

Tesla Still in the Driver's Seat

Companies: BIT:F/FIATY, EPA:RNO/RNSDF, EPA:UG/PEUGY, ETR:BMW, ETR:DAI/DDAIF, ETR:NSU, ETR:PAH3/POAHY, ETR:VOW3/VLKAY, F, GM, TSLA, TYO:7201/NSANY, TYO:7203/TM, TYO:7267/HMC

February 6, 2014

Research Question:

Will demand for Tesla vehicles remain strong throughout 2014?

Summary of Findings

- U.S. sales of Tesla Motors Inc.'s (TSLA) [Model S sedan](#) will continue to be strong in 2014. The only constraint will be Tesla's capacity to produce more vehicles.
- Tesla showroom employees noted greater consumer interest and a broadened demographic compared with a year ago. They expect Model X buyers to be traditional SUV drivers and those seeking all-wheel drive. This should result in little overlap with demand for the Model S sedan.
- Inputs from China reflect a market in its infancy. The lack of a charging station infrastructure will be the greatest hindrance to widespread demand this year.
- In Europe, Tesla's high price tag has limited its potential outside of the corporate sector. Also, Europe's relatively mature EV and hybrid markets represent Tesla's stiffest competition.
- Battery developments continue to be an area of great focus, both for Tesla's planned increase in scale of production and as a key component in Tesla's mass-market [Model E](#), due out in a few years. Sources in all geographies are awaiting a technological breakthrough to yield a battery more powerful and yet smaller and less expensive than anything produced to date.

Silo Summaries

1) Auto Supply Chain

All eight sources said Tesla's business is on track with expectations and should be considerably greater than a year ago. Sources noted no supply issues or pricing changes, but said any supply problems for this year likely would stem from battery manufacturing and development.

2) EV/Hybrid Owners or Prospective Owners

None of these five sources had purchased or soon will purchase a Tesla EV, primarily because of pricing. Still, other EVs are not viable alternatives because of their limited driving range and the lack of a strong network of charging stations. Four of the five sources favor owning a hybrid vehicle over an EV, for now.

3) Tesla Showrooms

All five sources said demand for and sales of Tesla's Model S continue to meet or beat expectations. They also have seen a greater number of financially qualified and serious buyers year to year. Three of the five sources noted a broader customer base that goes beyond "early adopters."

4) Tesla in China

These five sources all expect Tesla to sell just a few hundred Model S units in China this year. The announced price of approx. US\$121,300 will restrict initial sales to wealthy customers who desire the brand as a status symbol. Tesla has no direct competition, but offerings from Toyota, Toyota's Lexus, BMW and Nissan could affect Tesla's potential in Asia.

5) Tesla in Europe

These six sources said Tesla will grow its European sales in 2014 but off of a very low base. Except in Norway, most European consumers cannot afford a Model S, so sales have come mostly from the corporate sector. Tesla will not take an immediate lead in the European EV market, where established models already enjoy popularity and brand loyalty.

6) Auto Industry Specialists

Only capacity will constrain 2014 sales. Tesla has no direct competition in the luxury EV space. Six sources see the Model S buyer base as expanding beyond the early adopter. Still, Tesla's demographic will continue to be restricted to wealthy consumers, at least until the more economical Model E is released in two to three years.

Tesla Motors Inc.

Background

Tesla surprised the audience at the Detroit Auto Show with news of [6,900 Model S vehicles](#) delivered in the fourth quarter of 2013, 20% ahead of its estimates in November. Tesla looks to [double](#) growth in 2014 and will emphasize international expansion, including in China where it already has a store in [Beijing](#). Also, its next-generation [Model X](#) will be released in limited quantities at the end of 2014. Both the Model S and X will benefit from [high-speed wireless Internet access](#) in 2014.

However, Tesla delayed the release of the Model X once already and may need to hold the next release because of constrained supply of its lithium-ion batteries. Also, the effective range of Tesla vehicles is limited by an incomplete charging station infrastructure. Finally, Tesla faces the challenge of transitioning from [a boutique automaker to a volume automaker](#).

Blueshift's [Oct. 31, 2013, report](#) found that Tesla stood alone in the luxury EV niche despite an increase in the number of luxury automakers coming out with electric and hybrid models. Sources who discussed Tesla's sales said the company met or exceeded its goals, and no source criticized Tesla's order fulfillment. Although not a sales driver, Tesla's [three-year buyback program](#) does boost consumer confidence and helps to close deals. A few sources compared the program to a lease that is sweetened with tax incentives.

