HySafe
-
Vehicle Aspect Safety, Tunnels, Garages, …

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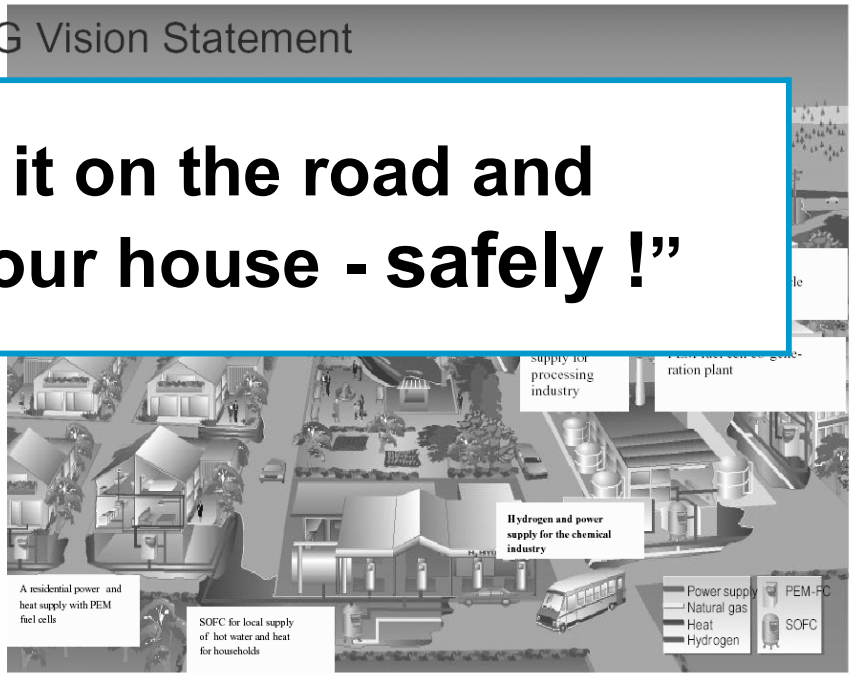
Mission Statement

HLG Vision Statement

“We bring it on the road and in your house - safely !”



Copied from a HyNet presentation

Safety Orientated Votes (PIRT)

Conclusions for H4 (COMMERCIAL VEHICLES AND PASSENGER CARS) votes:

H4 votes illustrate a number of safety concerns related to:

- safety of H2 vehicles in **confined environments such as tunnels, public or private car parks, maintenance workshops**. Damage to systems or components including the tank (because of accidents or external causes such as fire) could lead **to releases of H2 and the formation of confined potentially explosive clouds**. For private cars with smaller quantities of H2 involved, small release rates have not been ranked in the first category, but high release rate issues have.
- the **performance and reliability of systems and components, including tanks**: in some case even nominal behaviour (ie the device is functioning as intended) can have dangerous consequences, if for example the release happens in a confined environment.
- the performance of the H2 tanks under mechanical or thermal loads **failure to follow "good practices"** (for car mechanics in maintenance activities (purging of systems), or for emergency crews on scenes of accidents).

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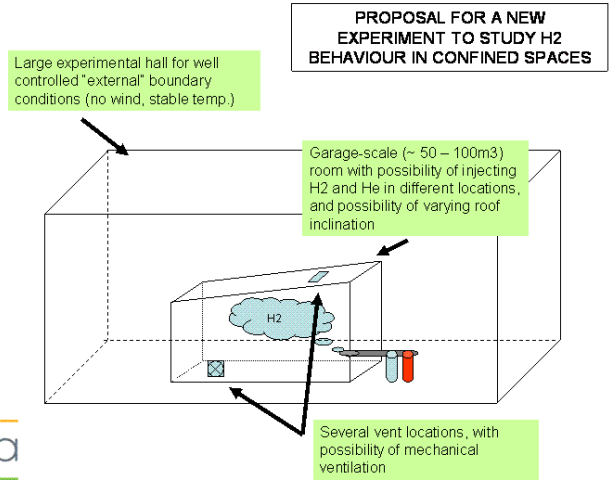
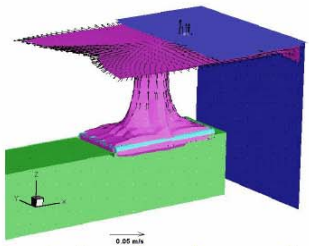
Project Proposal “insHYde”

- Investigation of realistic non-catastrophic releases in (partially) confined areas (garages, houses,...
- Systematic Assessment of Mitigatio (including Detection) Measures (sensors + venting + recombiner + .
- Simulations and experiments for critical releases
- Possibly including „Permeation Limits“ for garages
- Deriving „Recommendations“ , standards,...



