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# Worldwide Hydrogen Fueling Stations

| Location | Fuel | Project | Dates | H2 Production Technique | Specifics/ Comments | Picture |
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| Auburn, California | Compress. H2 | California Fuel Cell Partnership Station located at Pacific Gas & Electric service facility | 2004 | Ztek Corporation High Performance Steam Methane Reformer (HPSR) | HPSR converts natural gas supplied by PG&E to hydrogen at a rate of 600 scfh. | |
| Davis, California | Compressed H2, CNG/H2 | University of California, Davis Hydrogen Bus Technology Validation Program, Toyota FCVs | In operation June 2003 | Air Products and Chemicals (APCI) delivered LH2 | Converts liquid hydrogen to gaseous hydrogen. | |
| Diamond Bar, California | Compress. H2 | South Coast Air Quality Management headquarters | 2004 | Stuart Energy Station (SES-f) | One of first stations opened to the public. AQMD will install an SES power module to evaluate and demonstrate power applications later on. | |
| Oakland, California | Compress. H2 | Alameda-Contra Costa (AC) Transit, ChevronTexaco | Planned – August 2005 | Small-scale onsite steam reforming of natural gas | Will fuel AC Transit's fleet of 3 fuel cell buses | |
| Riverside, California | Compress. H2 | University of California, Riverside, College of Engineering – Center for Research and Technology with SCAQMD | 1992 (1st of its kind) | Electrolyser Corp. (now Stuart Energy) Uni-polar electrolyzer capable of using PV array or grid operation for 5,000 psi H2. | "Solar-Hydrogen Production and Vehicle Refueling Station" | |
| Irvine, California | LH2 to Compressed H2 | UC Irvine, SCAQMD, Toyota FCV | Opened June 2003 | APCI will design and build this H2 fueling station | This station will support a fleet of Toyota's FCVs | N/a |
| Thousand Palms, California | Compress. H2 | SunLine Transit Agency and Ballard P4 Bus Demo. | Opened April 2000 | Stuart Energy Hydrogen Energy Station for vehicle refueling | Electrolytic H2 generation and compression to 34.5 Mpa; 1,400 standard cubic feet per hour, Pdc Machines compressor | |
| Sacramento, California | Liquid to Compressed H2, MeOH | California Fuel Cell Partnership BP, Shell, and Texaco helped in the design | Opened November 2000 | APCI and Praxair delivered LH2 Uses Linde LH2 cryogenic nozzle and controls technology. | LH2 Stored on site in 4500-gallon tank. Can deliver CH2 to vehicle at 3600 and 5000 psi under 4 minutes. | |
| Torrance, California | Compress. H2 | American Honda Motors Co., Inc., Research and Development center | Opened July 2001 | Solar-powered electrolysis, stored on-site | PV-electrolysis with grid electricity back-up, Pdc Machines compressor | |
| Torrance, California | Compress. H2 | As part of Toyota's efforts to establish California fuel cell "communities" with the leasing of 6 FCHVs to 2 UC campuses, it plans to open 5 more refueling stations in addition to this one. | Opened early 2003 | Toyota is working with Stuart Energy and Air Products and Chemicals, Inc. | Toyota USA headquarters in Torrance uses a Stuart Energy hydrogen fueling station. It uses onsite electrolysis powered by renewable energy to generate 24kg hydrogen/day | |
| Oxnard, California | Liquid H2 | BMW North America Engineering and Emission Test Center | Opened July 2001 | APCI delivered LH2 | Manual power assisted refueling station. Also has a Linde LH2 mobile refueling station. | |
| Chula Vista, California (mobile station) | Compress. H2 | City of Chula Vista | 2003 | Stuart Energy hydrogen fueling station | A CFP-1350 generates 60 kg of H2/day, can fuel 3 buses a day, and dispenses at 3,600 and 5,000 psi. Pdc Machines compressor | |
