



“Renewable Energy in the Netherlands” Banská Bystrica, SK June 2009

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Agentschap

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First Regional Energy Agency





Content presentation

- Short introduction to EREA and the cities of Zoetermeer and Delft
- Renewable energy in the Netherlands
- Dutch financial and legal Instruments
- Thermal solar system explained
- Examples of local renewable energy projects



Short introduction



First Regional Energy Agency

- Result of the merge between the Energy Agency Zoetermeer and the Delft Energy Agency
- Started 1-12-2007
- Bringing partners together for energy efficiency and renewable energy (reduction of CO₂-emission, air quality)









SUPPORT_ERS

Intelligent Energy  Europe







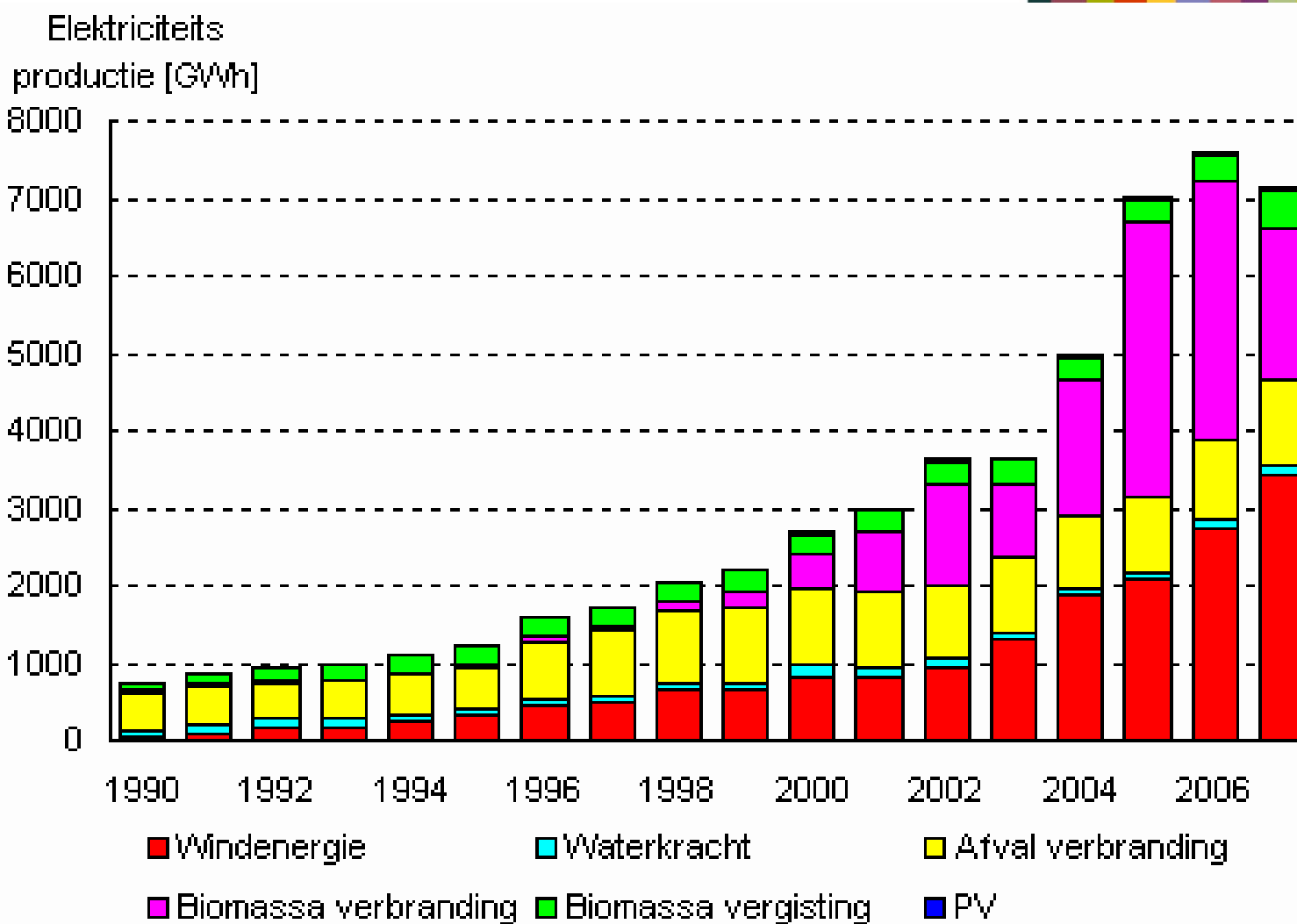


Organisation of EREA: The Board

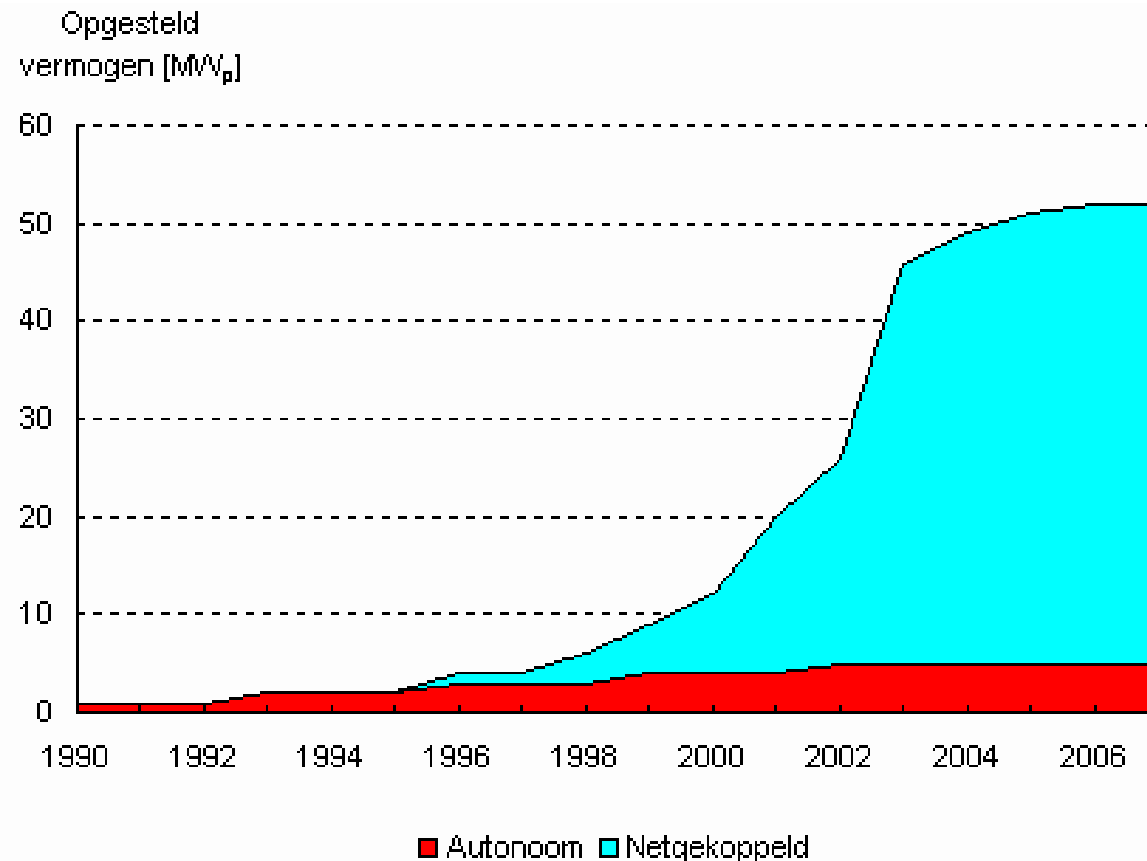
- 5 housing associations
- Siemens
- Rabobank
- Eneco energy
- Chamber of Commerce
- Municipalities of Delft, Zoetermeer and Midden Delfland
- Delft University of Technology



Renewable energy in the Netherlands



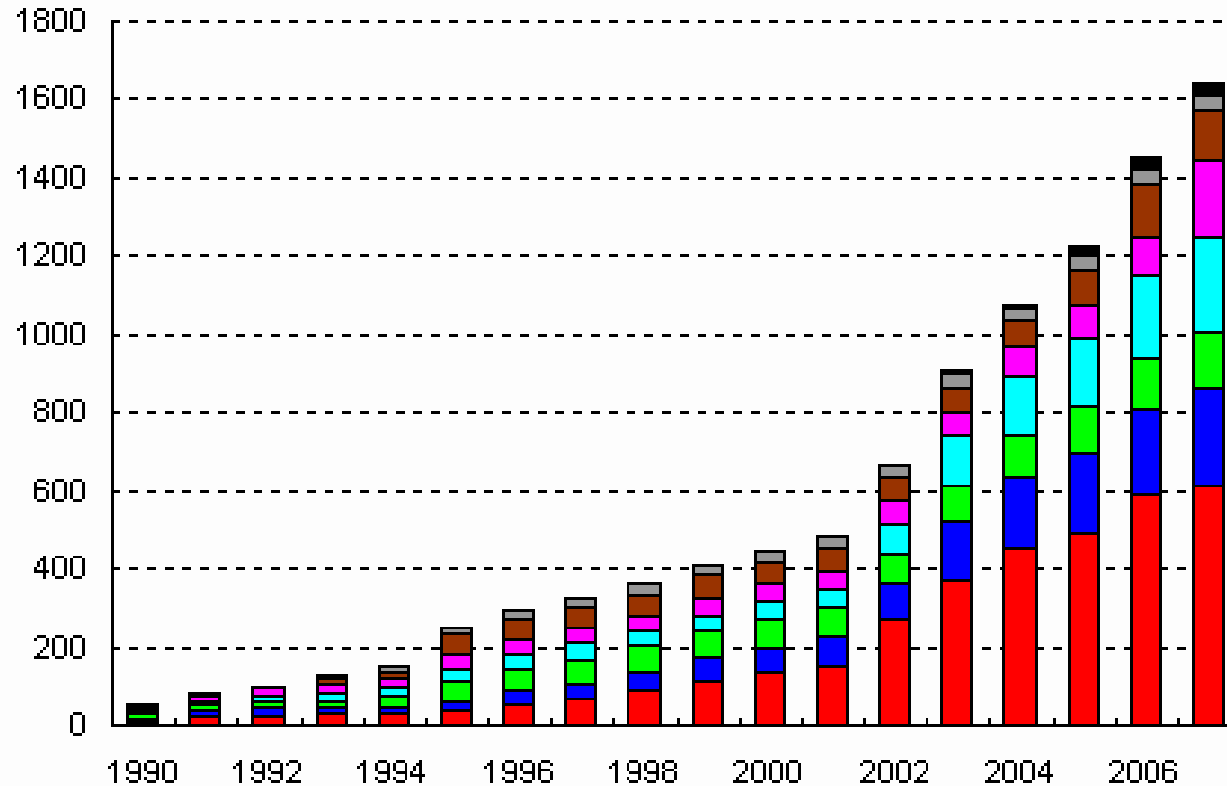
Electricity production from renewable sources in the Netherlands



