



Assessment of Hydrogen & Fuel Cell Vehicle Demonstrations



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3 februari 2006

EC Seminar 'Hydrogen for Transport', Brussels, 25 January 2006





Project objective



R&D, demonstration and incentive **PR**ogrammes
Effectiveness to facilitate and secure **Market I**ntroduction
of **A**lternative motor fuels

Ø Assess effectiveness of measures to support AMF

- EU-25
- Based on international experiences
- In relation to market maturity of AMF
 - short term: biofuels
 - mid/long term: hydrogen
- In national context

June 2004 – May 2007



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PREMIA consortium



VITO

Flemish Institute for Technological Research



JRC-IPTS

European Commission - Joint Research Centre,
Institute for Prospective Technological Studies



CERTH-HIT

Centre for Research and Technology Hellas,
Hellenic Institute for Transport



VTT

Technical Research Centre of Finland

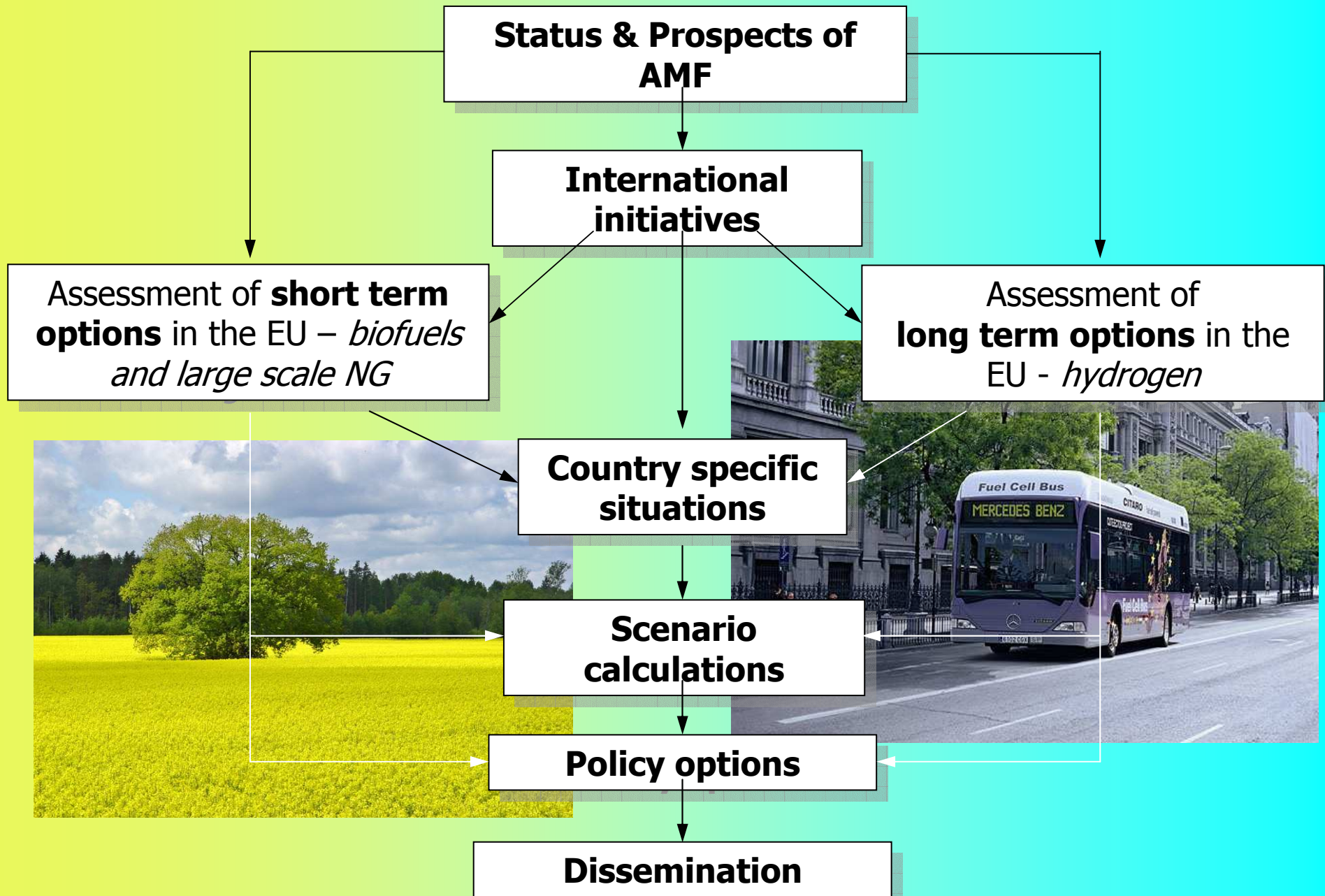


SETREF

South-East European Transport Research Forum



PREMIA PROJECT STRUCTURE





EU goals



- ü Improve effectiveness of RTD and demonstration
- ü Mobilize stakeholders
- ü Assess ways to remove existing technical, operational, organizational, and institutional barriers to market entry
- ü Demonstrate the environmental and societal benefits
- ü Spread knowledge and improve public awareness and acceptance



