

# Tesla Motors - Premium Electric Sedans and SUVs



Formerly known as Tesla Motors, **Tesla Inc.** is a world-known automobile maker with a base in Palo Alto, California, USA. Besides being just an automaker, this prestigious company has made a mark for itself as an energy storage company and solar panel manufacturer.

Best-known for its Model S electric car, the company reached the peak of its sales in November 2016. Ever since, there has been no looking back for the company that promises to bring more advanced models in the world of electric cars and automobiles in the coming years.

## **Foundation**

Founded in the year 2003 by the joint efforts of Marc Tarpenning and Martin Eberhard, Tesla Inc. came into existence soon after General Motors dropped their EVI electric cars in the same year. The company is now a well known maker of electric cars, residential photovoltaic panels and lithium-ion battery energy storage.

One can actually witness the whole range of its products at the various Tesla Stores and Galleries located all across the world, particularly in the US. Although, the company began its journey with sports cars, it soon dived into designing and launching mass market vehicles too. Now, the company is known to be one of the most acclaimed makers of electric and battery cars.

In 2008, Tesla Motors launched its first lithium-ion battery powered Tesla Roadster car. This particular car was designed to offer 320km per charge and was considered an instant hit with over 2,250 models sold in over 30 countries.

## **Basic Strategy**

Complex coordination is the main strategy used by the company for the designing of all the automobile products seen at various Tesla Stores. Formulated by the well-known investor Peter Thiel, this strategy was designed to target the potential buyers initially by emulating the life cycles of its technological products.

Later, the strategy was changed and the focus was laid on larger markets with lower priced products. Gradually, the company marked its foray in the battery and electric technology that can now be seen in

the latest models of Tesla's Series.

Now the company gives immense priority to pure electric propulsion technology and the vertical integration that comprises of production as well as infrastructure for proprietary charging.

## **Factories**

The first Tesla Factory was founded in Fremont, California and it comprised of the former NUMMI plant. According to the data collected in 2016, this plant was not automated as desired for the production of the company's latest automobile models, so the company then acquired Riviera Tool & Die, Tesla's supplier for stamping items in 2015.

Later, in 2017, the company also acquired Perbix Machine Company, a renowned manufacturer of equipments for automated manufacturing. Besides this Tesla also has a second factory in Fremont that spans over an area of more than 500,000 sq.ft just next to the SolarCity facility.

**Gigafactory 1:** The Gigafactory 1 of Tesla Motors is situated right outside Reno, Nevada. It is known to manufacture the company's Powerpacks and Powerwalls along with battery cells that too in partnership with Panasonic. Moreover, the company aims to manufacture drivetrains and engines at this factory and for this it also received decent subsidies from the state as well as local governments.

**Gigafactory 2:** Gigafactory 2 is situated in Buffalo, New York and it basically is used by Tesla's SolarCity unit. This 1.2 million sq.ft. factory is known to employ about 500 workers. Gigafactory 2 is the

company's site to assemble photovoltaic panel modules in partnership with Panasonic. From 2018, the factory is even supposed to start assembling solar panels and full panels.

## **Presence All Over Canada, Europe, Asia and Australia**

Always endeavouring to bring forth the latest electric and battery driven automobiles, Tesla Inc. has its eminent presence all across Canada, Europe, Asia and Australia. In 2017, there were about eight Tesla stores and galleries in places like Vancouver, Toronto, Montreal, Calgary and Quebec City. While, the company marked its presence in London in 2009 and later reached to places like Amsterdam, Netherlands and Germany in Europe.

In Asia, the company opened Tesla Service Centers in Japan, Beijing, Hong Kong and Shanghai. It was then in 2010, that the company decided to open its showroom in Sydney and later in 2015, it started with a service center even in Melbourne, Australia. Recently, in July 2017, Tesla came to the limelight by winning a contract for installing the world's largest grid-scale battery within a time span of 100 days in South Australia.

## **Advanced Technologies**

Being a vertically integrated manufacturer, Tesla needed to master the advanced technology domains that included multiple technologies like electric motors, sensors, batteries and even artificial intelligence.

- 1. Battery:** What makes Tesla Inc. different from other automobile makers is the fact that its battery vehicles don't rely on large battery cells but on numerous small and cylindrical lithium-ion commodity cells quite similar to the ones used in electronic items used in our

homes. At the moment, it is Panasonic, who is the sole provider of the cells used in the company's Model 3, Model S and Model X vehicles.

