

COMMITTEE ON SUSTAINABLE ENERGY

Working Party on Gas

Seventeenth session
Geneva, 23-24 January 2007

Note from the International Organization for Standardization (ISO)

Agenda item

ISO roundtable on global harmonization of regulations, codes and standards for
gaseous fuels and vehicles
held in Geneva on 10 January 2007,

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Note relating the ISO roundtable on global harmonization
of regulations, codes and standards for gaseous fuels and vehicles

1 Objectives

The ISO roundtable on global harmonization of regulations, codes and standards for gaseous fuels and vehicles was held on 10 January 2007.

The objectives were:

- To identify harmonization issues and needs from the perspective of stakeholders such as: governments, the automotive industry, fuel suppliers, builders of gaseous fuel infrastructures, the United Nations Economic Commission for Europe (UN/ECE) – Transport and Sustainable Energy Divisions, and associated ISO and IEC technical committees;
- To review the challenges and barriers to global harmonization.
- To identify potential pathways to achieve coherent and effective global harmonization.

2 Results of the meeting

The event was attended by over 70 delegates mainly from industry, research and government with an even split between those involved with natural gas vehicles and those involved with hydrogen vehicles.

In the morning a number of presentations were given showing the perspectives of the Natural Gas Vehicle Sector and the Hydrogen Vehicle sector. Two presentations were given by the UN/ECE to give their perspectives on sustainable energy and transport. All presentations can be seen at the URL:

<http://www.iso.org/iso/en/commcentre/events/2006/roundtable.html>

In the afternoon the delegates split into two Groups which were formed one to discuss the automotive point of view and the other to discuss issues related to infrastructure needed for the Gas Vehicle Sector.

As a main result of the discussions, the panels have identified priority areas for standardization. These are listed in the following table1.

Table 1
Summary of priority areas for standardization identified by
participants at the ISO Roundtable

H2 and NG fuel <i>automotive</i> subjects for considerations	H2 and NG fuel <i>infrastructure</i> subjects for consideration
<ul style="list-style-type: none"> • LNG and dual fuel standards and regulations for vehicles and fuels • Specification for natural gas hydrogen mixtures and components • Interchangeable components such as high pressure, low volume fuel containers and interfaces • Pressure units and temperature references • Fuel quality and vehicle safety • Material compatibility for hydrogen operation <p><i>Note: examine opportunities for harmonisation of European Regulation R110 with relevant ISO standards (eg, based on prioritization by relevant ISO TCs)</i></p>	<p>Safety standards for:</p> <ul style="list-style-type: none"> • Fuelling stations • Cylinders • Pressure levels • Periodic inspection • Fuel quality

3 Further actions

There are areas where ISO is already active (see Annex) and others where some new standardization work will need to be initiated, eg concerning Liquefied Natural Gas (LNG) vehicles. Certain matters will have to be reviewed and dealt in close liaison with Working Party on gas (WP3) and the World forum on the construction of vehicles (WP29).

Part of the work will be to review and initiate pertinent international standardization work.

ISO Technical Committees relevant to the subject of the Roundtable include:

- ISO/TC 22, Road vehicles
- ISO/TC 58, Gas cylinders
- ISO/TC 193, Natural gas
- ISO/TC 197, Hydrogen technologies
- ISO/TC 220, Cryogenic vessels
- ISO TC 28, Petroleum products and lubricants

All interested experts will be invited to join the work

4 Conclusions

Members of the ECE/ENERGY/WP3 Working Party are invited to take note of the above and if so wish to submit comments. It is moreover recommended that Working Party members will contact the ISO member body in their country for expressing views on areas on interest to them.

From the ISO point of view, these activities are to be carried out taking into account important aspects such as:

- energy security
- equipment safety
- environmental aspect (eg greenhouse effect)

The concerned activities can contribute to foster the research and development concerning the NG and H2 fuels vehicle technology and to improve the global worldwide situation towards a needed sustainable development

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ANNEX

ISO standardization work dealing with NG and H2 fuels vehicles

The purpose of this document is to list the current ISO work done as it concerns the NG fuel vehicles and the hydrogen fuel vehicles

1. Fuel reservoirs
 - a. Construction
 - i. Natural gas
ISO11439 Joint work from ISO/TC58/SC3 and ISO/TC22/SC25
 - ii. H2
 1. Gaseous H2
DIS 15869 Joint work from ISO/TC197, ISO/TC58 and ISO/TC22/SC25
 2. Liquid H2
ISO 13985 Joint work from ISO/TC197 and ISO/TC22/SC25
 - b. Periodic inspection for requalification
 - i. Natural gas
ISO 19078 Joint work from ISO/TC58/SC4 and ISO/TC22/SC25
 - ii. H2
?
2. Refuelling connectors
 - a. Natural gas
ISO 14469-1, 2 & 3 from ISO/TC22/SC25
 - b. H2
 - i. Gaseous
ISO 17268 Joint work from ISO/TC197 and ISO/TC22/SC25
 - ii. Liquid
ISO 13984 from ISO/TC197
3. Vehicle equipment
 - a. Natural gas
ISO 15500-1 to 20 from ISO/TC22/SC25
ISO 15501-1 & 2 from ISO/TC22/SC25
 - b. H2

Joint work from ISO/TC22/SC25 and ISO/TC197

4. Fuels
 - a. Natural Gas
ISO 15403-1 & 2 from ISO/TC193
 - b. H₂
ISO 14687
5. Equipment for fuel distribution
 - a. Pipelines
 - i. Natural Gas
Standards from ISO/TC67
 - ii. H₂
Possible future work from ISO/TC197 and/or ISO/TC220
 - b. Fuelling stations
 - i. Natural gas
Any envisaged work of ISO/TC67 ?
 - ii. H₂
ISO/PAS15594
 - c. Metering
 - i. Natural Gas
Possible work of ISO/TC193
 - ii. H₂
Possible work in ISO/TC197 ?
 - d. Other equipment
Possible work needed?
 - i. gaseous hydrogen and hydrogen blends

The following technical committees are currently interested in the above concerned standardization activities:

- ISO/TC22 Road vehicles and its SC25
- ISO/TC28 Petroleum product and lubricants
- ISO/TC58 Gas cylinders and its SC3 and 4
- ISO/TC67 Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries
- ISO/TC193 Natural gas
- ISO/TC197 Hydrogen technologies
- ISO/TC220 Cryogenic vessels