

## **Comments of Hyundai Motor Company to the Department of Energy regarding the Quadrennial Energy Review of Transmission, Storage and Distribution Infrastructure**

Hyundai Motor Company (“Hyundai”) manufactures motor vehicles and is a long-time advocate of clean transportation. In keeping with that focus, we fully support the Department of Energy’s (DOE) effort to map our national energy needs through the Quadrennial Energy Review (QER). We also support the comments submitted by the Electric Drive Transportation Association, of which we are a member.

Hyundai is pleased to offer these additional comments as DOE prepares the first QER Report.

### Hydrogen Fuel Infrastructure

The first year of the QER has been focused on transmission, storage and distribution infrastructure for electricity and transportation fuels. As DOE has noted, “These infrastructures tend to set supply and end use patterns, policies, investments and practices for decades.”<sup>1</sup> As part of this review, DOE has considered infrastructure for a number of sources of energy, including petroleum products, coal, solar, wind and others.

These sources of energy are appropriately part of the QER. However, Hyundai strongly recommends that infrastructure for another important source of energy – hydrogen – be included in the current review.

There are a number of ways in which hydrogen can help the United States meet its energy needs. Stationary hydrogen fuel cells can generate electricity and store electricity generated by other sources, such wind and solar power.<sup>2</sup> Furthermore, hydrogen can be made from plentiful domestic sources, including natural gas and water.

In the mobile sector, hydrogen is used in fuel cell electric vehicles (FCEV). FCEVs offer a unique combination of zero emissions and customer convenience. While emitting only water, FCEVs can be fueled in about five minutes and have a driving range of up to 300 miles. Fuel cells are completely scalable, with an ability to power vehicles ranging from two-seaters to eighteen-wheelers. Simply put, FCEVs enable zero emissions without compromises.

Since June 2014, Hyundai customers have enjoyed these benefits in our Tucson FCEV, the first mass-produced FCEV to reach the U.S. retail market. Unfortunately, we are only able to offer the Tucson FCEV in Southern California because that is the only area in the country with an adequate concentration of hydrogen fueling stations.

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<sup>1</sup> [http://energy.gov/sites/prod/files/2014/06/f17/qer\\_public\\_deck\\_june\\_twothree.pdf](http://energy.gov/sites/prod/files/2014/06/f17/qer_public_deck_june_twothree.pdf) (slide 5).

<sup>2</sup> <http://energystorage.org/energy-storage/technologies/hydrogen-energy-storage>

The need for more hydrogen fueling infrastructure is obvious and urgent. Other manufacturers are planning to offer their own FCEVs in 2015 and beyond. Like Hyundai, these manufacturers have invested billions to develop FCEVs to comply with increasingly stringent greenhouse gas emissions standards – as well as to offer customers zero-emission vehicles that do all of the things that their gasoline-fueled vehicles can.

### Recommended policies

To help this technology achieve its promise for customers and the environment, government and the private sector must work together to support fueling infrastructure. California offers a good example: it has committed at least \$20 million a year through 2024 to provide grants for the private sector to build 100 hydrogen fueling stations in California. Governors in several northeastern states (Connecticut, Massachusetts, New York, Rhode Island and Vermont) also have committed to seek to enact policies to provide hydrogen infrastructure. Policy analysts have found that such grant programs, along with tax credits for vehicle purchases, access to high occupancy vehicle lanes, access to low-cost capital and other measures, can help FCEVs succeed in the market and achieve critical mass.<sup>3</sup>

Finally, DOE itself works to further hydrogen fueling infrastructure through H<sub>2</sub>USA, a consortium including DOE, FCEV manufacturers and hydrogen suppliers. Hyundai recommends DOE supplement those efforts by seeking legislative authority and funding to initiate a grant program to help fund the development of hydrogen refueling stations.

In addition to the policies outlined above, Hyundai recommends:

- Sustaining the Alternative Motor Vehicle Credit for Qualified Fuel Cell Motor Vehicles<sup>4</sup>, which incentivizes consumers to consider and purchase FCEVs;
- Sustaining the Alternative Fuel Vehicle Refueling Property Credit<sup>5</sup>, which promotes expansion of complementary fueling infrastructure;
- Sustaining the Alternative Fuel Excise Credit<sup>6</sup>, which provides incentives for hydrogen retail sellers who face increased risk and possible losses during early-term FCEV introduction; and

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<sup>3</sup> <http://steps.ucdavis.edu/files/08-13-2014-08-13-2014-NextSTEPS-White-Paper-Hydrogen-Transition-7.29.2014.pdf>

<sup>4</sup> <http://www.gpo.gov/fdsys/pkg/USCODE-2012-title26/pdf/USCODE-2012-title26-subtitleA-chap1-subchapA-partIV-subpartB-sec30B.pdf>

<sup>5</sup> <http://www.gpo.gov/fdsys/pkg/USCODE-2012-title26/pdf/USCODE-2012-title26-subtitleA-chap1-subchapA-partIV-subpartB-sec30C.pdf>

<sup>6</sup> <http://www.law.cornell.edu/uscode/text/26/6426>

- Creating a federal Infrastructure Financing Authority<sup>7</sup> to provide low-cost capital to fund hydrogen and alternative infrastructure projects.

### Conclusion

Hyundai recommends the pending QER Report identify and endorse public policies that help increase the capabilities and economic viability of the hydrogen fueling infrastructure to support hydrogen FCEVs.

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<sup>7</sup> <https://www.congress.gov/bill/113th-congress/senate-bill/1716>