



# Partnership for Advancing the Transition to Hydrogen

The International Coalition of Hydrogen Associations

The Honorable Yvo de Boer  
Executive Secretary  
United Nations Framework on Climate Change  
Haus Carstanjen  
Martin-Luther-King-Strasse 8 (P.O. Box 260124, D-53153 Bonn)  
53175 Bonn  
Germany

20 November 2009

Dear Mr. de Boer:

The Partnership for Advancing the Transition to Hydrogen (PATH) applauds the continued efforts of delegates to COP 15 to reach fundamental agreements on climate change solutions. There are few challenges more daunting, and it will take the full weight of skilled diplomacy and massive investments in advanced technologies to achieve the greenhouse gas reductions that are so urgently needed. Many of us are here in Copenhagen as observers to support the diplomatic efforts.

**PATH represents 16 national associations** who believe that hydrogen and fuel cells offer **key solutions to eliminating substantial greenhouse gas emissions** in transportation and distributed electricity generation. For over twenty years, industry has been steadily evolving technologies and bringing down their costs. Nearly \$10 B (€6.7 B) has been expended by global governments and their industry partners over the last ten years in maturing this family of transformational technologies and moving them toward markets.

Many countries have done analyses to characterize the role of the **transportation sector** in emitting greenhouse gases, particularly in the EU, US, and Japan, and to recognize the relative roles of evolving technologies in eventually eliminating GHGs. Hydrogen and fuel cells in hybrid, electric drive vehicles offer a family of advanced technologies that have zero emissions. Coupled with renewable and other non-carbon sources of hydrogen, and fossil sources with carbon capture and storage, the entire hydrogen fuel cycle can be nearly zero carbon.

**Renewable energy-produced hydrogen** provides an energy carrier that allows for storage of variable energy with electrical grids, helping to solve intermittent generation and upstream congestion challenges. Thus, integrating hydrogen into smarter grids could greatly improve the management and efficiency of renewable resource systems.

Significant **GHG reduction benefits** are expected from widespread deployment of different types of low emission, electric drive light duty vehicles (LDVs), which have undergone extensive development and demonstration. The technical features of a wide variety of fuel and electric drive options are well known, but costs must become competitive and infrastructure needs to be solved in concert with fleet deployments. Growing market penetration occurs as costs come down and infrastructure keeps pace. Along with this, early market financial incentives for manufacturers and consumers are important.

Analysis from the US, EU and Japan has shown that **Zero Emission Vehicles are the only means by which 80% of the LDV GHG emissions could be eliminated** in developed economies with large vehicle fleets, along with urban tailpipe emissions and oil consumption. Associated annual societal costs avoided are large—in the hundreds of billions of dollars or euros. **It is important to note that the impact of today's policy and investment actions is critical to determining the shape of outcomes far into the future.** In a carbon-constrained world, hydrogen and fuel cells become considerably more valuable.

Here are some further reasons to seriously invest public and private funding in H2&FCVs.

### **1. Keeping nationally competitive**

- Hydrogen and fuel cell technologies are well-developed in several countries
- Hydrogen produced from in-country resources keeps jobs in-country, not exported to petroleum-producing countries
- Net job increases from new primary and supplier industries could be substantial
- Several countries are investing and setting aggressive commercialization goals, keeping pace in a global market
- Countries are investing in hydrogen and fuel cells for energy independence and energy security as well as to reduce GHG emissions and urban air pollution

### **2. Transition to the commercial market has already started**

- Billions of dollars/euros of industry and government investments in research, development and demonstration have been productive
- Industry and government are steadily reaching their RD&D goals for advancing technology and lowering costs
- There are decades of experience with hydrogen as an industrial chemical, used mainly in refining gasoline and making fertilizers
- Automakers have already started placing fuel cell vehicles with consumers and aggressive market entry is scheduled for 2014/15
- Fuel cell products are entering early markets (backup, portable power) with government support, tax credits and purchases
- Transit agencies have fuel cell buses in regular passenger service
- Industry remains committed even in difficult economic times
- In widely publicized statements from 9 September in Berlin, several manufacturers pledged to coordinate commercializing electric drive fuel cell vehicles and refueling infrastructure

### **3. Hydrogen and fuel cells will aid significantly in meeting national greenhouse gas and oil reduction targets**

- Serious commitment to a low carbon future depends upon near-zero emission technologies
- Major US studies, for instance, have found that gasoline use could be nearly eliminated in the light-duty vehicle fleet with fuel cell vehicles
- Other technologies will contribute, but the deepest cuts in oil use and GHGs would come from fuel cell vehicles

### **4. Hydrogen and fuel cells are a key choice in a balanced portfolio of solutions**

- Fuel Cell Electric Vehicles (FCEVs) are full-function, long-range, zero-emission vehicles that are refueled in minutes with a low-carbon fuel—no other option provides all these benefits

- Supporting market entry with tax credits for fuel cells and refueling infrastructure of all kinds advances energy efficiency, job creation and technology development.

We commend and encourage your continued efforts to achieve strong climate agreements and hope that Copenhagen will see the success the world needs. Our technologies can make a substantial contribution to eliminating GHG and urban emissions from the transportation and distributed generation sectors.

Sincerely,

Members of the 16 PATH associations whose industrial and educational members represent 39% of the world's population and 76% of the world GDP

[www.hpath.org](http://www.hpath.org)

