

SCANDINAVIAN MOON ROCKET

BY JOE SAGE

Volvo has their eye on big-picture changes at least as much as on individual models in the lineup right now—though each clearly influences the other—with a complete changeover to all-EV vehicles underway. These are transitional times, with a combination of mild hybrid, plug-in hybrid and pure EVs in the mix (but no non-hybrid gasoline vehicles). The plan is for Volvo Car USA to sell 50 percent pure EVs by 2025 and 100 percent by 2030 (all well along in development). And here's an evolutionary solution right now: the 2023 Volvo XC90 Recharge eAWD, a plug-in hybrid (PHEV) with up to 32 miles of pure electric

range and 58 MPGe combined cycle (or 27 gasoline) average MPG. All this adds up to 530 miles of range from its 455-hp 2.0-liter turbo powertrain—quite a formula and quite an achievement. Introduced in 2003, generation two of the Volvo XC90 arrived for model year 2016, with its refinement evolving throughout. The current lineup is built around three trim levels, but with powertrain and seating options you quickly arrive at 12 different basic builds, in a price range that climbs by 43 percent, all in the premium to premium-luxe realm. The version we are driving here is top dog. The XC90's cabin feels full-size, while it maneuvers and parks like the midsize it officially is. We were aware of its powertrain from our first red light—the electrified system contributes almost 50 percent again the horsepower of the gasoline turbo itself, providing launch power you will need to get used to. Underway, power is simply strong and ample—boulevard maneuvers are masterful, shifts from its eight-speed are smooth, and U-turns are efficient. Occasionally you may notice sound effects particular to this complex powertrain. While styled and shod as a street cruiser, the XC90 has significant ground clearance, approach-departure-breakover angles and wading depth—beyond its persona and expected usage. Much has been updated inside, as well. Its crystalline shift lever is not the most ergonomic we've handled, though it is the gateway to solid function,

including additional regenerative power. Volvo boasts an extensive suite of built-in Google functions across the whole lineup this year. We most appreciated its clean console, center stack and screen layout (remembering the Volvos of maybe 10-15 years ago, which bore dozens of tiny buttons to master). The new setup strikes us as having the classic best of Scandinavian design. Rather than another smartphone-on-wheels effort, as is so common, Volvo engineers seem to have developed a broad idea of the implementations and a specific idea of the purpose, then performing their own clean-sheet design—an approach long seen in that region's furniture, electronics and more—style, function and plenty of class. All in all, the XC90 Recharge PHEV is a nice performer. Just be ready for that first punch of the pedal to light you up like a SpaceX Falcon Heavy rocket—a surprise at first, but for many surely another strong selling point all its own. ■



SPECIFICATIONS

ASSEMBLY	Gothenburg, Sweden
ENGINE/TRANS BUILD	Sweden / Japan
PARTS CONTENT	Sweden 36%, Finland 13%, US/Canada 1%
SEATS/PASSENGERS	seven
ENGINE	2.0L turbo 4-cyl 16v DOHC dir inj
HP	312 hp
ELECTRIC MOTOR / HP	143 hp
EXT RANGE BATTERY	18.8 kWh 270-400 V
HP/TORQUE	(combined) 455 hp / 523 lb-ft
TRANSMISSION	8-spd Geartronic auto
DRIVETRAIN	AWD
0-TO-60 / TOP SPEED	5.0 sec / 112 mph
SUSPENSION	opt 4-corner air suspension
STEERING	elec power asst
BRAKES	F: 14.4 x 1.2; R: 13.6 x 0.8
WHEELS / TIRES	21-in alloy / all-season
LENGTH / WHEELBASE	195.0 / 117.5 in
GROUND CLEARANCE	(air susp) 8.3-9.9 in
APPR / DEP / BRKOVER	21.0 / 21.0 / 21.3°
WADING ABILITY	17.7 in
TURNING CIRCLE	curb-to-curb 39.7 ft
HEADROOM (F/2/3)	38.9 / 38.5 / 36.3 in
LEGROOM (F/2/3)	40.9 / 37.0 / 31.9 in
CARGO CAPACITY	41.9 / 85.7 cu.ft
WEIGHT	na
TOW CAPACITY	braked 5000 / unbrk 1650 lb
FUEL / CAPACITY	na / 18.8 gal
RANGE / PURE ELECTRIC	up to 32 miles
MPG	27 MPG (comb) / 58 MPGe (comb)