| Thousand Palms, California | Compress. H2 | Schatz Hydrogen Generation Center at SunLine Transit | Opened 1994; retro fit in 2001-2 | Teledyne Energy electrolyzer System | 3600 psi hydrogen generation via electrolysis powered by renewable PV; produces up to 42 standard cubic feet per hour of H2 | |
| Richmond, California | Compress. H2 | AC Transit facility | Opened October 2002 | Stuart Energy Satellite Hydrogen Energy Station for vehicle fueling | PEM electrolyzer; first satellite hub for CaFCP vehicles. Has 47 kg H2 storage capability. | |
| Los Angeles, California | Compress. H2 | Los Angeles International Airport, Praxair, BP, DOE, SCAQMD | October 2004 | Praxair | First retail-style hydrogen fueling station - will feature a 600-square-foot building with high-pressure hydrogen storage tubes on the roof. | |

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| Chicago, Illinois | Liquid to Compress. H2 at station | Chicago Transit Authority – Ballard Bus Demo. | March 1998 – February 2000 | APCI delivered LH2 | Provided hydrogen for three fuel cell buses | |
| Crane, Indiana | Compress. H2 | Navy Refueler | Delivered in 2004 | Hydrogenics PEM Electrolyzer Refueler | 20 kg/day of hydrogen | |
| Dearborn, Michigan | Liquid H2 & Liquid to Compress. H2 at Station | Ford Vehicle Refueling Station | Opened 1999 | APCI delivered hydrogen | | |
| Ann Arbor, Michigan | LH2 to Compress. H2 | EPA's National Vehicle and Fuel Emissions Laboratory (NVFEL), DaimlerChrysler, UPS | 2004 | APCI. will design and build this H2 fueling station. | Supports a fleet of DaimlerChrysler FCVs used by UPS located at EPA's NVFEL. It will store up to 1,500 gallons of LH2, uses Pdc Machines compressor | |
| Milford, Michigan | Compress.H2 | GM and APCI | Will open 2004 | GM and APCI | | N/a |
| Southfield, Michigan | Compress. H2 | DTE Energy, Stuart Energy Systems, BP | October 2004 | Stuart Energy Station | Part of Hydrogen Technology Park | N/a |
| Arizona<br><br>(mobile station) | Compress. H2 | Ford Motor Company | Delivered in 2002 | Stuart Energy Mobile Hydrogen Energy Station for vehicle fueling | Integrates H2 generation, storage, and dual pressure (3,600 and 5,000 psi) dispensing all mounted on a single trailer. | |
| Phoenix, Arizona | Compress. H2, CNG, & H2/CNG blend | Arizona Public Service (Vehicle Testing Center – part of DOE Field Operations Program) | Opened in 2001 | Proton Energy's HOGEN PEMFC electrolyzer, uses Pdc Machines compressor | Only DOE/private sector H2 station | |
| Las Vegas, Nevada | Compress. H2 | Nevada Test Site Development Corp., DOE, Corporation for Solar Technologies and Renewable Resources, APCI and city of Las Vegas | Opened November 2002 | : H2 production via NG reformation; electricity production (for sale) using 50kW PEMFC; H2/CNG blends & pure H2 vehicle dispensers | First multi-purpose station uses Plug Power PEM fuel cell | |
| Washington DC | LH2 & Compress. H2 | General Motors Corp., Shell Hydrogen and APCI | Broke ground May 2004 | Shell Hydrogen and APCI | US's 1st H2 pump at a Shell retail gas station. Will support a GM fleet of 6 H2 FCVs. | |
| Penn State, Pennsylvania | Compress. H2 | DOE, APCI, Penn State | Fall 2004 | APCI, Onsite reformed natural gas | Commercial station project. Will H2 refuel up to 7000 psi, uses Pdc Machines compressor | N/a |
| Charlotte, North Carolina | Compress. H2 | APCI and John Deere | 2004 | APCI and John Deere | | N/a |
| Munich, Germany | Liquid H2 | BMW Company Refueling Station | Opened in 1989 | Linde | | |
| Hamburg, Germany W.E.I.T. phase I | Compress. H2 | W.E.I.T. hydrogen project Services hydrogen vehicles for: Hamburg Hermes Versand Service, HEW, and HHA | Opened December 1999 | Delivered Compressed H2 by m-tec Gastechnologie and Messer Griesheim | On-site electrolysis using 'Green' electricity and 100% fuel cell powered vehicles is the current goal/direction of this project | |
