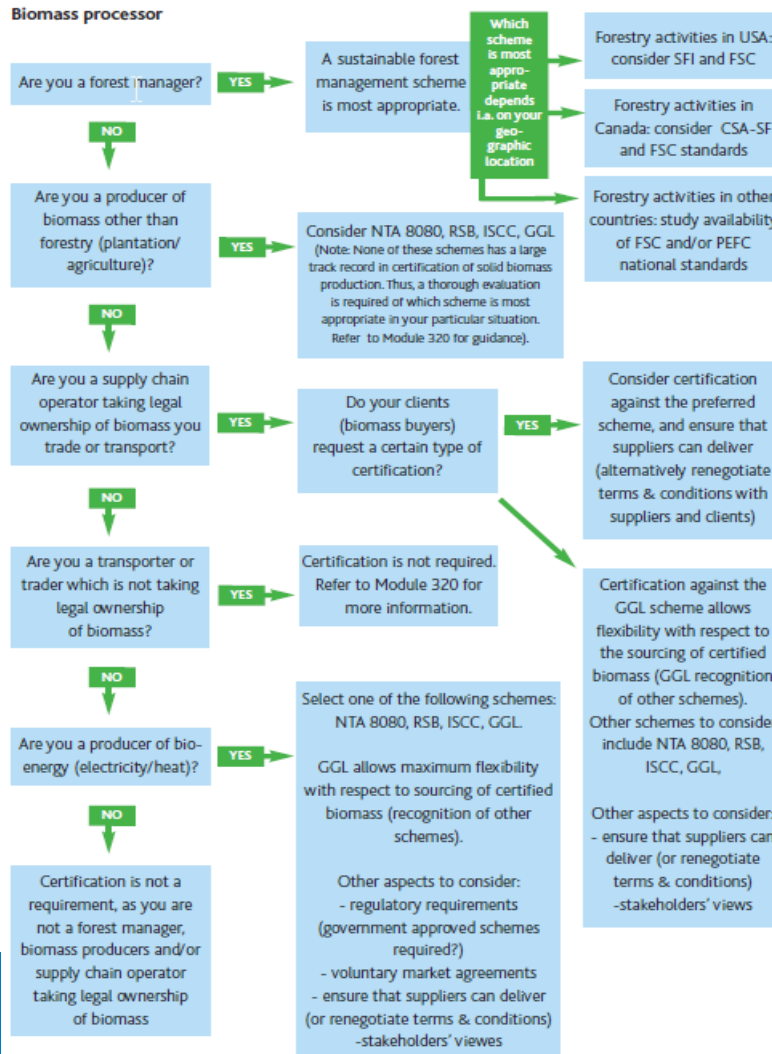


Certification schemes and end-use sectors

VSS	Sector					
	Food	Feed	Forest products (timber)	Biofuels	Bioenergy (heat & power)	Biomaterials (e.g. bio-plastics)
Bonsucro	◆			◆		◆
RSB				◆	◆	◆
ISCC (+)	◆	◆		◆	◆	◆
2BSvS				◆		
NTA8080				◆	◆	◆
FSC			◆			
PEFC			◆			



How to select a certification scheme?



NL Agency
Ministry of Economic Affairs, Agriculture and Innovation

Sustainable Biomass

How to select a biomass certification scheme?

>> Focus on energy and climate change



Certification: level of assurance and costs

- Guidance: “**How to select a biomass certification system**: a benchmark for level of assurance, costs and benefits”
- Bonsucro
- ISCC
- NTA8080/81
- REDcert (German version)
- Roundtable on Sustainable Biofuels (RSB)
- Roundtable on Sustainable Palm Oil (RSPO)
- Roundtable on Responsible Soy (RTRS)
- 2BSvs