Realised photovoltaic systems in the Netherlands



Opgesteld
vermogen [MW_e]



- Flevoland
- Noord-Holland
- Friesland
- Zuid-Holland
- Zeeland
- Groningen
- Noord-Brabant
- Overig

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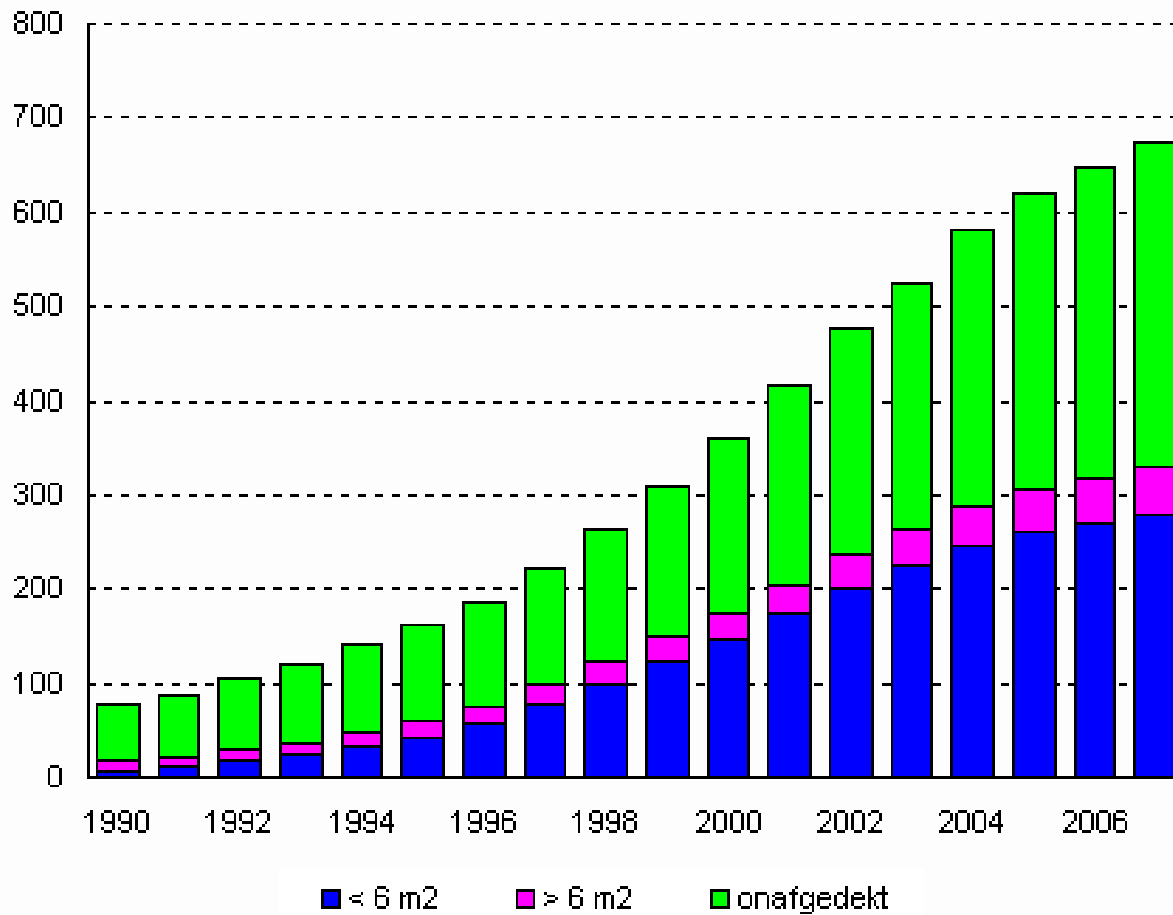


