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# Biofuel Policies in the Netherlands

Ir. Kees W. Kwant

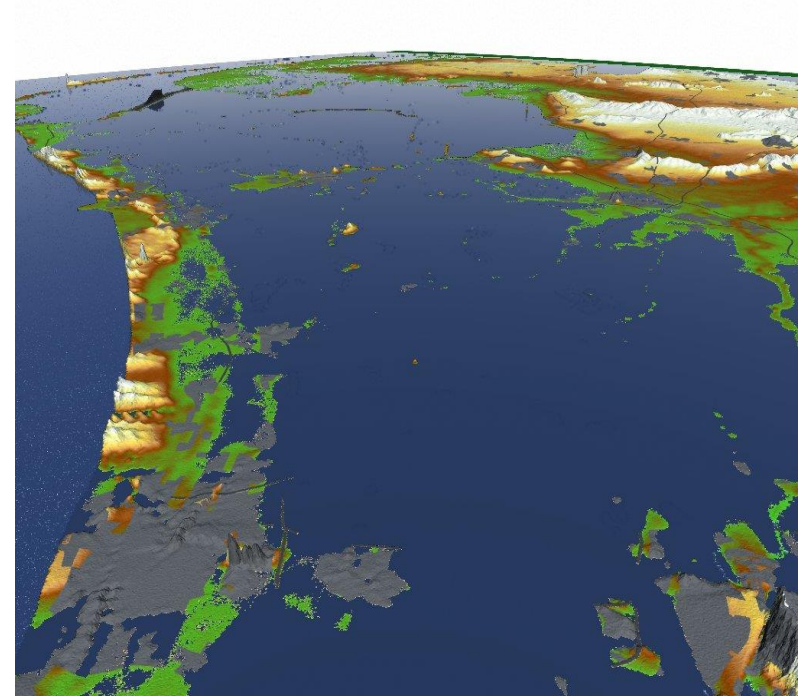
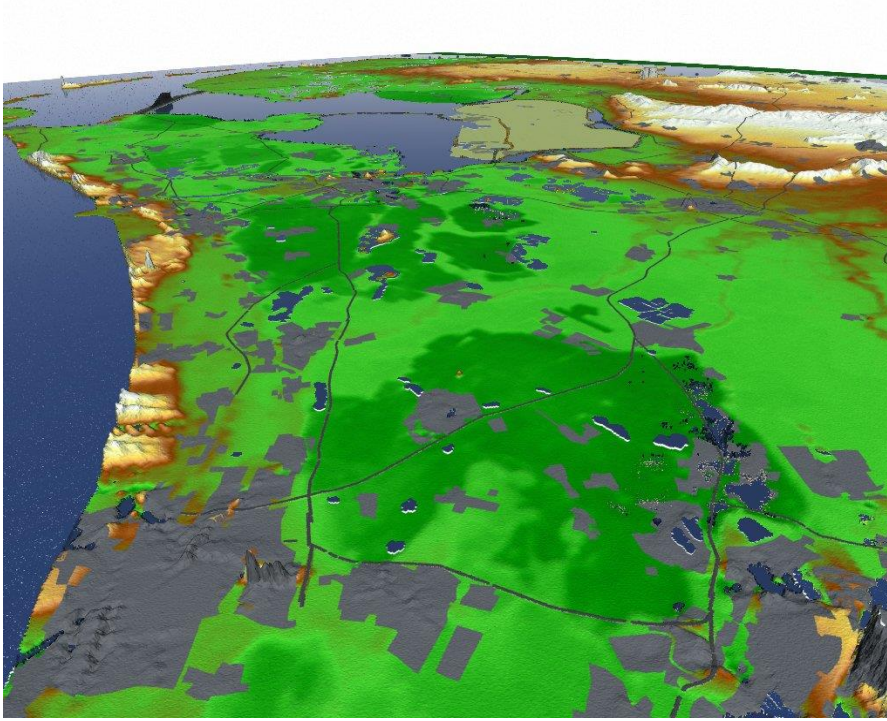


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# Netherlands now and in the year ???



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3 November



# EU 2020 Targets

- **Renewable Energy Directive**

- Minimum of 10% renewable energy in transport in 2020
- Electric, biofuels, biogas
- At least applicable to road transport, opt in for shipping/air
- Double counting 2nd generation biofuels (waste/residues/cellulosic)

- **Fuel Quality Directive**

- Life Cycle Analysis, CO<sub>2</sub>-reduction of 6% compared to 2010
- Looks at the whole chain of production and use of fuels
- No double counting 2nd generation biofuels







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## **Biofuels contribute to Renewable Energy Obligation RED (COM 2009/28)**

