
















Fuel Cell Vehicles (From Auto Manufacturers)

Automaker	Vehicle Type	Year Shown	Engine Type	Fuel Cell Size/type	Fuel Cell Mfr.	Range (mi/km)	MPG Equivalent*	Max. Speed	Fuel Type	Commercial Intro.	Picture
Audi	A2	2004	Fuel cell/ battery hybrid	66kW/ PEM	Ballard	137mi 220km	N/a	109mph 175km/h	Gaseous hydrogen		
AvtoVAZ	Lada Antel-2	2003	Fuel cell/ battery hybrid	Alkaline fuel cell	N/a	219mi 350km	N/a	N/a	Compress. hydrogen @ 400 bar	Debuted at the 2003 Moscow Auto Show.	
	Lada Antel-1	2001	Fuel cell/ battery hybrid	Alkaline fuel cell	N/a	155mi 250km	N/a	80km/h 50mph	Compress. hydrogen @ 250 atm.		
BMW	Series 7 (745 h) (Sedan)	2000	ICE (fuel cell APU)	5kW/ PEM	UTC	180mi 300km	N/a	140mph 87mph	Gasoline/ Liquid hydrogen	Limited intro in 2000 (Munich Airport Hydrogen Vehicle Project)	
Daihatsu	MOVE FCV – K II (mini vehicle)	2001	Fuel cell/ battery hybrid	30 kW/ PEM	Toyota	75mi 120km	N/a	65mph 105km/h	Compress. hydrogen @ 3600 psi	Previous model used methanol. Japan road testing started in early 2003.	
Daimler	Mercedes- Benz F 800	2010	Fuel cell/ battery hybrid	N/a	N/a	18 miles on battery power plus 375 miles on hydrogen	N/a	N/a	Compress. H2	Concept vehicle	
	B-Class F-Cell	2009	Fuel cell/battery hybrid	90 kW PEM	N/a	385 mi 616 km	N/a	106 mph 170 km/h	Compress. hydrogen @ 700 bar	Small series production starts in 2009.	
	Blue Zero F- Cell	2009	Fuel cell	N/a	N/a	>250 mi >400km	81 mpge	N/a	Na	Unveiled at the 2009 Detroit Auto Show. Small series production starts in late 2009.	
	EcoVoyager	2008	Fuel cell/ battery hybrid	45 kW/ PEM	N/a	300+ mi 483+ km	N/a	115 mph 185km/h	Compress. hydrogen @ 10,000 psi	Range of charged battery is 40mi/64km. H2FC extends range to more than 300 mi.	
	F600 HYGENIUS	2005	Fuel cell/ battery hybrid	60 kW/ PEM	N/a	250mi 400km	N/a	105mph 169km/h	Hydrogen		
	Jeep Treo	2003	Fuel cell	N/a	N/a	N/a	N/a	N/a	N/a	Unveiled at Tokyo Motor Show – drive by wire technology	
	A-Class F-Cell	2002	Fuel cell/ battery hybrid	85kW/ PEM	Ballard Mark 900 Series	90mi 145km	56 mpg equiv.	87mph 140km/h	Compress. hydrogen @ 700 bar	60 fleet vehicles in US, Japan, Singapore, and Europe started in 2003 – small fleet in Michigan operated by UPS.	
	NECAR 5.2 (A-class)	2001	Fuel cell/ battery hybrid	85kW/ PEM	Ballard Mark 900 Series	300mi 482km	N/a	95mph 150km/h	Methanol	Awarded a road permit for Japanese roads. Completed CA – DC drive.	
	Sprinter (van)	2001	Fuel cell	85kW/ PEM	Ballard Mark 900 Series	93mi 150km	N/a	75mph 120km/h	Compress. hydrogen @ 5,000 psi	Delivered to Hermes as part of the W.E.I.T. hydrogen project, also used by UPS	
	Natrium (Town & Country Mini Van)	2001	Fuel cell/ (40 kW) battery hybrid	54kW/ PEM	Ballard Mark 900 Series	300mi 483km	30 mpg equiv.	80mph 129km/h	Catalyzed chemical hydride - Sodium Borohydride	Uses Millennium Cell's 'Hydrogen on Demand' system with a 53 gallon fuel tank	













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	Jeep Commander 2 (SUV)	2000	Fuel cell/ (90 kW) battery hybrid	50kW/ PEM	Ballard Mark 700 Series	118mi 190km	24 mpg (gasoline equiv.)	N/a	Methanol	Jeep Commander 1 came out in 1999.	