Realised wind turbines in the Netherlands

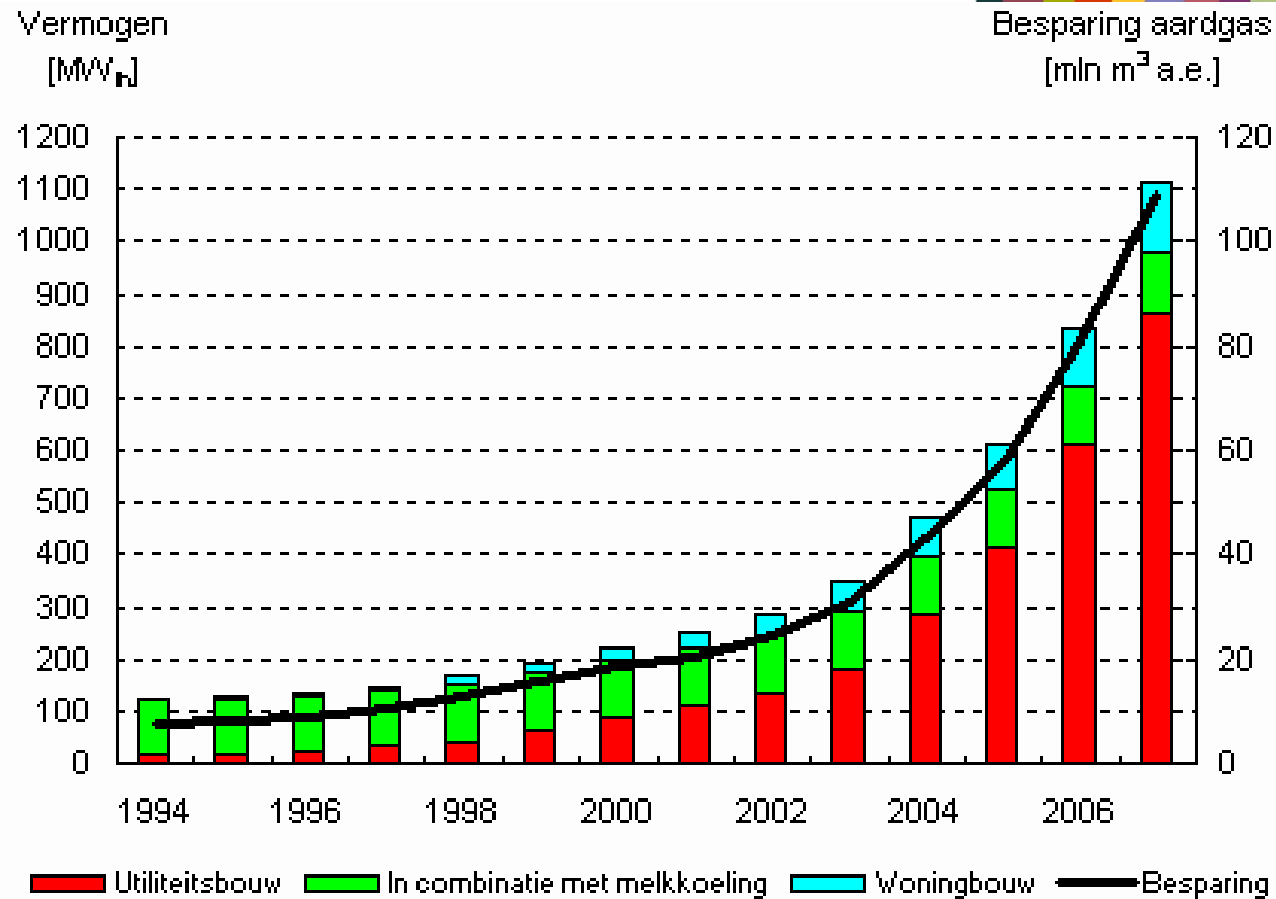




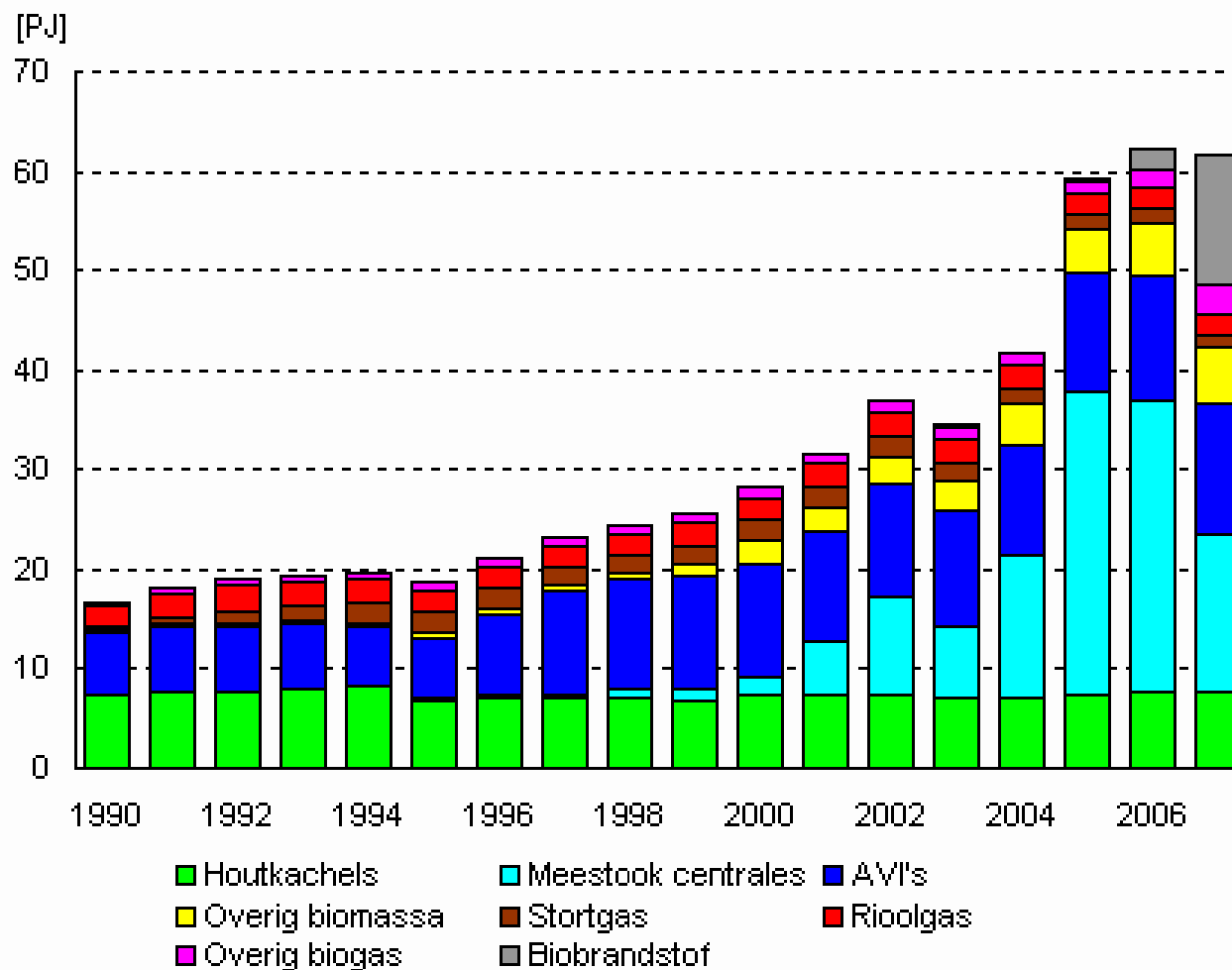