Current Research

In this next study, Blueshift Research assessed whether high demand was set to continue for Tesla in 2014. We employed our pattern mining approach to establish seven independent silos, comprising 39 primary sources (including 11 repeat sources) and eight relevant secondary sources focused on Tesla's push into China, its U.S. charging stations and its competitors:

- 1) Auto supply chain (8)
- 2) EV/hybrid owners or prospective owners (5)
- 3) Tesla showrooms (5)
- 4) Tesla in China (5)
- 5) Tesla in Europe (6)
- 6) Auto industry specialists (10)
- 7) Secondary sources (8)

Next Steps

Blueshift Research's next report will monitor 2014 developments for Tesla, specifically demand for and supply of its Model S vehicles and components and the release of its Model X SUV. We also will build on our coverage of Tesla in Europe and Asia.

Silos

1) Auto Supply Chain

All eight sources said Tesla's business is on track with expectations and should be considerably greater than a year ago. Sources noted no supply issues or pricing changes, but said any supply problems for this year likely would stem from battery manufacturing and development. Two sources believe lithium-ion batteries will eventually become outmoded as wireless charging takes hold. [Dynamic charging](#) (done while the vehicle is being operated) also could become a catalyst for a widespread shift from gas-powered to electric vehicles.

KEY SILO FINDINGS

Sales Trends

Tesla Motors Inc.

- None of the 8 sources reported any issues with production, supply or price—on their end or from Tesla.
- Tesla demand has not slowed, and pricing has not changed in dealings with the company.

Competition

- Just 2 of the 8 said Tesla has competition. 1 pointed to Porsche Automobil Holding SE's (ETR:PAH3/POAHH) [Panamera](#) and Group Lotus PLC's [Evora](#) hybrids. 1 said Daimler AG's (ETR:DAI/DDAIF) Mercedes-Benz [EV](#) (because of the leasing option) and BMW AG's (ETR:BMW) [i3](#) are potential threats.

Batteries and Other Developments

- Although supply currently is not an issue, 4 sources voiced concern regarding battery manufacturing possibly holding back sales.
- 1 source said the motor drive system is in shortest supply.
- 2 sources said wireless charging will eventually be the catalyst for mainstream acceptance of EVs.

1. VP of engineering for a former Tesla supplier

Tesla's production will increase by 50 vehicles per week throughout 2014; demand will continue to outpace supply because the company is restricted in capacity and supply chain. Batteries and charging stations are in demand, and motor drive systems are in shortest supply. Eventually lower-cost and higher-performing drive systems will be introduced to the market, but Tesla also could purchase those. Tesla has no competition, and will be the luxury EV leader for at least another three years. If another auto manufacturer made a top EV, it would be concerned with losing gas-powered car sales. Battery production is always changing, but manufacturers fear obsolescence. This source said wireless charging will be the biggest "game changer."

Sales Trends

- "I have no idea what Tesla's forecasts are, but I expect that they will continue to increase their weekly production rate from 650 or so vehicles per week and will increase through the year by 50 or so per week every month."
- "Tesla sold more vehicles than projected and are capacity- and supply chain-limited; their production rates continue to improve, and demand is outpacing supply significantly."
- "When you have high demand, no competition, and cannot build them fast enough, why would you need incentives?"
- "EV prices are trending down as the volumes increase and technology improves."
- "The Model X will parallel the growth of the Model S. Model X customers are all the people who did not want a Model S. It's like asking if a new SUV will affect the sales of Corvettes."
- "Batteries and charging stations are the obvious supplies that are in demand. Tesla solves the charging station problem by having a large battery and supercharging network, so one can travel far, charge fast with the superchargers for free, and/or charge overnight at home."
- "The items of shortest supply are the motor drive systems. Tesla has the only viable drive system for electric propulsion at the moment, and all other manufacturers are going in the wrong direction."
- "[Tesla is most vulnerable] in the drive system, [where] lower-cost and higher-performing products will be introduced in the market. Of course, Tesla could also purchase those as well."

There will be two EV markets:
1) desirable Tesla vehicles and
2) a multitude of second-rate vehicles from automobile companies that are careful not to have EVs that are so good that they lose sales from their gas vehicles.