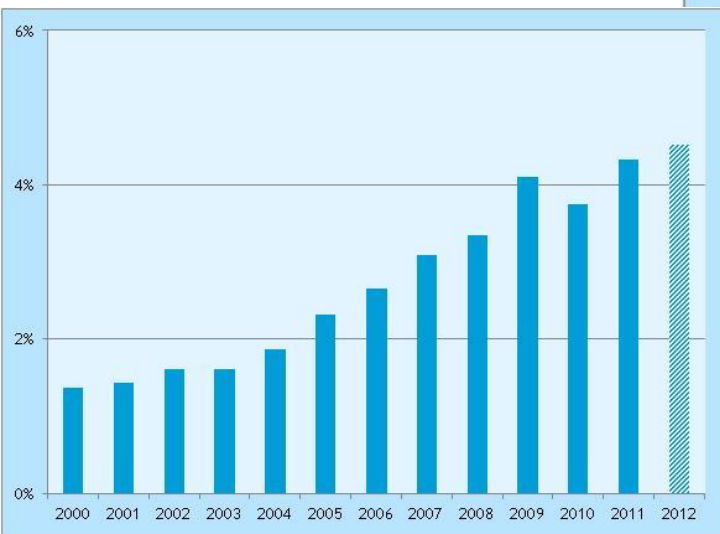
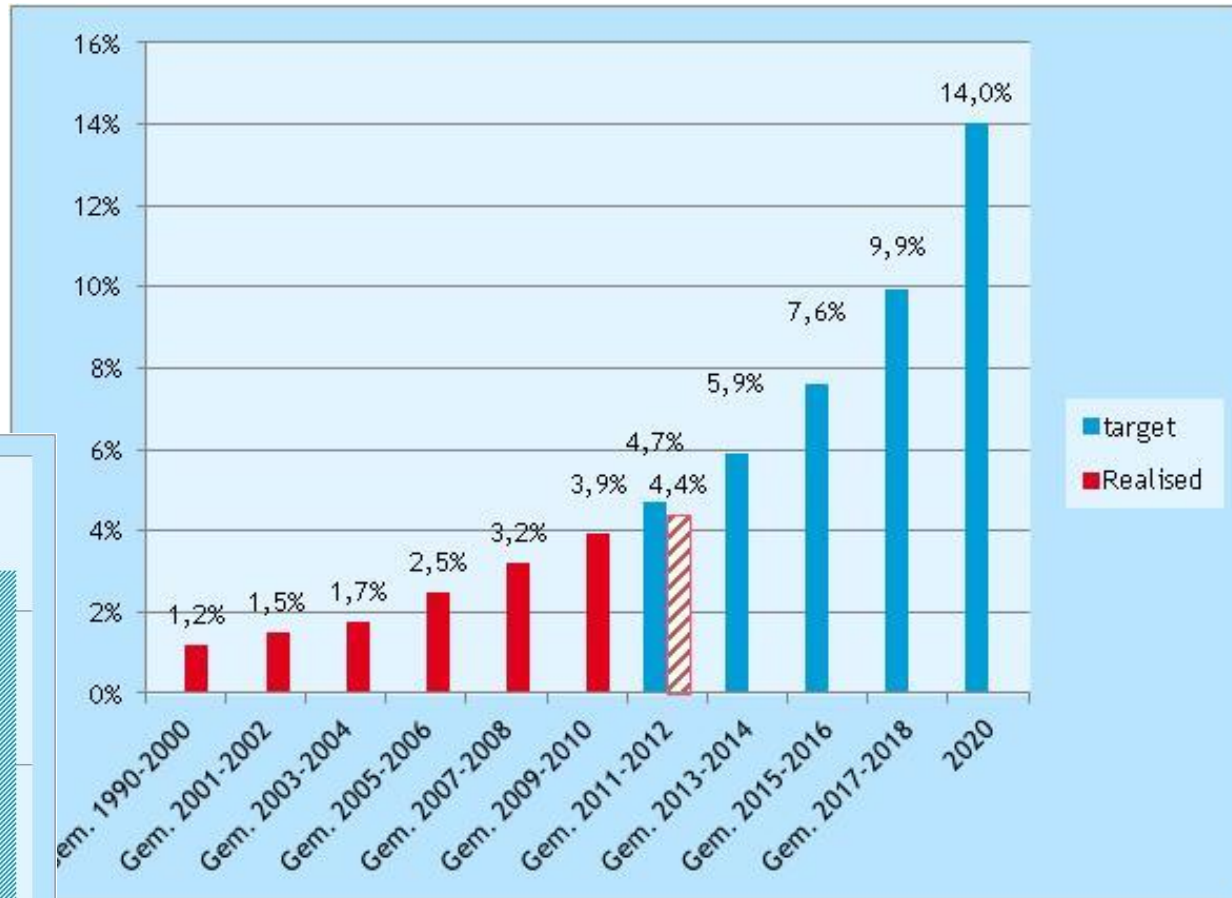