	NECAR 4 - Advanced (California NECAR)	2000	Fuel cell	85kW/ PEM	Ballard Mark 900 Series	124mi 200km	53.46 mpg equiv. (CaFCP est.)	90mph 145 km/h	4 lbs. (1.8kg) of Compress. hydrogen @ 5,000 psi		
	NECAR 5 (A-class)	2000	Fuel cell	85kW/ PEM	Ballard Mark 900 Series	280mi 450km	N/a	95mph 150km/h	Methanol		
	NECAR 4 (A-Class)	1999	Fuel cell	70kW/ PEM	Ballard Mark 900 Series	280mi 450km	N/a	90mph 145km/h	Liquid hydrogen		
	NECAR 3 (A-Class)	1997	2 fuel cell stacks	50kW/ PEM	Ballard Mark 700 Series	250mi 400km	N/a	75mph 120km/h	10.5 gal. of Liquid methanol	First methanol reforming FCV	
	NECAR 2 (V-Class)	1996	Fuel cell	50kW/ PEM	Ballard	155mi 250km	N/a	68mph 110km/h	Compress. hydrogen @ 3600 psi		
	NECAR 1 (180 van)	1994	12 fuel cell stacks	50kW/ PEM	Ballard	81mi 130km	N/a	56mph 90km/h	Compress. hydrogen @ 4300 psi		
Dongfeng Motor Corp.	ChuTian 1	2005	Fuel cell	25 kW	N/a	N/a	N/a	N/a	N/a	Developed in conjunction with the Wuhan University of Technology	
ESORO	Hycar	2001	Fuel cell/ battery hybrid	6.4kW/ PEM	Nuvera	224mi 360km	N/a	75mph 120km/h	Compress. hydrogen	Switzerland's first FCV	
Fiat	Panda	2007	Fuel cell	60kW/ PEM	Nuvera Andromeda II stack	125mi 200km	N/a	81mph 130 km/h	Compress. hydrogen	3 delivered to municipality of Mantova	
	Seicento Elettra H2 Fuel Cell	2003	Fuel cell/ battery hybrid	7kW/ PEM	Nuvera	N/a	N/a	50km/h 31mph with fuel cell alone/ 100km/h with battery	Compress. hydrogen	Being investigated for use in Milan, Italy.	
	Seicento Elettra H2 Fuel Cell	2001	Fuel cell/ battery hybrid	7kW/ PEM	Nuvera	100mi 140km	N/a	60mph 100km/h	Compress. hydrogen		
Ford Motor Company	Airstream concept vehicle/ HySeries Edge	2007	Fuel cell plug-in hybrid	HySeries Drive	Ballard	305mi 491km	80 mpg	85mph 137km/h	N/a	Electric motor powered by lithium-ion batteries-the fuel cell acts as on-board "generator" to recharge batteries during transit. Charged battery range is 25mi/40km. H2FC extends range by a further 280mi/450km.	 
	Explorer	2006	Fuel cell/ battery hybrid	60kW/ PEM	Ballard	350mi 563km	35 mpg	N/a	10 kg hydrogen at 700 bar		
	Advanced Focus FCV	2002	Fuel cell/ battery hybrid	85kW/ PEM	Ballard Mark 900 Series	180mi 290km	~50 mpg equiv.	N/a	8.8 lb. (4kg) Compress. H2 @ 5,000 psi	3 year demonstration in Vancouver beginning late 2004. 30 fleet vehicles in Sacramento, Orlando and Detroit	
	Focus FCV	2000	Fuel cell	85kW/ PEM	Ballard Mark 900 Series	100mi 160km	N/a	80mph 128km/h	Compress. hydrogen @ 3,600 psi		

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	THINK FC5	2000	Fuel cell	85kW/PEM	Ballard Mark 900 Series	N/a	N/a	80mph/128km/h	Methanol		
	P2000 HFC (sedan)	1999	Fuel cell	75kW/PEM	Ballard Mark 700 Series	100mi/160km	67.11 mpg equiv. (CaFCP est.)	N/a	Compress. hydrogen	First FCV by Ford	
GM	Provoq	2008	Fuel cell/battery hybrid	88kW/PEM	GM	300mi/483km	N/a	100mph/160km/h	Compress. hydrogen @ 10,000 psi	Uses GM's 5 th generation fuel cell stack. Range on one tank of hydrogen is 280 mi/450km; battery range is 20mi/32km.	
