


## U.S. Hydrogen Fueling Stations

Location	Project	Partners	Opened	Station Type	H2 Dispensing/ Production Technique	Station Details	Image
Phoenix, Arizona	Arizona Public Service Hydrogen Power Park	DOE	2001	<b>Public</b> Fuels HICE test vehicles	Compressed H2 & HCNG  Electrolysis offsite - H2 delivered to station	<ul style="list-style-type: none"> <li>- ProtonEnergy HOGEN 300 PEM electrolyzer</li> <li>- Pdc Machines compressor</li> <li>- H2 storage pressures-150, 2400 and 6000 psig</li> <li>- Storage capacity: 67,000 SCF</li> <li>- Dispenser-5000 psi</li> </ul>	
Arcata, California	Schatz Energy Research Center Hydrogen Station at Humboldt State University	Schatz Energy Research Ctr., Humboldt State U., Chevron Technology Ventures, Caltrans, North Coast Unified AQMD	2008	Private Fuels H2 Prius demo	Compressed H2  Onsite electrolysis	<ul style="list-style-type: none"> <li>- PEM electrolyzer delivers 2.3 kg H2/day</li> <li>- Storage capacity-12 kg at 1,200 psi</li> <li>- Industry standard H2 dispenser with temperature compensated fills to 5000 psi</li> <li>- First "rural" station on CA's H2 Highway</li> <li>- Station supports an H2-powered Prius for 2-year demo</li> <li>- Located by Humboldt State U. Plant Operations yard</li> <li>- Plans to develop an H2 power park using renewable gas from a local landfill</li> </ul>	
Auburn, California	Hydrogen Station at PG&E's Service Center and Division Office	Ztek, CaFCP, Pacific Gas & Electric	2004	Private Fuels CaFCP FCVs	Compressed H2  Natural gas reforming	<ul style="list-style-type: none"> <li>- Ztek CTU-600H H2 reformer on a transportable platform</li> <li>- Converts natural gas to H2 at a rate of 600 scfh</li> <li>- Serves as a satellite refueling station for the CaFCP</li> </ul>	
Burbank, California	SCAQMD Burbank Hydrogen Station	Air Products and Chemicals, Inc., City of Burbank, SCAQMD, Proton Energy	2006	Private N/a	Compressed H2  Onsite electrolysis	<ul style="list-style-type: none"> <li>- APCI Series 200 hydrogen fueling station and a PEM electrolyzer</li> <li>- Pdc Machines compressor, capacity 20 kg/day</li> <li>- 12 kg storage</li> <li>- Can deliver 0.5 kg/hr, 52 kg @ 6250 psi</li> <li>- Distributed Energy Systems FuelGen® H2Fueling System, capable of filling 10 vehicles/day</li> <li>- One of the SCAQMD's '5 Cities Project' stations, fuels FCVs and HICE vehicles</li> </ul>	
Burbank, California	GM Field Service and Support Hydrogen Station	GM	N/a	Private Fuels GM fleet customers	Compressed H2  N/a	<ul style="list-style-type: none"> <li>- 15-minute fill time</li> <li>- Fuels 60+ FCVs</li> </ul>	
Chino, California	Hyundai-Kia America Technical Center Hydrogen Station	ChevronTexaco, Hyundai Motor Co., UTC Fuel Cells	2005	Private Fuels Hyundai & Kia FCVs	Compressed H2  Natural gas reforming, also capable of producing H2 from ethanol	<ul style="list-style-type: none"> <li>- H2 compressed to 6,250 psi</li> <li>- H2 storage capacity-100 kg in pressurized containers</li> <li>- Able to simultaneously fuel 2 vehicles</li> <li>- Expected fuel time 3-5 minutes</li> <li>- 5-yr DOE cost-share demonstration to showcase practical application of H2 energy technology</li> <li>- Access limited to a fleet of 3-5 H2 FCVs</li> </ul>	
Culver City, California	Shell Hydrogen Station	N/a	2009	Private N/a	N/a  N/a	<ul style="list-style-type: none"> <li>- Pressure: 70 MPa</li> <li>- Capacity: 27 kg</li> </ul>	
Davis, California	UC Davis Hydrogen Station	University of California at Davis, Air Products and Chemicals, Inc.	2004	Private Fuels Toyota fleet customers	Compressed H2 & H2/CNG blend  APCI-delivered LH2	<ul style="list-style-type: none"> <li>- Series 100 H2 fueling station</li> <li>- Converts liquid H2 to gaseous H2</li> <li>- Pdc Machines compressor.</li> <li>- Storage: 30 kg compressed hydrogen plus 1,500 gallon liquid hydrogen in storage tank</li> </ul>	
Diamond Bar, California	SCAQMD Hydrogen Energy Station	SCAQMD, Hydrogenics	2004	<b>Public</b>	Compressed H2  Onsite electrolysis	<ul style="list-style-type: none"> <li>- Stuart Energy Station (SES-I)</li> <li>- Electrolyzer uses HICE electricity gen-set</li> <li>- Can fuel 20-30 cars/day</li> <li>- Located at South Coast Air Quality Management District (SCAQMD) headquarters</li> <li>- One of first stations opened to the public and first H2 station in CA to utilize a fueling island design</li> </ul>	
Irvine, California	University of California-Irvine APCI Hydrogen Station	NFCRC at UC Irvine, Air Products and Chemicals, Inc., SCAQMD	2003 upgraded 2006/2007	Private N/a	Compressed H2  Delivered H2	<ul style="list-style-type: none"> <li>- APCI Series 200 fueling system</li> <li>- 25 kg/day capacity, room to expand to 50 kg/day</li> <li>- 350 bar (Phase I), 700 bar (Phase II), and liquid H2 (Phase III)</li> <li>- Stand-alone island for a more traditional fueling experience</li> </ul>	
Irvine, California	University of California-Irvine Hydrogenics Hydrogen Station	National Fuel Cell Research Center at UC Irvine, AQMD, Hydrogenics	2005	Private Supports Toyota FCHVs managed by NFCRC	Compressed H2  Delivered H2	<ul style="list-style-type: none"> <li>- Hydrogenics Home Fueler prototype</li> <li>- Vandenberg IMET water electrolyzer</li> <li>- 2 kg H2/day production capacity</li> <li>- 12-13 kg H2 storage capacity</li> <li>- 5,000 psig (350 bar) filling pressure</li> </ul>	
Lake Forest, California	Quantum Technologies Hydrogen Station	DOE, GM, Quantum Technologies	N/a	Private Supports GM vehicles	Compressed H2  Delivered H2	<ul style="list-style-type: none"> <li>- Part of DOE's Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project</li> <li>- Supports 3-5 GM FCVs in the Lake Forrest area (GM Field Service and Support center for Operation Driveway located nearby), supported 40 FCVs for all GM-led locations</li> </ul>	







