

Co-firing in The Netherlands: The need for a secure supply

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Prepared for Exco55





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- New challenge...



Power Capacity 5500 MW

Turnover:

7,1 billion €

Profit:

389 million €

Market Share Essent Retail:

Green E © : 31%

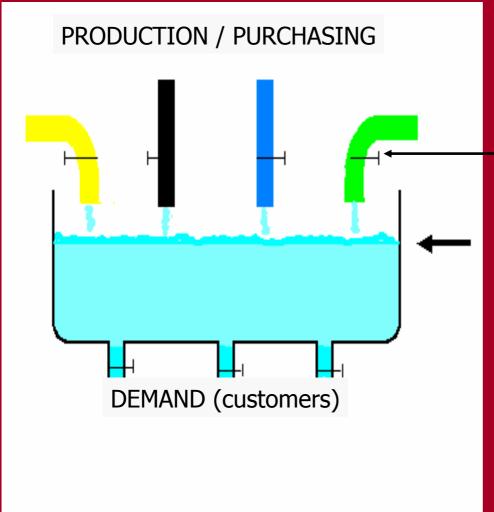
Electricity: 26%

Gas: 24%

Heat: 16%



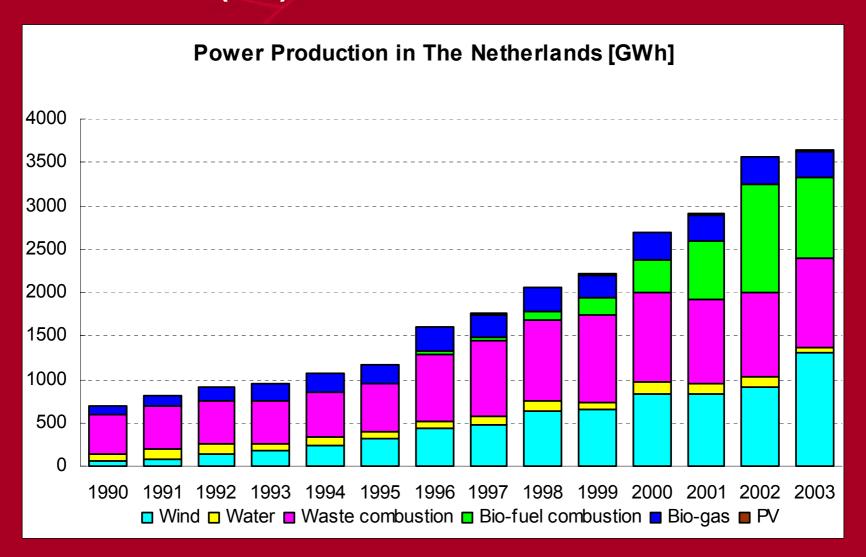
Matching demand and supply



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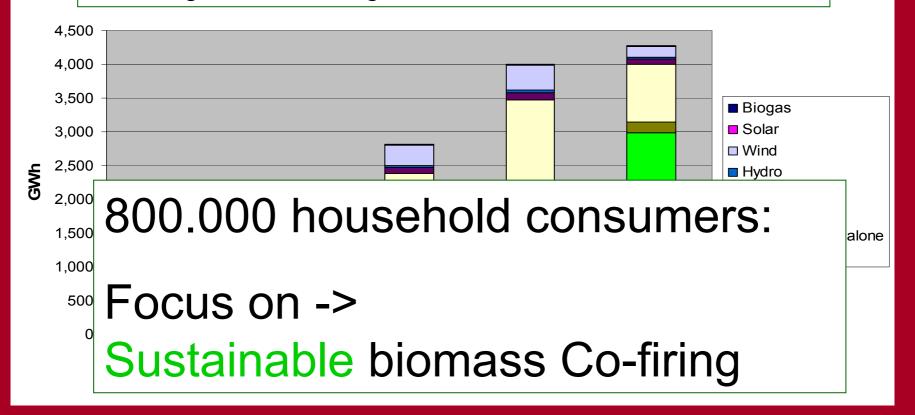
Realisatie (NL) (source: www.energie.nl)