BASE PRICE	\$65,850
ULTIMATE / BRIGHT THEME: bright chrome bars in grille, bright roof rails, bright chrome window surround, integrated 2nd row center booster cushion, perforated Nappa leather seating front, ventilated front seats, wood inlay, 21-in diamond cut alloy wheels, tailored dash & upper door panels, crystal shifter, Harman Kardon premium sound (not upgrade on ours), power front seat side support, power front seats cushion extension, sun curtains rear side windows, graphical heads-up display, heated steering wheel, heated rear seats, high-pressure headlight cleaning, 360 surround view camera, high level interior illumination, Recharge illuminated tread plates	
AUDIO: Bowers and Wilkins premium	3200
AIR SUSPENSION: 4-corner	1800
DESTINATION CHARGE	1095
TOTAL	\$85,495

Prices have increased; see chart.

2023 VOLVO XC90 LINEUP

MILD HYBRID	SEATS	B5	B6
Core	7	\$56,000	\$60,900
Plus	7	59,900	63,400
	6		63,900
Ultimate	7		69,400
	6		69,900
RECHARGE PHEV	SEATS	T8	
Core	7	\$71,900	
Plus	7	73,600	
	6	74,100	
Ultimate	7	79,600	
	6	80,100	

E-VOLVO-LUTION

The first Volvo car rolled off the production line in Sweden in 1927. Volvo Cars formed part of the Swedish Volvo Group until it was bought by Ford Motor Company in 1999. In 2010, it was acquired by Zhejiang Geely Holding of China, as Volvo Car Group. The Volvo name is owned by Volvo Trademark Holding AB, in turn jointly owned by Volvo Cars and Volvo Group.

While Volvo is well-known in about 100 countries, its global market share is 1-2 percent. Its largest market, China, had some 20 percent of their total sales volume in 2017, followed by the US (14%), Sweden (13%), the UK (8%) and Germany (7%).

Head office, product development, marketing and administration are mainly located in Gothenburg, Sweden. Since 2011, Volvo Cars has offices in Shanghai and Chengdu, China. Shanghai includes a Technology Centre plus sales and marketing, manufacturing, purchasing, product development and all other supporting functions.

Apart from main car plants in Sweden and Belgium, Volvo has long manufactured engines and body components in Sweden. They also have an assembly plant in Kuala Lumpur (Malaysia), R&D centers in Denmark and Silicon Valley, and design centers in Sweden, Southern California and China.

Production at Volvo's Chengdu plant started in 2013, making cars for the Chinese and US markets. A second plant in Daqing, China opened in 2014, plus an engine plant in Zhangjiakou, China. In the US, Volvo Cars opened a new manufacturing facility in Berkeley County, South Carolina in 2018.

By 2030, Volvo plans to sell only full EVs and to be "climate neutral" by 2040. They will end diesel models by early 2024, following their commitment toward no new combustion engines, in late 2022 selling their stake in Aurobay, the JV company that had all their remaining combustion engine assets.

Volvo Car USA and Canada this fall reported sales up 31.6 percent month-to-month and 22.9 percent year-to-date over 2022, with Recharge models (full EV or PHEV) double the prior year, at 25.3 percent at that point, with fully-EV at eight percent.

Now, Volvo Car USA and Canada are restructuring their operations, cutting over 10 percent of their nearly 1,000 white-collar work force, in an \$88 million global effort to tighten spending, drive efficiencies and update the work force for an all-EV future. Silicon Valley Tech Center has been downsized by 75 percent, Camarillo design center similarly, consolidating work "elsewhere globally." While much tech work was moved to Volvo's US headquarters in Mahwah, NJ, they are opening a tech hub in Singapore to focus on data and analytics, software and advanced manufacturing development, plus another tech center in Poland this year.

The factory in South Carolina is said to be building the XC-90 for the US market since 2022, though ours was built in Sweden. As of now, South Carolina operations are said to remain on track. ■

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