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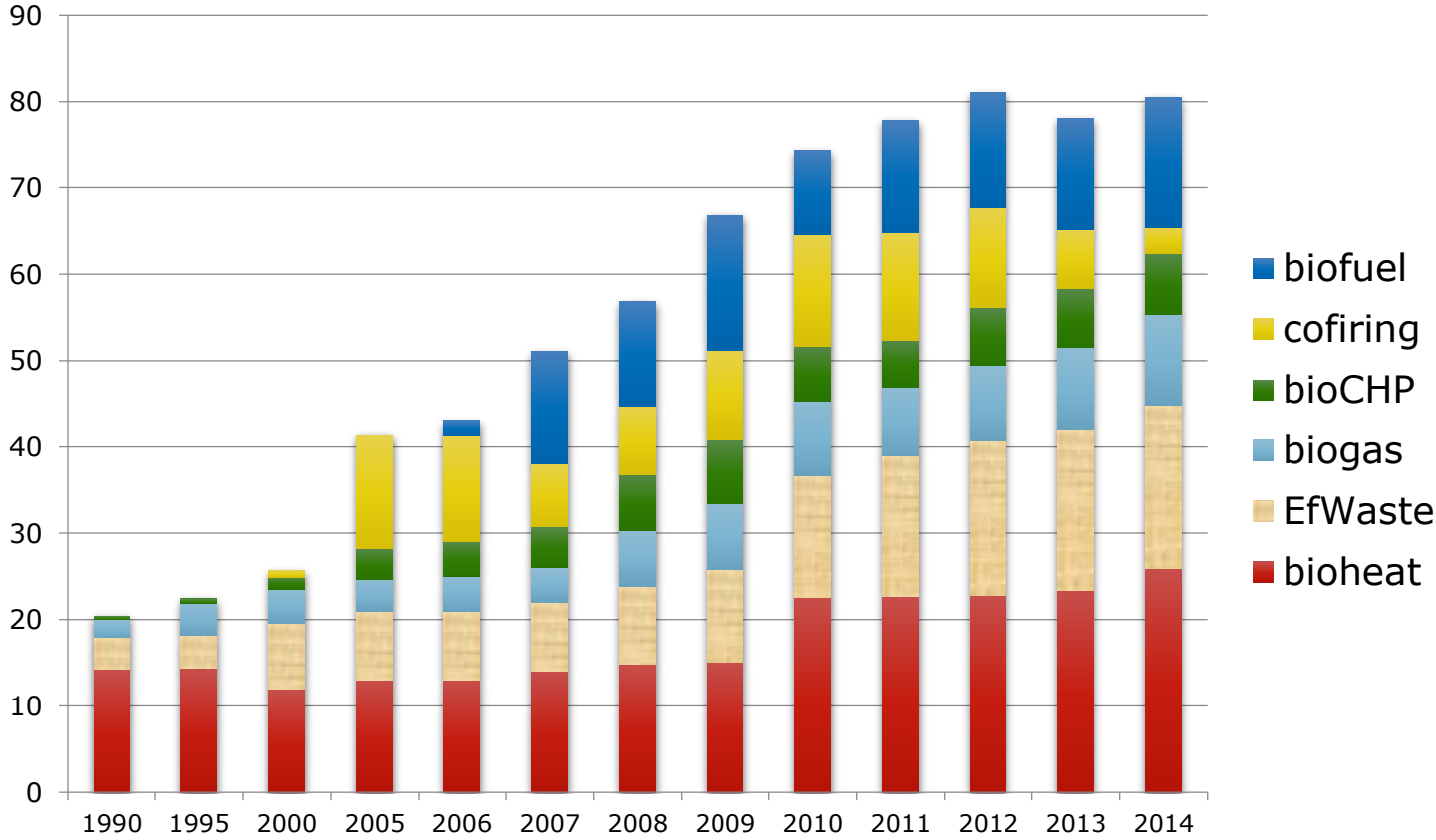
# RE targets: RED: 2020: 14%





# Biomass for Bioenergy use in Netherlands

- PJ



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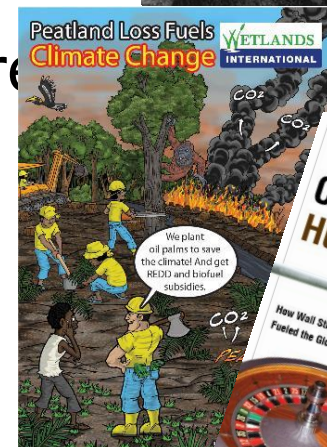
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# Concerns about biofuels

- 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)



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# EU Sustainability Requirements

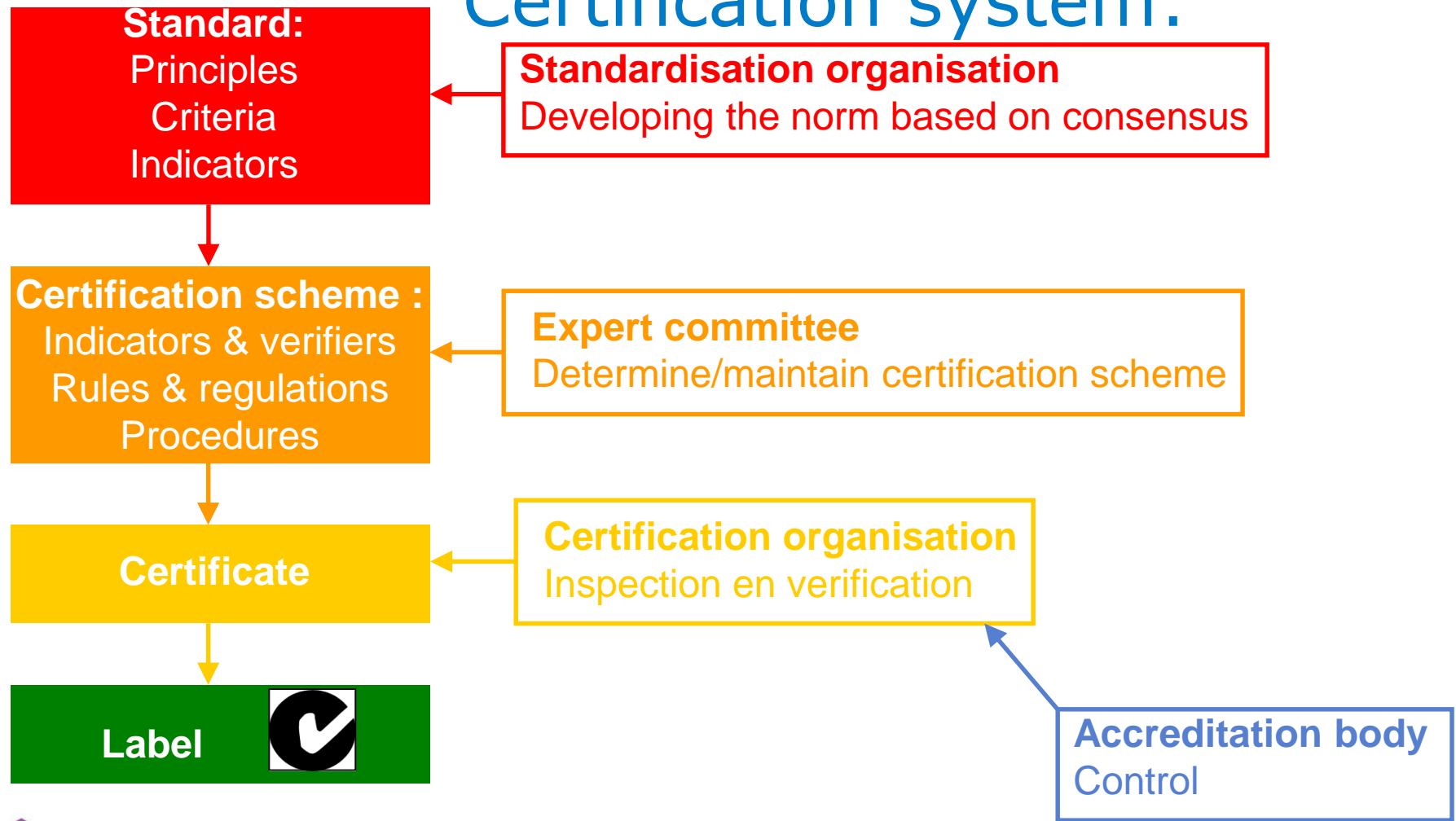
- **For biofuels and other bio liquids for energy purposes:**
  - GHG-emissions:  $\geq$  35% better than fossil equivalent, 2017 50% existing and 60% new installations
  - Biodiversity: no go areas
  - Carbon sinks: preservation of status of areas
  - EU: cross compliance requirements (agriculture and 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