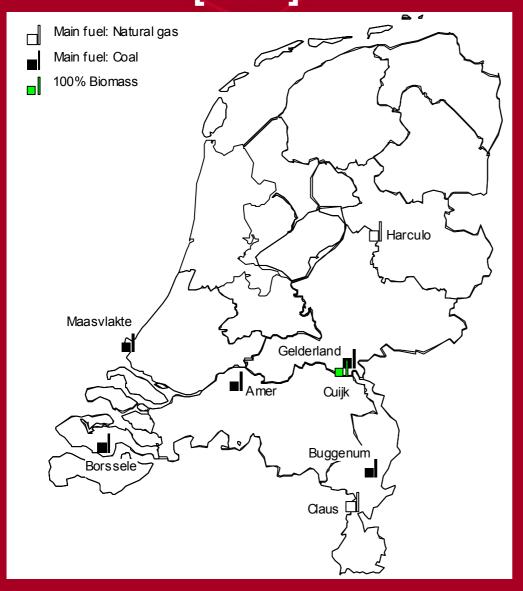


A high fast growing demand: needs a flexible portfolio!

- wind, solar -> no control
- standalone biomass combustion, hydro -> low control
- co-firing biomass -> high control



Biomass (Co-)firing in The Netherlands -essent -essent



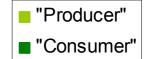
.....However, biomass is currently only co-fired in eight out of twenty five coal- and gas power plants......

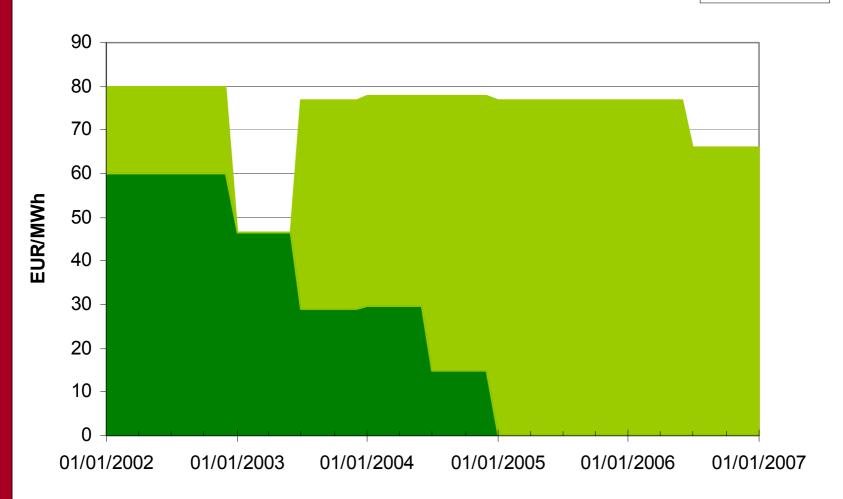
Source:

M. Junginger, A Faaij. Country report IEA Bioenergy Task 40 for The Netherlands, forthcoming



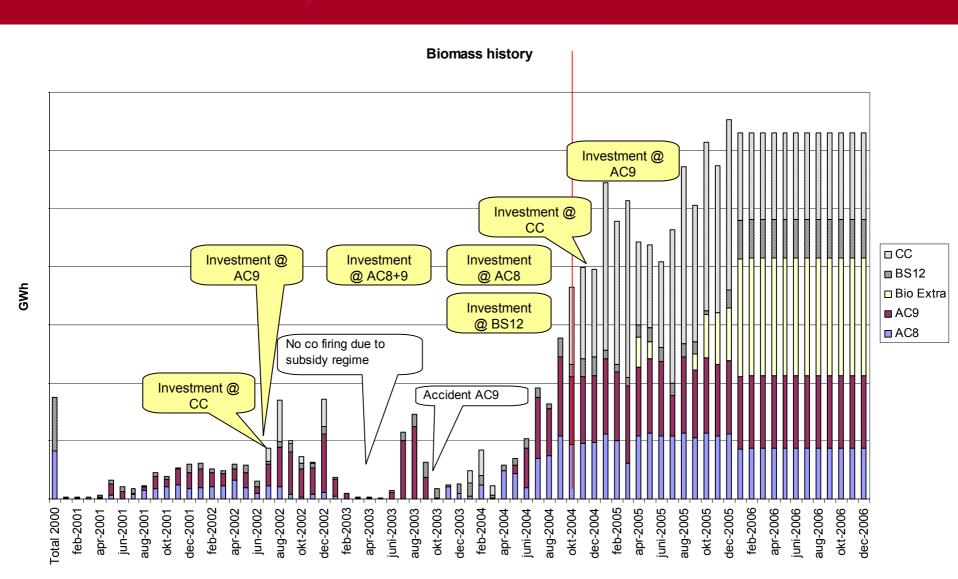








Co-firing: history and forecast (Cal-04 Q4)



BEC Cuijk





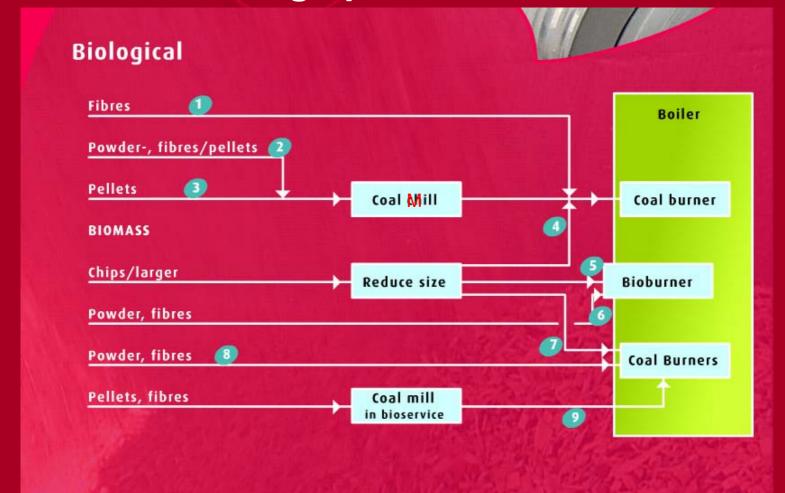
Wood Gasification Unit @ Amer 9





Solids co-firing options: 1-9





AC81: 5 (former 2, 3)

AC91: 9 (former 2, 3)

BS12: 1, 2, 3, 5, 6

Amercentrale Geertruidenberg





Technology: PC Boiler

Capacity: 600 MWe

Fuel: Coal + Bio-fuel ("pellets") [2003]

Bio-Fuel capacity 300 kton/yr [2003] +

300 kton/yr [Apr 2005]