Another interesting thing worth appreciating in all the battery operated vehicles of the company is that the batteries in them are placed right under the vehicle floor to save trunk as well as interior space. However, this also enhances the risk of the battery damage due to accumulated debris on the vehicle floor.

**2. Autopilot:** Not just battery operated vehicles, this American based automaker also made its presence felt in the autopilot vehicle segment. In 2014, Tesla introduced its first Autopilot vehicle HW2 with a semi autonomous driver assistant mode. Later in 2016, the company thought of replacing its sensors as well as software.

It was in 2017 that Tesla incorporated the perfect adaptive cruise control, emergency braking, lane departure warning, AutoPark, Autosteer and Summon in its Autopilot vehicles. Moreover, the HW2 was renamed as HW2.5 with a smarter GPU along with a driver facing camera.

**Popular Car Models:** As mentioned earlier, the company is best known for its highest selling Model S. Besides, there were Model 3, Model X, Tesla Roadster and Tesla Semi that brought the company's name to the fore in the list of battery operated vehicles. However, the company no longer sells its Roadster model.

**1. Model S:**



It was in 2012 that the company began selling its Model S that was offered in four basic configurations including a 75D, 100D and P100D models with 315 miles and 335 miles range respectively. This sedan was designed to offer unparalleled performance with its Autopilot capability. Needless to say that Model S does show the future of electric vehicles in a more advanced form.

This all-electric powertrain could accelerate upto 100kph in just 2.7 seconds. Featuring full LED adaptive headlamps and Bio Weapon Defence Mode to generate positive pressure within the cabin, this car incorporates a full self-driving hardware to offer you a safer and stress free travelling experience on the road. Fitted with six airbags and offering electronic stability on the go with traction control, Tesla Model S became the first choice of many people interested to buy an electric car way back in 2013.

Model S also boasts of 17 inch touchscreen controls and a beautiful glass panoramic roof along with a digital instrument cluster and a perfect navigation system. You get all the driving personalized controls like climate controls and cabin controls on this happening Tesla vehicle. 466km per charge, 594km per charge and 572 km per charge are the ranges offered by all the three models of Model S.

Most notably, in 2013, the company won the “Motor Trend Car of the Year Award” for its Model S and again in the same year, it won the “World Green Car” for the same model. This is not all, Model S received acclaim for being one of the “Best 25 Inventions of the Year 2012” in Time Magazine and later was declared as the “Car of the Year” in Automobile Magazine of 2013.

According to the latest data, USA became the largest market for Model S in 2016 with over 92,000 units sold. In Norway alone, over 11,800 units of this car were registered in 2016. In fact, Model S became the first electric car ever to fetch such high monthly sales ranking in any country.

## 2. Model X:



The next model launched by the company was Model X that was out for sale in the year 2015. This full-size crossover SUV was designed in three configurations including a 5, 6 and 7 passenger model. Sporting a sophisticated yet intricate falcon wing design in its doors, this Tesla model was a treat for the eyes.

Although, announced in 2013, the company rescheduled its production several times between 2013 and 2014 and it was in September 2015 that we finally saw this car on the roads. In the first quarter of 2016 itself, over 2,400 units of Model X were sold and later the number rose to over 4,500 units in the second quarter of 2016. Globally, the company sold more than 25,000 units of Model X in 2016.

Best known for its comfortable seating and storage design, this one is a passenger friendly car from Tesla Motors. The five seat model can accommodate upto five adults easily with a choice to create room for extra interior cargo space by folding the second row seats. While, the six seat model can accommodate upto six passengers easily and if required the third row seats can be folded to create an extra cargo space. Seven seat model of Model X allows you to fold both the second and third row seats to generate enormous interior cargo space.

What makes this electric car stand out is the fact that it comprises of eight amazing surround cameras for a perfect 360 degree view. Moreover, there are twelve ultrasonic sensors for detecting the surrounding objects, if any. The fact that this model is the first SUV to grab a 5-star safety rating makes it one of the safest cars to travel in.

Model X got acclaimed for being the best selling plug-in electric car in Norway in September 2016, right after one year of its launch. With a capability to accelerate from 0 to 100 km per hour in just 3.1 seconds, this amazing car offers not just the quickest but safest way of travelling from one place to another in an eco-friendly way.

### **3. Model 3:**





Considered as a third generation car, Model 3 from the house of Tesla Inc., was initially referred to as Model E but due to a controversy over its name with Ford, another automaker, the name had to be changed. This car was launched in 2016 and within just a week of its launch, over 325,000 units of the model were booked. According to [Bloomberg News](#), in 2017, Model 3 broke a 100 year record of mass market automobile by getting so many reservations within a week of its launch.

