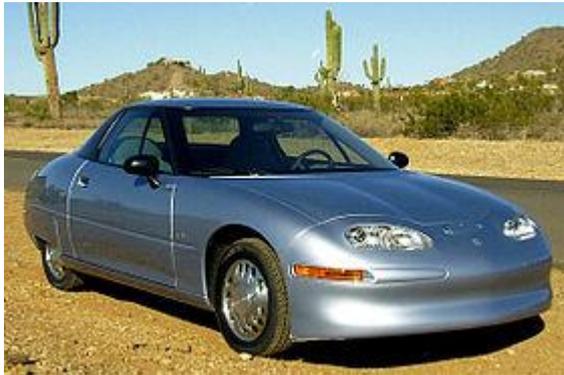




RESURGENCE OF THE ELECTRIC CAR

Who Killed the Electric Car? is a 2006 documentary film that explores the creation and subsequent destruction of the battery electric cars in the United States. The film focuses primarily on the General Motors EV1, which was made available for lease mainly in Southern California, after the California Air Resources Board passed the Zero-emissions vehicle mandate in 1990 which required the seven major automobile suppliers in the United States to offer electric vehicles in order to continue sales of their petrol powered vehicles in California. Nearly 5000 electric cars were designed and manufactured by GM, Toyota, Honda, Ford, Nissan, and Chrysler; and then later destroyed or donated to museums and educational institutions. The film explores some of the



designed electric vehicle of the modern era

motives that may have pushed the auto and oil industries to kill off the electric car. For example, that the oil companies were afraid of losing their monopoly on transportation fuel over the coming decades while the auto companies feared short term costs for EV development and long term revenue loss because EVs require little maintenance and no regular services. General Motors argued it was lack of consumer interest due to the maximum range of about 150 kilometres per charge and the relatively high price.

The General Motors EV1 was an electric car produced by General Motors from 1996 to 1999. It was the first mass-produced and purpose-

Well, the electric car has been resurrected by Tesla Motors. Tesla Motors was founded in 2003 by a group of engineers in Silicon Valley who wanted to prove that electric cars could be better than petrol-powered cars. Tesla's engineers first designed a powertrain for a sports car built around an AC induction motor, patented in 1888 by Nikola Tesla, the inventor who inspired the company's name. The resulting Tesla Roadster was launched in 2008. Accelerating from 0 to 100 kmh in 3.7 seconds and achieving a range of 400 kilometres per charge of its lithium ion battery, the Roadster set a new standard for electric mobility. Tesla would sell more than 2,400 Roadsters, now on the road in more than 30 countries.

In 2012, Tesla launched Model S, the world's first premium electric sedan that looks, drives and sounds like nothing else. Built from the ground up to be 100 percent electric, Model S has redefined the very concept of a four-door car. There is no engine to take up space under the bonnet, no fuel system behind and below the rear seats, and no transmission tunnel down the spine of the car. The Model S can be had with room for seven passengers with a "jump seat" that stows away in the boot floor and allows seating for two children. And the luggage storage on offer at the front



and the rear of the car is substantial. There's Tesla's 'frunk' (the front trunk) that allows 150 litres of cargo capacity, while the boot has 744 litres of space. Combined, it has 894 litres – more than almost all similarly sized vehicles. Model S provides the comfort and utility of a family sedan while achieving the acceleration of a sports car: 0 to 100 kmh in about five seconds. Its flat battery pack is integrated into the chassis and sits below the occupant cabin, lending the car a low centre of gravity that enables outstanding road holding and handling

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while driving 425 kilometres per charge. Unlike a petrol internal combustion engine with hundreds of moving parts, Tesla electric motors have only one moving piece: the rotor. No servicing is required. Model S was named Motor Trend's 2013 Car of the Year and achieved a 5-star safety rating from the U.S. National Highway Traffic Safety Administration.

The price of a Model S in Australia starts at about A\$100,000. In addition, a highly anticipated Tesla Model X SUV will go into production later this year, with an Australian launch very likely for early 2016. It will be followed by a mid-size sedan to take on the BMW 3 Series and Mercedes-Benz C-Class, dubbed the Tesla Model 3.

Tesla has announced plans to launch 16 high-powered supercharger stations between Melbourne and Brisbane by 2016, 10 of which are flagged for completion this year. Theoretically the stations will allow a Tesla customer to travel between Brisbane and Melbourne without paying a cent for electricity – simply plug into a supercharger and wait 20-odd minutes for a 50% charge or 40 minutes for an 80% charge.

General Motors is joining the competition in the battle for affordable electric cars, and will go up against the BMW i3, Nissan Leaf and 2017 Tesla Model 3. General Motors will develop an affordable electric car named the Chevrolet Bolt by 2017, matching Tesla's goal for the Model 3. GM claims that the Bolt will "offer more than 200 miles" of electric range with a starting price of "around \$30,000."



According to CNBC, Bob Lutz, former vice president at General Motors, predicts that almost all private transportation will be done by electric vehicles in 25 years, and that driving range concerns will be relieved in 10 to 15 years. For electric vehicles to really go mainstream, battery prices need to decline and battery technology needs to improve. Fortunately, many of today's industry leaders appear to realize this, and are working on ways to conquer the challenge.