# Certification system:





# Implementation in legislation

- 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 1.4 €/liter petrol in NL)





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# Biofuels Production



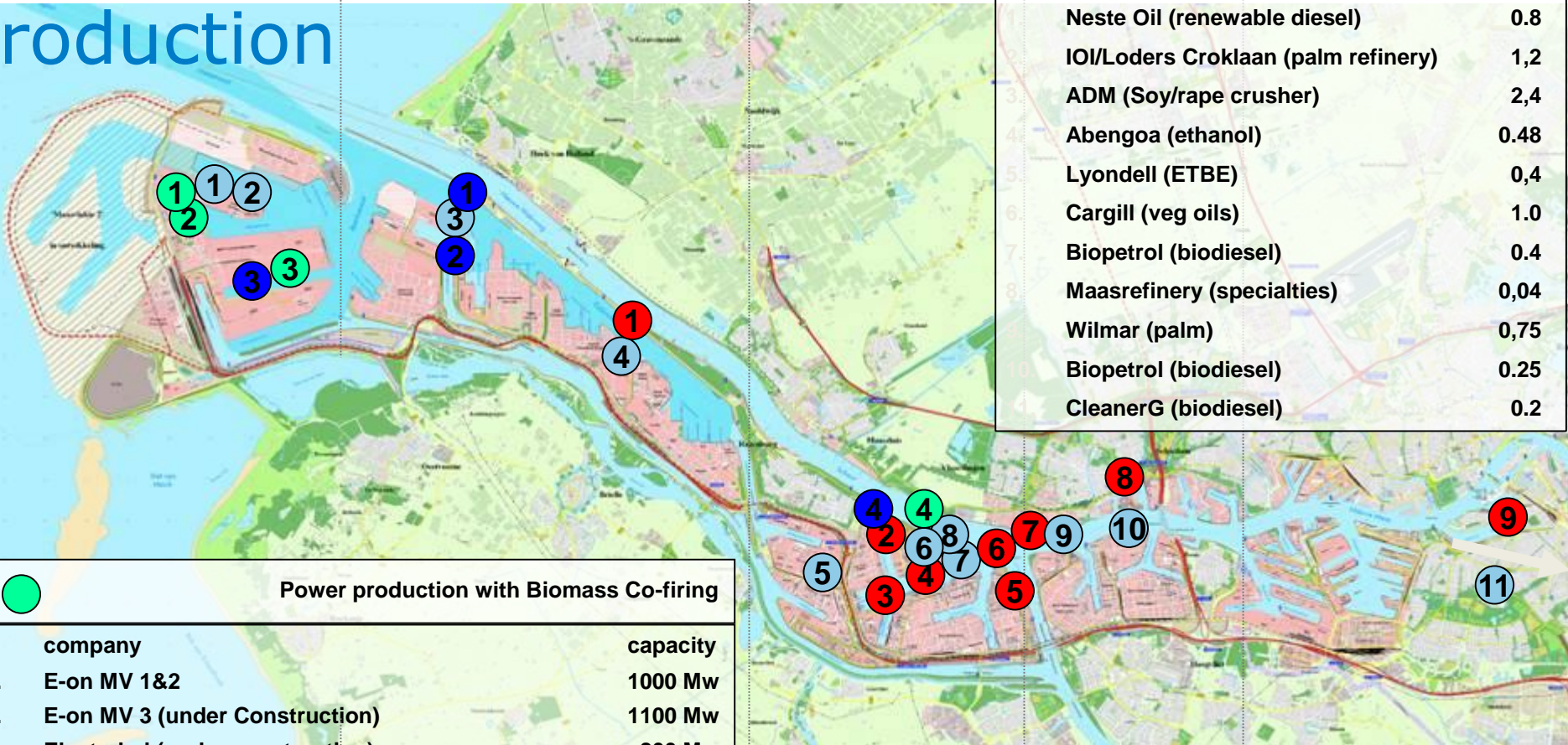
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# BioPort Rotterdam: production



