



NL Agency
Ministry of Economic Affairs



Welcome

Developments in Sustainable
Biomass Valorisation

EU-India Collaboration

Utrecht

Kees Kwant

30/10/2013

Kees Kwant

» *Als het gaat om duurzaamheid,
innovatie en internationaal*



NL Agency, The Netherlands

Department of Ministry of
Economic Affairs

- Innovation
- Energy and Climate
- International Cooperation
- Patent office

- 2000 people
- Focus on: 
 - Financing
 - Information exchange
 - Know how
- Program management
- Offices: The Hague, Utrecht,
Zwolle, Sittard



Agentschap NL
Ministerie van Economische Zaken





Minisymposium and Twinning Workshop

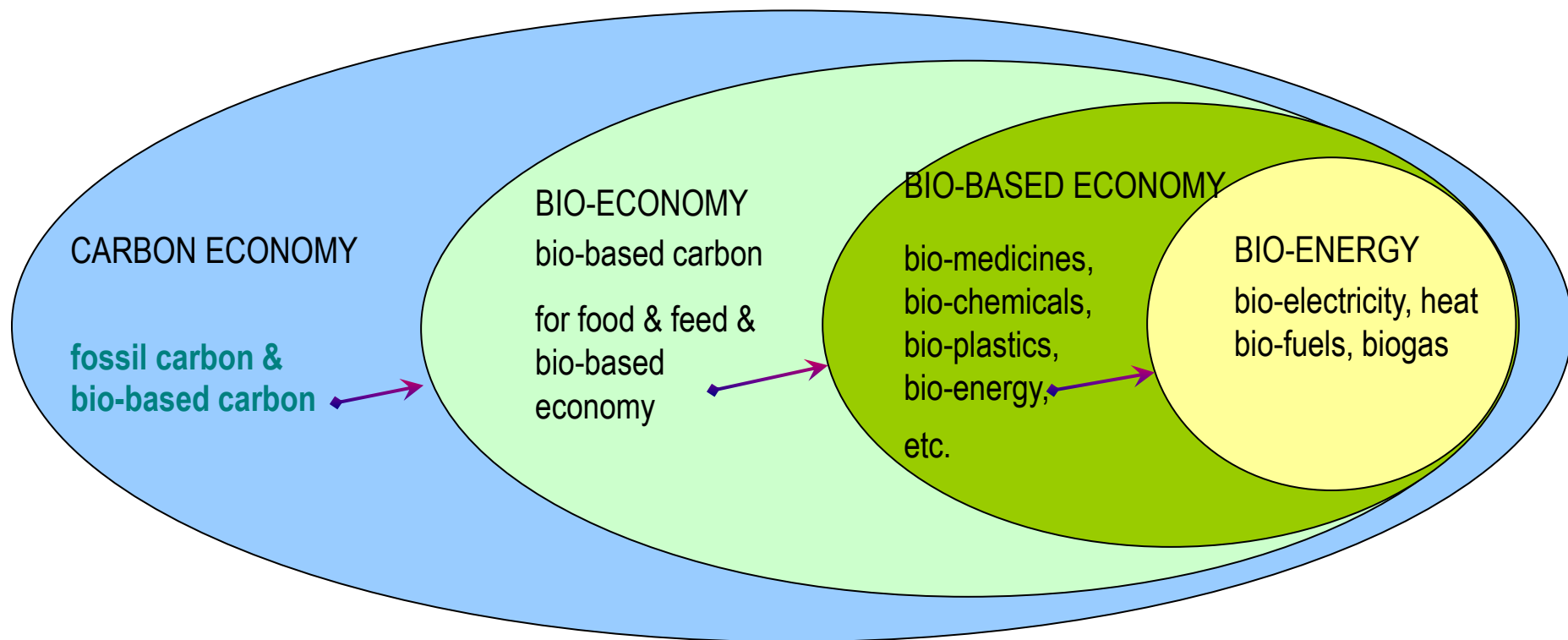
Developments in Sustainable Biomass Valorisation

Goal:

- What are the drivers for Sustainable Biomass Utilisation
- What policies and Roadmaps can lead to more sustainable biomass
- What is the role of industry? Private Public Partnerships?
- How can we collaborate?