	RSB	RSPO	RTRS	Bon-sucro	2BSvs	NTA8080	REDcert	ISCC
1. Management of system itself								
Transparency	++	+	+	-	-	0	0	+
Stakeholders	++	++	++	++	--	+	--	+
Complaints	++	++	++	++	+	++	+	++
2. Quality requirements for auditors								
Impartiality	+	++	++	++	+	+	+	+
Personnel competence [1]	++	+	++	++	--	+	0	0
Accreditation [2]	+	++	++	+	+	++	+	+
3. Auditing procedures								
Frequency certificate	++	0	+	0	0	+	-	+
Type of audits	0	+	++	++	--	+	++	++
Process requirements	+	++	+	++	++	+	+	++
Sanctions	++	+	+	+	0	+	0	+
Sampling, group and multi-site certification procedures								
Sampling options [3]	++	+	++	-	-	++	-	+
Requirements	--	0	++	0	0	+	-	0
Sample size	+	0	+	+	+	+	--	+
Chain of custody requirements and procedures								
Claims	++	++	++	++	+	+	+	++
Requirements tracing	+	+	++	-	0	0	+	+
Mass balance [4]	++	++	++	++	++	+	++	++
Procedures change ownership	+	+	+	+	0	0	--	0
Prevent uncontrolled mixing	+	+	+	+	+	+	+	--
Recognition or affiliation of system and acceptance other systems								
Level of recognition	+	-	+	+	0	0	-	0
Recognition other systems [6]	+	+	+	+	-	+	-	-

As example to show some of the differences

[++] System covers all items; [+] 1 item is not covered, partially or under development; [0] 2 items are not covered, partially or under development; [-] 3 items are not covered, partially or under development; [--] 4 items are not covered, partially or under development, (or no items covered in case less than 4 items are benchmarked). Note that i) number of discussed item differs per issue, which creates some diffusion in the comparison.



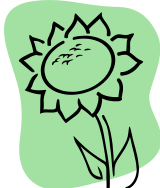
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Chain of Custody

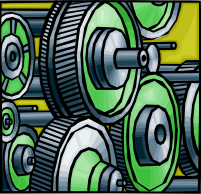




Chain of Custody



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Primaire
productie

Processing

Transport

Productie

Distributie



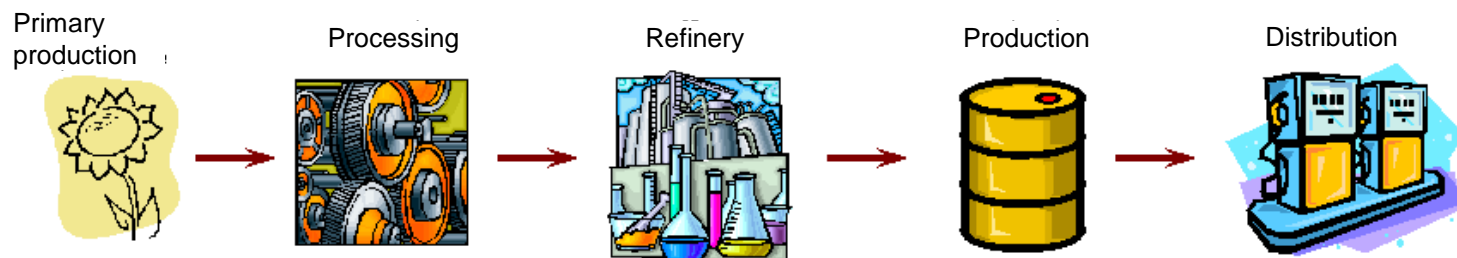
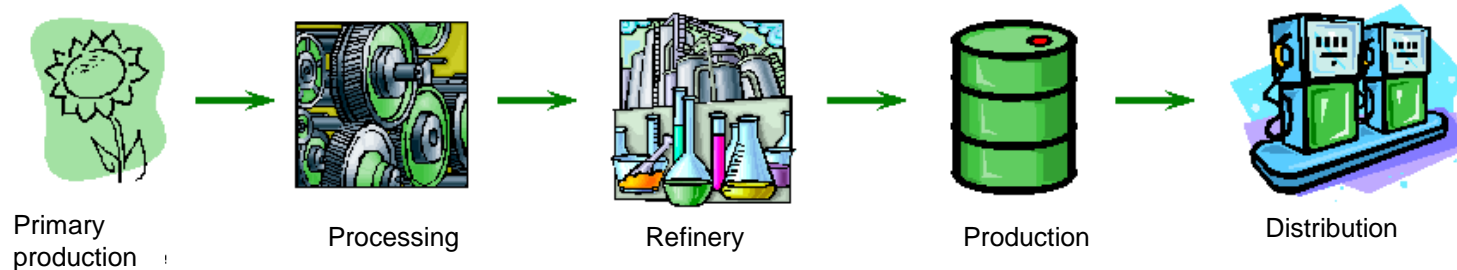
“evidence”