| Hamburg, Germany<br><br>W.E.I.T. phase II | Compress. H2 | CUTE Bus Demo. PLANET from EUHYFIS in charge of H2 station | Opened September 2003 | On site hydrogen from electrolysis via renewable wind power. Hamburgische Electricitätswerke AG subsidiary, GHW | This is the second phase of the W.E.I.T project, which will incorporate the Hamburg CUTE project | |
| Nabern, Germany | LH2 and LH2 to Compress. H2 | DaimlerChrysler Company Refueling Station | Opened in 1998 | LH2 delivered by Linde. | Uses Linde H2 refueling technology. | N/a |
| Munich, Germany | Compress. H2 & Liquid H2 & Liquid to Compress. H2 | Munich Airport Vehicle Project<br><br>Bavaria's minister for economics, transportation and technology and Linde | May 1999 | Hamburgische Electricitätswerke AG subsidiary, GHW<br><br>LH2 and Compress. H2 delivered by Linde. | Uses Linde H2 refueling technology.<br><br>Public Accessible. | |
| Russelsheim, Germany | Liquid H2 & Compress. H2 | On-site fueling for Opel hydrogen vehicles | N/a | LH2 and Compress. H2 delivered by Linde. | Uses Linde LH2 and Compress. H2 refueling technology. This station can refuel Compress. H2 at 10,000 psi (700 bar). | N/a |
| Berlin, Germany | H2 & LH2 & Convent. fuels | Aral, BMW, BVG, DaimlerChrysler, Ford, GHW, Linde, MAN and Opel: Clean Energy Partnership (CEP) | 2003 | LH2 delivered by Linde to Aral station. | World's 1st public hydrogen gas station Linde supplied all LH2 refueling technology. | |
| Berlin, Germany | Liquid and Compress. Hydrogen | TotalFinaElf, BVG, Linde, MAN and Opel: Hydrogen Competence Center Berlin. Station was opened under the framework of the Berlin, Copenhagen, Lisbon fuel cell bus Program | Opened October 2002 | Uses Linde supplied LH2 & Proton Energy Systems' HOGEN® PEM electrolyzer for Compress. H2 | 1st permanent hydrogen fuel station in Berlin; will fuel H2 ICE buses from MAN & fuel cell buses<br><br>Uses Linde LH2 refueling technology & includes a Linde AG mobile filling station | |
| Copenhagen | Mobile LH2 | Station was opened under the framework of the Berlin, Copenhagen, Lisbon fuel cell bus Program | 2003 | Will use Linde supplied liquid hydrogen | The Linde mobile filling station is a part of the TotalFinaElf station in Berlin. | |

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| Lisbon | Mobile LH2 | Station was opened under the framework of the Berlin, Copenhagen, Lisbon fuel cell bus Program | 2003 | Will use Arliquido (in Portugal) supplied liquid hydrogen | The Linde mobile filling station is a part of the TotalFinaElf station in Berlin. | |
| Erlangen, Germany | Mobile Liquid H2 | MAN, Linde (several Bavarian funded bus programs) | April 1996 – August 1998 (ICE) Oct. 2000 – April 2001 (fuel cell) | Linde AG produced and supplied the LH2 to their mobile station | Linde AG supplied LH2 from their large central H2 production & Liquification plant and transported it to the Linde mobile fueling station | |
| Stuttgart, Germany | Compress. H2 | CUTE Bus Demo. | N/a | On-site Natural Gas steam reformation | BP affiliated | N/a |
| Malmo, Sweden | Compress. H2 | Sydkraft | Opened September 2003 | Water electrolysis-based hydrogen generation | Stuart Energy's Hydrogen Energy Station for vehicle fueling | |
| Stockholm, Sweden | Compress. H2 | Clean Urban Transport for Europe (CUTE) Bus Demo. PLANET from EUHYFIS in charge of H2 station | November 2003 | Central Hydro Powered electrolysis, then transported to fueling site | Stuart Energy's Hydrogen Energy Station for vehicle fueling, uses Pdc Machines compressor | |
| London, United Kingdom | Compress. H2 | CUTE Bus Demo. BP in charge of H2 station | Delayed | Centralized production via excess hydrogen from crude oil, then transported to fueling site. Uses BOC H2 refueling technology. | BP affiliated | N/a |