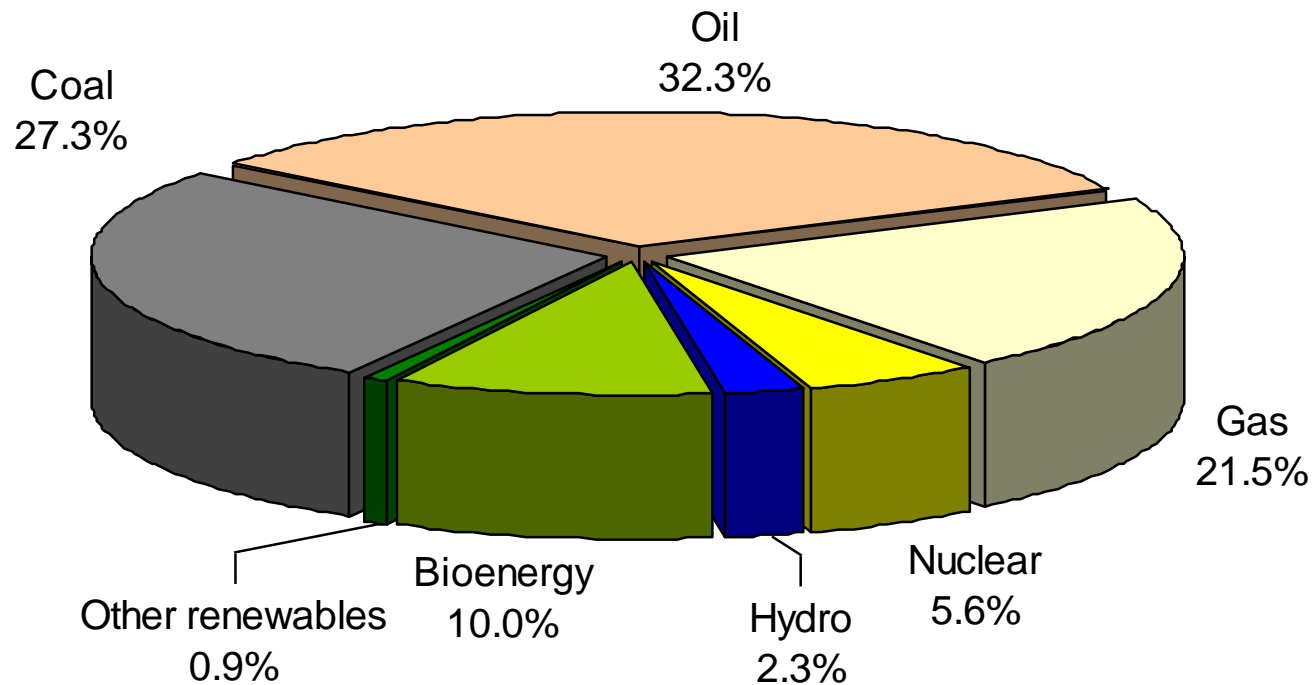


The Biobased Economy within the Bio-Economy





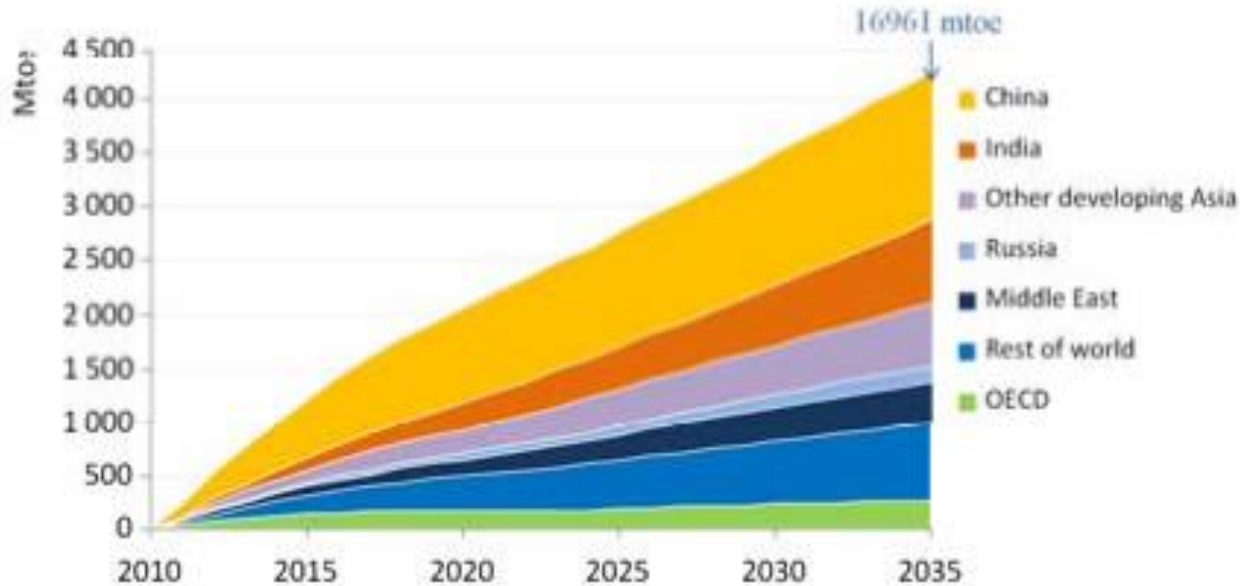
World Energy Demand 2012, (IEA) Total 533 EJ