VP of Engineering
Former Tesla Supplier

Competition

- "Tesla seems to have a three- to five-year lead on the market."
- "Tesla will continue to lead the premium EV industry and maybe become more dominant. There will be some EVs from the current incumbents, but these are not nearly as compelling as the Model S. There will be two EV markets: 1) desirable Tesla vehicles and 2) a multitude of second-rate vehicles from automobile companies that are careful not to have EVs that are so good that they lose sales from their gas vehicles."
- "There is nothing even close to Tesla right now; only low-cost vehicles like [General Motors Corp's/GM [Chevy Volt](#) or the Nissan [Motor Co. Ltd./TYO:7201/NSANY] [Leaf](#) are alternatives for those who cannot afford a Tesla."

Tesla Motors Inc.

- “This year there will be competitors that are closer in performance at two to three times the price [Mercedes-Benz] or similar price at much lower performance and range [GM’s Cadillac and BMW].”
- “Supply of components will by far be the biggest challenge for Tesla.”

Batteries and Other Developments

- “Battery technology is changing all the time. However, because of this, new production will be slow to change in technology. It is risky to invest in a large battery factory with a newer technology if there is a chance of obsolescence in the near future. I believe battery incumbents will expand production of current technology until battery rate of development in the research community matures or the rate of change slows down to give an indication of a clear winner.”
- “Battery supply will be a major item that could hold back sales. However, production ramping of battery capacity is going on now, and will likely keep pace with demand.”
- “I see wireless charging as the biggest game changer in the EV industry. Once a wireless charging infrastructure is developed, where vehicles never need to stop to recharge, the demand for gasoline or other fuel vehicles that need to stop and refuel will plummet.”
- “The lack of recharging stations is holding back the sales of short-range EVs. Tesla has an advantage in that they are building a charging network, and they have a 200- to 300-mile range.”

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VP of Engineering
Former Tesla Supplier

2. Technical director of a Tesla supplier; repeat source

Tesla made more than 20,000 cars in 2013, and this supplier’s sales met expectations. The company expects 2014 sales to double because it plans to double car output to well over 40,000 vehicles. Tesla does not appear to have supply problems, but it would make more cars if it had more batteries. Sales also will increase as more charging stations are established. Tesla faces competition from GM and Cadillac electric cars and also future European companies, but it still will lead the pack 12 months from now. Tesla is working on reducing costs, both internally and in the price of components, as it gears up for its mass-market Model E car.

Sales Trends

- “Our Tesla sales were as expected last year. We are just starting 2014, and so far there has been no change. However, we expect sales to be close to double in 2014, compared to 2013. Tesla made [more than 20,000] cars last year, and this year they are expected to make over 40,000. This is still not a huge volume compared to the other manufacturers.”
- “Tesla does not have a supply problem with us, and I don’t believe they have supply issues with anyone else. If there were any supply problems, it would be with the battery pack. It is my understanding that if they could get more batteries, they would make more cars.”
- “We have maintained our prices although there might be an increase in the future. The automobile industry doesn’t like price increases. Tesla is trying to keep their costs down; they’re looking internally to cut costs, and they want to keep the price of components down. They will need to do this for the economy car.”
- “Tesla is offering a buyback program, and they are working with loan institutions. Tesla will guarantee the value of the car over the course of several years.”

Competition

- “I like the Tesla vehicle; it is the only one I follow. GM and Cadillac have electric vehicles out, but I haven’t heard much about them. There will be other premiums coming out from Europe in the future.”
- “Tesla will still be leading the pack in 12 months.”
- “Tesla’s ... economy car will be made for the masses. I also hear that in 10 years they’ll have a pickup truck.”
- “The [fires](#) [that occurred in a Model S] didn’t help Tesla much, but they didn’t hurt them either.”

Batteries and Other Developments

- “The battery is the heart of the Tesla, but I don’t know much about it. It’s the main reason for buying the Tesla. Right now the range is very acceptable, almost like a gas car. My concern is, over time will they maintain themselves?”

Tesla Motors Inc.

- “The Tesla battery does drain more in cooler weather. You need a battery-friendly climate. To compensate for this, Tesla has heat blowing in on the battery from the rear; there’s some sort of method to control battery atmosphere.”
- “I may have heard some talk about Tesla starting their own battery plant.”
- “The charging stations are not quite developed yet. Once they are, that will spur sales.”

3. Product engineer for a Tesla supplier

The source is unsure of Tesla's demand, but thinks the company is very responsive and helpful to suppliers. Tesla faces competition from two luxury hybrids: the Porsche Panamera and the Lotus Evora. He expects battery and ultimately car prices to come down once the technology is further developed. Product pricing is stable.

Sales Trends

- “I’m not sure of the Tesla demand. I see a lot of Teslas on trucks in Detroit, but we don’t see any here.”
- “Tesla is quick to get us information. They are very helpful. But we treat them like every other customer.”
- “Our prices are stable.”