Model 3 was made available in two variants including an EPA rated all-electric range offering 220miles and another model offering 310miles. Initially, the company planned to invest somewhere between \$2 and \$2.5 billion to produce this model and the first 30 units were offered in 2017 during a special event.

According to fresh updates from the company, Tesla aims to produce the standard battery model of Model 3 in 2018, while the all-wheel drive units will be produced in the spring 2018. On the other hand, inside reports state that the left hand drive vehicles for international markets will begin in the latter half of 2018. Moreover, expectations are high that the right hand vehicles of Model 3 will be produced somewhere in 2019.

This smaller and but simpler electric car will be a more affordable option for those who can't afford to spend more to own a battery operated car. Also, referred to as Version 3, Model 3 is believed to be the most advanced Tesla model and will exhibit all safety precautions like the ones appreciated in Model S.

With a 5 seat capacity, Model 3 will feature a 15 inch digital display and eight airbags along with a perfect electronic stability and traction control. The car will also offer apt voice activated controls and a keyless entry with a remote climate control app. This is not all, Model 3 is believed to feature an automatic emergency braking system and a feature to avoid collisions.

#### **4. Tesla Roadster:**



Tesla Roadster was the first sports cars to be run on lithium ion battery cells. This first BEV or battery electric vehicle sports car from Tesla was launched way back in 2008 and was an instant hit. In 2012, over 2,450 units were sold in over 30 countries. This is not all. Tesla Roadster even qualified for various government incentives in a number of countries.

Tesla Roadster was the first electric car to get acclaimed for emerging as a winner in the Monet Carlo Alternative Energy Rally in 2010. The list of its achievements doesn't end here. Driven by Eric Comas, the popular Formula One driver, Tesla Roadster also won the Federation

Internationale de l'Automobile-sanctioned championship beating over 95 other competitors.

As per the **U.S. EPA** reports, Tesla Roadster was capable of travelling upto 393 kms on one single charge of its set of lithium ion batteries. Moreover, it was recorded that this electric vehicle used just 135 Wh/km or battery to wheel power, which is much better than the efficiency shown by other similar models. However, later, the company though of upgrading Roadster by launching Roadster 2.5 in 2010 with better looks and more comfortable seats along with a new lumbar support system.

The production of Tesla Roadster was stopped in 2012 and now the next generation of Roadster is all set to get unveiled in 2020 by the company. This latest upgraded Roadster model is believed to be the fastest electric car in the world with a record breaking acceleration of upto 100km/hr in just 2.1 seconds.

## 5. Tesla Semi:



First mentioned in 2016 as part of Tesla Master plan, Tesla Semi is actually an all-electric semi trailer truck belonging to Class 8. Although, the production is still slated to start in 2019, this model from the company has grabbed all the limelight for being the most comfortable as well as the safest truck ever designed by a company to be run on an electric power.

Featuring not one but four powerful motors for maximum power and higher acceleration, this one is expected to be the lowest energy consuming electric truck that can accelerate upto 60mph in just 20 seconds. The price for the 300 mile range model and 500 mile range model of Tesla Semi is believed to be around \$150,000 and \$180,000 respectively.

Believed to incorporate amazing features like an enhanced autopilot mode, this truck will avoid collisions providing maximum visibility and controls both during daytime and night time. Moreover, there is a rollover protection guaranteed with its low center of gravity. Another thing that makes this yet to be launched Tesla vehicle noteworthy is that it will offer the lowest cost of ownership and will offer amazing fuel savings to the user.

**Upcoming Car Models:** For a company like Tesla Inc. to rule the electric vehicle segment, there will be a constant need to bring out more and more innovative models. Perhaps, this is the reason that Tesla CEO Elon Musk, has himself acknowledged a couple of upcoming models as part of the company's ambitious master plan. In 2016, Musk stated that there is a need to bring forth heavy duty trucks running on electricity and some high passenger density transport for the urban roads. With all this in mind, we predict that the company will soon unveil the following electric vehicles.

- 1. Tesla Mini Bus:**



The first model expected to be launched by Tesla is a Minibus. Inspired by the California Custom VW combi design art, this Tesla Minibus is believed to be built on a Model X chassis, as disclosed by Musk in his Master Plan. We could easily sense that Musk hinted to the minibus, when he referred to a high density passenger vehicle for urban roads.

## 2. Tesla Pickup Truck:



After observing the emerging trend of pickup trucks, we are certain that Tesla will focus on launching an all-electric pickup truck. In fact, Tesla CEO, Elon Musk, revealed that the company is busy working on a pickup truck, which is still in its early stages of development. He further revealed that the company may unveil the exact concept in within this year itself.

