Biofuel Policies in the Netherlands

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Netherlands now and in the year ???
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, CO2-reduction of 6% compared to 2010
  - Looks at the whole chain of production and use of fuels
  - No double counting 2nd generation biofuels
Biofuels contribute to Renewable Energy Obligation RED (COM 2009/28)
RE targets: RED: 2020: 14%
Biomass for Bioenergy use in Netherlands

- PJ

![Graph showing biomass use from 1990 to 2014](http://biobased-ukraine.nl)
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)
EU Sustainability Requirements

• For biofuels and other bio liquids for energy purposes:
  • GHG-emissions: ≥ 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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Certification system:

- **Standard:**
  - Principles
  - Criteria
  - Indicators

- **Certification scheme:**
  - Indicators & verifiers
  - Rules & regulations
  - Procedures

- **Certificate**

- **Label**

- **Certification organisation**
  - Inspection en verification

- **Standardisation organisation**
  - Developing the norm based on consensus

- **Expert committee**
  - Determine/maintain certification scheme

- **Accreditation body**
  - Control

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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 bij 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)
Biofuels Production
Bio-production plants
nameplate capacity in mln tonnes

<table>
<thead>
<tr>
<th>company</th>
<th>capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neste Oil (renewable diesel)</td>
<td>0.8</td>
</tr>
<tr>
<td>IOI/Loders Croklaan (palm refinery)</td>
<td>1.2</td>
</tr>
<tr>
<td>ADM (Soy/rape crusher)</td>
<td>2.4</td>
</tr>
<tr>
<td>Abengoa (ethanol)</td>
<td>0.48</td>
</tr>
<tr>
<td>Lyondell (ETBE)</td>
<td>0.4</td>
</tr>
<tr>
<td>Cargill (veg oils)</td>
<td>1.0</td>
</tr>
<tr>
<td>Biopetrol (biodiesel)</td>
<td>0.4</td>
</tr>
<tr>
<td>Maasrefinery (specialties)</td>
<td>0.04</td>
</tr>
<tr>
<td>Wilmar (palm)</td>
<td>0.75</td>
</tr>
<tr>
<td>Biopetrol (biodiesel)</td>
<td>0.25</td>
</tr>
<tr>
<td>CleanerG (biodiesel)</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Power production with Biomass Co-firing

<table>
<thead>
<tr>
<th>company</th>
<th>capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. E-on MV 1&amp;2</td>
<td>1000 Mw</td>
</tr>
<tr>
<td>2. E-on MV 3 (under Construction)</td>
<td>1100 Mw</td>
</tr>
<tr>
<td>3. Electrabel (under construction)</td>
<td>800 Mw</td>
</tr>
<tr>
<td>4. AVR-BEC (biomass only)</td>
<td>22 Mw</td>
</tr>
</tbody>
</table>
Ethanol Resources (mostly import)
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
Biodiesel production/ consumption in NL

- Nett storage of biodiesel in NL reported by CBS
- Biodiesel consumed in NL reported by CBS
- Biodiesel net export reported by CBS
- Production capacity of biodiesel in NL reported by CBS
Resources for biodiesel in NL

![Diagram showing biodiesel resources from 2010 to 2015](http://biobased-ukraine.nl)
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)

Legend
- 0 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 - 25
- 25 - 30
- 30 - 35
- 35 - 40
- 40 - 45
- 45 - 50
- 50 - 55
- 55 - 60
- no (significant) trade

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Biofuels Vision long term
Greening the transport sector

Verbrandingsmotoren

Elektrische aandrijving

Stookolie incl. bijmengen

(bio)-kerosine

scheepsdiesel incl. bijmengen en GTL

(bio)diesel incl. bijmengen en GTL

benzine incl. bijmengen

(bio)-LPG

(bio)-LNG

(bio)-CNG

productie waterstof, elektriciteit en power-to-gas

waterstof (brandstofcel)

elektrisch (batterij & plug-in)
elektrisch (bovenleiding)

Olie

Gas

Biomassa

Wind & zon (100% hernieuwbaar)

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Ministerie van Infrastructuur en Milieu

3 november
Vision sustainable fuelmix

• **Cars** transition from 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
Conclusion
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)
Thank you for your attention

Questions?
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