| Amsterdam, The Netherlands | Compress. H2 | CUTE Bus Demo. GVB Amsterdam in charge of H2 station Shell Hydrogen | TBD | Hydrogen System's IMET® powered water electrolyzer and Hoekloos (a Linde Co.) delivered Compress. H2 | On site Hydrogen production via electrolysis from green energy | |
| City of Luxemburg | Compress. H2 | CUTE Bus Demo. AVL in charge of H2 station | Opened October 2003 | Shell Hydrogen/Air Liquide delivered | Tube Trailer compressed H2 | |
| Porto, Portugal | Compress. H2 | CUTE Bus Demo. BP in charge of H2 station | Late 2003 | Centralized production via excess hydrogen from crude oil. | Uses a Linde High Booster Compressor System for high pressure H2. BP affiliated | |
| Madrid, Spain | Compress. H2 | CUTE Bus Demo. & CITYCELL ETA in charge of H2 station | Opened April 2003 | Steam reforming of natural gas, uses Pdc Machines compressor | Consortium | |
| Barcelona, Spain | Compress. H2 | CUTE Bus Demo. BP in charge of H2 station | Opened September 2003 | BP & Vandenborre Hydrogen Systems: IMET® powered water electrolyzer | On-site production via renewable solar and grid electricity powered electrolysis. Uses a Linde High Booster Compressor System for high pressure H2. | |
| Reykjavik, Iceland | Compress. H2 | ECTOS Bus Demo. | Opened April 2003 | Shell Hydrogen/Iceland On site Geothermal and Hydro Powered Electrolyzer. | World's 1st Commercial Hydrogen Station. | |
| Perth, Australia | Compress. H2 | DaimlerChrysler, BP, UNEP | 2004 target | Centrally produced H2 at BP's refinery in Kwinana | Centralized hydrogen production. Gaseous hydrogen from crude oil/natural gas refining. | N/a |
| Hong Kong | Compress. H2 | Cheung Kong Infrastructure Holdings, Ltd. | Late 2004 | Stuart Energy Station for vehicle fueling and power (SES-fp) | Will provide back-up power for building. | |
| Osaka, Japan | Compress. H2 | PEMFC Vehicle Demo. by WE-NET | Fall 2001 | Natural Gas Reforming | | |
| Takamatsu, Japan | Compress. H2 | PEMFC Vehicle Demo. by WE-NET | Fall 2001 | PEM electrolyzer | | |
| Tsurumi, Japan | Compress. H2 | Tsurumi Soda Co. Ltd. Iwatani International Corporation | 2003 | Byproduct hydrogen (brine electrolysis) produced off-site | Next to this station is a showroom and garage for fuel cell vehicles, managed by the Japan Automobile Research Institute. | |
| Yokohama, Japan | Compress. H2 | Steam-Reforming Hydrogen Supply Facilities Cosmo Oil Co., Ltd. | Opened FY2002 | Desulfurized-gasoline Reformation, uses Pdc Machines compressor | Part of Japan Hydrogen and Fuel Cell Demonstration Project. | |
| Yokohama, Japan | Compress. H2 | Nippon Oil JHFC | Opened FY2002 | Naphtha Reformation, uses Pdc Machines compressor | Part of Japan Hydrogen and Fuel Cell Demonstration Project. | |

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| Ome, Japan | Compress. H2 | Babcock-Hitachi K.K.<br>JHFC | 2003 | Natural-gas reforming | This station can move anywhere to supply hydrogen because its hydrogen production device and fueling device are vehicle-mounted. | |
| Tokai, Japan | Compress. H2 | Toho Gas Co. owned. Will sell the hydrogen fuel at a price similar to gasoline | Opened October 2002 | N/a | Located at Toho Gas Co.'s research laboratory in Aichi Prefecture | N/a |
| Hadano, Japan | Compress. H2 | Idemitsu Kosan Co. Ltd.<br>JHFC | 2003 | Kerosene-reform-type hydrogen fueling facility | The world's first kerosene-reform-type hydrogen fueling facility, using originally-developed desulfurization technology. | |
| Ariake, Japan | Liquid H2 & Compress. H2 | Iwatani International Corporation; Tokyo Metropolitan Government, Showa Shell Sekiyu KK<br><br>JHFC | 2002 | LH2 from Iwatani and high pressure Compress. H2 from Linde Hydrogen Cryo-Compressor. | Tokyo's first hydrogen station<br><br>Uses Linde LH2 refueling technology. | |