Competition

- “There are already a few other competitors: There are two luxury hybrids: the Porsche Panamera and the Lotus Evora.”

Batteries and Other Developments

- “If things keep going like they are, battery prices will come down and so will electric car prices.”
- “I’m not sure how the cold weather affects the Tesla battery. Around here, the weather is not a problem for the hybrids.”
- “I hear that it takes awhile to charge the car.”
- “[Top Gear](#) has given Tesla some bad press about their battery.”

4. Marketing director for a Tesla supplier; repeat source

Sales to Tesla exceeded this supplier's expectations during the fourth quarter. Sales are on track so far this year, but the source expects to see a slight decline in 2014 sales and would not comment further on the subject. Product pricing to Tesla and other EVs has been stable. She does not believe that the Model X will affect sales of the Model S.

Sales Trends

- “Our Tesla sales exceeded our expectations during the fourth quarter.”
- “So far this year, our Tesla sales are on track.”
- “We expect a slight decline in 2014 Tesla sales.”
- “The Model X sales will not affect the Model S.”
- “There have been no price fluctuations for any electric vehicle products.”

Competition

- No comment

Batteries and Other Developments

- No comment

5. Sales representative for a Tesla supplier

Production of Tesla Model S continues to rise, and recent sales to Tesla were in line with or above expectations. The source does not have insight into battery or other supply chain issues, but said his company's plans are responsive to Tesla's forecast. Because the Model X appeals to a different driver, its production should not affect demand for the Model S. Charging stations are being developed as planned.

Sales Trends

Tesla Motors Inc.

- “Fourth-quarter sales were above expectations for our products sold to Tesla. Tesla has been ramping production to meet increasing demand.”
- “January sales are definitely above last year’s sales. But last year was the first year they really went into mass production, so that is not surprising.”
- “Their forecast is to continue to increase production through the first quarter and the whole year of 2014, over the same period last year. We do not anticipate any slowdown at this time.”
- “The Model X is anticipated to broaden demand for Tesla, bringing a new buyer into the market with minimal to no impact to the Model S demand, and we have no indication that it will slow Model S production.”
- “It is public knowledge that if supply chain issues develop, it is most likely to involve their batteries. It is the most vulnerable area I can see, and the only one, really.”

Competition

- “Tesla does not have a serious competitor at this time. The closest was Fisker [Automotive Inc.]’s [Karma](#) and prototype [Atlantic](#). Since [Fisker] went [bankrupt](#), I do not see any formidable competition to Tesla’s market anytime soon. No indications at this time that any competitor will steal their lead.”
- “In the next year, I do not see another electric car even competing in their space yet.”
- “In the three- to five-year time frame, they may begin to saturate the market so demand may lessen. I do not see everyone wanting an all-electric car, and by that time, they may have captured the larger volume of their market.”

Batteries and Other Developments

- “I do not really have any insight into battery production. We can only react to their forecast, but we do not have any indication that they are anticipating a battery or any other supply chain issue for the time being.”
- “I am aware of some new developments, but am not at liberty to discuss them at this time.”
- “Tesla is on a solid plane of establishing a good network of charging stations. I do not foresee that causing any issue or impacting demand at all.”

6. Account manager for a Tesla supplier

Fourth-quarter sales to Tesla were in line with or ahead of expectations, and the source expects a similar result for the first quarter. Fisker’s Karma would have been the nearest competitor to Tesla’s Model S, but now is not a player. Tesla’s growth is strong, but it may meet all of the demand for luxury EVs within five to 10 years.

Sales Trends

- “Tesla orders are in line with expectations or above for the last few months, and I anticipate they will continue to run slightly ahead of forecast for the first quarter.”
- “I have not seen any January numbers, and we really do not forecast out a year for Tesla. I am not anticipating any change, but we do not have a perspective that far out yet.”
- “Our pricing with Tesla is stable, and I am not anticipating changes at this time.”

Competition

- “When it comes to electric luxury cars, there is just nothing else out there like it. Fisker’s Karma is gone, and I do not expect them to come back. They would have been the closest.”
- “The only thing I foresee slowing Tesla’s growth is that they may meet the demand within a short five- to 10-year time frame. How many people really want an all-electric car, and how many of them can afford a Tesla?”