[oppervlak in
1000 m²]



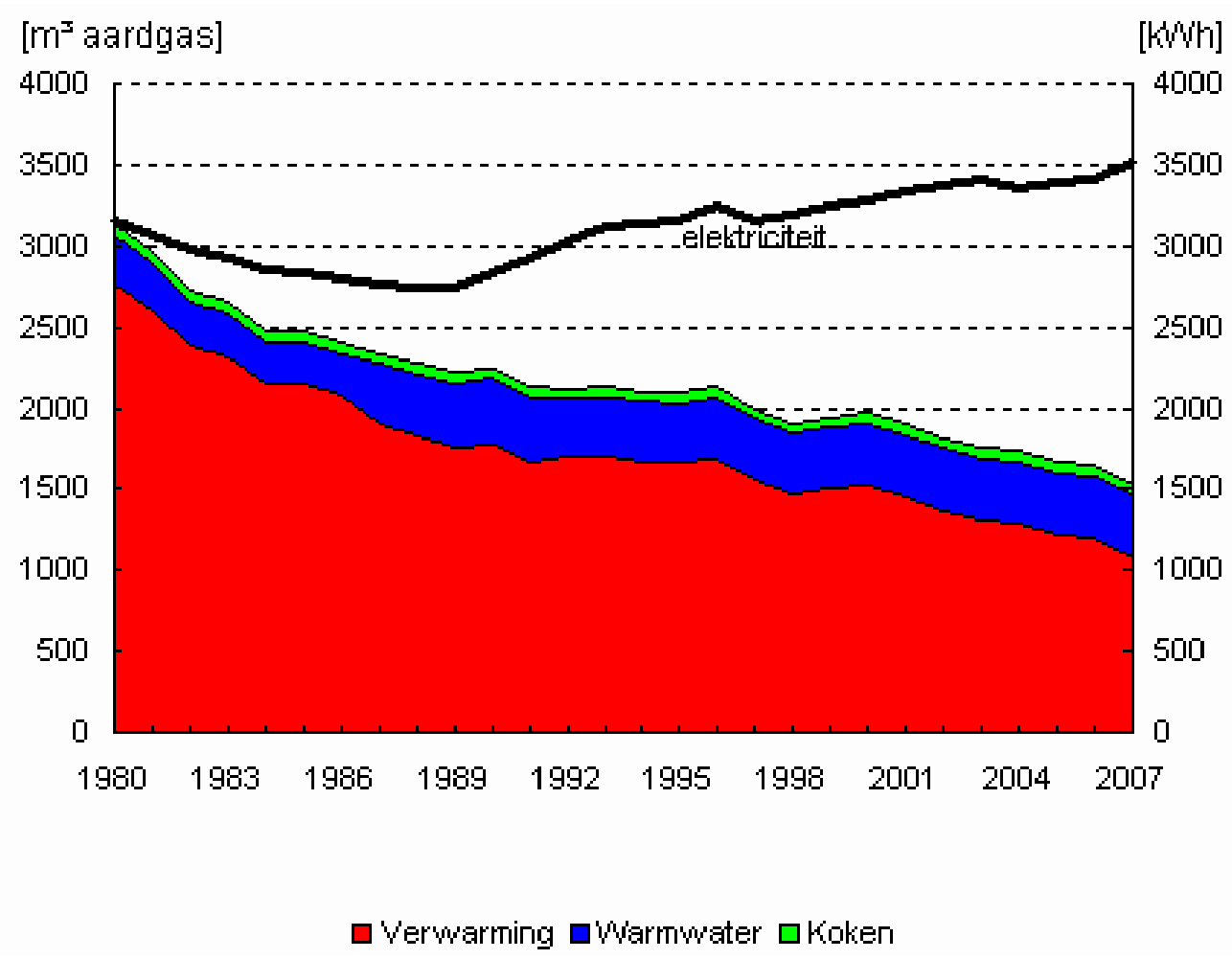
Square meters of solar thermal systems in the Netherlands