Bio-production plants nameplate capacity in mln tonnes	
company	capacity
Neste Oil (renewable diesel)	0.8
IOI/Loders Croklaan (palm refinery)	1,2
ADM (Soy/rape crusher)	2,4
Abengoa (ethanol)	0.48
Lyondell (ETBE)	0,4
Cargill (veg oils)	1.0
Biopetrol (biodiesel)	0.4
Maasrefinery (specialties)	0,04
Wilmar (palm)	0,75
Biopetrol (biodiesel)	0.25
CleanerG (biodiesel)	0.2

Power production with Biomass Co-firing	
company	capacity
1. E-on MV 1&2	1000 Mw
2. E-on MV 3 (under Construction)	1100 Mw
3. Electrabel (under construction)	800 Mw
4. AVR-BEC (biomass only)	22 Mw



# BioPort expansion Maasvlakte 2

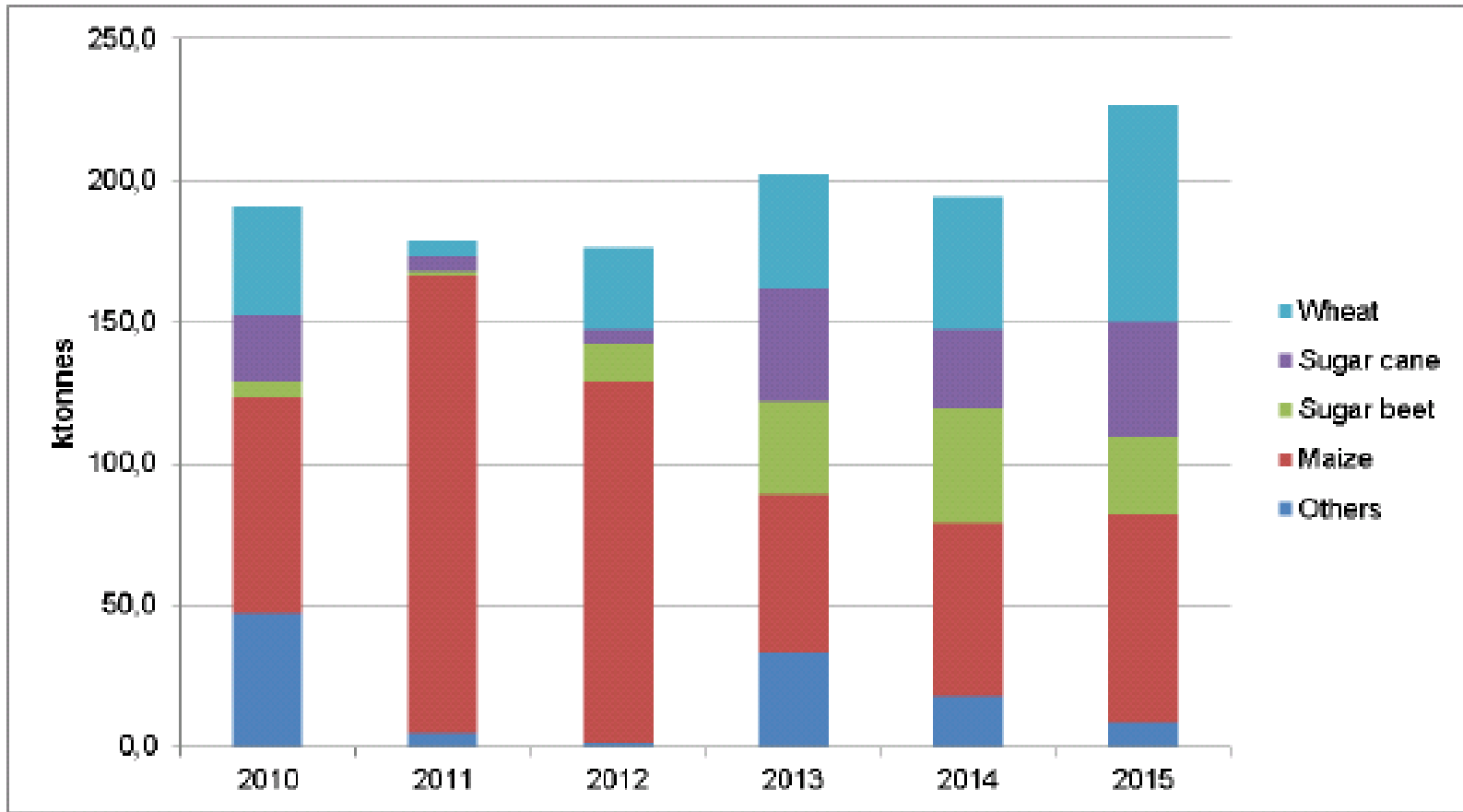


- 1 CO<sub>2</sub> Cluster**  
Storage, liquifaction and shipping of CO<sub>2</sub>.
- 2 Next generation biodiesel**  
Oils and fats - based biochemicals en fuels production facilities.
- 3 Multi-user jetty and storage**  
Sharing of infrastructure maximises efficiency in using it.
- 4 Ethanol based chemicals**  
Dry biomass based production of next generation ethanol and chemicals.
- 5 Handling and storage of dry biomass**  
Multi user storage and handling of all sorts of dry biomass.