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Los Angeles, California	Clean Energy LAX Airport Hydrogen Station	GM, Clean Energy, LAX Airport	2008	Private Fuels H2-powered Equinoxes leased by Virgin Atlantic Airways	Compressed H2 Delivered H2	- Located at existing CNG station	
Oakland, California	AC Transit mobile hydrogen fueler	AC Transit, Air Products	2010	Private Fuels AC Transit buses	Compressed H2 N/a	- Air Products mobile fueler -350 bar (5,000 psi) -500 kg H2 storage capacity -capable of dispensing either liquid or gaseous H2 -solar panel on the top of the fueler provides the electrical power for the dispensing unit	
Oakland, California	AC Transit Oakland Hydrogen Station	AC Transit, UTC Power, Chevron, Van Hool, ISE Research, DOE, NREL, ITS UC Davis, Hyundai	2005	Private Fuels AC Transit's 3 FC hybrid buses and Hyundai Tucson FCVs	Compressed H2 Small-scale steam reforming of natural gas	- Pdc Machines compressor - Storage capacity-366 kg H2 at 6250 psi - Dispenses up to 150 kg H2/day (enough to fill 3 buses) - 2 H2 dispensers- can fuel 2 FC buses simultaneously at 5,000 psi - Fuels AC Transit FCEVs and will also be able to fuel a stationary FC to help meet power needs at AC Transit's maintenance facility	
Oceanside, California	Camp Pendleton Hydrogen Station	U.S. Navy, ZTek	N/a	Private Fuels GM FCVs operated by Camp Pendleton	Compressed H2 Steam methane reforming	- Air Products' HF-60 mobile hydrogen fueler - Will produce 30 kg/day - 60 kg of H2 storage - Dispenses at 5,000 psi - will fuels GM FCVs operated	
Ontario, California	Ontario Hydrogen Station	Air Products and Chemicals, Inc., City of Ontario, SCAQMD	2006	Private N/a	Compressed H2 Delivered H2	- Air Products HF-150 mobile H2 refueler - Pdc compressor - Can deliver 150 kg @ 6600 psi - Storage capacity - 60 kg compressed H2 - Capable of filling 10 vehicles/day - One of the SCAQMD's '5 Cities Project' stations, fuels FCVs and HICE vehicles	
Oxnard, California	BMW North America Hydrogen Fueling Station	BMW, Air Products, Linde AG	2001	Private Supports BMW's HICE vehicles	Liquid H2 Delivered H2	- Manual power assisted Linde LH2 mobile refueling station - APCI-delivered liquid H2 is pressure-transferred from the storage tank to the vehicle tank, no pumps or compressors are needed - APCI 1,500-gallon gross capacity vacuum-jacketed ASME storage tank - Located at BMW North America Engineering and Emission Test Center	
Placerville, California	Placerville Hydrogen Station	Air Products, Nissan	2010	Private Supports a Nissan FC vehicle leased by USFS	Compressed H2 N/a	- Host Site: Eldorado National Forest, U.S. Forest Service - 350 bar fueling capability - Installed March 2010 for a planned 6-mo. deployment - Seeking 2 <sup>nd</sup> 6-mo. operation in south Lake Tahoe area - Funding support by Nissan	
Port Hueneme, California	Port Hueneme Hydrogen Station	Naval Facilities Engineering Service Center, Marine Corps Southwest Region Fleet Transportation	2008	Private N/a	Compressed H2 Natural gas reforming	- The Navy's first compressed H2 station - One-year trial	
Riverside, California	Riverside Hydrogen Fueling Station	City of Riverside, SCAQMD, Air Products and Chemicals, Inc.	2006	Private N/a	Compressed H2 Onsite electrolysis	- APCI Series 200 hydrogen fueling station and a PEM electrolyzer - Pdc Machines compressor - 12 kg storage capacity - Distributed Energy Systems' FuelGen® Hydrogen Fueling Systems, can deliver 0.5 kg/hr, 52 kg @ 6250 psi - Capable of filling 10 vehicles/day - One of the SCAQMD's '5 Cities Project' stations, fuels FCVs and HICE vehicles	
San Francisco, California	San Francisco International Airport Hydrogen Station	San Mateo County	2010	N/a	N/a	- Linde is installing the hydrogen station, which will use a Linde MaxFueler 90 fast-fill dispensing system.	
San Jose, California	Santa Clara Valley Transportation Authority Hydrogen Fueling Station	Santa Clara VTA, SamTrans, CEC, Ballard, FTA, BAAQMD, DOE, Cal EPA, APCI, CARB, CaFCP, NREL	2004	Private Fueled VTA and SamTrans FC buses	Compressed H2 Delivered H2	- Station went off-line at completion of FC bus demo - Stored H2 in liquid form for efficient storage and convert the liquid to H2 gas to fuel buses - Storage-6 ASME steel tubes, 6668 psi and 9000 gallon liquid supply tank. - Could fuel 3 buses/day - H2 delivered by APCI	
Santa Ana, California	Santa Ana Mobile Hydrogen Station	Air Products and Chemicals, Inc., City of Santa Ana, SCAQMD	2006	Private Fuels H2 Priuses operated by city & AQMD	Compressed H2 Onsite electrolysis	- APCI HF-150 self contained, transportable fueling station - Pdc Machines compressor - Air Products' HF-150 mobile H2 refueler - Can deliver 150 kg @ 6600 psi - Capable of filling 10 vehicles/day - One of the SCAQMD's '5 Cities Project' stations, fuels FCVs and HICE vehicles	