Realised heat pumps in the Netherlands

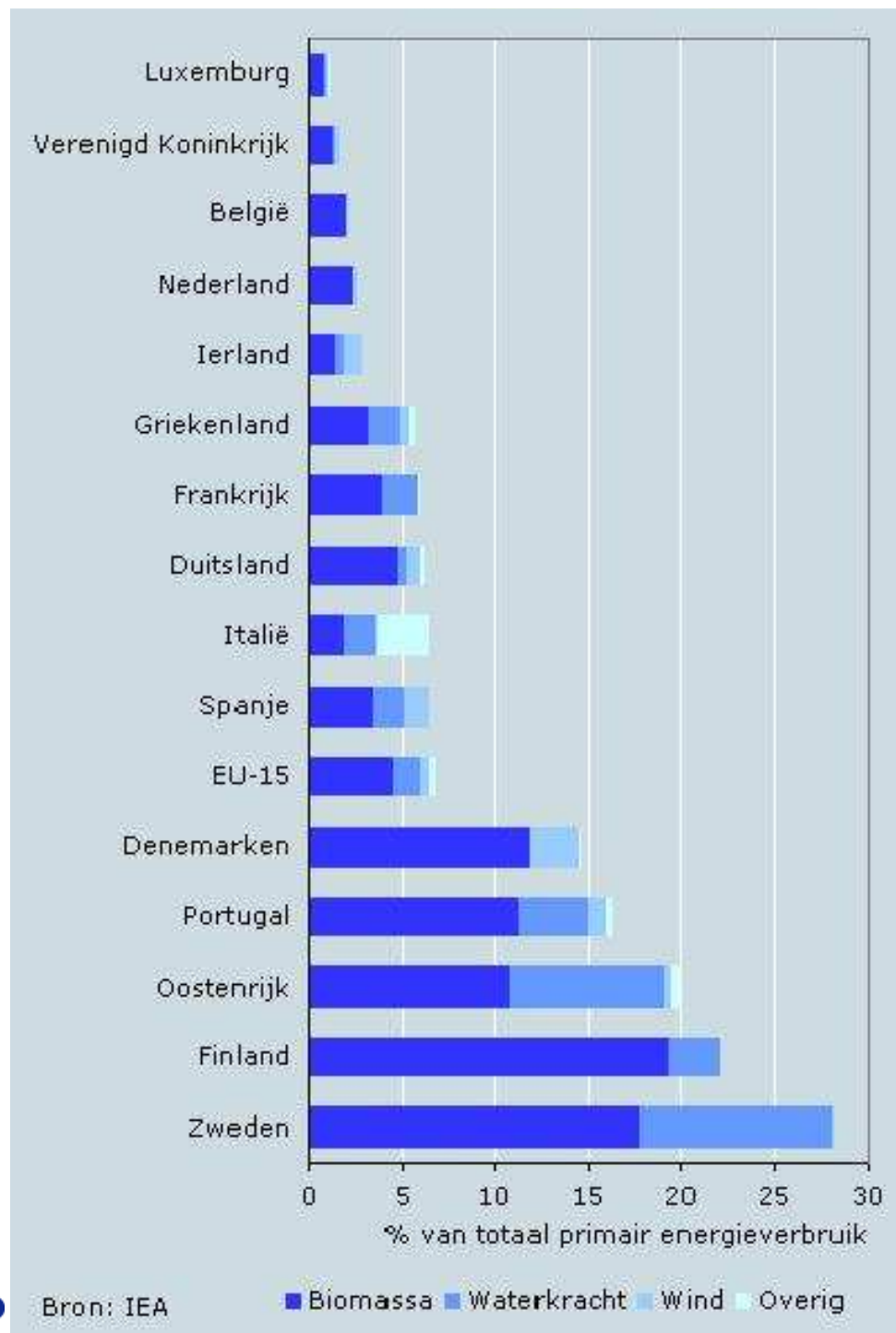


Realised biomass in the Netherlands



Average energy consumption per household in the Netherlands

Use of primary renewable energy sources in EU-15, 2006*





Dutch financial and legal instruments



Financial instruments (1)

1. Stimulating renewable energy production
 - National law on the sustainable production of sustainable electricity by PV, Wind, Biomass, Hydro
 - Subsidy for a period of 15 years
 - Amount per produced kWh:
 - € 0,094 ct (wind)
 - € 0,256 ct (PV)
 - € 0,177 ct (biomass)
 - € 0,125 ct (hydro)



Financial instruments (2)

2. Sustainable heat production.

Investment subsidy for:

- Solar thermal systems; € 600,- to € 1000,-