Emerging economies continue to drive global energy demand

Growth in primary energy demand - by region

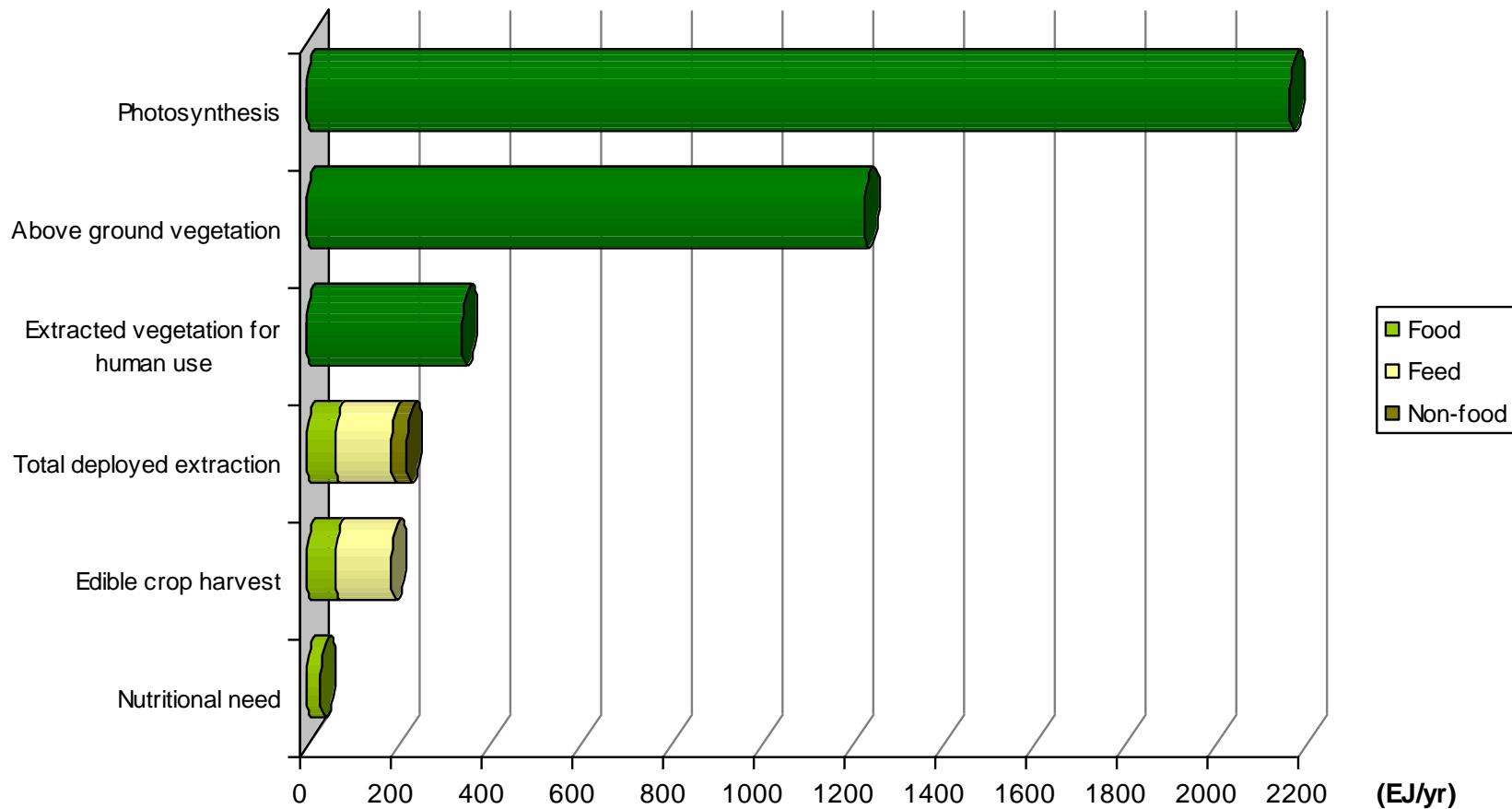


- Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth

© IEA/NEA 2012



Total Global Biological Carbon





Fossil and Bio-based Carbon blaance

World carbon based resource consumption	Fossil based primary use	Fossil based end use	Bio-based primary use	Bio-based end use
	EJ/yr	EJ/yr	EJ/yr	EJ/yr
Total extracted	432		342	
Total deployed	426		222	
Edible crop harvest (in 2000)			187	30
<i>Of which feed</i>			124	
Electricity & heat	152	57	30	Na
Non-food application (fuels/ chemicals/plastics/ materials)	275	235	6	Na
<i>Of which non-energy use*</i>	33		Na	Na



Sustainable Production of biomass

- Improving yields in agriculture (with better crops, cultures, nursing, care)
- Nutrient recycling
- Optimal use of water (drip irrigation)
- Minimal pesticide (organic pest control)
- Minimal energy use in production chains



A Trias Biologica for an integrated production system for food, energy and materials



Decarbonizing

- Minimizing material and energy use



Replace Fossil Carbon with Biobased Carbon

- and use sustainably produced Carbon



Cascading

- Biorefinery approach
- Circular chains



Minisymposium Sustainable Biomass Valorisation

1. EU-India Cooperation, Philippe de Taxis du Poet
2. Sahyog Project, Neeta Sharma
3. The Netherlands Biobased Economy policies, Marc Nellen

COFFEE

1. Sustainable international biobased Business, Daan Dijk
2. Indian Industry Perspectives, Priyangshu Sarma
3. Public Private Partnerships, Bram Brouwer