Segregation: Chain of custody

- Segregation (= 100% mass balance)

Certified chain



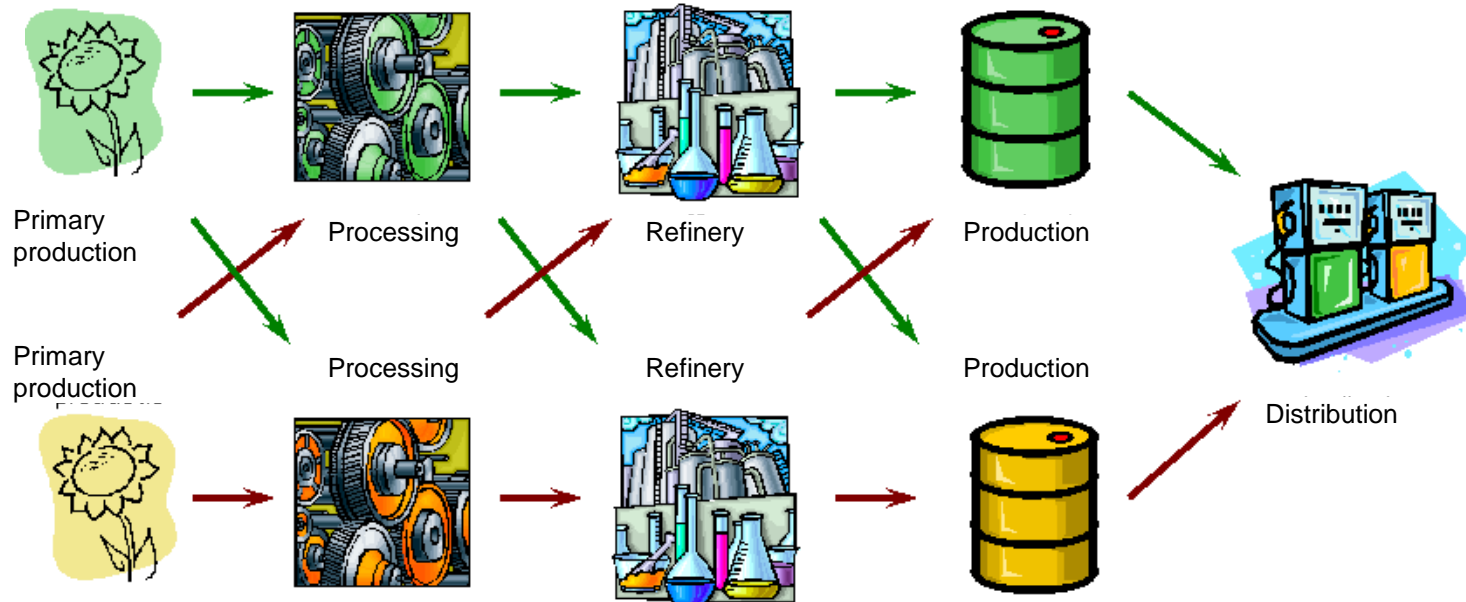
Regular (uncertified) chain



Mass Balance: Chain of custody

- Mass balance (required by RED, 2009/28/EC)

Certified chain



Regular (uncertified) chain



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Implementation of Sustainability Certification in the Netherlands