	HydroGen4	2007	Fuel cell/battery hybrid	93kW/PEM	N/a	200mi/320km	N/a	100mph/160km/h	N/a	European version of Equinox – will undergo tests in Berlin in 2008	
	Equinox FCEV	2006	Fuel cell/battery hybrid	93kW/PEM	N/a	200mi/320km	~39 mpg	100mph/160km/h	N/a	Leasing started in 2007 – 100 vehicles in California, New York and Washington DC. In Berlin, leased as "HydroGen4" to 9 companies starting in 2008.	
	Sequel	2005	Fuel cell/battery hybrid	73kW/PEM	GM	300mi/483km	N/a	N/a	8kg Compress. h2 @ 10,000 psi		
	Diesel Hybrid Electric Military truck	2003	Fuel cell APU	5kW/PEM	Hydrogenics	N/a	N/a	N/a	Low pressure metal hydrides	Turbo diesel ICE/battery hybrid with PEM FC APU	
	AUTOmomy Concept only	2002	Fuel cell	N/a	N/a	N/a	Projected 100 mpg	N/a	N/a	GM's 2010 FCV concept Freedom of Design	
	Hy-Wire Proof of Concept	2002	Fuel cell	94kW/PEM	GM**	80mi/129km	~41 mpg (gas equiv.)	97mph/160km/h	4.4 lbs.(2kg) Compress. h2 @ 5,000 psi	Uses HydroGen3's powertrain, so range & mpg theoretically could = HydroGen3	
	Advanced HydroGen3 (Zafira van)	2002	Fuel cell	94kW/PEM	GM**	170mi/270km	~55 mpg (gas equiv.)	~100mph/160km/h	6.8lbs. (3.1kg) Compress. h2 @ 10,000 psi	1 st FCV to incorporate 10,000 psi tanks (by Quantum). 6 placed in Washington DC.	
	HydroGen3 (Zafira van)	2001	Fuel cell	94kW/PEM	GM**	250mi/400km	N/a	100mph/160km/h	Liquid hydrogen	Used by FedEx Corp. in Tokyo, Japan from 6/2003 – 6/2004	
	Chevy S-10 (pickup truck)	2001	Fuel cell/battery hybrid	25kW/PEM	GM**	240mi/386km	40 mpg	70 mph/113km/h	Low sulfur, clean gasoline (CHF)	GM has partnership with Toyota on reforming	
	Precept FCEV Concept only	2000	Fuel cell/battery hybrid	100kW/PEM	GM**	500mi/800km (est.)	108 mpg equiv. (est.)	120mph/193km/h	Hydrogen (stored in metal hydride)	These are concept projections	
	HydroGen1 (Zafira van)	2000	Fuel cell/battery hybrid	80kW/PEM	GM**	250mi/400km	N/a	90mph/140km/h	16 gal. of Liquid hydrogen		
	Zafira (mini-van)	1998	Fuel cell	50kW/PEM	Ballard	300mi/483km	80 mpg equiv.	75mph/120km/h	Methanol	GM has ceased efforts regarding methanol (2001)	
	Sintra (mini-van)	1997	Fuel cell	50kW/PEM	N/a	N/a	N/a	N/a	N/a	Wants to be 1 st automaker to sell 1 million FCVs profitably	

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GM (Shanghai) PATAC	Phoenix (Mini van)	Oct. 2001	Fuel cell/ battery hybrid	25kW/ PEM	Shanghai GM**	125mi 200km	N/a	70mph 113km/h	Compress. hydrogen	Seventh FCV prototype out of China	
Honda	FC Sport concept	2008	Fuel cell	PEM	Honda	N/a	N/a	N/a	Compress. Hydrogen	Showcased at L.A. Auto Show – 11/08	
	FCX Clarity	2007	Fuel cell	100kW/ PEM	Honda	354mi 570km	N/a	100mph 160km/h	Compress. hydrogen	Small scale production of 200 vehicles between 2008-2010. Leasing in Southern California and Japan.	