| Kawasaki City, Japan | Compress. H2 | Air Liquide Japan<br><br>JHFC | 2002 | Methanol Reformation | Kawasaki Hydrogen Station was the world's first to supply hydrogen by methanol reforming. | |
| Senju, Japan | Compress. H2 | Tokyo Gas & Nippon Sanso<br><br>JHFC | 2002 | Steam reforming + PSA refinement, uses Pdc Machines compressor | Reforming of LPG (mixed butane and propane) | |
| Toronto, Canada | Compress. H2 | Hydrogenics, City of Toronto, and the Canadian Transportation Fuel Cell Alliance | 2003 | Steam Methane Reforming | 70 kg/day of hydrogen; this hydrogen energy station includes a 50kW PEM fuel cell for peak-shaving. | |
| Toronto, Canada | Compress. H2 | Hydrogenics, City of Toronto, and the Canadian Transportation Fuel Cell Alliance | 2004 | Hydrogenics PEM Electrolyzer Refueler | 65 kg/day of hydrogen; electricity renewable resources | |
| Toronto, Canada | Compress. H2 | Hydrogenics, John Deere, NACCO, FedEx, GM of Canada – Fuel Cell forklift demonstration | 2004 | Hydrogenics PEM Electrolyzer Refueler | 20 kg/day of hydrogen | |
| Toronto, Canada | Compress. H2 | Hydrogenics, Purolator, and and the Canadian Transportation Fuel Cell Alliance – Fuel Cell Hybrid Delivery Truck Demonstration | Late 2004 | Hydrogenics PEM Electrolyzer Refueler | 20 kg/day of hydrogen | |
| Surrey, BC Canada | Compress. H2 & H2/Natural Gas blend | British Columbia Hydro's Powertech Labs | Opened in 2001 | Stuart Energy hydrogen fueling station: electrolyzer | Used for Coast Mountain Transit's fuel cell bus demonstration from '98-00. It now supplies H2 as well as a blend of H2/Natural Gas to a variety of vehicles. | |
| Torino, northern Italy | Compress. H2 | Irisbus PEMFC City Bus Demo. | TBD | Hydrogen from hydropower via electrolysis | | N/a |
| Bi-cocca (near Milano) | Compress. H2 & Liquid H2 | Hydrogen and fuel cell demonstration project | Opened in 2002 | AEM, SOL, and others | Hydrogen liquefier and vehicle refueling | N/a |
| Oostmalle, Belgian | Liquid H2 | Belgian Bus Demo. | Opened in 1994 | Messer Griesheim GmbH | $LH_2$ storage system of 125 L, an electric $LH_2$ evaporation system as well as all necessary connecting supply infrastructure and relevant control and safety components | N/a |
| Leuven, Belgium | Compress. H2 | NexBen Fueling—a division of Chart—has won a contract from Citensy | 2003 | NexBen Fueling | Europe's first combined liquefied natural gas (LNG) and liquid compressed natural gas (LCNG) and hydrogen fueling station | |
| South Korea | Compress. H2 | Hyundai Motor Company fuel cell vehicle research | Opened in 2001 | Pressure Products Industries, Inc. & Doojin Corporation | The heart of the fueling station is a PPI two stage compressor, model 4V104068 designed for 6,000 psig | N/a |
| Singapore | Compress. H2 | Singapore Economic Dev. Board (EDB), SINERGY Programme (Singapore initiative in energy technology), BP, DaimlerChrysler, APCI | 1st quarter 2004 | BP and APCI, uses Pdc Machines compressor | This will be the 1st H2 refueling station in Southeast Asia.<br>Will be able to supply 20kg of compress. H2 per day (~11 vehicles per day). This will support a small fleet of DaimlerChrysler F-Cell FCVs | N/a |
| Taoyuan, Taiwan | Compress. H2 | Maw Chong Energy<br>Hydrogen refueling project | 2004 | Ztek Corporation High Performance Steam Methane Reformer (HPSR) | Ztek to deliver 2000 scfh unit in 2004 | N/a |
| Howaldwerke-Deutsche Werft, Germany | | Class 212 submarine: driven by hydrogen fuel cells dependent on outer air. | Finished in 2002 | APCI, uses Pdc Machines compressor | World's 1st installed complete hydrogen infrastructure in a non-nuclear hydrogen driven submarine. | |