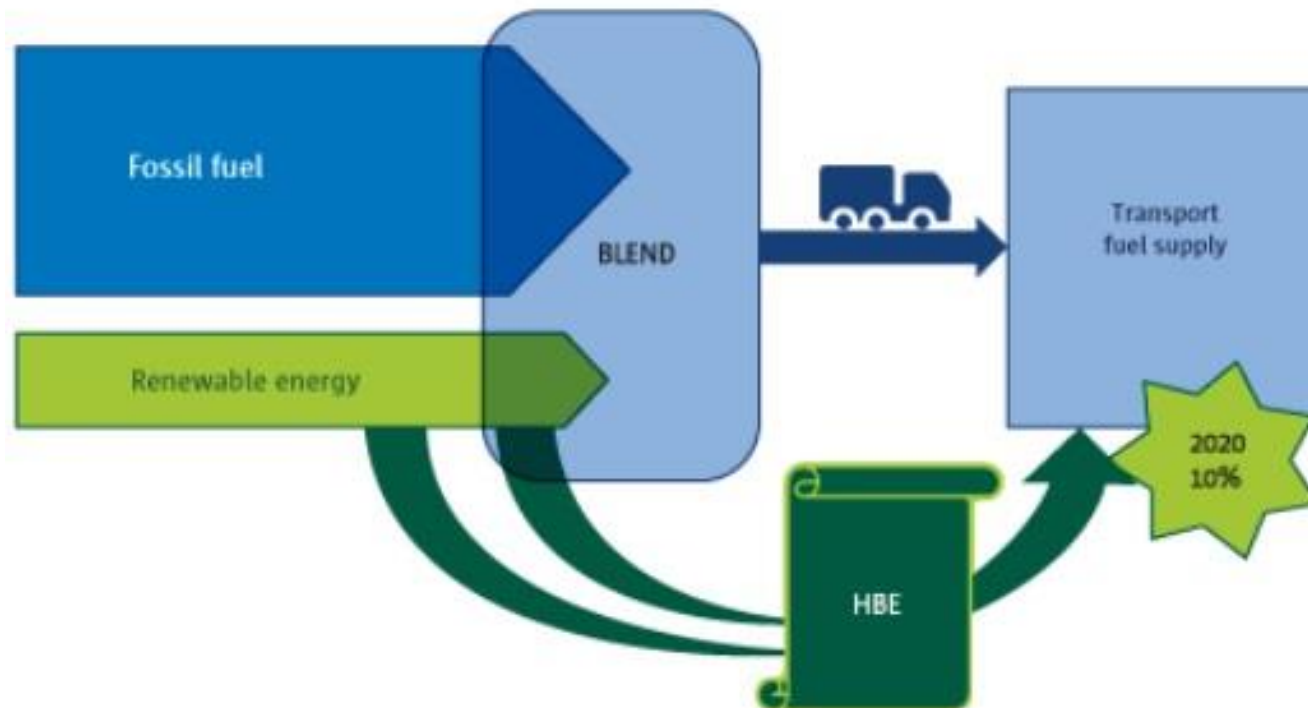
Practical implementation

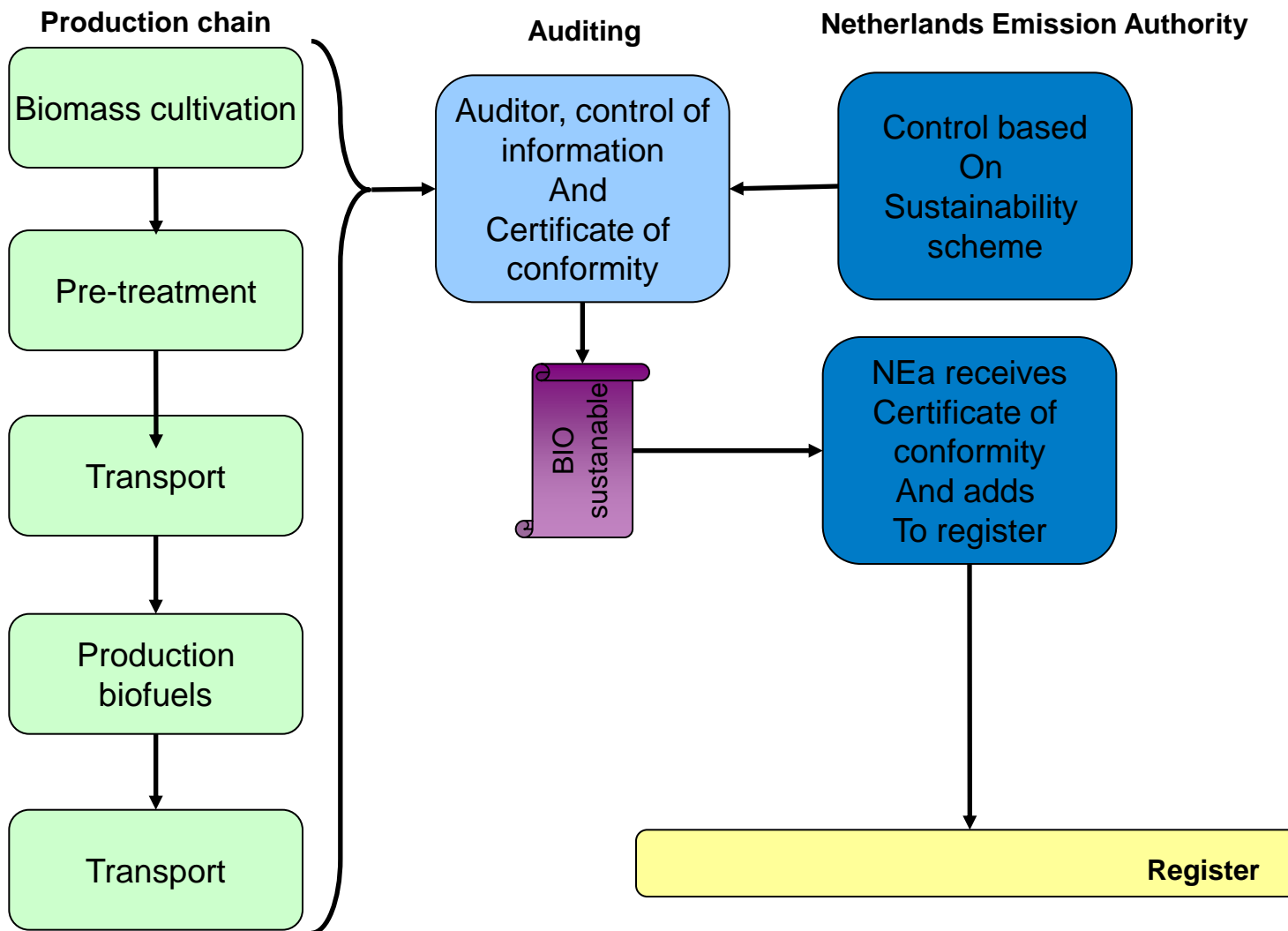
- Fuel suppliers have an obligation (e.g. 2014 5,5% and 2015 6,25%) written in Environmental Law, article 9.7
- Dutch Emission Authority (NEA) is registering and controlling the Dutch biofuel market
- Sustainability must be shown by an adopted voluntary certification system incl. independent audit
 - We have a mass balance system.
 - 25% carry over to next year
- NEA controls and in case obligation is not met, or fraud is expected the prosecutor is informed and action taken
- Taxes on biofuels are the same as for fossil fuels (about 150%_ Consumer pays 1.3 €/liter diesels in NL)



Biofuel compliance system in the Netherlands

Dutch compliance mechanism







Filling the register by a company (Fuel supplier)