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Santa Monica, California	Santa Monica Hydrogen Station	APCI, City of Santa Monica, SCAQMD, Proton Energy Systems, DOE, Quantum Technologies	2006	Private Fuels H2 Priuses operated by city & AQMD	Compressed H2 Onsite electrolysis	- APCI Series 200 hydrogen fueling station and a PEM electrolyzer - Distributed Energy System's FuelGen® H2 fueling system - Pdc Machnries compressor - 12 kg storage - One of the SCAQMD's '5 Cities Project' stations, fuels FCVs and HICE vehicles	
Thousand Palms, California	Schatz Hydrogen Generation Center Hydrogen Station at SunLine Transit facility	Schatz Energy Research Center, SunLine Transit	1994 retro fit 2001-2002	Private Fuels golf carts and other low volume vehicles	Compressed H2 Onsite solar electrolysis	- Produces up to 42 standard cubic feet of H2/hour - Compressed H2 stored in cylinders - Mini-hydrogen station, H2 is dispensed on-site to fuel low-volume vehicles (eg. golf carts)	
Thousand Palms, California	SunLine Transit's SunFuels Hydrogen Fueling Station	Hydrogenics, Hyradix, SunLine Transit Agency	2000	<b>Public</b>	Compressed H2 Onsite electrolysis	- Teledyne electrolyzer - HyRadix Adéo™ H2 generator - Pdc Machines compressor - H2 can be dispensed at both 3600 psig and 5000 psig - Can fuel up to 15 cars/day or 2 buses/day - Station operates 24-hours offering H2, HCNG (also CNG and LNG), H2 is available by appointment - Open to the public, trained technician performs H2 refueling - Fuels SunLine's HICE and HCNG buses	
Torrance, California	Torrance Shell Hydrogen Station	Air Products, Shell Hydrogen, Toyota, SCAQMD	N/a	<b>Public</b>	Compressed H2 Pipeline H2	- APCI owns/operates 17 miles of H2 pipeline, will utilize the pipeline system to deliver H2 to the fueling site - Pressure swing absorption system will purify the pipeline-grade H2 to the higher fuel purity level required by FCV manufacturers - Compressed H2 @ 350 bar, 700 bar - Dispenser - AP Series 200 - 48 kg/day capacity, expandable with additional compression to 96 kg/day - Greenfield station, retail-like design - Several FC vehicle manufacturers are headquartered near the station, will provide multiple-fleet and public access & lower price for H2	
Torrance, California	Honda Solar Hydrogen Refueling Station	Honda R&D	2001	Private Fuels Honda's internal FCX FCV fleet	Compressed H2 Onsite solar electrolysis	- PV electrolysis with grid electricity back-up - Storage - 110 Nm3 @ 5000psi - Fuels 1 car/day - World's first solar-powered H2 production and fueling station	
Torrance, California	Honda Home Energy Station	Honda R&D	2003	Private Fuels Honda's internal FCX FCV fleet	Compressed H2 Natural gas reforming	- Storage - 400 liters @ 420 atmospheres - Fuels 1 car/day - Station designed to power a home, provide hot water and generate hydrogen fuel for refueling FCVs	
Torrance, California	Honda's next generation Solar Hydrogen Station	Honda R&D	2010	Private Fuels Honda's internal FCX FCV fleet	Compressed H2 Onsite solar electrolysis	- Station is small enough to fit into a Clarity owner's garage - Compressor has been eliminated, the largest and most expensive component - The station pulls in solar energy during the day customer can slow-fill with H2 over an 8-hour period at night	
Torrance, California	Toyota Torrance Hydrogen Station	Toyota, Hydrogenics	2002	Private Fuels leased Toyota FCHVs	Compressed H2 Onsite electrolysis using renewable energy	- Stuart Energy H2 fueling station - Onsite electrolysis powered by renewable energy to generate 24kg H2/day - 48 kg 5700 psi storage in 12 X 150L Type 3 Dynatek NGV-2 tanks - Can fuel up to 15 cars/day - Supports 6 FCHVs leased to two University of CA campuses	
West Los Angeles, California	Santa Monica Shell Hydrogen Station	Shell	2008	<b>Public</b>	Compressed H2 Onsite electrolysis using "green" electricity	- H2 produced, compressed and stored onsite - Pressure: 35 MPa - Capacity: 13 kg - Public hydrogen station with an educational visitor's center - One of the SCAQMD's '5 Cities Project' stations, fuels FCVs and HICE vehicles	
West Sacramento, California	CaFCP headquarters Hydrogen Fueling Station	Air Products and Chemicals, Inc., ChevronTexaco, ExxonMobil, BP, Praxair, Shell Hydrogen	2000	Private Fuels vehicles operated by member technicians and engineers	Compressed H2 APCI and Praxair-delivered LH2	- LH2 supply with gaseous onboard storage started in 2000 - In 2003, added HF-150 mobile fueler - Three 750L cascading ASME steel tanks, plus 4500 gallon liquid storage tank - Linde LH2 cryogenic nozzle and controls technology - Can deliver H2 to vehicle at 3600 and 5000 psi in under 4 minutes - Can fuel 17-20 cars/day	
Boulder, Colorado	NREL Wind 2H2 Hydrogen Station	US Dept. of Energy's National Renewable Energy Laboratory (NREL)	2009	Private Fuels NREL HICE shuttle bus and Daimler FCV	Compressed H2 Renewable electrolysis from wind and solar power	-cascading storage tanks, which decreases the time required for refueling -130 kg storage capacity at 413 bar (6,000 psi) -filling the shuttle bus takes 20-30 minutes.	