LUNCH

1. Introduction to Twinning Workshop, Dominik Rutz
2. Panel Discussion moderated by Rob Bakker

TEA

1. Brokerage Event



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BIOENERGY -> BIOBASED

Netherlands

2013

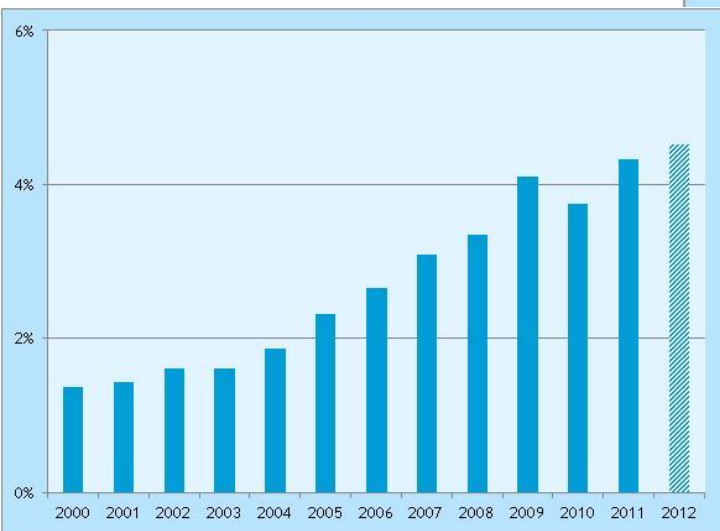
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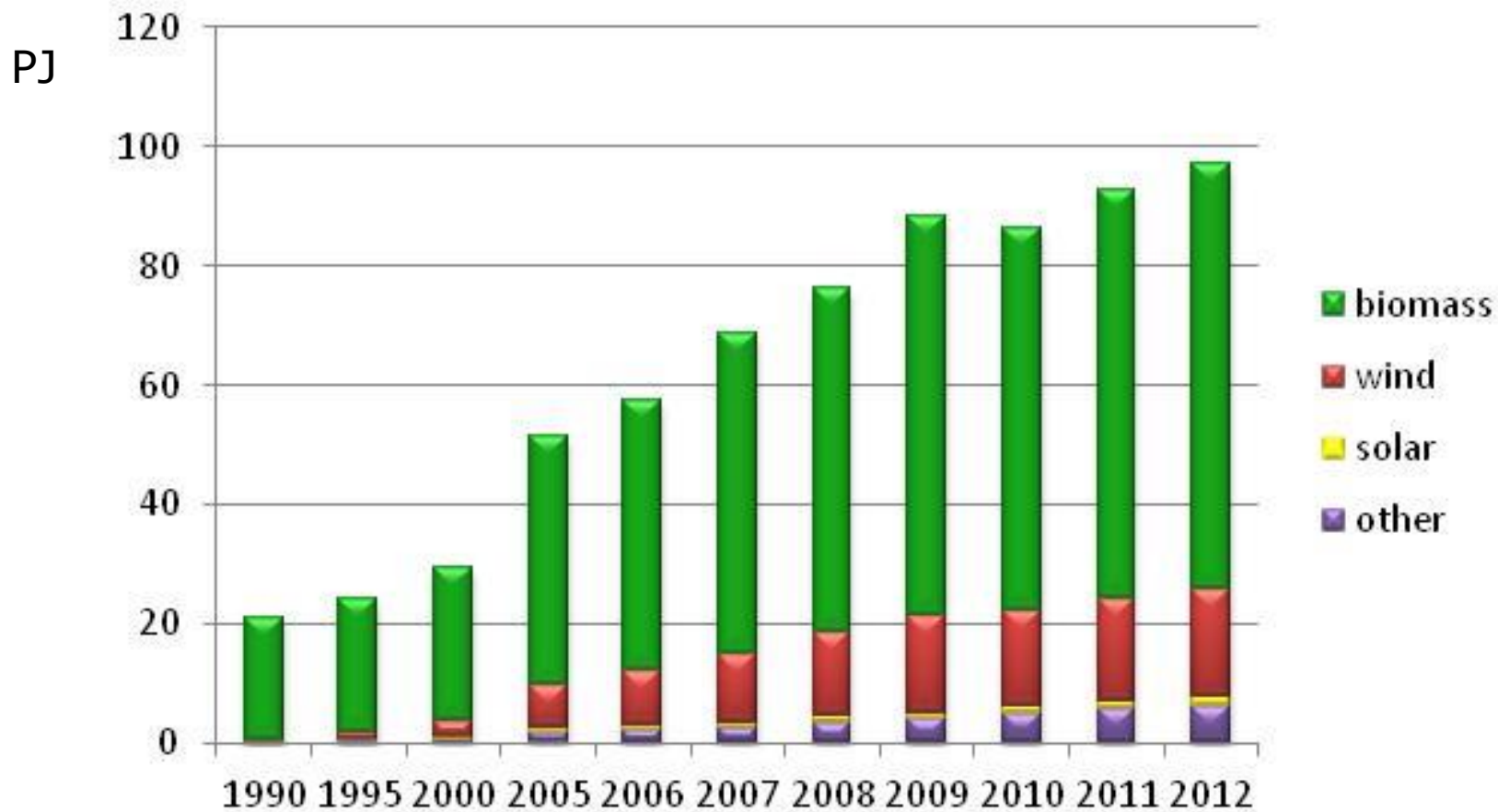
1.RE targets: RED: 2020: 14%, NL gvt: 16%



