





THE NETHERLANDS COUNTRY REPORT

Berend Vreugdenhil
Skive, Denmark
23rd of October 2017



Change of Government

Currently VVD (liberals) and PvdA (socialist) 2012 -2017

After the elections –PVV number 2



But no one wants to work with this man.

ecm.nl

The winner is

VVD – Economic/Liberal party

CDA – Christian Democratic

D66 – Social Liberal Progressive

Christen Unie – Christian and Social

As of October they started leaking their plans for the coming four years

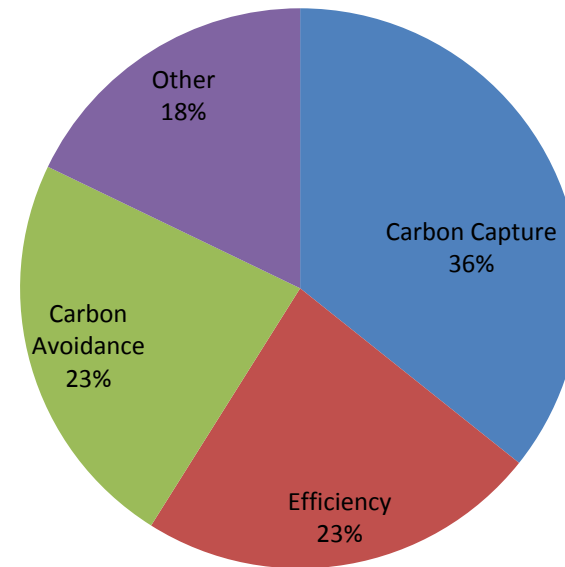


The Netherlands 2017 - 2020

CO₂ capture and storage

- 56 Mton CO₂ reduction
- 12 Mton → Shutting down coal
- 18 Mton → Industry CCS
- 2 Mton → Waste incineration
- Rest is efficiency, wind, solar, biofuels etc...

Reduction of 56 Mton CO₂



The Netherlands 2017 - 2020

Ban on coal

- 5 power stations on coals should be closed in 2030 (12 Mton CO₂ savings)
- 6 GW additional wind (3,5 GW planned to 2023 and 7 GW planned to 2030)



The Netherlands 2017 - 2020

Natural gas usage

- Goal is to deliver new homes without gas connection (still by law they need to be connected)
- Increase tax on NG and introduction of a minimum CO₂ price for the electricity sector (18€/ton in 2020 → 43 €/ton in 2030)
- Reduce NG exploitation bij 1.5 billion m³



Status update gasification developments



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- Heat production
- Power production
- Green Gas production
- Syngas production
- WtE projects



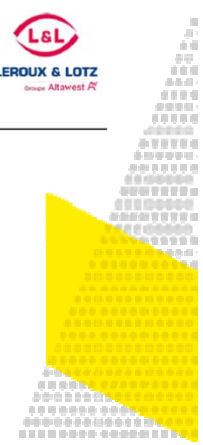
CFB Gasifier of ESKA



- Fuel: 25 kton/y rejects
- Air blown CFB gasifier coupled to a steam boiler
- Saturated steam production @ 16 bar
- Fuel load 12 MW_{th}
- Thermal efficiency ~ 85%

- Performance tests finished. Most topics are according to specifications
- Thermal load ~ 100%
- RDF uptime 70% (monthly basis)
- Steam uptime is >90%
- Performance is not optimal due to reject quality (moisture and fiber content)

Start in 2015



Amer gasifier – RWE

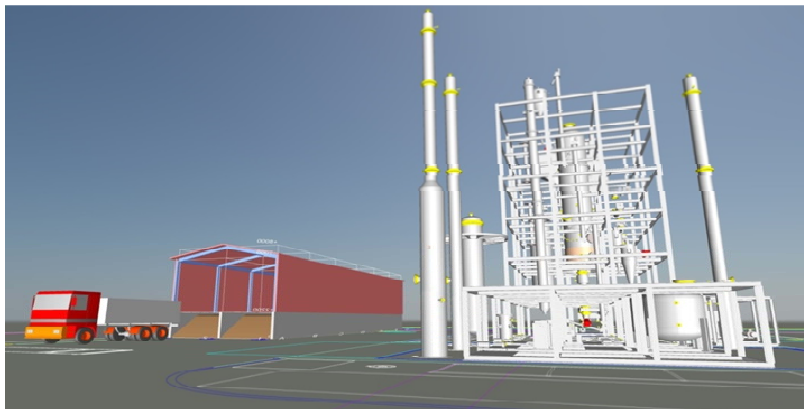


- 3 SDE+ subsidy granted for the Amer location in Geertruidenberg
- 1 SDE+ subsidy granted for Eemshaven
- RWE focusses on CO₂ neutral park by 2030
- Feedstock diversification is part of this, to become future proof.



Green Gas developments - AMBIGO

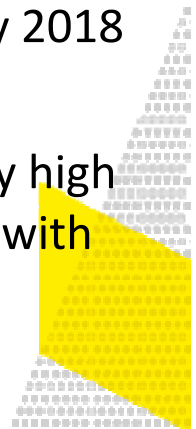
Alkmaar demonstration
FID expected Q4 2017



Torrgas development



- Pyrolysis unit did not reach sufficient functionality
- Additional unit will be added and has been proven successful in a stand alone approach.
- Modification planned for Dec/Jan
- Continue testing until March
- FID for the 10 MW_{th} expected May 2018
- Highlight: Char produced with very high porosity and pyrolysis performed with less than 3% condensables



DRT / Synova development

AMBIGO

Showcase in the Netherlands for Green Gas production

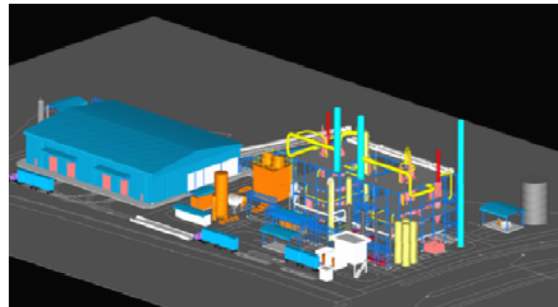
Finalizing contracts



Thailand

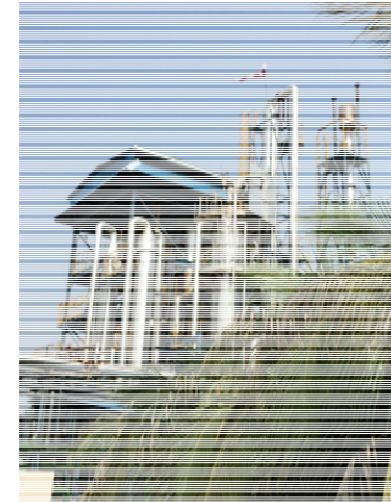
Showcase in Thailand for WtE using turbines.

Awaiting PPA



India

Showcase in India for Soya to electricity using engines



MORE INFORMATION

Berend Vreugdenhil

ECN

Westerduinweg 3
1755 LE Petten
The Netherlands

P.O. Box 1
1755 ZG Petten
The Netherlands

T +31 224 564 504
M +31 610 111 176

vreugdenhil@ecn.nl
www.ecn.nl

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