

## Trend Memo

### Trend Memo (Part II): Hydrogen Fueling Station Development Under Way Internationally

Fuel cell electric vehicles (FCEVs) have been trending in the news recently. This clean driving alternative is attractive because it features zero tailpipe emissions, a driving range in the hundreds of miles, and fast and easy hydrogen refueling that takes just minutes—similar to filling up at gas stations today.

Recent media attention has led to questions about the current, and future, availability of hydrogen fueling to support FCEVs. Few outside the industry realize the scope of efforts currently underway to deliver hydrogen fueling infrastructure:

- High profile industry partnerships are working to facilitate the buildup of hydrogen stations.
- The U.S. and a number of governments worldwide wholeheartedly support the development of hydrogen fueling stations with a goal of increasing zero-emission vehicle deployments to help meet greenhouse gas reduction goals.

In the first three months of 2015, a number of news stories have focused on international developments in hydrogen fueling infrastructure:

Toyota, Nissan, and Honda announced that they have [agreed to work together to help accelerate hydrogen station infrastructure](#) in Japan. The country's industry ministry reports that there are currently [45 hydrogen stations operating or under construction](#), with a total of 100 stations to be opened by March 2016. Tokyo also plans to [spend ¥45 billion \(US\\$378 million\) on hydrogen stations and fuel cell vehicle subsidies](#) ahead of the 2020 Summer Olympics. In addition, [two new hydrogen filling stations opened in January](#), one in the central Nagoya area and the other in Toyota City. Both are the first public hydrogen fueling stations in those areas.

In Europe, Saint-Lô has become the [first French community to open a hydrogen station](#). The station will initially fuel a dozen of the community's electric vehicles with fuel cell range extenders. Later, 30 additional vehicles, plus buses, belonging to partner communities will be added to the fleet. In March, the UK's [first commercial-scale hydrogen production and bus refueling station](#) opened in Aberdeen, Scotland. Owned and operated by BOC, a member of the Linde Group, the station will be used to fuel 10 public transit buses. A hydrogen fueling station is also [planned at Arlanda Airport](#), outside Stockholm, Sweden, that will generate renewable hydrogen onsite from hydropower.



**Hydrogen Fueling Station in Amagasaki, Japan**



**Hydrogen Fueling Station in Saint Lô, France**



**Hydrogen Fueling Station for buses in Aberdeen, Scotland**

Hydrogen fueling station development took a step forward in 2014 with significant policy efforts and funding commitments that will enable the number of hydrogen fueling stations to grow across Europe and Asia. These include both industry and government-supported projects.

In Europe:

- The [EU's TEN-T Program will invest almost €3.5 million \(US\\$4 million\) in studies](#) in preparation for a European network of hydrogen fueling stations.
- Daimler, The Linde Group, TOTAL, OMV, Avia, and Hoyer are partnering to increase the number of hydrogen fueling stations in Germany. [Daimler and Linde will invest around €10 million \(US\\$11.4 million\) each in 10 fueling stations](#). Linde also opened the world's first small-series production facility for hydrogen fueling stations in Vienna, Austria.
- Germany's Clean Energy Partnership (CEP), H2Mobility and Performing Energy reaffirmed their commitment to the development of a German hydrogen fueling infrastructure by signing a [declaration to invest €2 billion \(US\\$2.3 billion\) over the next 10 years](#).
- The [U.K. government unveiled a plan to provide up to £11 million \(US\\$17 million\) in support](#) to facilitate the roll-out of hydrogen-fueled vehicles and hydrogen fueling infrastructure. The government will provide £7.5 million (US\$11.6 million) in funding and industry will provide £3.5 million (US\$5.4 million). The funding will help establish an initial network of up to 15 hydrogen stations by the end of 2015.



**CEP Hydrogen Fueling Stations in Hamburg (top) and Düsseldorf (bottom), Germany**

In Asia:

- [Gwangju, Korea declared that it will foster the hydrogen fuel and fuel cell automobile industry](#) as its core and strategic industry. The plans include developing technologies, installing hydrogen fueling stations, and providing commercially available FCEVs.
- Japan's [JX Nippon Oil & Energy plans to build a nationwide hydrogen fueling infrastructure](#). The company will develop 10 Japan-based hydrogen production sites by 2020. JX is also working to open 40 hydrogen fueling stations, most located in the Tokyo area, by the end of fiscal 2015.
- [Iwatani Corp. is teaming with Seven-Eleven Japan Co. to open convenience stores with hydrogen stations on the premises](#). The companies plan to open two outlets in Tokyo and Aichi Prefecture in 2015. Seven-Eleven will use hydrogen from the stations to generate electricity for the stores.



**Concept for a Seven-Eleven Convenience Store Hydrogen Fueling Station in Japan**

Also in 2014, hydrogen station plans or openings were announced for sites in Australia, England, Denmark, Finland, Germany, Japan, Scotland, Sweden, and the U.S.

For information on U.S. hydrogen fueling infrastructure development, see *Trend Memo (Part I): Hydrogen Fueling Station Development Under Way in the U.S.*

URL: [www.fchea.org/s/Trend-Memo-Hydrogen-Fueling-Stations-US.docx](http://www.fchea.org/s/Trend-Memo-Hydrogen-Fueling-Stations-US.docx)

To learn more about FCEVs and hydrogen infrastructure, please visit the Fuel Cell and Hydrogen Energy Association web page, [www.fchea.org/media-kit](http://www.fchea.org/media-kit), or contact us at [info@fchea.org](mailto:info@fchea.org) to reach experts for interviews, images, quotes, or connections to member companies.