	PUYO concept vehicle	2007	Fuel cell	N/a	N/a	N/a	N/a	N/a	N/a	Shown at 2007 Tokyo Motor Show	
	FCX concept vehicle	2006	Fuel cell	100kW/ PEM	Honda	270mi 434km	N/a	100mph 160km/h	Compress. hydrogen		
	Kiwami concept	2003	Fuel cell	N/a	N/a	N/a	N/a	N/a	Hydrogen	Unveiled at Tokyo Motor Show	
	FCX	2002	Fuel cell/ Honda ultra capacitors	85kW/ PEM	Ballard Mark 900 series	220mi 355km	~50 mpg (gas equiv.)	93mph 150km/h	156.6 L Compress. hydrogen @ 5000 psi	Have 4 in Japan, 5 in L.A., 3 in San Francisco	
	FCX-V4	2001	Fuel cell/ Honda ultra capacitors	85kW/ PEM	Ballard Mark 900 series	185mi 300km	~50 mpg (gas equiv.)	84mph 140km/h	130 L (3.75kg) Compress. H2 @ 5,000 psi	Completed Japanese road testing - 1st FCV to receive CARB & EPA emission certs.	
	FCX-V3	2000	Fuel cell/ Honda ultra capacitors	62kW/ PEM	Ballard Mark 700 Series	108mi 173km	N/a	78mph 130km/h	26 gal. of Compress. hydrogen at 3600 psi		
	FCX-V2	1999	Fuel cell	60kW/ PEM	Honda	N/a	N/a	78mph 130km/h	Methanol	Honda has strict focus on pure hydrogen FCVs (2001)	
	FCX-V1	1999	Fuel cell/ battery hybrid	60kW/ PEM	Ballard Mark 700 Series	110mi 177km	N/a	78mph 130km/h	Hydrogen (stored in metal hydride)		
Hyundai	i-Blue concept	2007	Fuel cell	100 kW/ PEM	N/a	373mi 600km	N/a	102mph 165km/h	Compress. hydrogen	Shown at Frankfurt Motor Show	
	Tucson II	2007	Fuel cell/ battery hybrid	100 kW PEM	Kia	N/a	N/a	N/a	Compress. hydrogen @350 bar		
	Tucson	2004	Fuel cell/ battery hybrid	80kW/ PEM	UTC Fuel Cells	185mi 300km	N/a	93mph 150km/h	Compress. hydrogen @ 350 bar	Demonstrating 33 Hyundai Tucsons and Kia Sportage FCVs in the US between 2004-2009 and in Korea between 2006-2010.	
	Santa Fe SUV	2001	Ambient-pressure fuel cell	75kW/ PEM	UTC Fuel Cells	250mi 402km	N/a	N/a	Compress. hydrogen		
	Santa Fe SUV	2000	Ambient-pressure fuel cell	75kW/ PEM	UTC Fuel Cells	100mi 160km	N/a	77mph 124km/h	Compress. hydrogen		

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Kia	Borrego/ Mojave FCEV	2008	Fuel cell/battery hybrid	115kW/ PEM	Kia	426mi 685km	54 mpg	100mph 160km/h	Compress. Hydrogen @ 700 bar	Leasing to Seoul, Korea residents starting in 2009.	
	Sportage II	2008	Fuel cell/battery hybrid	100 kW PEM	Kia	Na	Na	Na	Compress. hydrogen @ 350 bar		
	Sportage	2004	Fuel cell	80kW/ PEM	UTC Fuel Cells	185mi 300km	N/a	93mph 150km/h	Compress. hydrogen	Demonstrating 33 Hyundai Tucsons and Kia Sportage FCEVs in the US between 2004-2009 and in Korea between 2006-2010.	
Mazda	Premacy FC-EV	2001	Fuel cell	85kW/ PEM	Ballard Mark 900 Series	N/a	N/a	77mph 124km/h	Methanol	Awarded road permit for Japanese roads in 2001 – undergoing public road testing	
	Demio (compact passenger car)	1997	Fuel cell/ ultra capacitor hybrid	20kW/ PEM	Mazda	106mi 170km	N/a	60mph 90km/h	Hydrogen (stored in metal hydride)		
Microcab Industries Limited	Microcab	2008	Fuel cell	N/a	N/a	100mi 160km	N/a	30mph 45kph	Compress. hydrogen	An Urban, ultra light, city speed, 'short hop' taxi system	
Mitsubishi	Grandis FCV (mini-van)	2003	Fuel cell/ battery hybrid	68kW/ PEM	Daimler Chrysler/ Ballard	92mi 150km	N/a	87mph 140km/h	Compress. hydrogen		
	SpaceLiner Concept only	2001	Fuel cell/ battery hybrid	40kW/ PEM	N/a	N/a	N/a	N/a	Methanol		
Morgan	LIFECar	2008	Fuel cell	22kW/ PEM	QinetiQ	250mi 402km	N/a	80-85 mph 129-137km/h	N/a		
Nissan	Effis (commuter concept)	2003	Fuel cell/ battery hybrid	N/a	N/a	N/a	N/a	N/a	N/a	Unveiled at Tokyo Motor Show	
	X-TRAIL (SUV)	2002	Fuel cell/ battery hybrid	75kW/ PEM	UTC Fuel Cells (Ambient-pressure)	N/a	N/a	78mph 125km/h	Compress. hydrogen @ 5,000 psi	Approved for Japanese Public road testing – 3 leased to Japanese gov.	