### **3. Tesla Shuttle:**



The company may soon produce a shuttle for accommodating larger crowds at once from one place to another. We expect the shuttle to be unveiled sometime soon in the near future. Moreover, with an economical battery mode and wireless charging mode, this mass commuting vehicle will emerge out to be an instant hit as a zero emission public transit all across the world.

### **4. Tesla Model Y:**



Also referred to as a crossover all-electric vehicle, Tesla Model Y is expected to expand the future of electric cars all over the world very soon. Reported to be in the advanced stages of its development, Model Y is believed to be quite similar to Model X, featuring the fascinating Falcon Wing doors. If inside reports are true then, you may expect its launch shortly after the launch of Model 3 in 2018 itself.

### **Tesla Energy:**

**1. Powerwall:** Tesla is a name to trust not only in the electric vehicle segment but also when it comes to get sustainable power all day and night even at a home. Tesla Powerwall was designed to offer the power of solar energy, thereby eliminating or reducing the need to rely only on fossil fuels. Powerwall helps make homes self- powered in the most convenient way.

In essence, the idea behind Powerwall is to integrate with solar energy during the day time to make it available even at night for turning on different appliances at home. Featuring a compact yet simple design, Powerwall is a powerful automated system with no maintenance requirement. This weatherproof, touch safe wall can be easily installed on walls and floors.

**2. Solar Roof:** Another advanced product from the house of Tesla is its Solar Roof that has been designed to power any home with solar energy. Together with Tesla Powerwall battery, Solar Roof can easily collect the solar energy generated during the day time to be availed any time. These solar roofs have been designed with durable glass solar tiles and come with a guarantee for a lifetime.

This is not all, Tesla Solar Roof can be chosen in a variety of tile preferences like smooth, textured, slate and Tuscan, as per choice. Moreover, there is an option to go for invisible solar cells too that can be customized to get solar energy as per requirement in a home. Solar Roof can be easily ordered starting from approximately €930.

**3. Commercial Products:** On the other hand, the company has brought about a kind of revolution commercially too by launching Powerpack systems that can help you avoid peak demand charges with utmost ease. These power-packed systems were designed to be charged at low energy prices during peak demand period. Moreover, it offers load shifting and helps shifting energy consumption at peak time to avoid high energy bills.

**4. Utilities:** Tesla Energy was brought to the limelight by an array of utility energy products. The company gradually brought forward a complete range of utilities for frequency regulation, flexible ramping, dynamic capacity, voltage and reactive power support and situational intelligence. This is not all, Tesla also introduced a utility for an emergency backup, so that the user can rely on battery installations without any fear of backup.

**Supercharger Stations:** The makers at Tesla have never disappointed when it comes to use latest technologies. If they can produce world-class electric vehicles, they can also set up supercharger stations. Way back in 2012, Tesla Inc., started building a huge network of fast charging supercharger stations providing 480



volt charge to its electric vehicles.

From 2012 to 2017, now there are about 1,032 supercharger stations all across the world with powerful 7,320 superchargers offering easy charging to Tesla electric vehicles. Providing upto 120kW of power in a time span of 75 minutes, these superchargers incorporate the DC or direct current technology. Moreover, now all Tesla vehicles come equipped with supercharging hardware and can be relied upon for a long distance travelling too.

**Sales:** According to a recent report, Tesla sold over 250,000 units globally in September 2017. As mentioned earlier, Model S is by far the best selling electric vehicle from the house of Tesla with a global sale of more than 197,500 units. The second best-selling car is Model X with over 59,000 units sold globally between 2015 and 2017.

Expectations are high this time around with the latest Model 3 and Roadster models that are expected to be launched in 2018 or 2020. On the other hand, China is believed to be the world's largest market for electric vehicles in 2016 and keeping this fact in mind, Tesla is planning to set up a factory in Shanghai, China.

**Esteemed Partners:** Quite contrary to other similar manufacturers, Tesla chose to operate as an OEM or original equipment manufacturer. With this aim, the company chose to indulge in partnership with several companies renowned in their own fields like Panasonic, Daimler AG, Toyota and Airbnb.

- 1. Toyota:** It was in July 2010, when Tesla partnered with Toyota to make a second generation of Toyota RAV4 EV in compact form. Later in October 2010, the company launched this model in Los Angeles Auto Show and Toyota trusted Tesla to make 35 such models for a demonstration program that was held in 2011. In this vehicle, the lithium metal oxide battery and the main powertrain

components were provided by none other than Tesla.