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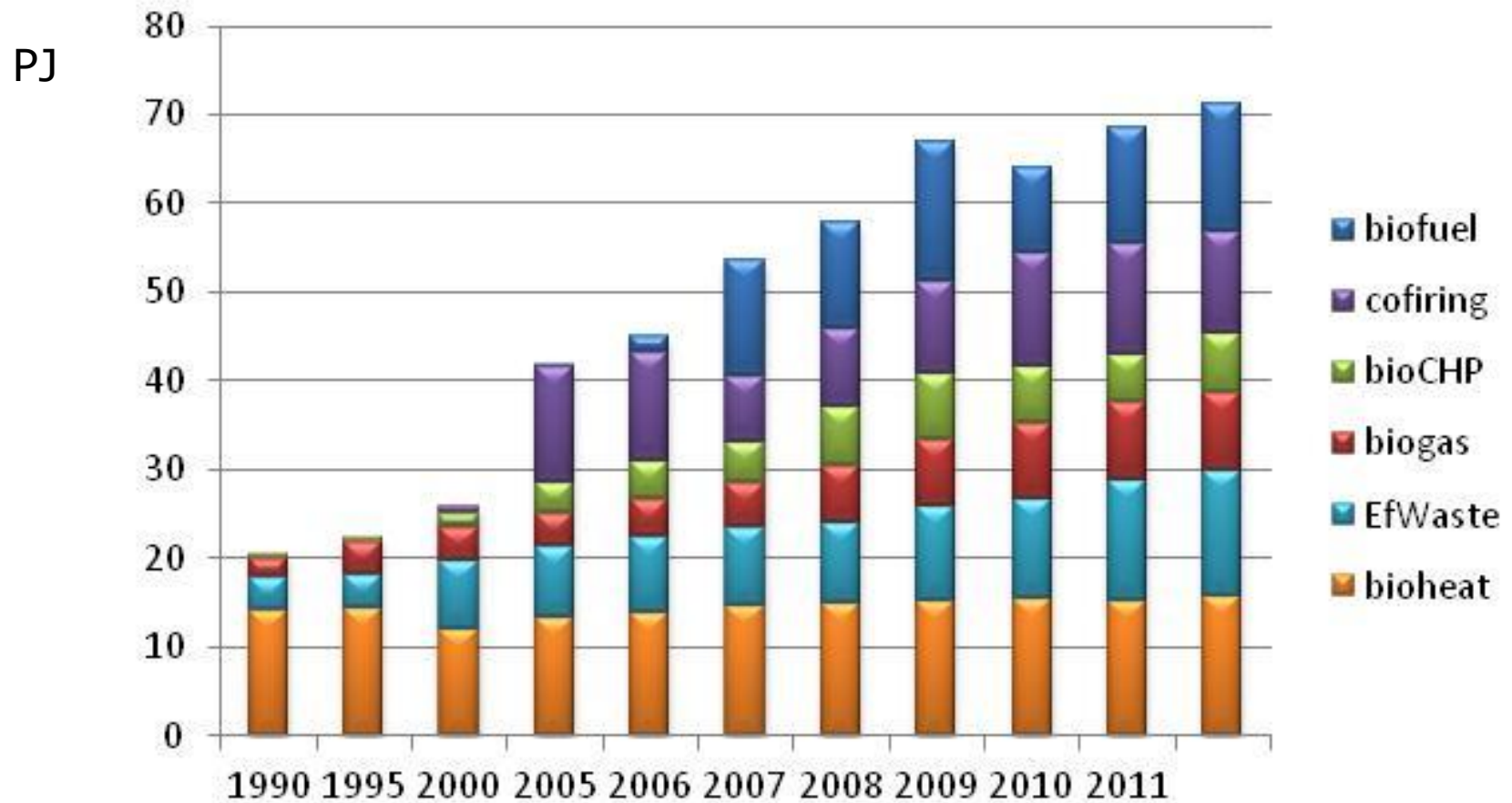
Results: About 70% realised with Bioenergy



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Bioenergy options



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Power and Heat from Municipal Solid Waste

5.5 Mton waste

After recycling

No more landfilling

For power and Heat (Rotterdam)