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Golden, Colorado	Proterra Hydrogen Station	N/a	2009	Private Fuels Proterra FC buses	N/a N/a	- Mobile refueler	
South Windsor, Connecticut	UTC Power's South Windsor Campus Hydrogen Fueling Station	UTC Power, CT Transit, CT DOT, Greater Hartford Transit, Praxair, FTA, DOT	2007	Private Fuels CTTransit FC buses	Compressed H2 H2 produced by hydropower	- Gaseous Hydrogen at 5000 psi - The renewably-generated hydrogen is produced and liquefied using hydropower derived from the Praxair Niagara Falls Facility	
Wallingford, Connecticut	SunHydro Hydrogen Station	SunHydro, Proton Energy Systems	2010	Public Fuels Toyota FCVs operated by Proton Energy Systems and SunHydro, FC buses operated by CTTransit	Compressed H2 Onsite electrolysis	- One of 9 H2 stations being built by SunHydro between Maine and Florida, forming a hydrogen highway - Limited public access at first, full public access in the future - H2 generated onsite using Proton Energy Systems electrolyzer	
Wallingford, Connecticut	Proton Energy Systems Hydrogen Fueling Station	Proton Energy Systems	N/a	Private Fuels CTTransit FC buses	Compressed H2 Onsite electrolysis	- Proton's PEM electrolyzer	
Newark, Delaware	University of Delaware Hydrogen Station	EPRI, Air Liquide	2007	Private Fuels university's FC shuttle bus	N/a N/a	- EPRI Installed the H2 station next to the high-bay for refueling the bus	
Washington, DC	Shell's Benning Road Hydrogen Station	GM., Shell Hydrogen, Air Products and Chemicals, Inc.	2004	Public	Compressed H2 & LH2 N/a	- America's first H2 pump at a retail Shell gas station, with integration of retail H2 and gasoline sales - Gaseous and liquid H2 refueling - APCI Series 200 hydrogen fueling station - Designed for future 700 bar refueling - Below grade storage of LH2 - Safety devices such as below-mount dispenser shear valves and liquid H2 hose break-away - Supports GM's Project Driveway FCVs and other FCVs	
Orlando, Florida	Progress Energy Hydrogen Station	Progress Energy Florida, State of Florida, Ford Motor Company, Chevron, Air Products and Chemicals, Inc.	2006	Private Fuels 8 Ford HICE shuttle buses	Compressed H2 Natural gas reforming	- APCI Series 300 fueling station - H2Ge system to convert natural gas into hydrogen - Pdc compressor - Generation capacity of <16 gge/day - Station located on Progress Energy property - Fuels 8 Ford HICE shuttle buses transporting visitors at the Orlando International Airport	
Oviedo, Florida	BP - Progress Energy Hydrogen Station	Progress Energy, Ford, BP, Florida Dept. of Environmental Protection	2007	Private Fuels 5 FCVs driven by Progress Energy counselors	Compressed H2 Electrolysis	- APCI Series 200 fueling station supplied by a PEM electrolysis unit. - Pdc compressor - Generation capacity of less than <20 gge/day - Station located at Progress Energy's Jamestown Operations Center	
Honolulu, Hawaii	Hickam AFB Hydrogen Station	HydraFLX Systems LLC, USAF	2006	Private Fuels FC bus, tow-tractors and ground support equipment	Compressed H2 Onsite solar electrolysis	- 810 solar modules can produce 146 kW per hour, which can meet the maximum power demand of the H2 plant - HydraFLX system that generates H2 from water in a flexible pressure management process	
Des Plaines, Illinois	GTI Hydrogen Station	GTI, DOE	2007	Public	Compressed H2 N/a	- The H2 station can produce H2 from natural gas, ethanol, or electrolysis of water - Located at GTI's headquarters - Publicly-accessible by arrangement, select credit cards accepted	
Crane, Indiana	Naval Surface Warfare Center Hydrogen Station	US Navy, Hydrogenics	2004	Private Fuels DOD vehicles	Compressed H2 Onsite electrolysis	- Hydrogenics PEM HyLYZER electrolyzer refueler - Can produce and dispense 2.0 kg of compressed H2 gas/day - Located at Naval Surface Warfare Center - Crane Division Test Center. Installed at NAVSEA's showcase test facility	
Billerica, Massachusetts	Nuvera Fuel Cells U.S. Headquarters Hydrogen Station	N/a	2008	Private N/a	Compressed H2 Natural gas reforming	- Nuvera PowerTap reforms natural gas to H2 onsite - Located at Nuvera's headquarters in Billerica, MA	
Ann Arbor, Michigan	EPA National Vehicle and Fuel Emissions Lab Hydrogen Station	EPA, DaimlerChrysler, UPS, Air Products and Chemicals, Inc.	2004	Private Fuels fleet of DaimlerChrysler FCVs used by UPS	Compressed H2 Delivered H2	- Pdc Compressor - Stores up to 1,500 gallons of LH2 - Series 200 APCI H2 station - Dispenses 350 bar gaseous H2	