Made prototypes w/ each fuel cell stack	Xterra (SUV)	2000/2001	Fuel cell/ battery hybrid	85kW/ PEM	Ballard Mark 900 Series & UTC Fuel Cells	100mi 161km	N/a	75mph 120km/h	Compress. hydrogen	Will begin driving trials in California and Arizona.	
	R'nessa (SUV)	1999	Fuel cell/ battery hybrid	10kW/ PEM	Ballard Mark 700 Series	N/a	N/a	44mph 70km/h	Methanol	Partnership with Renault for gasoline fueled FCV until 2006	
Pininfarina	Sintesi	2008	Fuel cell/battery hybrid	Four 20 kW PEMs	Nuvera	N/a	N/a	138 mph 222 km/h with battery boost / 118 mph 191 km/h FC power only	N/a	The four fuel cells are positioned near the wheels.	
PSA Peugeot Citroen	307cc FISyPAC F/C Hybrid	2009	Fuel cell/ battery hybrid (FC is range extender)	N/a	N/a	310 miles / 496 km	62 mpg	N/a	N/a	Demo vehicle	
	H2Origin delivery van	2008	Fuel cell/battery hybrid	10kW/ PEM	Intelligent Energy	186mi 300km	N/a	N/a	Compress. hydrogen	H2 tanks mounted on sliding rack under rear cargo area-can swap out new tanks as alternative to refilling at an H2 station.	
	H2O fire-fighting Concept only	2002	Fuel cell/ battery APU	N/a	N/a	N/a	N/a	N/a	Catalyzed chemical hydride - Sodium Borohydride	Uses Millennium Cell's 'Hydrogen on Demand' system	

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	Peugeot Fuel Cell Cab "Taxi PAC"	2001	Fuel cell/battery hybrid	55kW/PEM	H Power	188mi/300km	N/a	60mph/95km/h	80 Liters Compress. hydrogen @ 4300 psi		
	Peugeot Hydro-Gen	2001	Fuel cell/battery hybrid	30kW/PEM	Nuvera	186mi/300km	N/a	60mph/95km/h	Compress. hydrogen		
Renault	Scenic FCV H2	2008	Fuel cell/battery hybrid	90kW	Nissan	150mi/240km	N/a	100mph/161km/h	N/a		
	EU FEVER Project (Laguna wagon)	1997	Fuel cell/battery hybrid	30kW/PEM	Nuvera	250mi/400km	N/a	75mph/120km/h	Liquid hydrogen	Partnership with Nissan on gasoline fueled FCV	
Shanghai Automotive Industry Corp.	Shanghai	2007	Fuel cell	60 kW/PEM	ShenLi	N/a	N/a	N/a	Low pressure hydrogen		
	Chao Yue III	2005	Fuel cell	50 kW/PEM	ShenLi	230km/144mi	~69 mpg (gas equiv.)	122km/h/76mph	Low pressure hydrogen @ 20MPa	2.2kg fuel storage (two tanks)	
	Chao Yue II	2004	Fuel cell	43 kW/PEM	ShenLi	122mi/197km	~61 mpg (gas equiv.)	118 km/h/73mph	Low pressure hydrogen		
	Chao Yue I	2003	Fuel cell	40 kW/PEM	ShenLi	N/a	~45 mpg (gas equiv.)	110km/h/68mph	Low pressure hydrogen	Developed in conjunction with Tongju University.	
Suzuki	SX4-FCV	2008	Fuel cell	80kW/PEM	GM	155mi/250km	N/a	93mph/150km/h	Compress. hydrogen	First subcompact FC vehicle developed by Suzuki & GM. Uses a 70MPa tank.	
	Mobile Terrace	2003	Fuel cell	N/a	GM	N/a	N/a	N/a	Hydrogen	Unveiled at Tokyo Motor Show	
	Wagon R FCV	2003	Fuel cell	50kW/PEM	GM	N/a	N/a	N/a	Compress. hydrogen	35 MPa storage rating for the two compressed H2 tanks.	
