

TALKING POINT

Where the fuel-cell industry has its say on emerging technologies.

Think standards, think global

Randy Dey wants governments and senior industry executives to put the emphasis on global standards for emerging hydrogen technologies and fuel-cell applications. Siân Harris asked him why he's so passionate about harmonization.

When natural gas was introduced as a fuel for vehicles, different countries started to develop their own standards for it. Randy Dey, president of the Canadian standards company The CCS Global Group, says this approach turned out to be flawed. "They got to the stage where these national standards became tools for development and it got too late to develop international standards," he explained. Now, 20 years on, key elements such as the connector for natural-gas refuelling still aren't harmonized across borders. This means that if somebody drives their natural-gas-fuelled car from Germany into France or the Netherlands they either have to return to their own country to refuel or carry spare connectors in their car—hardly ideal.

Dey does not want the hydrogen industry to follow the same path, and he and the company that he founded are doing everything in their power to prevent it from happening. For nearly 30 years, CCS has been working on regulations, codes and standards, though its focus for the last five years has been on hydrogen and fuel-cell technologies. "We are completely committed to harmonization of hydrogen standards to bring about commercialization as early as possible," he said. Dey himself is chair of ISO/TC 197, the International Organization for Standardization (ISO) technical committee that is standardizing systems and devices for the production, storage, transport, measurement and use of hydrogen. In this role, he also represents the ISO at the United Nations (UNECE/WP29).

"The ISO is looking at developing international standards for all new markets for hydrogen," said Dey. "The main ones are transportation, including cars, but also boats and aircraft; portable power, which will probably be the first commercial application; and stationary power, where fuel cells produce and store electricity using hydrogen and also produce heat." ISO/TC 197 has already developed standards for the land-vehicle fuelling system interface for liquid hydrogen, product specifications for hydrogen as a fuel and basic considerations for the safety of hydrogen systems. There are also standards for airport-hydrogen fuelling facilities and compressed-hydrogen, surface-vehicle-refuelling connection devices.

At the same time, CCS is involved in IEC/TC 105, a committee of the International Electrotechnical Commission (IEC) that is working on international fuel-cell standards for applications such as stationary-power plants, transportation (propulsion systems and auxiliary power units), portable-power generation systems and micro applications. The UN takes these standards to the next level by writing regulations for how things should be



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Randy Dey, president of The CCS Global Group, Canada.

implemented. "Without the ISO standards, the UN would have to write the technical requirements itself," Dey explained. The UN's initial focus is on writing a Global Technical Regulation for hydrogen-powered vehicles by 2010, though Dey hopes that it will also soon begin to tackle hydrogen infrastructure issues.

Duplication of effort

It is the nature of this market that makes Dey so passionate about harmonization. "Hydrogen would benefit greatly from developments of global standards from the start. For commercialization, you need standards and if you have global standards then you have access to the global market." This sounds straightforward enough, especially given the existence of international bodies championing just that message. There is a fly in the ointment, however. Although the activities of the UN, the ISO and IEC are aimed at global standards, many of the participating countries are also developing national standards in tandem.

"Some countries have big enough markets that they think they can get away with developing their own standards as well as working with the UN," said Dey. "They don't understand that they are duplicating efforts. They should join the international efforts rather than doing national standards." This conflict arises, says Dey, because the hydrogen and fuel-cell industries are still at an early stage. "Every country's and every company's roadmaps say that hydrogen will be global but they have local market forces that are immature and these are forcing governments to spend money on local efforts," he noted. This immaturity goes hand in hand with a strong sense of competition, with developers wary of sharing too much information about their technology in standards working groups.

Dey believes that the answer to this stand-off lies in better communication. "We need the executives to understand the problems of the lack of harmonized standards and to communicate this to their experts," he explained. CCS recently emphasized its commitment to harmonization by setting up and funding the Global Cooperation Group (GCG). This project is independent from the ISO, IEC, the UN, governments and the hydrogen companies. "We identify [harmonization] problems and put together global teams of experts," explained Dey.

There is still plenty to do and Dey wants GCG's work to speed up. "We want to bring decision-makers to the table. So far the GCG has been funded by our little company. [But] we need governments to resource and fund it to give it solid backing." To this end, Dey is coordinating a roundtable on behalf of the ISO (and supported by the UNECE/WP29). The ISO roundtable on global harmonization of regulations, codes and standards for gaseous fuels and vehicles will be held in Geneva, Switzerland, in January 2007.

Dey concluded: "The timescale for harmonized standards depends on the results of this roundtable and on whether the chief executive officers of companies can work together".