



Nederlands e
onderneming
voor
energie en
milieu b.v.



Gear up!

A photograph of a city skyline at night, with several tall buildings illuminated by lights, viewed through a blue oval frame.

**Eric van den Heuvel
Novem
Green Tech 2002**

A photograph of traffic at night, showing the rear of a car and a yellow taxi with its lights on, viewed through a blue oval frame.



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Gear up!

A photograph of a city skyline at night, with illuminated skyscrapers and a dark sky. The image is framed within a blue oval shape.

**The Netherlands in transition
Cleaner and Greener Fuels**

A photograph of traffic at night, showing the headlights and taillights of cars in a city street. The image is framed within a blue oval shape.



Climate Neutral Fuels

GAVE stimulates the production and application of Climate Neutral fuels, from resource to final product





Formation of Alliances

GAVE links together organisations and projects in order to establish whole chains - gearing up the introduction of climate neutral fuels





Substitutes for Gasoline, diesel and natural gas

GAVE aims at market
introduction and
application by end users





Climate Neutral Fuels

Inventory phase from 1998 to 2000:

- Which attractive climate fuel chains could contribute to accelerated reduction of climate emissions?

Climate Neutral Fuels

Dutch CO₂-eq. emissions (Mtonne)
targets:



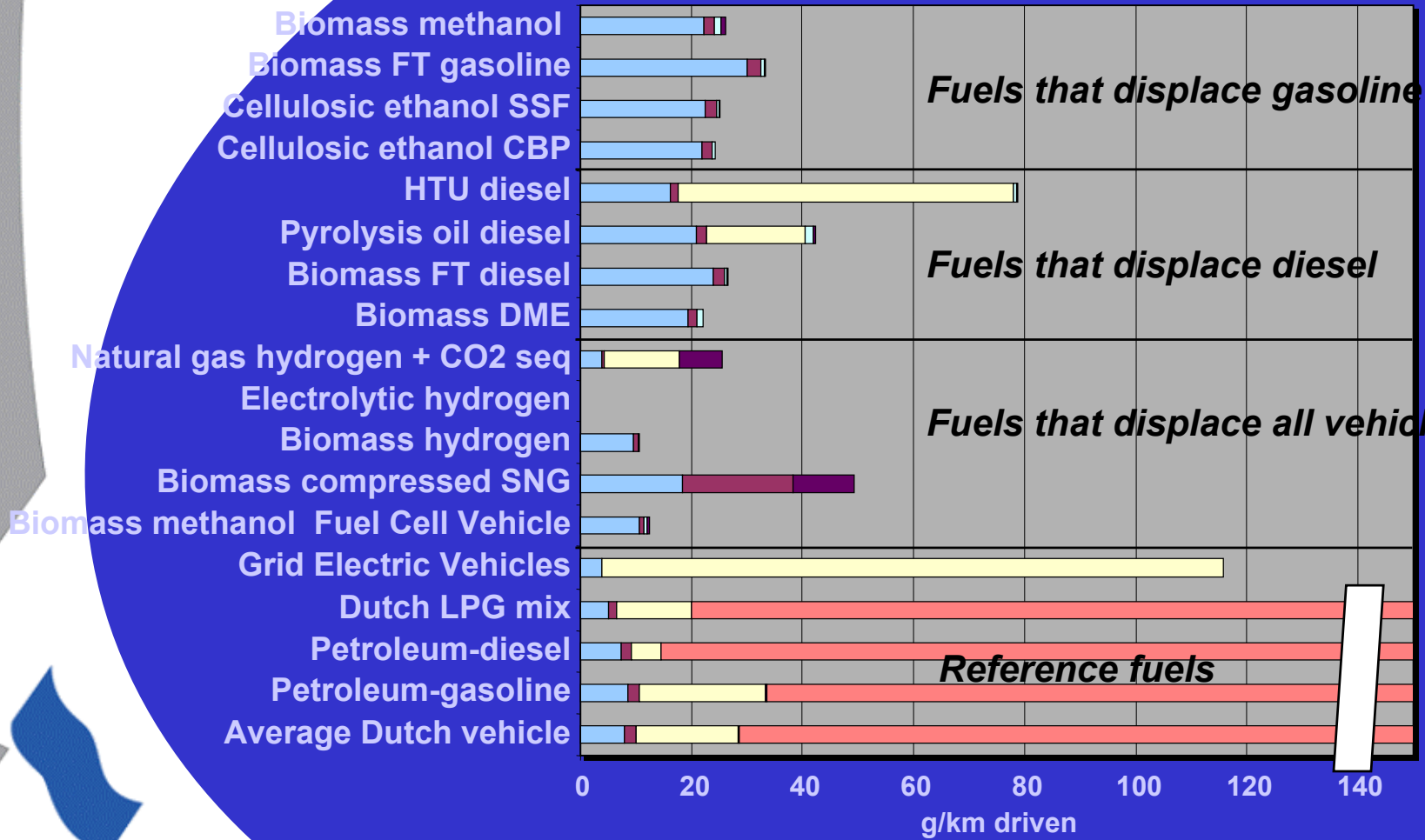


Climate Neutral fuels

Attractive climate neutral fuel chains
in

- both transport sector
- and natural gas sector

Fuel chain comparison: CO₂ emissions





Climate Neutral Fuels

Attractive climate neutral fuel chains
in

- both transport sector
- and natural gas sector

- 80% CO₂ eq. emissions

bulk CO₂

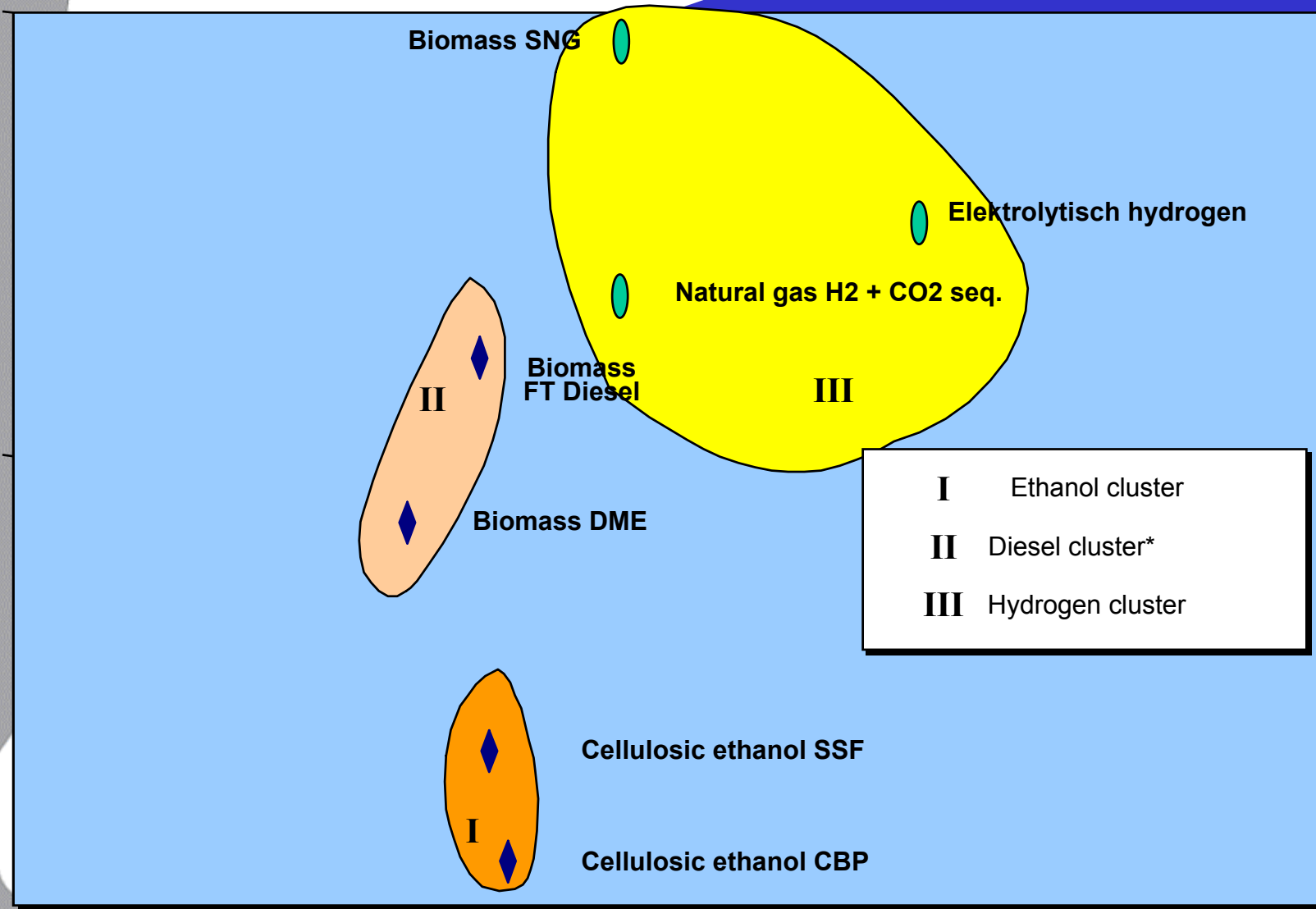