Batteries and Other Developments

- No comment

7. Eric Giler, CEO of [WiTricity](#)

At this time next year, Tesla still will be leading the pack in the EV landscape. The one vulnerable part of the supply chain is batteries since lithium is in such high demand. Wireless technology will be a major game changer for EVs. The United States is lagging behind Asia and Europe in wireless charging through electromagnetic technology under the roadways. Besides driving greater acceptance of EVs, wireless charging could improve EV design by encouraging smaller batteries.

Sales Trends

Tesla Motors Inc.

- “I don’t see much movement up or down in battery prices this year. I do think Tesla will do better, and think the Tesla X is a winner.”
- “It’s interesting that of all the things we could do with this technology, the one that has caught on the fastest for us is that of charging electric vehicles wirelessly. We are looking to a world in which this type of charging accelerates the adoption of ‘green’ electric vehicles.”
- “We have talked with Tesla a number of times about our [\[wireless charging\] technology](#), but we are not doing anything with them at this time. It’s not that they’re not interested in the technology; they just have their hands full at the moment. They have already committed to their fast-charging stations and are very busy with that.”
- “Since we are targeting residential charging, you can’t create the equivalent of a wireless fast-charging station without changing [the wiring] in your house. But 20 kW wireless charging could definitely be implemented in Tesla’s fast-charging system.”

Competition

- “At this time next year, Tesla will definitely still be the leader in EVs.”
- “The Tesla is geared to people who are affluent. The Roadster was very cute, with a cost of about \$130,000. The Model S sedan cost less with a base price of about \$60,000, but you still need money to buy one. And Model X sales will also be driven by the wealthy.”
- “An electric car from Mercedes is not much competition to Tesla, but you can lease one for \$199 a month. You certainly couldn’t do that with the Model S.”
- “The BMW i3 is also interesting from the affordability standpoint: It may not be the most glamorous car on the outside, but it is absolutely beautiful on the inside. According to [Car and Driver](#), it’s an awesome machine. It’s only about \$40,000, and it’s a BMW. Tesla is not going to have the EV market to itself forever.”

Batteries and Other Developments

- “The global supply chain for EVs is getting worked out, but I would say batteries are the one vulnerable area. With such high demand, it’s getting harder to find a steady supply of lithium for lithium-ion batteries.”
- “Wireless charging is a development that could expand the use of electric cars substantially. The impact would be to reduce pollution and reduce our dependence on foreign oil.”
- “Wireless charging would also be a great thing for electric cars themselves. It could change the design of the cars; you could use smaller batteries or perhaps no batteries at all. It also makes more sense for public charging places, because the charging could be standardized for all types of EVs.”
- “In addition, you wouldn’t have to plug or unplug the car to charge it in cold weather or deal with a dirty, messy cable. Out here in Boston, we’ve also been having a problem with people vandalizing or stealing the cables.”
- “There is a wireless charging technology that is here and now and one that is little more futuristic. The technology that is already here is called static charging; it’s using wireless charging to charge a vehicle that is stationary. It transfers energy through electromagnetic fields to an EV without the use of a cord.”
- “The other type is called dynamic charging. That uses wireless technology under the roadways to charge a vehicle in motion. If we could do that here in the United States, we could achieve energy independence.”
- “Dynamic charging has been deployed in South Korea, including charging Disneyland shuttle busses through coils under the roadway. They also adopted it at the [Korean Advanced Institute of Science and Technology](#), where the campus buses pick up their charges through the campus roadways.”
- “Japan is the leader in wireless charging, followed by Europe and other parts of Asia, with the U.S. lagging behind in the third place.”

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CEO, WiTricity

The global supply chain for EVs is getting worked out, but I would say batteries are the one vulnerable area. With such high demand, it’s getting harder to find a steady supply of lithium for lithium-ion batteries.

CEO, WiTricity

8. Former warehouse assembly worker for a Tesla supplier in Europe

Competitors may emerge, but Tesla will remain the luxury EV leader for at least the next two or three years. The Model X, if widely adopted, may help reduce smog in major European cities. More charging stations are needed to combat cord vandalism and theft and to travel longer distances.

Sales Trends

- “When I left this November, the company was still producing [the product] for Tesla. The company is a real dedicated line operated by three shifts, so the production line stops only on Sunday.”
- “In Italy there are few buyers for the Model S sedan. The cost is too high to justify the savings on gas: €80,000. For my car I paid €17,000; calculating that it has 150 HP compared to 289/300 of the S model, even if you want to point to the environment and savings on fuel, the price for the sedan is excessive.”
- “An optimal price would be €28,000 to €35,000. It would help the mid- to high-[income households] to purchase it, in the long run saving on fuel.”