- Heat pumps; € 500,- per kW
- Micro CHP; € 4000,- per system



Financial instruments (3)

3. Local subsidies

- In particular subsidy on investment, i.e. € 200,- for one solar thermal system
- Also low interest loans



Legal situation

- Wind turbines: building permit, until 15 MW common rules, > 15 MW environmental permit and special report
- PV, thermal systems and heat pumps: no permits for individual systems required
- For bigger PV, thermal and heat pump systems: building permit required
- Biomass installations: building and environmental permit

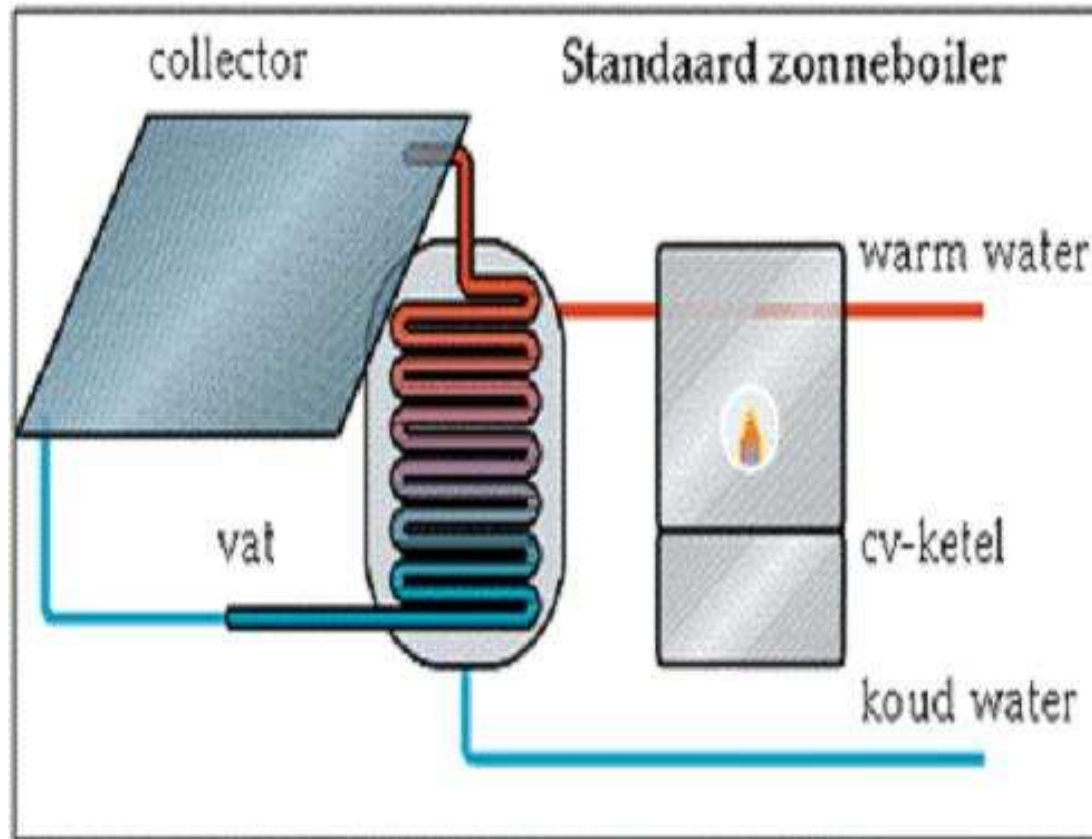


Communication

- National Energy Agency “SenterNovem” for local governments and companies
- “Milieu Centraal”: environmental information desk for citizens