fit in existing infrastructure

early involvement market parties

Cost of CO₂ reduction
in € per ton

230

115



- I** Ethanol cluster
- II** Diesel cluster*
- III** Hydrogen cluster

0

20

40

60

80

100

120

CO₂ reduction potential In the Netherlands
in Mton per year



Formation of Alliances

From 2001 to 2010:

Chain Demonstration Phase

- Formation of alliances
- Develop Blue Prints for demo projects
- Realise demo projects



Formation of Alliances

2001 Call for Projects:

- **4 approved projects**
 - **FisherTropsch Biofuels, Electricity and heat**
SDE, ECN, Rabobank, Volkswagen, Shell
 - **FisherTropsch Biofuels**
TNO-MEP, NUON, Sasol
 - **BioMethanol for hydrogen**
HGP, Soldesa, Methanor, Hoekloos, GVB



Climate Neutral fuels

2002 Call for Projects:

- 25 April Call Closes for Formation of Alliances
- 17 June Call closes for Blue Print Projects



Climate Neutral fuels

2003 Call for Projects:

- Call for Blue Print Projects (?)
- Call for Realisation of Chain Demonstration Projects





Substitutes for Gasoline, diesel and natural gas

Development takes time:

- Full market penetration: post-Kyoto
- In meantime, Europe optimises utilisation of established biofuels by 2% mandate
- And new climate neutral fuels are ready when we need them



Substitutes for Gasoline, diesel and natural gas

**Biomass fuels the fuel
market:**

- (Resource supplying) partners are crucial
- Sustainability of resource needs to be assured (environmental, social, economic!)



**New sources,
fuels!**

<http://gave.novem.nl>



new links,



new



Resuming: Climate Neutral Fuels:

Will it be in the future

or

in your hands?



Resuming: Climate Neutral Fuels:

Will it be in the future

or

in your hands?



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