-> app. 160 MWe Bio of 600 MWe

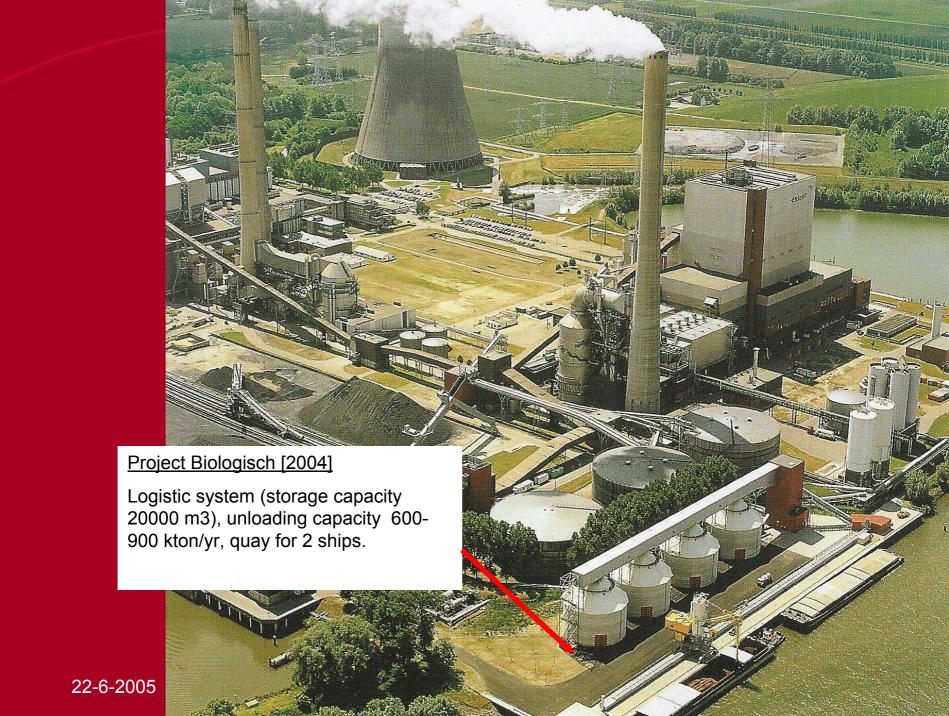
Technology: PC Boiler

Capacity: 650 MWe

Fuel: Coal + Bio-fuel (Technology:

hammermill [2004])

Bio-Fuel capacity 300 kton/yr



centrale Borssele





Clauscentrale Maasbracht





Development Bio-energy @ Essent -essent



22-6-2005

17





FAIR Biotrade project [2002-2004]

Subjects of publications by FBT project:

- life cycle inventory on woodpellets and palmkernelexpeller
- global potential study
- inventarisation of certification systems
- impact analysis of sustainability criteria

- ✓ by Universiteit Utrecht and Essent
- ✓ support by SenterNovem
- ✓ results see: www.fairbiotrade.org





IEA Bio-energy T40

Sustainable International Bio-energy Trade: Securing Supply and Demand

The future vision on global bio energy trade is that it develops over time into a real "commodity market" which will secure supply and demand in a sustainable way; sustainability is a key factor for long-term security.

This task aims to investigate what is needed to create that "commodity market" for bio-energy.

www.fairbiotrade.org

2004-2006

IEA Bioenergy

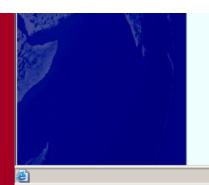
Task 40

Green Gold Label: www.skalint.com_esser



= TRACKING AND TRACE SYSTEM

- To ensure quality and sustainability
- Making use of existing certifications systems (where possible)
- Accreditation in Q4 2005 -> Green Gold Label foundation with independent advisory board (representatives from e.g. Probos, Houtindustrie Schijndel, Unilever, Solidaridad, Jongeneel Agencies Control Union)
- Already implemented practical system



creating wastelands all in the name of "reducing the fossil CO2 emission and saving the environment".

The Green Gold Label quality system (GGL) aims at a track and trace system for biomass from (by-) products from the power plant (and its green power it produces) back to the sustainable source. In this system mixing or contamination with non-intrinsic or environmentally harmful materials is prohibited. In every link of the chain written proof must be available that the GGL quality system is supported, sustained and maintained.

This track and trace system features certification (of the source, suppliers and production) and inspection of transport and storage. Certificates of cleanliness are checked for transportation and storage. Chemical analyses are done to confirm that the material delivered at the power plant is the same material as shipped by the seller.