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Dearborn, Michigan	Ford's Sustainable Mobility Transportation Lab Hydrogen Station	Ford Motor Co., Air Products and Chemicals, Inc.	1999	Private Fuels Ford H2 & FC vehicles	Compressed H2 Delivered H2	- Liquid hydrogen supply with 350 bar dispensing - APCI delivered H2 - First filling station to provide liquid and gaseous H2 - 700 bar upgrade of the Ford Dearborn station scheduled to operate by the end of July 2008	
Detroit, Michigan	NextEnergy Center Hydrogen Station	NextEnergy, BP, APCI, Albert Kahn Assoc., DMA Technical Services, Praxair, REB Research and Consulting, DaimlerChrysler	2006	Private Fuels DaimlerChrysler A Class FCV used by Wayne State U.	Compressed H2 Delivered H2	- APCI Series 200 fueling technology - Can store 50 kg H2 and dispense 20 to 40 kg H2/day - Located in NextEnergy's Microgrid Power Pavilion - Plans for station to produce H2 onsite by different technologies for DaimlerChrysler FC vehicles	
Milford, Michigan	General Motors Milford Proving Ground Hydrogen Station	Air Products and Chemicals, Inc., GM	2004	Private Fuels GM FCVs	Compressed H2 N/a	- APCI Series 200 H2 fueling station with 350 and 700 bar gaseous dispensing - Pdc Machines compressor	
Romeo, Michigan	Ford Proving Grounds Hydrogen Station	Air Products and Chemicals, Inc., GM	2003	Private Fuels Ford H2 & FCVs	Compressed H2 N/a	- APCI Series 100 H2 fueling station - Pdc Machines compressor	
Selfridge, Michigan	Chevron Hydrogen Energy Station	Chevron Hydrogen, DOE, DOD, Hyundai Kia, UTC Power, Air Products and Chemicals, Inc.	2007	Private Fuels Hyundai Kia FCVs	Compressed H2 Steam methane reforming of natural gas	- APCI Series 300 fueling station and H2 purifier. - Produces 80 kg gaseous H2/day, pressure of 5000 psi - Can fuel for up to 20 vehicles per day - Located at the Selfridge Air National Guard Base, limited access	
Southfield, Michigan	DTE Hydrogen Technology Park Hydrogen Station	DTE Energy, Stuart Energy Systems, BP, DaimlerChrysler, DOE	2004	Private Fuels DaimlerChrysler FCVs	Compressed H2 Onsite electrolysis	- Stuart Energy Station electrolyzer - Pdc Machines compressor - Can produce 30 Nm <sup>3</sup> h (65 kg/day) of hydrogen at 6000 psi for vehicles - Can produce 100,000 kW/hrs of electricity/yr, electricity can be fed back to the grid at peak periods or can be used to fuel several FCVs/day - Storage capacity of 140kg - 5,000 psig (345 barg) (nominal) H2 dispensing	
Taylor, Michigan	City of Taylor Hydrogen Station	Ford Motor Company, BP, City of Taylor, DOE	2006	Private Fuels DPW and fire dept. H2 vehicles	Compressed H2 Delivered H2	- Pdc compressor - Located at the Taylor Department of Public Works - Supports four H2-powered Ford Focus FC vehicles: 3 used by the Fire Dept. and 1 used by DPW	
Rolla, Missouri	University of Missouri, Rolla mobile Hydrogen Station	U. of Missouri-Rolla, DOT, Natl. University Transportation Center, Air Force Research Laboratory, DLA	2007, permanent station in 2008	Private Fuels 2 Ford E-450 HICE shuttle buses	Compressed H2 Onsite reforming of natural gas	- Original mobile station installed at the HyPoint Industrial Park - Permanent H2 fueling station opened in 2008 in St. Robert providing fuel for a commuter service for Fort Leonard Wood employees along Interstate 44 corridor	
Las Vegas, Nevada	City of Las Vegas Energy Station	Air Products, Plug Power, City of Las Vegas, DOE	2002	Private Fuels 2 Honda FCVs and will power HCNG-powered vehicles	Compressed H2 & HCNG Onsite solar electrolysis	- Initially used onsite H2 natural gas reforming with LH2 backup, in 2004 added Series 100 H2 fueling station supplied by 50 kW PEM electrolyzer, a portion of power delivered by solar cells - Fuels 2 Honda FCVs, also 4 trucks operating on HCNG - Also fuels a PEM FC providing electrical energy to the Las Vegas grid	
Las Vegas, Nevada	Las Vegas Valley Water District's main campus Hydrogen Station	Las Vegas Valley Water District, UNLV Research Foundation, DOE	2007	Private Fuels 2 Honda FCVs and HCNG-powered vehicles	Compressed H2 Onsite solar electrolysis	- APCI Series 100 fueling station supplied by a PEM electrolysis unit - Pdc compressor	
Las Vegas, Nevada	Proton Energy Systems Hydrogen Station	N/a	N/a	N/a	N/a N/a	- Series 100 H2 fueling station supplied by a PEM electrolyzer - A portion of the power is supplied by solar cells	
East Amwell, New Jersey	Hydrogen Station at private residence	N/a	N/a	Private Fuels the family's FCVs	Compressed H2 Onsite solar electrolysis	- Located at the off-grid home of the Strizki family, home is powered by solar-hydrogen-geothermal energy - Solar generated H2 is stored onsite for use in the home (via a fuel cell) and to fuel FCVs	
Taos, New Mexico	Angel's Nest Hydrogen station	N/a	2004	Private N/a	N/a Wind/solar electrolysis	- APCI Series 100 hydrogen fueling station supplied by a PEM electrolyzer. - Completely renewable power source (wind/solar) in a utility-independent, self-sufficient community	
Ardsey, New York	GM Service and Support Facility Hydrogen Station	GM, Air Liquide	N/a	Private Fuels GM fleet FCVs	Compressed H2 N/a	- 5 minute fill time - Center is fully operational for 30 FCVs	



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Bronx, New York	Shell Hydrogen Station	Shell, Air Liquide, NYC Dept. of Sanitation	2010	N/a N/a	Compressed H2 Delivered H2	- 700 bar pressure - Will support GM's Project Driveway fuel cell vehicles and vehicles by other manufacturers	
Hempstead, New York	Hempstead Hydrogen Station	National Grid, NYSERDA, town of Hempstead	2009	Private Fuels fleet customers	Compressed H2 & HCNG Onsite electrolysis	- APCI fueling technology - Pdc compressor - Can fuel 7 cars consecutively - Long Island's first H2 station, located at Hempstead's Conservation and Waterways Facility	
Honepye Falls, New York	GM Facility Hydrogen Station	GM	N/a	Private Supports GM fleet FCVs	Compressed H2 N/a	- Temporary installation of 350 and 700 bar fueling - 30 minute fueling time	
Jamaica, New York	Shell Hydrogen Station at John F. Kennedy International Airport	GM, Shell, Port Authority of NY & NJ, DOE	2009	Private N/a	Compressed H2 Delivered H2	- Pdc compressor - Supports GM Project Driveway participants	
Latham, New York	Home Energy Station	Honda R&D Americas, Plug Power	2004	N/a Fuels Honda FCX FC cars on public roads in NE US	Compressed H2 Natural gas reforming	- Home Energy Station II - Can fuel one car/day - Developed by Honda R&D Americas and located at Plug Power's corporate headquarters	
Rochester, New York	Rochester Green City Hydrogen Station	N/a	2007	N/a Fuels 3 HICE vehicles and 1 FC bus	N/a Electrolysis	N/a	
White Plains, New York	Shell Hydrogen Station	City of White Plains, Shell Hydrogen, General Motors, Air Products and Chemicals, Inc.	2007	Private Fuels GM fleet customers	Compressed H2 Onsite electrolysis using electricity generated by hydropower	- H2 generated onsite from electrolysis of water using CO2-free hydropower from the New York Power Authority - Stores up to 30 kg gaseous H2 on-site @ 700 bar - Distributed Energy Systems Corp.'s FuelGen H2 generation system - APCI Series 200 H2 fueling technology with PEM electrolysis unit - Pdc compressor - Commercial fueling station is located at the city's public works garage - Serves GM Project Driveway FCVs	
Minot, North Dakota	State University North Central Research Extension Center Hydrogen Station	Hydrogenics, Basic Electric Power Cooperative, Verendrye, Electric Cooperative, Velva	2007	Private Fuels 3 HICE pickup trucks	Compressed H2 Wind-powered electrolysis	- 80 kg/h @ 43 Mpa	
Columbus, Ohio	Ohio State University's Hydrogen Station	Praxair, Ohio State University, Honda	2006	Private Fuels Ford Focus FCHV loaned to the Center	Compressed H2 Delivered H2	- H2 delivered by Praxair, may produce H2 onsite in the future - Station built by Ohio State's Center for Automotive Research	
Allentown, Pennsylvania	APCI Hydrogen Station	Air Products and Chemicals, Inc.	2008	Private Fuels 2 H2 buses	N/a N/a	- Station is located at Air Products' headquarters in PA	
University Park, Pennsylvania	Penn State/Air Products Hydrogen Station	DOE, Air Products and Chemicals, Inc., Penn State	2004	Private Fuels Penn State FCV, utility van and Centre Area Transportation Authority bus	Compressed H2 Natural gas reforming	- APCI Series 300 hydrogen and HCNG fueling station supplied via an advanced natural gas reformer with liquid hydrogen back-up. - Pdc Machines compressor - Up to 7000 psi	
Aiken, South Carolina	Center for Hydrogen Research Hydrogen Station	Center for Hydrogen Research, eTec	2008	Private Fuels CHR's HICE Silverado truck and other H2-powered vehicles	Compressed H2 Delivered H2	- Current plans are to keep the temporary CHR station at the CHR until a more accessible location at Sage Mill Industrial Park on I-20 is constructed	
Columbia, South Carolina	Columbia Hydrogen Station	SC Research Authority, city of Columbia	2009	Private Fuels hybrid fuel cell-electric bus at the U. of SC and will serve fleet of H2 cars	Compressed H2 Delivered liquid H2	- LH2 is stored and converted to gaseous H2	