	MR Wagon FCV	2003	Fuel cell	80kW/PEM	GM	N/a	N/a	N/a	Compress. hydrogen	First FCV certified by Japan's Ministry of Land Infrastructure and Transport as a 70 MPa system (uses two 70 MPa tanks).	
	Covie Concept only	2001	Fuel cell	N/a	GM	N/a	N/a	N/a	N/a		
Tecnalia	H2CAR	2008	Fuel cell/battery hybrid	5kW/PEM	N/a	N/a	N/a	N/a	Low pressure hydrogen @ 200 bar	Developed by the Energy Unit / Basque Technological Corporation at Tecnalia (Spain)	
Toyota	FCHV-adv	2008	Fuel cell/battery hybrid	Toyota FC stack	N/a	515mi/830km	N/a	97mph/155km/h	N/a	Leasing, to government agencies and energy companies in Japan, started in late 2008.	
	FINE-N Concept only	2003	Fuel cell/battery hybrid	N/a	Toyota	311mi/194km	N/a	N/a	Compress. hydrogen	Based on the Fine-S. Uses 70 MPa tank. Features by-wire braking, steering and throttle controls.	
	FINE-S Concept only	2003	Fuel cell/battery hybrid	N/a	Toyota	N/a	N/a	N/a	Compress. hydrogen	Toyota's freedom of design concept.	
	FCHV (Kluger V/ Highlander SUV)	2002	Fuel cell/battery hybrid	90kW/PEM [122 hp]	Toyota	180mi/290km	N/a	96mph/155km/h	Compress. hydrogen @ 5,000 psi	Total of 18 leased in California and Japan	

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	FCHV-5 (Kluger V/ Highlander SUV)	2001	Fuel cell/ battery hybrid	90kW/ PEM	Toyota	N/a	N/a	N/a	Low sulfur, clean gasoline (CHF)	Partnered with GM on gasoline CHP reforming technology	
	FCHV-4 (Kluger V/ Highlander SUV)	2001	Fuel cell/ battery hybrid	90kW/ PEM	Toyota	155mi 250km	N/a	95mph 152km/h	Compress. hydrogen @ 3,600 psi	Completed Japanese road testing	
	FCHV-3 (Kluger V/ Highlander SUV)	2001	Fuel cell/ battery hybrid	90kW/ PEM	Toyota	186mi 300km	N/a	93mph 150km/h	Hydrogen (stored in metal hydride)		
	RAV 4 FCEV (SUV)	1997	Fuel cell/ battery hybrid	25kW/ PEM	Toyota	310mi 500km	N/a	78mph 125km/h	Methanol		
	RAV 4 FCEV (SUV)	1996	Fuel cell/ battery hybrid	20kW/ PEM	Toyota	155mi 250km	N/a	62mph 100km/h	Hydrogen (stored in metal hydride)		
VW	Passat Lingyu	2008	Fuel cell/battery	55kW/ PEM	SAIC (Shanghai VW parent co.)	186mi 300km	N/a	93mph 150km/h	N/a	Developed by Shanghai Volkswagen and Tongji University for deployment in China – aiming for 2010.	
	Tiguan HyMotion	2008	Fuel cell/battery	80kW/ HTFC*	VW	125mi 200km	N/a	87mph 140km/h	N/a	*VW-developed high temperature fuel cell	
	Space Up Blue	2007	Fuel cell/ battery	45kW/ PEM	VW	155mi 250km	N/a	75mph 120km/h	N/a	Can go additional 62 miles (100 kilometers) range via a compact lithium-ion battery package.	
	Touran HyMotion	2007	Fuel cell/ battery	80kW/ PEM	VW	100mi 161km	N/a	87mph 140km/h	N/a		
	HyPower	2002	Fuel cell/ super-capacitors hybrid	40kW/ PEM	Paul Scherrer Institute	94mi 150km	N/a	N/a	Compress. hydrogen		
	HyMotion	2000	Fuel cell	75kW/ PEM	Ballard	220mi 350km	N/a	86mph 140km/h	13 gal. Of Liquid Hydrogen		
	EU Capri Project (VW Estate)	1999	Fuel cell/ battery	15kW/ PEM	Ballard Mark 500 Series	N/a	N/a	N/a	Methanol	Involved Johnson-Matthey, ECN, VW, and Volvo	

Note: mpg gas equivalent is based on conversion rate of 1 kg hydrogen = 1 gallon gasoline energy equivalent