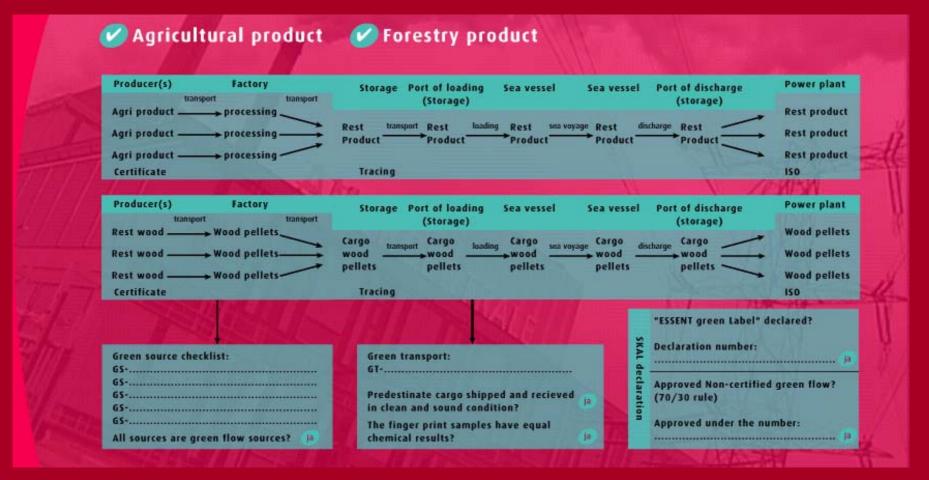
Internet

Green Gold Label: Chain of custody



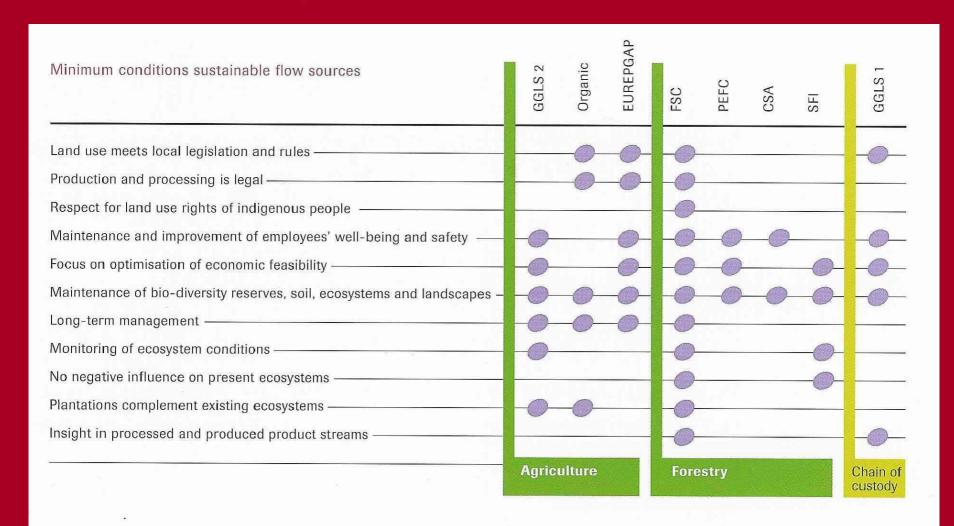








Current sustainability criteria by GGL



Essent's Approach: "Sustainable Business Model"



- Building infrastructure for Biotrade on short term is necessary for the increase of biomass production and utilization on the long term.
 - Focus first on existing biomass residues or underutilized resources worldwide and existing infrastructures
 - -> create demand, supply will follow
- International bio trade will create stable markets and contribute to sustainable development in importing AND exporting regions.
- Control the whole chain of custody, from resources to green power. Ensure sustainability (and supply)
- Essent's EMG STO ambition -> "40% of supplied power will be sustainable in 2010". (app. 8 TWh) [May 2005]

The need for supply..... The need for demand



- Third energy white paper of the Netherlands, published in 1995: 10% contribution from renewable energy sources in 2020 in the Netherlands was set (Ministry of Economic Affairs, 1995).
- For 2005, the Dutch government has set a of 6% renewable electricity, and targets of 9% renewable electricity supply in 2010, and 17% in 2020 (Ministry of Economic Affairs, 1995; Ministry of Economic Affairs, 1997; Ministry of Economic Affairs, 1999)
- Coal covenant between the power producers and the Dutch Ministry of the Environment, signed in 2002, in which the Dutch electricity production companies committed themselves to CO2-reduction of 3.2 Mton between 2008-2012
- Energy Transition . ..a number of experts formulated a biomass vision for the long term, supported by government and the market (Ministry of Economic Affairs, 2004c). The potential use and ambitions levels are high: possibly 30% of the total energy consumption of the Netherlands may be covered by biomass energy in 2040...
- 10 May 2005: Biomass projects on plants > 50 MWe (=cofiring) MEP=0 [reason: target 2005 will be reached. larger projects on hold]



Thank you. Questions?

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