**2. Daimler AG:** Not just Toyota, Tesla Inc. happily collaborated with Daimler AG in 2007. In 2009, Daimler came into news for buying a very minimal stake in Tesla for a good \$50 million. It was in partnership with Daimler AG that Tesla built powertrain components for Mercedes Benz A Class and B Class electric drive vehicles.

**3. Panasonic:** Tesla's partnership with Panasonic is an age old affair that started in 2010, when both the companies announced their plans to make nickel based lithium ion batteries for electric vehicles. Ever since, there has been no looking back. In 2010 itself, Panasonic revealed its investment of \$30 million on next generation cells that were supposed to be designed for electric vehicles.

**4. Airbnb:** In 2015, Tesla came into partnership with Airbnb with an aim to provide destination chargers. However, these chargers were planned to be located only at some restricted host houses like California.

**Used Vehicles:** In order to keep the interest of the buyers intact in its electric vehicles, Tesla offered a buyback program with the name Resale Value Guarantee in 37 top U.S. states. According to this plan, all Model S units sold before July 1, 2016 could be returned within three years of purchase to get a maximum 50% reimbursement of the base price.

With this plan, Tesla aimed to secure a good supply of used cars in order to refurbish them and re-sell them with attractive warranties. Although, the profit margin was minimal in this plan, but the company succeeded in attracting customers once again with its new car models. In 2015, the company began selling the refurbished Model S in different U.S. states.

**List of Controversies & Lawsuits:** In spite of so many acclaims and applauses, Tesla too was involved in a slew of controversies time and again. In fact, the company was even dragged in different lawsuits year to year for some sort of disputes. Some of the main controversies and lawsuits involving Tesla Inc. are listed below.

**1. Disputes over US Dealership:** Although, the company has various Tesla stores and galleries but the vehicles are sold online directly to the customers, which in turn gave rise to the disputes over its US dealership. Other automakers tend to rely on other dealerships to provide financing and online configurations. Moreover, about 48 states restrict automakers to directly sell their vehicles to the consumers. This is where Tesla ended up falling in a trap of US dealership disputes.

**2. Fisker Automotive:** In 2008, Tesla came into news for suing Fisker Automotive for stealing the design ideas and some confidential information about its electric and hybrid cars. In fact, once Tesla chose to design the WhiteStar Sedan with the help of Fisker Coachbuild but later, Tesla CEO, Musk rejected it stating it substandard.

**3. Founder Dispute:** In 2009, Eberhard surprised everyone by filing a slander and libel lawsuit against Musk and Tesla Company for breach of contract over a founder dispute. On the other hand, Musk brought forward a blog post showing the original source documents to support his own side over the dispute. After the much hype over co-foundation of the company, one public provision stated that there were five co-founders of Tesla, including Musk, Eberhard, Straubel, Wright and Tarpenning.

**5. Autopilot 2 Class-Action Lawsuit:** In 2017, the owners of the company filed a class-action lawsuit against the buyers of affected vehicles. Tesla stated in the lawsuit that the owners were trying to

exaggerate the capabilities of the company's Autopilot 2 to extract attorney's fee.

**6. SolarCity Acquisition Litigation:** In 2016, not one but seven Delaware lawsuits were together filed by Tesla stockholders in order to stop the planned SolarCity acquisition. The stockholders alleged that Tesla board of directors breached their duty in approving the SolarCity acquisition.

**7. Labor Practices:** In 2017, a group of workers at the Tesla factory filed a lawsuit for unfair labor practices with none other than the National Labor Relations Board. The lawsuit stated that the company used illegal surveillance to prevent worker communication. In fact, four separate charges were filed with NLRB. It was later believed that this was an attempt to unionize Tesla's famous Fremont plant.

**Future Prospects:** As stated earlier, with the company's aim to set up a factory in China, one can see the future of electric vehicles emerging on a large scale. Just imagine, the company that changed the face of the auto industry with its autopilot and electrification technologies is now going to produce electric vehicles in the world's largest electric vehicle market, China!

Moreover, with amazing models like Model 3, Roadster 2020, Tesla Semi and many more slated to release in 2018 and coming years, the future of electric vehicle segment surely seems bright and attractive. In fact, we believe Tesla will inspire other automakers to introduce their own hands-free electric vehicles with features like Autopilot.

Many expert analysts believe that by 2040, more than 50% of vehicles on planet earth will be electric vehicles and needless to say, Tesla will

play a huge and crucial role in paving the way for an environmental friendly world of vehicles.