

# European Integrated Hydrogen Project (EIHP) Phase II

Jeff Rinker  
General Manager, Hydrogen  
BP

National Hydrogen Association  
Annual Meeting  
7 March 2001

European Integrated Hydrogen Project - Phase II [E I H P 2]



# EIHP Phase I

- 1998-2000
- Ten industry partners
  - Air Liquide S.A.
  - BMW AG
  - EC-JRC
  - HEW AG
  - Hydrogen Systems N.V.
  - INTA
  - LBST
  - Messer
  - Renault
  - A B Volvo
- Surveyed European hydrogen regulations



## EIHP Phase II

- Feb. 2001 – Jan. 2004
- Twenty industry partners
- 4.935 million Euro budget
- 50% funded by EU



## EIHP Phase II Partners

- LBST
- Adam Opel AG
- Air Liquide SA
- Air Products Plc
- BMW AG
- BP
- CEA
- DaimlerChrysler AG
- Demokritos
- Det Norsk Veritas
- EC JRC
- Ford AG
- Forschungszentrum Karlsruhe
- Hydrogen Systems NV
- INTA
- Messer Griesheim GmbH
- Norsk Hydro SA
- Shell Research Ltd.
- AB Volvo
- Raufoss ASA



## EIHP Phase II Objectives

- Provide inputs for EU regulatory activities
  - Hydrogen fuelled road vehicles (ICE & FCV)
  - Hydrogen fuelling infrastructure
  - Relevant vehicle / filling station interfaces
- Ensure safe development, introduction and operation of hydrogen fuelled road vehicles and hydrogen filling stations throughout the EU



# EIHP Phase II Work Packages

- WP1: Overall Coordination
- WP2: Refueling Station
- WP3: Refueling Interface
- WP4: Vehicles
- WP5: Safety
- WP6: Links “EU-USA” and other cluster activities



# WP1: Overall Coordination

- Lead Partner: LBST
- Objectives:
  - Host meetings, coordinate efforts
  - Liaison with EC
  - Communication with public
  - Compile reports



## WP2: Refueling Station

- Lead Partner: Norsk Hydro
- Other Partners: Air Products, BP, Hydrogen Systems, Air Liquide, Shell, DNV
- Objectives:
  - Develop hydrogen specific industrial codes of practise for acceptance by European authorities
  - Identify refueling station components which should be standardised





## WP3: Refueling Interface

- Lead Partner: INTA
- Other Partners: Air Products, BMW, CEA, DaimlerChrysler, Air Liquide, Messer, Norsk Hydro, Opel, Raufoss ASA, Shell, Volvo
- Objectives:
  - Identify optimum storage pressure for compressed hydrogen
  - Seek approval of liquid and compressed hydrogen connectors
  - Develop refueling procedures
  - Seek standardisation of hydrogen connectors



## WP4: Vehicle

- Lead Partner: BMW
- Other Partners: CEA, DaimlerChrysler, Ford, Hydrogen Systems, INTA, Air Liquide, Messer, Opel, Raufoss, Volvo
- Objectives:
  - Monitor existing draft regulations for hydrogen road vehicles
  - Develop harmonised regulations for hydrogen road vehicles
  - Develop procedures for vehicle inspections
  - Validate existing draft regulations by licensing vehicles



## WP5: Safety

- Lead Partner: EC-Joint Research Center
- Other Partners: Air Products, DNV, FZK, NCSR, Norsk Hydro, Raufoss ASA, Shell, Volvo
- Objectives:
  - Risk assessment of hydrogen in vehicles and infrastructure
  - Comparative study of hydrogen vs. other fuels
  - Support safety aspects of WP2, WP3 and WP4



## WP6: Links to other activities

- Lead Partner: BP
- Other Partners: CEA, DaimlerChrysler, Ford, Shell
- Objectives:
  - Link to CaFCP, NHA, US DOE
  - Link to other EU cluster activities
  - Identify comparable initiatives in Japan
  - Disseminate results to interested experts