## U.S. Hydrogen Fueling Stations

Location	Project	Partners	Opened	Station Type	H2 Dispensing/ Production Technique	Station Details	Image
Austin, Texas	University of Texas Hydrogen Station	U. of Texas, Austin, GTI, GreenField Compression, TCEQ, DOT, Texas State Energy Conservation Office	2007	Private Supports fuel cell-hybrid shuttle bus and will support other H2 vehicles planned in Austin area	Compressed H2  Natural gas reforming	- H2 generated/compressed/stored on-site - Located at the J. J. Pickle Research Center - Fuels the University of Texas fuel cell bus and a Dual Variable Output fuel cell bus	
Burlington, Vermont	EVermont Hydrogen Station	EVermont, DOE, Northern Power Systems, Proton Energy Systems APCI, Burlington Dept. of Public Works, Burlington Electric Dept.	2006	Private Fuels a H2-powered Toyota Prius	Compressed H2  Wind-powered electrolysis	- APCI Series 200 Hydrogen fueling station supplied by a PEM electrolysis unit - Proton HOGEN H Series electrolyzer-12 kg/day, 40 kW at peak production capacity - Electrochemical and mechanical compression for on-site storage at 6,000 psi in high-pressure cylinders - Pdc Machines compressor	
Ft. Belvoir, Virginia	Ft. Belvoir Hydrogen Station	GM, DOD	2004	Private Supports a GM FCVs	Compressed H2  N/a	- APCI Series 100 H2 fueling station - Pdc compressor.	
Charleston, West Virginia	Yeager Airport Hydrogen Station	DOE, NETL, Yeager Airport	2009	Private Fuels 3 H2-powered cars, and H2-powered pickup truck and forklift	N/a  H2 generated onsite by electrolysis	- H2 production and fueling facility producing 12 kg H2/day - Pdc compressor - Includes a dispenser, storage facility and trailer to dispense H2 - After 2 years, the station will be sold to a private business for public fueling	



## Planned U.S. Hydrogen Fueling Stations

Location	Project	Partners	To Be Opened	Station Type	H2 Dispensed & Production Technique	Station Details	Image
East Oakland, California	AC Transit East Oakland Hydrogen Fueling Station	N/a	N/a	Private Will fuel 12 Zero Emission Bay Area buses used in regular transit service	Compressed H2  N/a	- Linde H2 station will replace and expand the current outdated H2 facility - Will feature liquid H2 delivery and storage, and possibly an electrolyzer. - Will use ionic compression, which uses less electricity than other H2 fueling stations and requires less maintenance - The dispensers will be added in-line with the division's existing diesel fueling dispensers to help transition the technology to mainstream use - High-performance, fast-fill dispensing systems	
Emeryville, California	AC Transit Hydrogen Fueling Station	AC Transit, Avalence LLC	N/a	Private Will fuel 12 Zero Emission Bay Area buses used in regular transit service	Compressed H2  Onsite solar electrolysis for gaseous H2 and delivered liquid H2	- Avalence electrolyzer (10 kg/day) with Integrated compression to 5,000 psi - 20 kg H2 storage	
Fountain Valley, California	Fountain Valley OCSD Renewable Hydrogen Station	Air Products, DOE, CARB, SCAQMD	N/a	Private N/a	N/a  Biogas from wastewater treatment plant	- Location: Orange County Sanitation District's (OCSD) wastewater treatment facility - Fuel: Biogas from wastewater treatment operations - Will incorporate FuelCell Energy's DFC-H2 fuel cell to produce onsite H2, power and heat - Will produce 300 kW of power and up to 300 lbs of H2/day - 100 kg/day capacity, 360 and 700 bar fueling capability - Will produce sufficient H2 to fuel roughly 100 fuel cell cars - Electricity will be available for use by OCSD operations	
Harbor City, California	Harbor City - Mebtahi Station Services Hydrogen Station	Capital Investment Group, Air Products and Chemicals, Inc., General Physics	N/a	Na	N/a	- ARB awarded Mebtahi Station Services \$1.7 million to add H2 to their existing Chevron station on Western Ave near the Pacific Coast Highway - Will be capable of delivering 100 kg H2/day	
Los Angeles, California	California State University-Los Angeles Hydrogen Station	California State University Los Angeles, SCAQMD, Air Resources Board	Late 2010 or early 2011	<b>Public</b>	Compressed H2  Onsite electrolysis powered by wind	- Hydrogenics PEM electrolyzer - One low pressure (6 kg) and two high pressure tanks (24 kg), over 60 kg of storage capacity - Capable of fueling 5 cars/day - Will be located on the eastern edge of the college campus	