# Ethanol Resources (mostly import)



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# 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



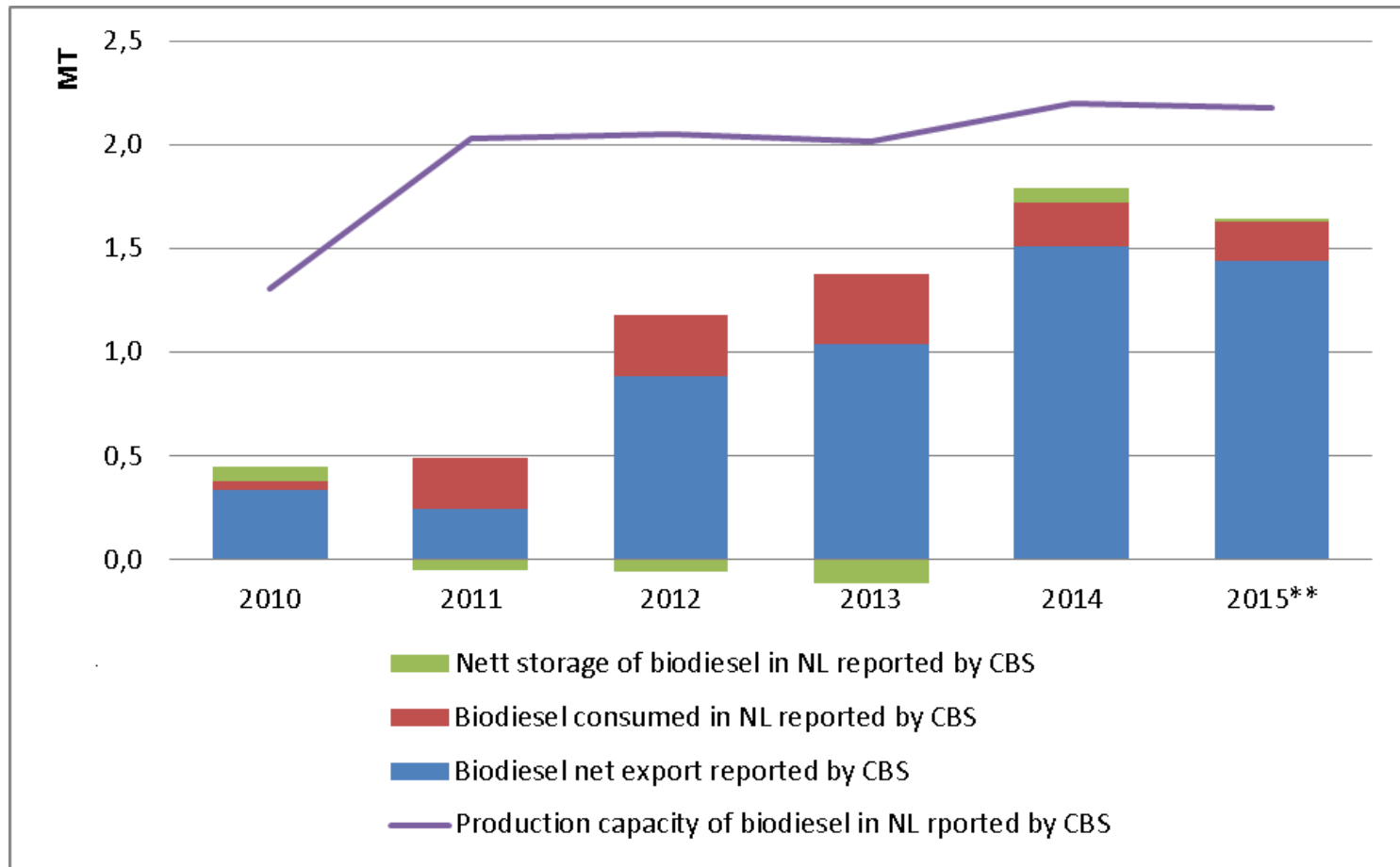
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# Biodiesel production/ consumption in NL



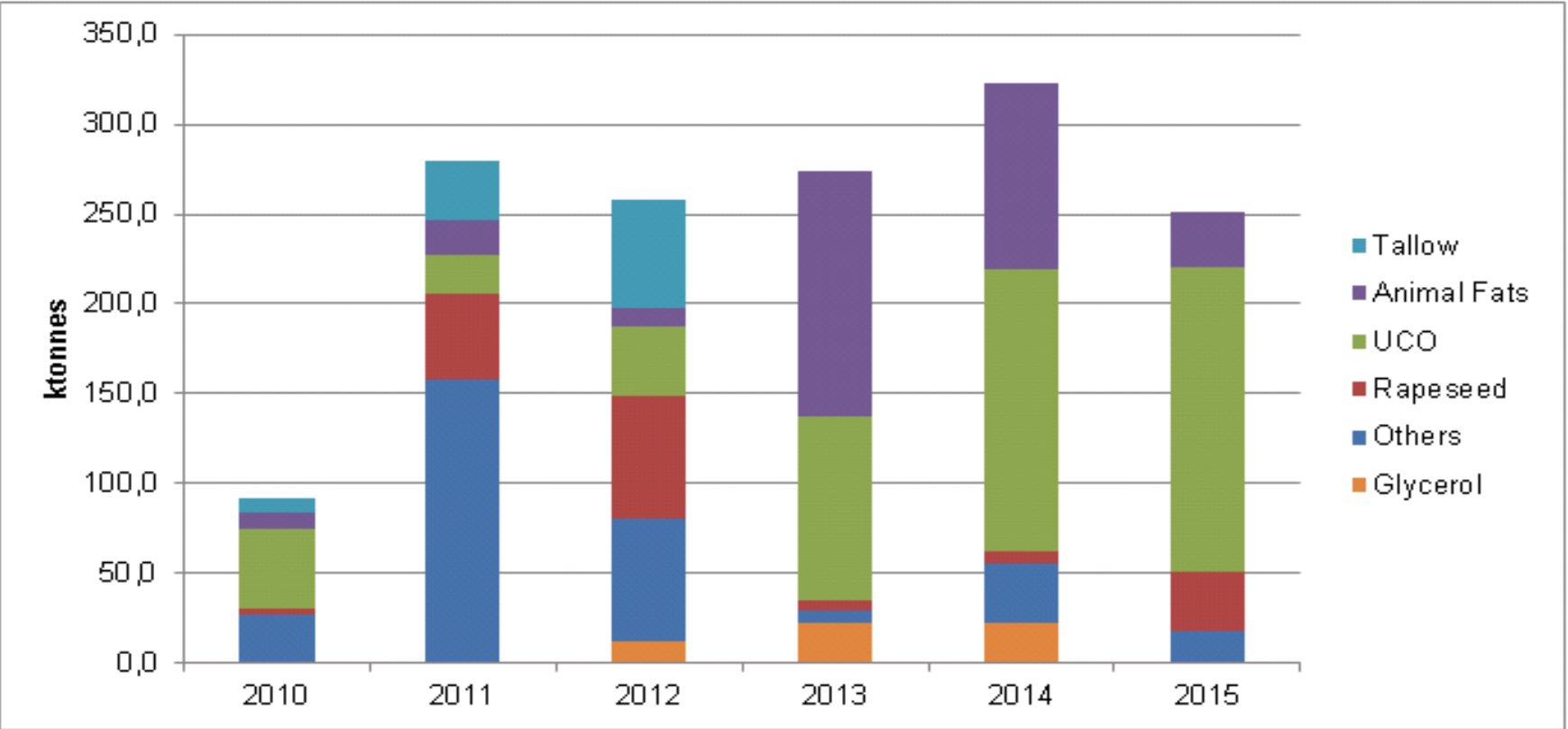
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# Resources for biodiesel in NL