Competition depends on whether other manufacturers will come out with cheaper cars than Tesla and overshadow it, but I think it will take at least two to three years.

*Former Warehouse Assembly Worker
Tesla Supplier, Europe*

Competition

- “Tesla created the first electric sport cars, and for now it doesn’t have any real rivals. Tesla Model X will give us a good chance of reducing smog in Europe’s biggest cities, including London, Berlin, Milan, Rome and Strasbourg. It will also reduce the price of oil.”
- “Competition depends on whether other manufacturers will come out with cheaper cars than Tesla and overshadow it, but I think it will take at least two to three years.”

Batteries and Other Developments

- “The construction of charging stations is necessary, partly because an [EV] car is equipped with cable is at risk of vandalism. It is best at the stations because there is already a cable with the plug to be inserted in the car.”
- “Also, it takes 10 to 12 hours for a full charge at home and two hours for recharge at a recharge station.”
- “It may also be possible to attach to the car a very small panel to recharge the photovoltaic roof, so that when the car is stationary or in motion, it is also charging a small amount.”

2) EV/Hybrid Owners or Prospective Owners

None of these five sources had purchased or soon will purchase a Tesla EV, primarily because of pricing. Still, other EVs are not viable alternatives because of their limited driving range and the lack of a strong network of charging stations. Four of the five sources favor owning a hybrid vehicle over an EV, for now. Tesla’s Model X SUV may draw new buyers waiting for a larger EV, but the high price will continue to restrict Tesla’s overall market.

KEY SILO FINDINGS

Interest

- All 5 recognize Tesla as an elite EV brand, but they went with an alternative vehicle because of Tesla’s pricing and the lack of EV charging stations.

Competition

- Tesla faces no direct competition to its longer-range EVs, but its high price makes hybrids more practical for most consumers.

Buyer Profile

- Tesla continues to be accessible only to wealthy individuals. The Model X may attract wealthier buyers who have been waiting for a larger EV.

Tesla Motors Inc.

1. Prospective EV/hybrid buyer in her early 60s

This source has been considering an EV or a hybrid for the past few years. She said an EV purchase is unlikely because of price and the lack of charging stations. Tesla's Model X will appeal to wealthy buyers looking for a family vehicle.

Interest

- "I started looking at EVs and hybrids a couple years ago. The economy is a large part of my consideration, but it just seems like a good idea for the planet."
- "I'll buy an EV or a hybrid when I can afford it."
- "For right now I favor a hybrid because of the lack of availability of charging stations and limit in driving distance. When charging becomes more available, then I would rather have a completely electric car."
- "The brand and model would depend on my finances, but I would choose either [Toyota Motors Corp.'s/TYO:7203/TM] [Prius](#) or Tesla."

Competition

- "I haven't driven a Tesla."
- "I haven't looked enough to know who is competition for the Model S."
- "The buzz I hear about electric cars is that they are becoming more common and that the technology is improving."
- "I wasn't aware that BMW, [Audi](#) [IAG](#)/ETR:NSU] and Porsche are offering EV/hybrid vehicles."
- "I have no idea how much high-end competitors will affect Tesla. The issue they all have to address before they can take over the market is the charging ability. ... Otherwise, the cars will be limited to people driving in town to buy groceries."
- "The release of Tesla's Model X SUV is of no interest to me."

Buyer Profile

- "If Tesla were to lower the price of the Model S, it would motivate me to buy it sooner."
- "If there are more chargers available, then I expect the profile of the Model S buyer would change over the year."
- "Tesla's Model X will attract a new audience because it's a different kind of car. X is a family car."

2. NEV owner and EV developer

Involved with electric vehicles since 2006, this [Neighborhood Electric Vehicle](#) (NEV) owner does not expect Tesla to be in high demand in the U.S. market this year because of price, battery volatility and the lack of charging options. Also, hybrids are complicated and will hold less potential for the next 10 years as EV technology advances.

Interest

- "I own a Neighborhood Electric Vehicle, and have been involved in the development of NEVs since 2006. EVs are a great way to get around for short distances."
- "This is my second NEV. It has been very easy maintenance, and the overall cost is low."
- "Most EVs are small, and I have kids, a dog, surf boards, etc. They are not very practical to accommodate a family."
- "Electric cars are still before their time. The batteries are heavy and volatile. They can blow up and start fires. The technology is still catching up."
- "Hybrids have too many components. They are very complicated with two of everything: two engines, two transmissions. That is a lot of maintenance and can be expensive if something goes wrong."
- "Electric is the new way, and it is within reach in the next 10 years to have more EV options."
- "The government and electric prices dictate the growth of all electric vehicles. They are inexpensive to build, but the rest of the picture is not done yet."