## Planned U.S. Hydrogen Fueling Stations

Location	Project	Partners	To Be Opened	Station Type	H2 Dispensed & Production Technique	Station Details	Image
Newport Beach, California	Shell Hydrogen Station	Shell Hydrogen, Powertech	N/a	Na	N/a	- Will be the first high-pressure fueling station for private consumers in California. - Will be capable of fueling 4 H2-powered vehicles at the same time.	
Westwood, California	UCLA Hydrogen Station	DaimlerChrysler, BP	N/a	Public	Compressed H2 Steam methane reforming	- Compressed H2 @ 350 bar - Will support two Daimler Chrysler F-Cell vehicles - Will produce 140 kg of H2/day - Capable of fueling 25 cars/day	
Fort Collins, Colorado	Fort Collins Hythane Station	City of Fort Collins, Colorado State, Hydrogen Components Inc.	N/a	N/a	Compressed H2 & HCNG N/a	- HCNG station, plans to add H2 dispenser in the future - H2 fuel generator by Avalence - City has one Hythane powered minibus, converting 5 more to run on Hythane	
Claymont, Delaware	SunHydro Hydrogen Station	N/a	Planned by early 2011	Public	Compressed H2 Onsite electrolysis powered by solar	- Will be one of 9 H2 stations built by SunHydro between Maine and Florida, forming a hydrogen highway	
Multiple sites, Hawaii	Hydrogen Stations	State of Hawaii, GM	N/a	N/a	N/a	- Hawaii Hydrogen Initiative - 25 stations are planned by 2015 - Will fuel a fleet of 20 GM FCVs	
Scarborough, Maine	SunHydro Hydrogen Station	N/a	N/a	Public	Compressed H2 N/a	- Will be one of 9 H2 stations built by SunHydro between Maine and Florida, forming a hydrogen highway	
Boston, Massachusetts	Massport/Logan Airport Hydrogen Station	Nuvera, NAVC, MBTA, ISE Corp., Keyspan, AVSG	N/a	N/a	N/a N/a	- FTA grant of \$4.875 million for a FC bus and refueling demonstration project at Logan International Airport. - Nuvera Powertap H2 generation system - Will fuel a FC bus to be operated by Massport.	
Braintree, Massachusetts	SunHydro Hydrogen Station	N/a	N/a	Public	Compressed H2 N/a	- Will be one of 9 H2 stations built by SunHydro between Maine and Florida, forming a hydrogen highway	
Flint, Michigan	Hydrogen Station	Kettering University, Flint Mass Transportation Authority, Air Products, Proton Onsite	Planned by April 2012	N/a	Compressed H2 Onsite electrolysis	- Will fuel a Flint MTA fuel cell bus	
Brookville, Ohio	Dull's Family Farm Hydrogen Station	N/a	Planned in 2010	N/a	N/a Electrolysis	- The farm showcases alternative energy and energy efficiency	
Morgantown, West Virginia	West Virginia University Hydrogen Station	WV University, US Dept. of Energy				- US Department of Energy grant funding of \$1.15 million - Will create a hydrogen highway between Morgantown and a production and fueling station at Yeager Airport in Charleston	

## Decommissioned U.S. Hydrogen Fueling Stations



Location	Project	Partners	Dates	Station Type	H2 Dispensed & Production Technique	Station Details	Image
Yucca, Arizona	Ford's Arizona Proving Grounds Hydrogen Station	N/a	Opened 2002, decommissioned	Private Fueled Ford's H2 & FC vehicles	Compressed H2 Onsite electrolysis	- 2002 - Stuart Energy mobile H2 station mounted on single trailer, integrated H2 generation and storage, dual pressure (3600 and 5000 psi) dispensing (photo at right) - APCI Series 100 hydrogen station added in 2005.	
Chula Vista, California	Chula Vista mobile Hydrogen Fueler	City of Chula Vista, Ford, Toyota, SunLine, Hydrogenics	Opened 2003, decommissioned	Public	Compressed H2 Onsite electrolysis	- Stuart Energy H2 fueling station - Stuart's CFP-1350 system generated 60 kg of H2/day - Pdc Machines compressor - Dispensed at 3600 and 5000 psi - Could fuel 20-30 cars/day - Supported Honda FCX leased to city of Chula Vista - Station was accessible to the public, key card available for unassisted fueling	