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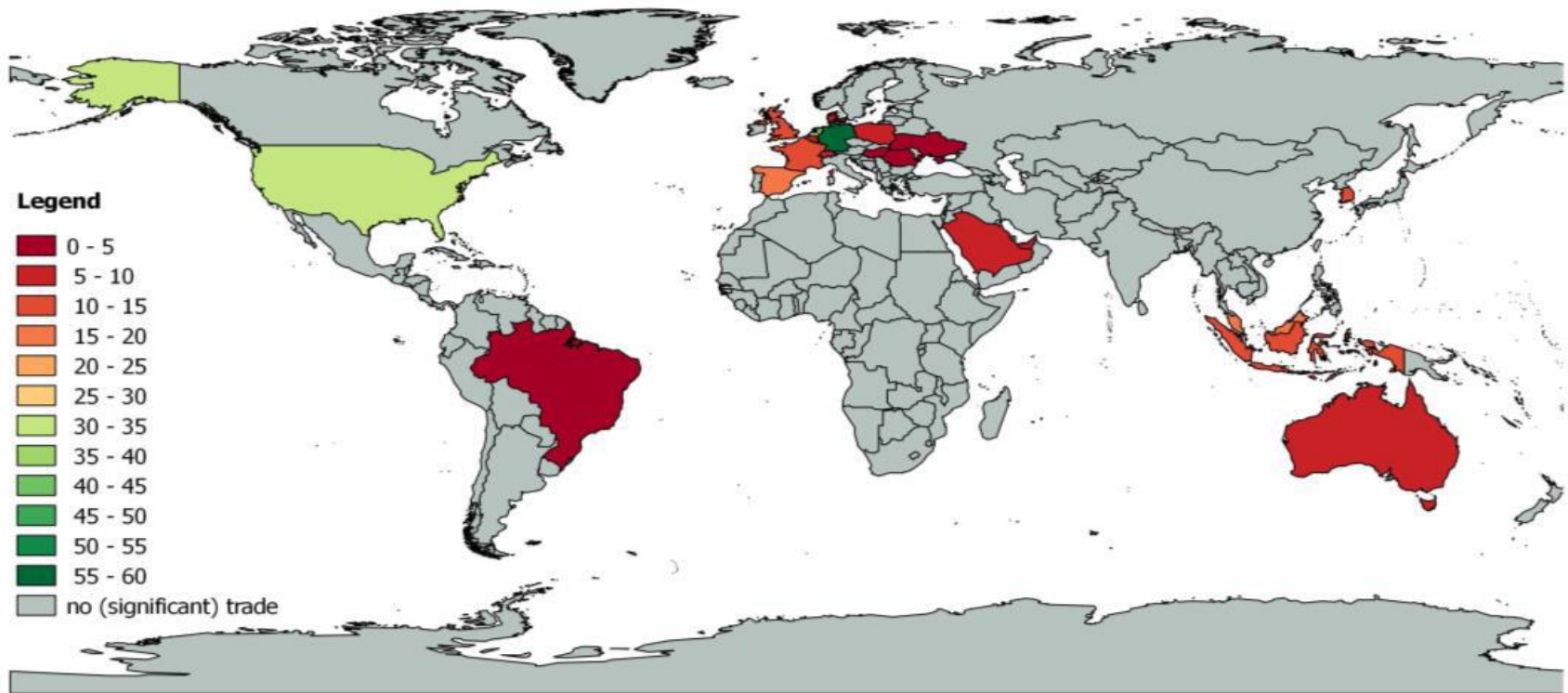




# From all over the world

Origin of feedstocks for biodiesel in kton on the Dutch market in 2015

Source: NEa (2016) converted to ktonnes final fuel (no MTBE, MEOH in 2015)