Toevoegen grondstof

Algemeen

Naam	Used cooking oil (UCO) entirely of veg. origin	
Eenheid opgave bijdrage grondstof aan levering (keuze)	<input checked="" type="radio"/> %	<input type="radio"/> GJ
Bijdrage grondstof aan levering (naar energieinhoud)	<input type="text" value="100,00"/>	%
Bijdrage grondstof aan levering - LHV	<input type="text" value="3.310,000"/>	GJ
Datum van in gebruikname productie-installatie	<input type="text" value="06-10-2015 of later"/> ▼	
Broeikasgasemissie	<input type="text" value="33,00"/>	g CO ₂ eq/MJ
Land van herkomst	<input type="text" value="China"/> ▼	
Non-modificatieverklaring aanwezig?	<input checked="" type="radio"/> Ja	<input type="radio"/> Nee
Soort HBE	Overig	
Deze grondstof kan dubbeltellend geclaimd worden indien u in het bezit bent van een bijbehorende dubbeltellingsverklaring.		
Dubbeltellend claimen	<input checked="" type="radio"/> Ja	<input type="radio"/> Nee
Nummer dubbeltellingsverklaring	<input type="text" value="CUC.1211010"/> ▼	



NEA Bio fuel Re gis ter

nea Register Energie voor Vervoer Rekeningbevoegde - Raffinaderij 1, rekeningbevoegde voor Raffinaderij 1 [Uitloggen](#)

Nederlandse Erfsiteautoriteit
Dutch Erfsites Authority

Laatst ingelogd: 20-11-2018 18:11

Home Inboekingen ▾ HBE's ▾ Brandstofleveringen ▾ Jaar-reductieverplichting ▾ Beheren ▾ Rapportages ▾ Mijn REV ▾ [Contact](#)

Deadlines

Inboeken	28-2-2018
Rapporteren uitslag tot vervoersverbruik	28-2-2018
Verifiëren inboekingen	31-3-2018
Voldoen aan jaarverplichting	31-3-2018

Beschikbaar saldo

	HBE-C	HBE-O	HBE-G	HBE-Totaal
Actueel saldo	118.308	0	0	118.308

HBE Transacties

1 tot 5 van 18

Nummer	Datum	Type	Tegenpartij	HBE-C	HBE-O	HBE-G
T.1TYXB	01-04-2016	Vervallen...	n.v.t.	-1.050.823	0	0
T.WRHCC	01-04-2016	Verplichting	n.v.t.	-13.972	0	0
T.1YVT9	11-03-2016	Inboeking	n.v.t.	51.835	0	0
T.PGEMW	11-03-2016	Inboeking	n.v.t.	51.835	0	0
T.WHJMN	11-01-2016	Overboek...	Raffinade...	25	0	0

Rekeninggegevens

Rekeninghouder	Raffinaderij 1
KvK nummer	48392817
Rekeningnummer	H.799.33.28.10
Ruimte tot overboeklimiet	10.000.000.000 van 10.000.000.000 HBE

