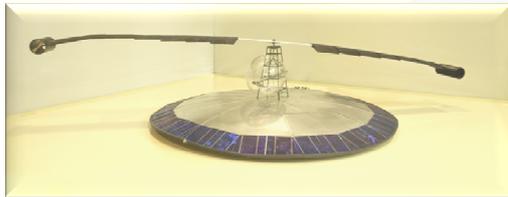


Roads to sustainable transport

EPTA-conference
Copenhagen - November 3, 2010

Topic: 'Energy use for transport'
Biofuels and Hydrogen: Suggestions for actions and initiatives in Flanders



 IST
Instituut Samenleving & Technologie

IST-study on biofuels Some figures

- Potential for local production of biodiesel (1st generation)
 - In Flanders: 1.3 ktoe/yr
 - In Belgium: 13 ktoe/yr
- Potential for local production of bio-ethanol (1st generation)
 - In Flanders: 440 ktoe/yr
 - In Belgium: 930 ktoe/yr
- Estimated demand (by 2020) for biodiesel in Belgium
 - Scenario 1: 800 ktoe/yr
 - Scenario 2: 708 ktoe/yr
- Estimated demand (by 2020) for bio-ethanol in Belgium
 - Scenario 1: 90 ktoe/yr
 - Scenario 2: 107 ktoe/yr

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IST-study on biofuels

Policy

- Seven producers of biofuels received a quatum from Belgian authorities
 - 4 biodiesel producers; 300 ktoe/yr
 - 3 bio-ethanol producers; 127 ktoe/yr
- These quota are valid till september 2013
- Obligation to partly mix (4%) biofuels in the regular fuel circuit (since July 2009)

IST-study on biofuels

Recommendations - EU

Sustainability

Be sure that 'sustainability' gets translated in a **concrete** concept in which ecological, social and macro-economic dimensions are **well-balanced** so that **unequivocal monitoring** of MS becomes possible

A well-balanced whole of sustainability-criteria should be applied to **all forms** of mining, producing and/or using energy resources in general and biomass in particular

IST-study on biofuels

Recommendations - EU

Research

R&D of a **diversity** of energy sources—both different generations of biofuels and alternatives for biofuels—should be supported

Where the step is made from experiment to societal introduction, the **precautionary principle** should be applied

One of the precautionary measures consists of **monitoring the sustainability effects** of various generations of biofuels and of alternatives for biofuels

IST-study on biofuels

Recommendations - Flemish authorities

Long term vision

A **long term vision** is needed with regard to sustainable energy supply and the relative contribution of biofuels thereto.

This vision should

- aim, first and foremost, at **energy frugality and efficiency**
- aim at optimal use of biomass that is at disposal **locally**
- be sufficiently **flexible** to allow for adjustments based on new technological developments and new insights in sustainability performance
- be based on a **mix** of energy resources and of technologies for mobilisation, production and use of biofuels.

IST-study on biofuels

Recommendations - **Flemish** authorities

Sustainability

Flemish authorities should **stimulate research** with respect to

- a **diversity** of energy sources
- the **sustainability impacts of various circumstances** of mobilisation, production and use of various generations of biofuels and of alternatives to biofuels

Flemish authorities should implement sustainability **certificates** to ameliorate sustainability performances of existing installations for the production

Adjustments to waste regulations are needed in order to allow for the realisation of a long term vision on sustainable energy supply

IST-study on biofuels

Recommendations - **Flemish** authorities

Public engagement

Flemish authorities should **stimulate public engagement** in order to clarify and debate issues w.r.t. styles of living and of living together underlying actual and future mobility and energy needs.

IST-study on biofuels

Recommendations - **Belgian** authorities

Support

A well-considered mix of **support measures** for societal introduction of biofuels can be useful on condition

- that the **sustainability impacts** of intended societal introductions are **sufficiently clear and positive**
- that these introductions **fit** within the Flemish long term vision of sustainable energy supply

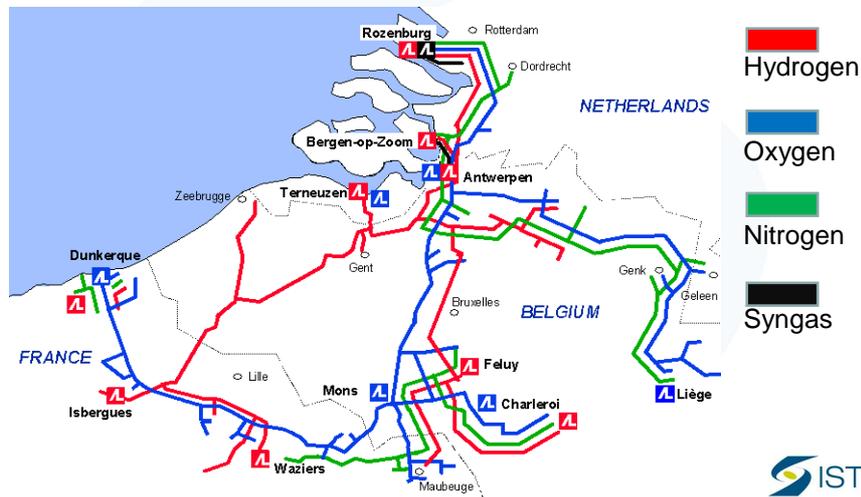
IST-study on hydrogen

Some data

- Hydrogen is an important element in Flanders' chemical industry => know-how w.r.t. hydrogen transportation
- Flanders has the largest underground pipeline grid for hydrogen (900 km) worldwide
- Consortium of 35 Flemish organisations active in the domain of hydrogen and fuel cell technology
- Lacking infrastructure of filling stations

IST-study on hydrogen

Some data



IST-study on hydrogen

Remaining questions

- Energy efficiency? => Hydrogen technology at most a complement to, not a competitor of, other energy carriers/sources for transport use
- CO₂-emissions?
- Safety?

IST-study on hydrogen Recommendations - Flanders

Flemish authorities should

- develop a clear **long term vision** on energy policy and strategy, constituted by a **variety of energy resources and technologies** and prioritising renewable energy resources
- support **R&D** to keep pace with international developments w.r.t. **hydrogen and fuel cell technology**
- attune regional and federal initiatives w.r.t. **(safety) regulations, permits, training** in order to simplify introductions of new technologies or infrastructure

Thank you

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