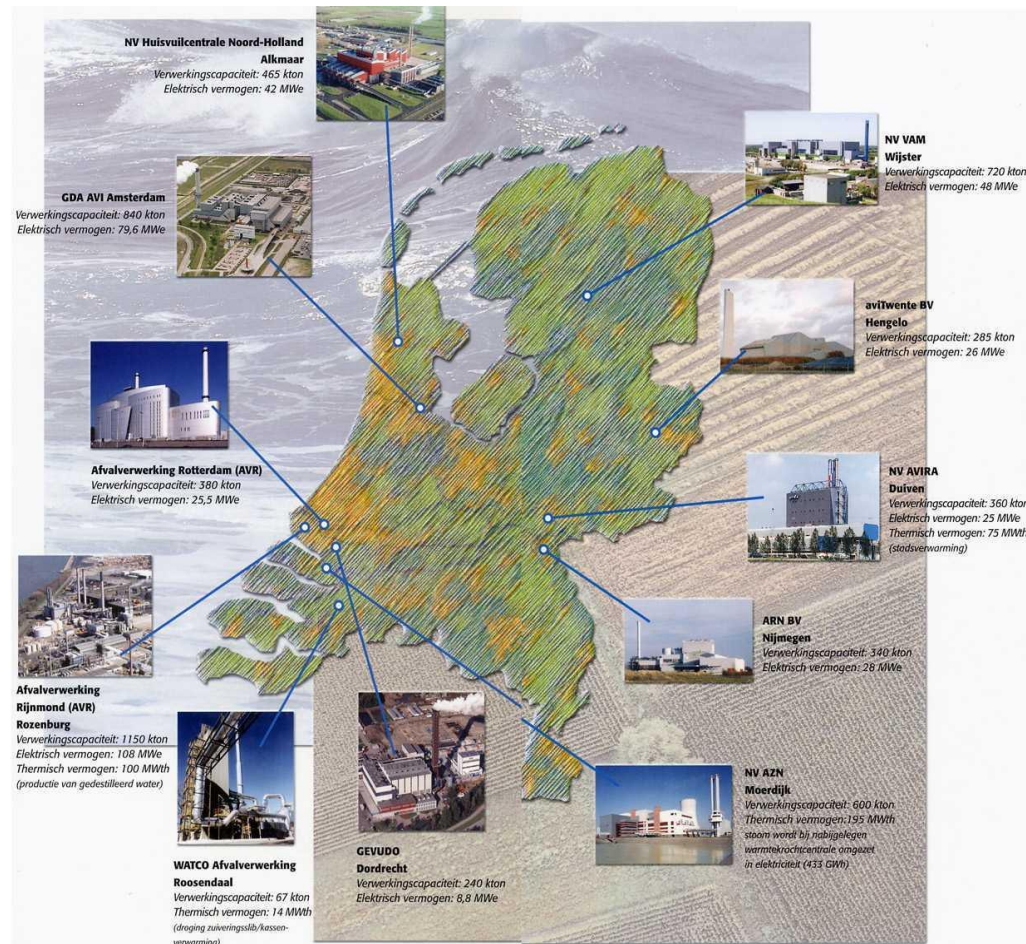
Import of waste in EU market

Afvalverbrandingsinstallaties in Nederland

Waste to Energy Plants in the Netherlands

Elektrisch vermogen = Electric Power in MWe

Verwerkingscapaciteit = Waste capacity in kTon/a

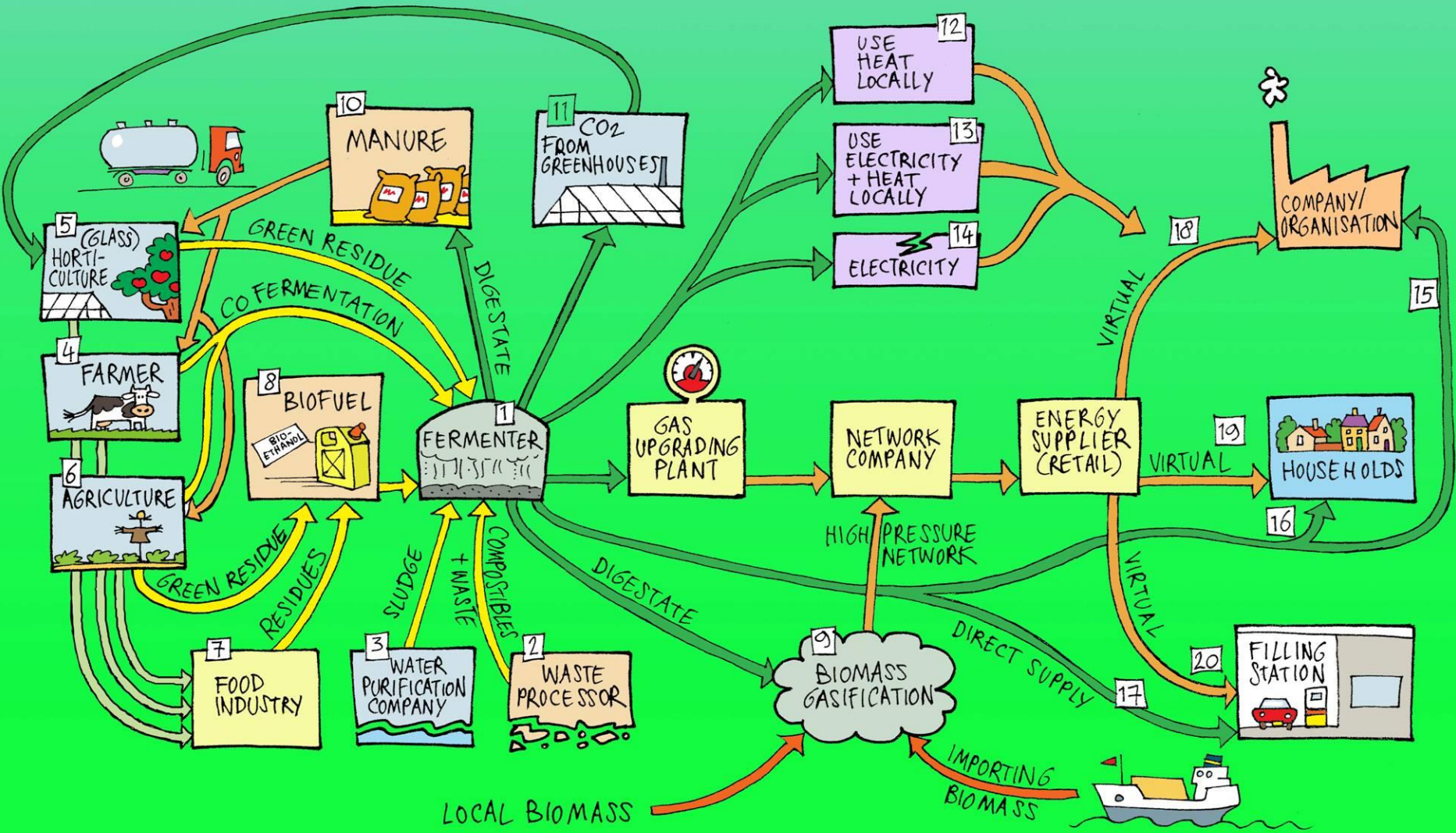


» Als het gaat om duurzaamheid, innovatie en internationaal

THE GREEN GAS CHAIN

20 ROUTES TO GREEN GAS

GREEN GAS WORKING GROUP / NEW GAS PLATFORM





Good practice example with heat utilisation (Zeewolde)

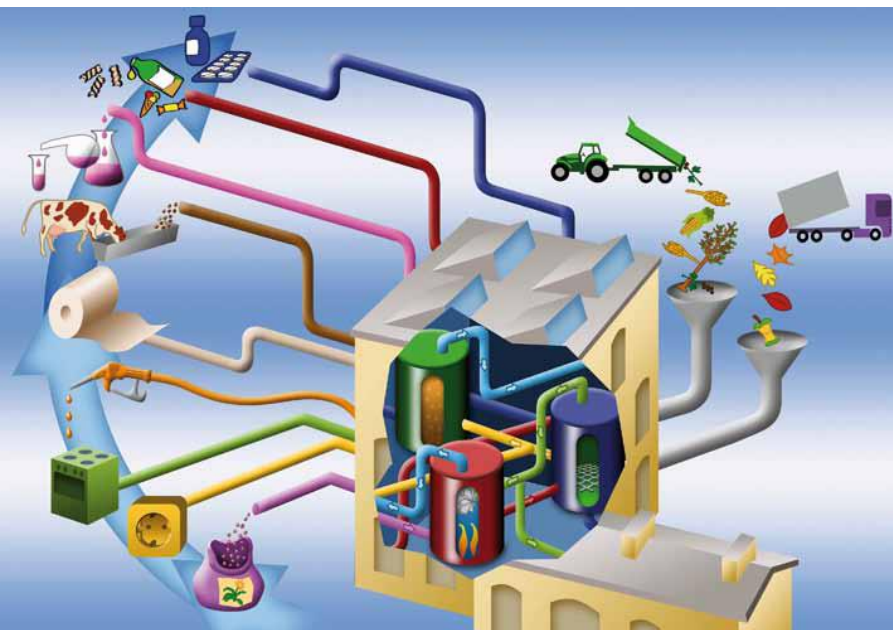


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Biorefineries in the Netherlands

Valorisation for products and bioenergy



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Sustainability criteria

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



NTA 8080 certification system for sustainable biomass for energy, [www.nta.nl](#)

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innovatie en internationaal



Unbeatable beat

Biorefinery

- Create value for farmer
- 22 – 25 ton/ha
- Use beat, leaf, root
- Pilot products for chemical industry



<http://www.cosun.com/en/>



Learning and Practical experiences

Subsidy programmes for sustainable biomass: In total 41 projects

Additional projects commissioned by NL Agency:

- What are direct effects?
 - Development of toolbox
 - Jatropha assessment (incl. business cases)
- Certification: lessons learned
- Indirect effects, add ons to low risk iLuc production
- Regional support for upscaling and duplication

Web: www.agentschapnl.nl/biomass



Future

New Energy Agreement (SER)

- Stimulating Wind & Solar
 - Maximum of 25 PJ on cofiring
 - Strong emphasis on sustainability
 - Burning of biomass is seen as a bad use
 - Request for cascading of biomass
 - Focus on chemical use of biomass
 - Motion Parliament: reuse biomass before cofiring
-
- International Cooperation





Thank you for your attention
QUESTIONS?

MORE INFORMATION:

WWW.AGENTSCHAPNL.NL/BIOMASS

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