Permeation – Current Issues

Discussions have recently started within ISO (& soon UN ECE WP29) to increase the allowable permeation rates from automotive hydrogen storage systems. Any increase in the allowable rate should be based on the following:



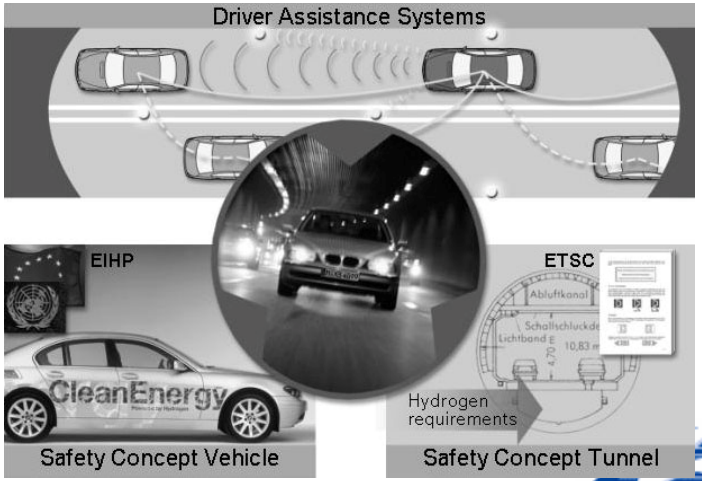
- **Is the very simple US calculation for domestic garages valid for the wide variety of garages/car sizes and various ventilation requirements found in Europe and elsewhere?**
- **Are the existing/proposed permeation rates acceptable for commercial vehicles in maintenance/storage facilities?**
- **How much can the permeation rate be increased without compromising safety?**

Project Proposal “HyTunnel”

Mobile Use

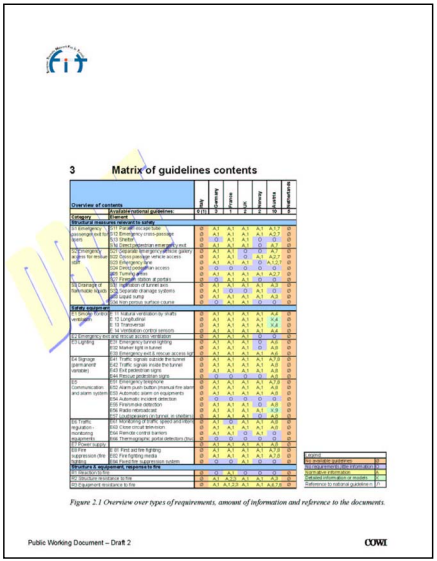
Improved Tunnel Safety

for H_2 as the Fuel of the Future



Further Motivation for "HyTunnel"

accidents in public (and EC) focus



Heterogenous regulations

Expensive, long term investments

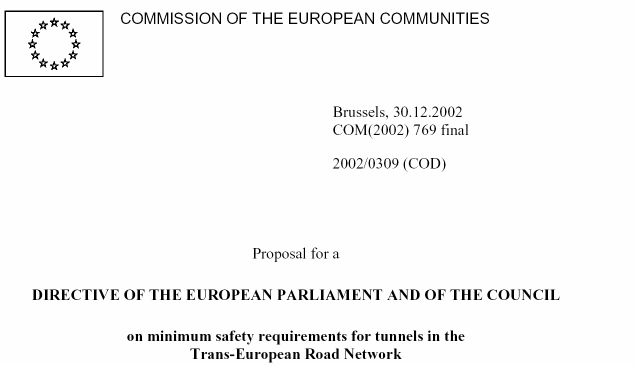
HyTunnel

Phases

a) Selection of broadly accepted **szenarios**. Qualitative **assessment on standard mitigation measures** effectiveness in H2 accidents **Benchmarking** of numerical tools

b) Experimental part (depending on financing)

c) Extension of EC Tunnel **directives**



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 30.12.2002
COM(2002) 769 final

2002/0309 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on minimum safety requirements for tunnels in the Trans-European Road Network

Collaboration

… with **StorHy** for storage in road vehicles.

planned common meeting March 8-9, 2005, Orgeval, for co-ordinated planning of next 18 months:

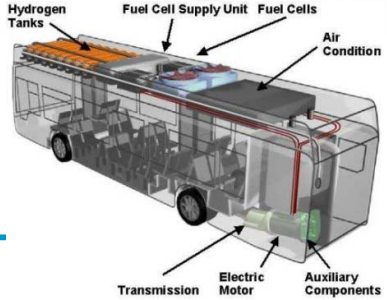
Topics:

- Bonfire Test Standard
- Sensors “insHYde”

… with **HyApproval** *(if approved)*

common work esp. WP12 Risk Assessment Methodologies assessing basic refueling station designs

Mission Statement



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