

mission

- ▶ Introduction and commercialisation of hydrogen as a safe energy carrier
- ▶ Integrate, strengthen and focus fragmented EU-research and development in the field of hydrogen safety
- ▶ Integrate experimental facilities, computational tools and teams by international cooperation
- ▶ Gain synergy by concentrating all existing knowledge in a common database
- ▶ Benefit by easy identification and use of existing information and prevention of duplication of work
- ▶ Develop a robust and reliable framework for the consortium
- ▶ Harmonize and support test procedures and EU standards and legislation
- ▶ Promote public awareness and trust in safe hydrogen technology

The overall goal of HySafe is to contribute to the safe transition to a more sustainable development in Europe by facilitating the safe introduction of hydrogen technologies and applications.

facilities

Hydrogen Safety Test Center

Europe's largest facility for hydrogen explosion tests ($V = 110 \text{ m}^3$, $P_{\text{max}} = 110 \text{ bar}$) at FZK is mainly used

- ▶ to address safety questions in closed or semi-confined spaces for hydrogen-fueled energy systems
- ▶ to provide fundamental data for the development of hydrogen safety rules and standards



for more information contact

Institute for Nuclear and Energy Technologies IKET
Forschungszentrum Karlsruhe
Hermann-von-Helmholtz-Platz 1
76344 Eggenstein-Leopoldshafen, Germany
Phone +49 7247 82 6105 > Fax +49 7247 82 4777
Email thomas.jordan@iket.fzk.de > Internet www.hysafe.net



European Network
of Excellence HySafe

Safety of Hydrogen as an Energy Carrier

facts



Consortium

24 partners from 12 EU countries and one partner from Canada

- ▶ 13 Research Centers
- ▶ 5 Universities
- ▶ 7 Industry Partners

Coordination

- ▶ Forschungszentrum Karlsruhe, Germany

Context

- ▶ Start March 2004
- ▶ 5 years co-financed by European Community (7 M€)
- ▶ Total budget 13 M€



The European Network of Excellence Hysafe (NoE) brings together the best international partners of competitive scientific and industrial communities.

tasks

Cooperations in FP6

comprise for example

- ▶ **NaturalHy**
tests all the critical components of a hydrogen system by adding hydrogen to natural gas in existing networks
- ▶ **StorHy**
covers the whole spectrum of hydrogen storage technologies (compressed gas, cryogenic liquid and solid materials)
- ▶ **HyApproval**
produces and edits a „handbook for approval of hydrogen refuelling stations“
- ▶ **HyPer**
produces and edits a „handbook for small stationary installations“

structures

Clusters and Work Packages

The total field of research is grouped by clusters and work packages.

- ▶ **Cluster Phenomena**
 - release
 - ignition
 - fire
 - explosions
 - mitigation
- ▶ **Cluster Tools**
 - integrate knowledge of existing experimental facilities
 - application and development of computer codes (CFD)
 - risk assessment methodology (RA)
- ▶ **Cluster Dissemination**
 - handbook
 - database HIAD
 - international conference
 - e-Academy