Hybrids have too many components. They are very complicated with two of everything: two engines, two transmissions. That is a lot of maintenance and can be expensive if something goes wrong. ... Electric is the new way, and it is within reach in the next 10 years to have more EV options.

Competition

- "I have been in the Tesla S. It is beautifully designed inside and out. The transition from battery to engine is seamless."

NEV Owner & EV Developer

Tesla Motors Inc.

- “The Tesla is still a major stretch for 90% of our country. The price is still too high.”
- “The idea of an electric SUV from Tesla is appealing, but not this year. I would like to see what other developments happen with the EVs before jumping on the first thing released.”
- “The hybrid luxury cars like Porsche’s still have too much equipment and are using too much fossil fuel. They are also still too expensive”
- “My neighbor has a Fisker and is always having trouble with it. It will be in the shop for months at a time and has had a lot of recalls.”

Buyer Profile

- “The Tesla Model X SUV interests me more than the [Model S] car. It will be interesting to see how it performs and the cost. I won’t be buying one until it has a proven track record of reliability.”
- “With the release of the SUV, the profile of the buyer will change from what I perceive it to be now [from] single wealthy men to married, still wealthy men with families.”
- “The Tesla models will not take hold until the price comes down and charging stations are more prevalent.”

3. Longtime Prius owner

This source just purchased his second Toyota hybrid. He regards Tesla as out of reach for most Americans, and battery range remains an issue. Still, Tesla offers a longer battery range than competitors like the Volt. He could be convinced to switch in five to 10 years if Tesla’s reputation holds and if price becomes less of a factor.

Interest

- “I purchased my first Prius in February 2007. The only reason I considered doing it was asset preservation. I sell real estate. In 2007 the real estate market headed downhill fast, and gas prices were rising fast.”
- “I just traded in my 2007 Prius with 230,000 miles on it for a used 2010 Prius with 46,000 miles on it.”
- “My concern with electric vehicles is they only last so far before you have to stop and charge them. I did look at the Tesla; however, it was cost-prohibitive. Maybe someday in the next five to 10 years when I see they are reliable and the price comes down.”

Competition

- “I have not driven a Tesla Model S. I have, however, gone to a showroom ... about a year ago. I love the look of the car and the design concept. ... It is the closest thing to an all-electric car that I could consider because its range is longer than cars like the Volt.”
- “Tesla offers a choice to the higher end and is a viable option to those who can afford it.”
- “I have not seen the electrics or hybrids from BMW, Audi or Porsche yet. I think they will be viable just because of the reputation of those brands.”
- “I have not heard much about EVs in the mainstream market this year. I do think they will only continue to grow as the cars get better and more affordable.”
- “The Toyota Prius is a lot more practical than the Tesla for me and, I think, most Americans.”

The Toyota Prius is a lot more practical than the Tesla for me and, I think, most Americans.

Longtime Prius Owner

Buyer Profile

- “A drastic increase in commission earnings might motivate me to consider an EV. Not this year though. I am happy with my Toyota. It has been reliable and affordable.”
- “I have no interest in the Tesla SUV this year. It is good to see the EVs getting bigger though. It will help open the option to other types of drivers.”

4. 50 year-old Chicago woman who owns two Prius hybrids

For those who can afford them, Tesla’s vehicles will continue to be in high demand throughout 2014. This longtime Prius owner plans to purchase a new Prius or a used [Insight](#) (Honda Motor Co. Ltd./TYO:7267/HMC) this year. Tesla is way above her price point but is her “dream car.” She was not aware of any nearby Tesla showrooms and had not seen a Tesla vehicle in person. High-end competition should not affect Tesla’s appeal as the company is way ahead of the pack. She suspects most Model X buyers will be current Tesla owners.