Huidige status

Vorig jaar

Jaar 2018

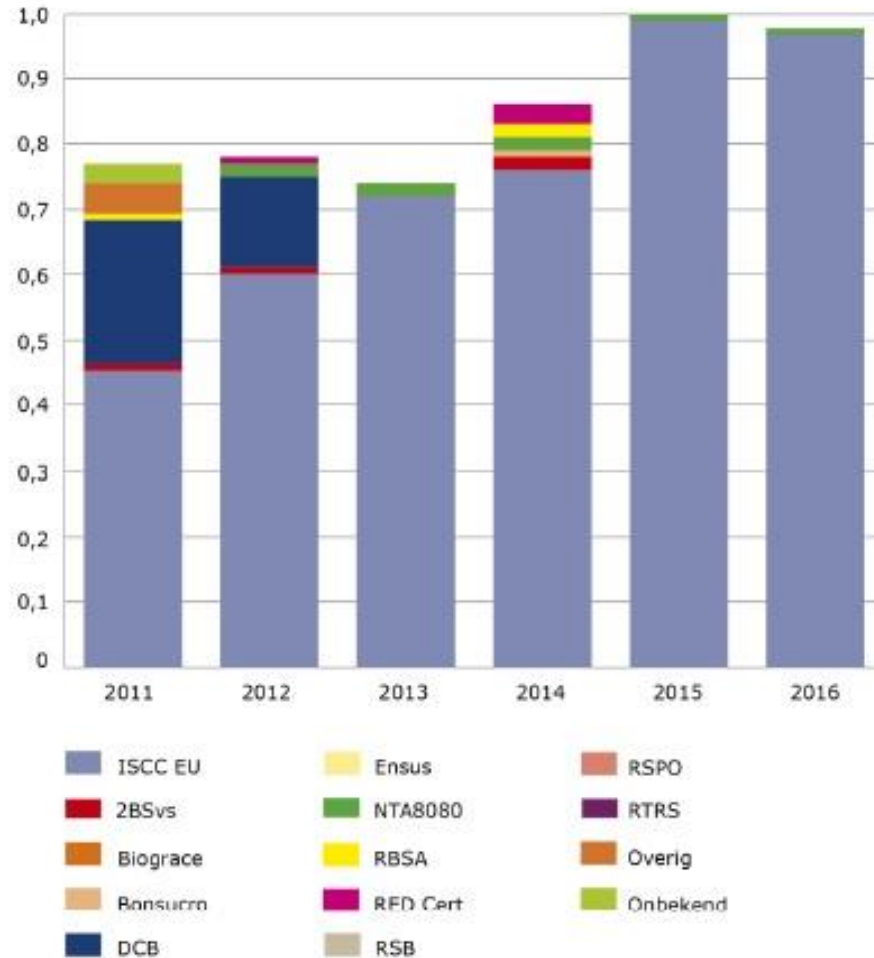
+ HBE saldo

- Indicatie voldoen aan verplichting

	HBE-C	HBE-O	HBE-G
Actueel saldo	118.308	0	0
Jaarverplichting	0	0	0
Eindsaldo	118.308	0	0
Voldoende saldo voor nakomen jaarverplichting?			Ja



Certification schemes in the Netherlands



Bron: NEa



Biofuel volumes

- Tax codes:
 - undenatured alcohol: CN 22071000
 - Denatured ethanol: CN 22072000
 - > Not drinkable; spiritus, blended with methanol/ petrol
 - Chemical compound: CN 38249097
- Trading with different countries,
 - Different tax regimes over time



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Sustainability of solid biomass import in the Agreement of the Netherlands





Energy Agreement for Sustainable Growth

Government and stakeholders agreed on a package to meet 2020 targets

1. An annual maximum of 25 PJ (1,2%) of the 14% Dutch renewable energy target from co-firing
2. Used solid biomass has to comply with sustainability criteria on SFM, GHG emissions, carbon debt and ILUC





Sustainability criteria for categories

Biomass categories	Sustainability criteria						
	SFM criteria	GHG balance	Carbon debt	ILUC	Soil quality	Compliance with legislation	Chain of Custody
1. Woody biomass from large forest management units	X	X ¹	X ¹	X ^{1,2}	X ¹	X ¹	X ¹
2. Woody biomass from small forest management units	X	X	X	N/A	X	X	X
3. Residual products from multi-functional forests	N/A	X	N/A	N/A	X	X	X
4. Agricultural residual products	N/A	X	N/A	N/A	X	X	X
5. Residual agri-food products and timber industry products	N/A	X	N/A	N/A	N/A	X	X
6. Biogenic waste materials	N/A	X	N/A	N/A	N/A	X	X
7. Residual products from natural site and landscape management	N/A	X	N/A	N/A	N/A	X	X



SFM criteria

- Based on Dutch criteria for timber procurement by the government (TPAS) with some small changes
- Certification at regional level allowed for smallholders (<1000 ha) as part of a growth path towards FMU level
- Both certification and verification are accepted as evidence





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Sustainability Certification in Ukraine





Discussion / Implementation

1. Focus on Liquid biofuels
 2. Sustainability of local biofuels or import?
 3. Greenhouse Balance
- > Energy balance across the chain





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Thank you for
your attention

Questions?

Contact:

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