Common learning from demonstrations necessary



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Assessment framework

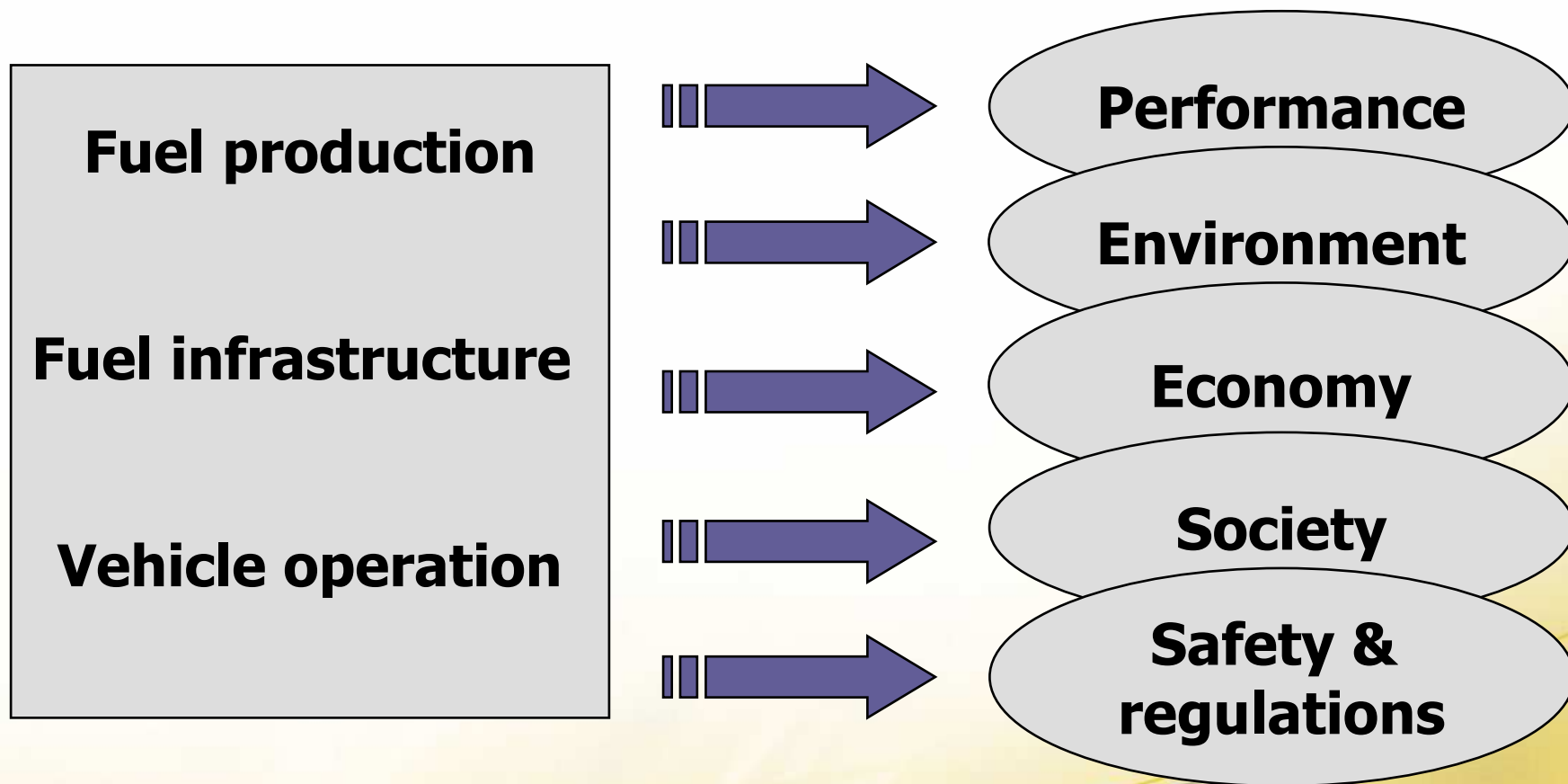


- Indicator framework
- Based on existing frameworks of ended/ongoing projects
 - METEOR (CIVITAS assessment)
 - CUTE assessment indicators
 - International assessment frameworks
- Worked out further with own research
- Input to embedded assessment of starting demonstration projects
 - ZERO REGIO
- Draft assessment framework available at
 - www.premia-eu.org
- Final delivery including reporting July 2006





Assessment procedure





Assessment procedure



Goals of assessment matrix:

- ø Indicate the position of the fuel/technology combination in relation to
 - target & potential of the fuel/technology
 - baseline fuel/technology (e.g. diesel / CNG)

=> current and future strengths and weaknesses
- ø Express in which field the initiative tends to make a difference
- ø Assess the actual evolutions & obtained results in the initiative



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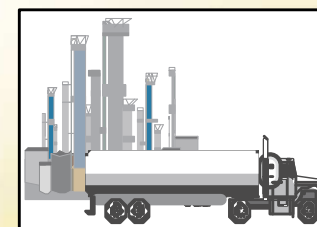
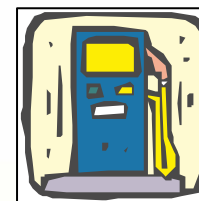




Technical Indicators



- Performance
 - Operational characteristics
 - Technical maturity
 - Energy consumption
- Environment
 - Greenhouse gas emissions
 - Emissions related to health (incl. noise)
 - Use of resources
- Economy
 - Costs for operator / vehicle owner
 - Public support
- Safety & regulations
 - Safety measures & incident reporting
 - Codes, standards, regulations
 - Permits & licenses





Socio-economic Indicators



- Awareness & visibility
- Acceptance
 - public & fleet owners
 - fuel suppliers
 - technology suppliers
 - politics
- Business opportunities
- Macro-economic effects
 - Market penetration potential
 - Energy diversity & security of supply
 - Sustainability
 - Macro-economic impact (jobs, regional development)
 - Scope



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Assessment within demo



- Design phase demonstration
 - Definition reference technology
 - Data collection reference technology
 - Definition targets for demonstrated technology
- Implementation phase demonstration
 - H2-FC technology (fuel-vehicle), data collection
- Indicator – score :
 - indicator H2-FC compared to reference
 - Indicator H2-FC compared to project targets





International cooperation



International FC bus working group

- Cooperation US (US-DOT/FTA, NREL, NAVC & EDTA) and EU (EC, PREMIA) in work committee
- Members : responsible demonstrations worldwide
- Data collection and sharing
 - FC bus demonstration
 - 2 data levels
 - General project specifications: open to public
 - Sensitive & operational data: members only
- Organization of international workshops
 - Porto (Nov '04), Vancouver (Dec '05), Yokohama (Oct '06)



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PREMIA contacts



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