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# Biofuels Vision long term

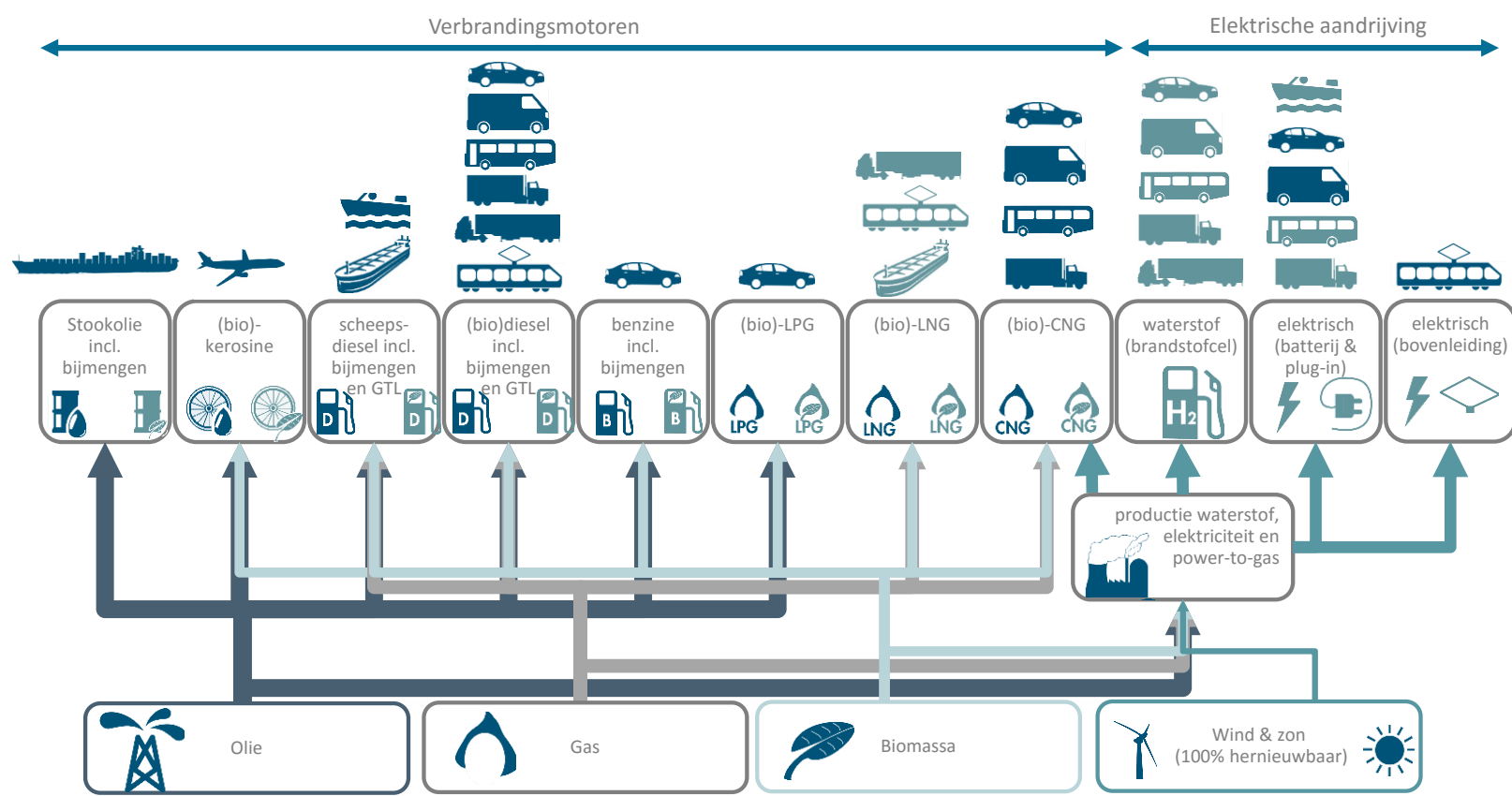


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# Greening the transport sector



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Ministerie van Infrastructuur en Milieu

3 november



# Vision sustainable fuelmix

- **Cars** transition form fossil to electrification (EV/H2), back up biofuels
- **Trucks** long distance LNG, short distance electrification (EV/H2)
- **Shipping** efficiency, transition to LNG
- **Aviation** biokerosine
- **Rail** sustainable electricity, replace diesel engines by LNG





BANEN  
-KANSEN-



EU  
2050  
12 MT CO<sub>2</sub>

2050 ALLE ENERGIE  
ZERO EMISSIE

ONZEKERHEDEN  
-ANGSTEN-



VOORWAARDEN

MARKT  
TOTAL COST  
OWNERSHIP  
- RIJKS-  
- GEMAK

OVERHEID  
- KLIMAT DOELEN  
- FUMSTOF, NO<sub>x</sub>  
- GELUID  
- ENERGIE ZEKERHEID  
- VEILIGHEID  
- SCHATKIST

MAATSCHAPPELIJK  
KOSTEN-  
EFFECTIEF



CO<sub>2</sub>  
OPSLAG



2014  
37 MT CO<sub>2</sub>



2035  
ALLE NIEUWE AUTO'S  
ZERO EMISSIE



SER  
2030  
25 MT CO<sub>2</sub>

2025  
ALLE BUSSEN  
ZERO EMISSION

VEILIGHEID  
BASISNET  
GEVAARLIJKE  
STOPPEN



BATTERIJ

BEV

PHEV

FCEV

BIO FUELS



BEV



PHEV



FCEV

LNG



BIO FUELS



BIO FUEL  
PRIJS  
BESCHIK



RASTRUCTUUR





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# Conclusion



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## Conclusion

- Biofuels part of Renewable Energy and part of Biobased Economy
- Sustainability certification implemented
- Production of biofuels with imported resources
- In the long term mix with other renewable resources ( H2, Electric Vehicles)



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***Thank you for  
your attention***

Questions?

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