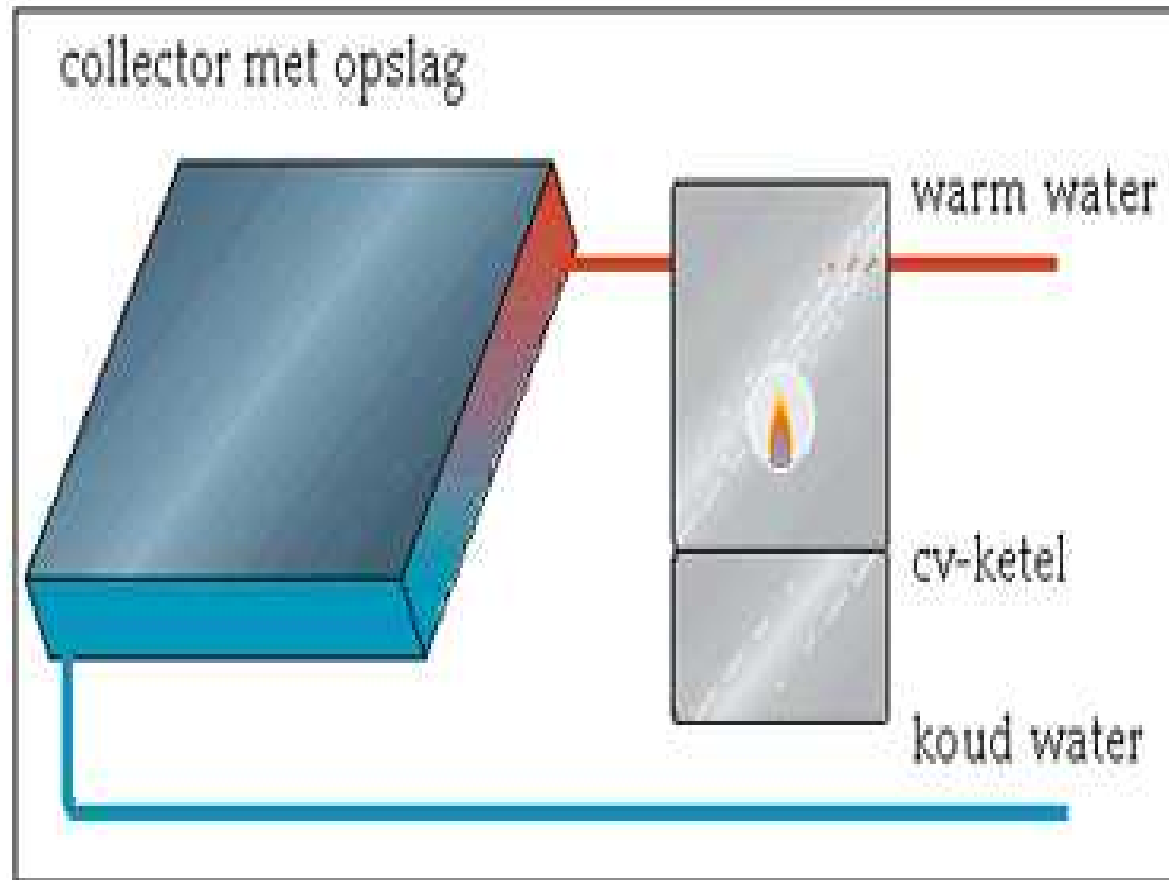
Thermal solar system



Standard thermal solar system

- Only for hot water
- Boiler inside the building





Compact thermal solar system

- Only for hot water
- Integrated boiler on the roof



Thermal solar combo system

– For hot water and heating





Data of thermal solar and combo system

Thermal solar system

- € 2000,- to € 4000,-
- 170 m³ gas
- € 119,- per year
- 287 kg CO₂ per year

Combo solar system

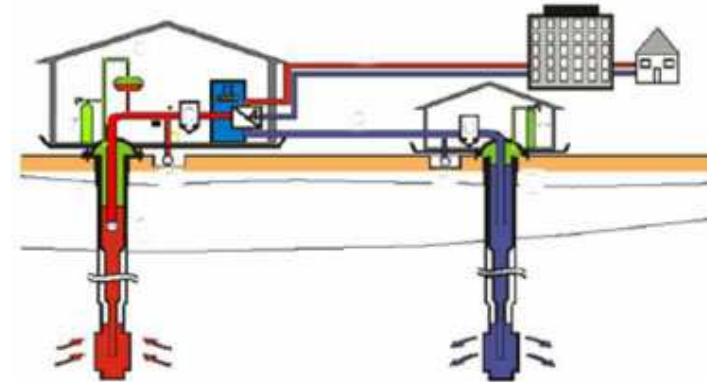
- € 3000,- to € 5000,-
- 230 m³ gas
- € 160,- per year
- 395 kg CO₂ per year



Projects in Zoetermeer and Delft



Urban scale renewable energy



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Questions?

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