## Decommissioned U.S. Hydrogen Fueling Stations

Location	Project	Partners	Dates	Station Type	H2 Dispensed & Production Technique	Station Details	Image
El Segundo, California	Xerox-Clean Air Now Project Hydrogen Station	Clean Air Now, Xerox Corp., Praxair Inc., PVI Corp., Kaiser Engineering	1995-1997	Private Fueled Xerox H2 vehicles	Compressed H2 Onsite electrolysis	- Electrolyzer and compression system operated directly from a PV array for electrolytic generation of up to 400 scfh of H2 gas - Praxair partial fast-fill fueling system, upgraded to a full fast fill system able to fuel multiple vehicles in succession in under 7 minutes each - Fueled fleet of H2 vehicles used by Xerox (Ballard buses and converted H2 ICE Ford Rangers)	
Long Beach, California	Long Beach Hydrogen Station	Air Products and Chemicals, Inc.	Opened 2007, decommissioned	<b>Public</b>	Compressed H2 N/a	- APCI HF-150 Mobile Refueler - Pdc compressor	
Los Angeles, California	City of Los Angeles mobile Hydrogen Fueler	City of Los Angeles, American Honda, Air Products and Chemicals, Inc., Praxair	Opened 2002, decommissioned	Private Fueled 5 Honda FCX FCVs leased to city of Los Angeles	Compressed H2 Delivered H2	- HF-150 mobile APCI fueler - High pressure stored hydrogen (delivered) - 150 kg storage capacity - Could fuel 26-100 cars/day	
Los Angeles, California	Praxair-BP Los Angeles International Airport Hydrogen Station	DOE, SCAQMD, CEC, Los Angeles World Airports, Praxair, BP	Opened 2004, decommissioned	<b>Public</b> Supported Honda FCVs leased to City of Los Angeles	Compressed H2 Onsite electrolysis	- Norsk-Hydro electrolyzer - Pdc compressor - 600-sq-ft building with high-pressure H2 storage tubes on the roof - Storage- 60 kg compressed H2 in ASME Steel cylinder at approximately 6,600 psi - 307 kg storage of supplemental H2 via 2,400 psi tube trailer - Fueling capacity of 10 – 20 cars/day - First retail-style H2 fueling station	
Palm Springs, California	Palm Springs Airport Hydrogen Station	Air Products and Chemicals, Inc.	Opened 1998, decommissioned	Private Fueled 2 FC service vehicles	N/a N/a	- Gaseous hydrogen supply	
Richmond, California	AC Transit Hydrogen Energy Station	AC Transit, Hydrogenics, CaFCP	Opened 2002; decommissioned	Private Fueled AC Transit FC buses and CaFCP vehicles traveling to Bay Area from Sacramento	Compressed H2 Onsite electrolysis	- Stuart Energy Satellite Hydrogen Energy Station - PEM electrolyzer, produces up to 24 kg H2 daily - Pdc Machines compressor - Storage- 47 kg compressed (5700 psi) hydrogen in 12 X 150L Type 3 Dynatek NGV-2 - Could fuel as many as 5 cars within 8 minutes - Capacity-up to 15 cars/day or 2 buses/day - First satellite hub for CaFCP vehicles	
Riverside, California	Solar-Hydrogen Production and Vehicle Refueling Station	UC-Riverside, Air Products and Chemicals, Inc., City of Riverside, SCAQMD, Proton Energy	Opened 1993, decommissioned	Private Fueled UC-Riverside HICE vehicle	Compressed H2 Onsite electrolysis	- Electrolyser Corp. (now Stuart Energy) Uni-polar electrolyzer was capable of using PV array or grid operation for 5,000 psi H2 - "Solar-Hydrogen Production and Vehicle Refueling Station" for H2-ICE pickup truck - Was located at University of California, Riverside, College of Engineering – Center for Research and Technology	
Rosemead, California	Southern California Edison headquarters Hydrogen Station	Chevron Technology Ventures, Hyundai, UTC Power, Southern California Edison, DOE, Hyundai Kia Motors	Opened 2007 decommissioned	Private Fueled small fleet of Kia and Hyundai FCVs operated by SCE meter readers	Compressed H2 Onsite electrolysis	- Alkaline electrolyzer, generating capacity of 40 km H2/day - Pdc compressor - Dispenses H2 at 5000 psi - Fueling time: 3-5 minutes, could fuel 18-20 vehicles/day - The station was one of up to 6 stations that Chevron plans to build and operate under a DOE Contract	
Sacramento, California	Sacramento Municipal Utility District (SMUD) Hydrogen Station	SMUD, Ford, DOE, BP	Opened 2008, decommissioned in 2009	N/a Fueled SMUD FCEVs and others in the region	Compressed H2 Onsite solar electrolysis	- APCI HF-150 mobile fueler - H2 produced onsite via a large solar array - Could produce enough H2 for about 14 FCVs - Pdc compressor	
San Francisco, California	City of San Francisco mobile Hydrogen Fueler	City of San Francisco, American Honda, Air Products and Chemicals, Inc.	Opened 2004, decommissioned	Private Fueled 2 Honda FCX FCVs leased to city of San Francisco	Compressed H2 N/a	- APCI HF-60 mobile fueler - Storage-60 kg - Fueling capacity 5-10 cars/day - Station to be replaced by APCI Series 100 station	
San Francisco, California	PG&E Hydrogen Station	PG&E, Air Products, Daimler-Chrysler	Opened 2006, decommissioned	Private N/a	N/a N/a	- HF-150 mobile refueler	
Denver, Colorado	City of Denver/US DOE Hydrogen Station	Air Products and Chemicals, Inc.	Opened 1993, decommissioned	Private N/a	N/a N/a	- Delivered gaseous hydrogen supply, hydrogen/natural gas blends	
Atlanta, Georgia	Olympic Hydrogen Station demonstration	Air Products and Chemicals, Inc.	1996, decommissioned	Private Fueled hydrogen hybrid ICE bus	N/a N/a	N/a	

## Decommissioned U.S. Hydrogen Fueling Stations

Location	Project	Partners	Dates	Station Type	H2 Dispensed & Production Technique	Station Details	Image
Honolulu, Hawaii	Hickam AFB mobile Hydrogen Station	HCATT, Hydrogenics, Stuart Energy	Opened 2004, decommissioned, new station built	Private Fueled government vehicles	Compressed H2 Onsite electrolysis	- Modular, deployable HydraFLX Systems H2 production and fueling station, composed of Packaged Operating moDules (PODs) - crush proof carbon steel packages for military or commercial transport. 3 primary pods: 1) H2 Fuel Processor: 2 Teledyne Energy Systems HMX 200 electrolyzers, 50kg/day 2) H2 Pressure Management: HydraFLX compression system; JP8 /diesel powered, up to 5000psi 3) H2 Pressure Storage: 9 Dynetek composite tanks; stores at 5000psi - Two additional PODs provided power control and water for electrolysis; MEP 9 generator used for deployment	
Chicago, Illinois	Chicago Transit Authority's Chicago/ Pulaski Avenue Garage Hydrogen Station	Air Products and Chemicals, Inc., Chicago Transit Authority, Ballard Power Systems	1998-2000	Private Fueled 3 Ballard FC buses used in a revenue service	Compressed H2 Delivered H2	- APCI delivered LH2 - LH2 storage at 150 psi - LH2 vaporized to create gaseous H2 (3600 psi), compress and stored for fueling operations	
Buffalo, New York	State University of New York at Buffalo Hydrogen Station	State U. of New York at Buffalo, American Wind Power & Hydrogen, Quantum Technologies, Airgas	2006-2008	Private Fueled 2 Toyota Prius HICEs leased by Quantum Technologies to State U. at Buffalo	Compressed H2 Delivered H2	- H2 delivered in cylinders by Airgas, maximum pressure in cylinders is 2,300 psi - Quantum Technologies' B35 Hydrogen Refueling System - Delivers compressed H2 at sufficient pressure to fill the vehicle to 5,000 psi	
Erie, Pennsylvania	PA Energy Office/ National Fuel Gas Inc. hydrogen station	Air Products and Chemicals, Inc.	1994, decommissioned	Private N/a	N/a N/a	- Delivered gaseous hydrogen supply, hydrogen/natural gas blends	