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Interest

- “We first considered getting a hybrid in 2004. We purchased our first Prius in 2005 and our second one in 2008.”
- “This year, we are most likely going to purchase a new Toyota Prius plug-in. We are upgrading because it has some extra charge capacity that helps you gain more mileage to totally run on electric. This will be our third Prius.”
- “Two people I know have [Ford \[Motor Co./F\] hybrids](#), but they don’t get the mileage that the Prius does. I know the Honda does. ... I am actually also considering a friend’s used Honda hybrid called the Insight.”
- “We are planning to purchase another hybrid in the next six months. We are going to get rid of the 2005 Prius. We are only getting 40 miles per gallon, when we have always got at least 50, and it really does not like the cold weather.”
- “The Volt is much more expensive than a Prius or a Leaf, but it probably gets the mileage I need. It is just a bit above my price point.”
- “In 2005, there were not fully EVs available to the public. In 2008, there were some available then, but they did not have the range I need for one of my frequent business trips to Indiana.”
- “If I had my choice of EV or hybrid, I would most like to own a Tesla. They may actually have the range I need. They make a fabulous, extremely sporty vehicle. It is my dream car. But they are ridiculously expensive.”

Competition

- “I have not driven a Tesla, but I would love to. I did not even know they had dealers in the area.”
- “I have not heard much buzz about anything that can compare to the Tesla. I know about the Leaf, which is more affordable, but it won’t get me to my regular gig in Indiana and back, which is 140 miles roundtrip.”
- “I have not heard much about EVs going forward and new technologies. I know they are working on some kind of agreement in my hometown with existing charging stations.”
- “I have not seen or heard about any hybrids from BMW, Audi or Porsche. It should be viable at the higher end as they are known brands that would invent in good technology.”
- “High-end competition will have little impact on demand for Teslas. In my mind, Tesla is so far up and ahead of the pack; while the other brands are good brands, they are more mainstream.”
- “The pending release of the Model X does not affect my buying likelihood at all. I cannot afford a Tesla.”

Buyer Profile

- “I love the Tesla Model S, but it is way above my affordability level for our next car.”
- “I don’t see the profile of the Model S buyer changing all that much. Anyone that gets a Tesla has to be rich. That won’t change this year.”
- “Most of the Tesla Model X buyers will come from Tesla S people because I am getting that they really, really love their Teslas and were sad they could not get an SUV. They will probably get one and still keep their Model S because most people have more than one car these days.”

Most of the Tesla Model X buyers will come from Tesla S people because I am getting that they really, really love their Teslas and were sad they could not get an SUV. They will probably get one and still keep their Model S because most people have more than one car these days.

Prius Hybrids Owner

5. 70-year-old Chicago-area man who owns a hybrid vehicle

2014 will be a good year for Tesla, especially if the economy continues to improve. The Model X will attract more buyers to the brand. This source purchased his Toyota Prius five years ago. If the Chevy Volt had come with a hatchback, he would have bought that instead because it offered better mileage on battery and used its electrical capabilities more than the Prius. His biggest issue with EVs is they use electricity to operate. Also, EVs do not have the mileage capabilities he needs, and their cost is too high.

Interest

- “I first considered purchasing a hybrid two or three years after the Prius came out. I am always suspicious of new technology when it comes out, so I wanted to wait until they got the kinks out.”
- “For me, it was about fuel economy and the environment. Plus, gas is not getting cheaper any time soon.”
- “It took some time to convince my wife to purchase a hybrid, but now that we have it, she likes it as much as I do. We had never spent that much on a vehicle, so it was a big step for us. But we are glad we did it.”

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- “I did not really consider a purely EV when I purchased my 2009 Toyota Prius. The problem is the range is really limited and I can go up to 500 miles with my Prius. With an EV, you are lucky to get 100.”
- “If I thought the Prius was expensive, the EVs are really expensive.”
- “They need find a way to use solar recharging for the EV batteries. As it is now, for power, you are plugging into ComEd to use your car. The car is being powered by coal or gas, so it is displacing the pollution.”
- “The limit in EV technology is that you have to be able to rapidly charge a battery or swap it out. You can't do currently do either. I am sure it is only a matter of time.”
- “An EV does not fit in my budget or in the travel I do.”
- “My favorite among the EVs and hybrids is the Chevy Volt. It is an extreme hybrid, and it works more on the electric side than the Prius does.”
- “I got the Prius because it will hold my string bass. If they made the Volt in a hatchback, I would have probably bought that.”
- “The technology used in the Volt seems ideal because it will go 100 miles without any gasoline at all. It is a plug-in, but on a long trip it will revert to gas.”
- “I would like a hybrid that uses more battery than a Prius does. With the Prius, I am lucky to go a mile before the gasoline engine kicks in. It uses the electricity more as a boost rather than driving purely electric.”
- “Another limit to the Prius is I can't accelerate real fast with the battery motor. I would like more choice in what I am using [battery vs. gas].”

Competition

- “I have not driven a Tesla. It is a sports car. At my age, I don't need a sports car and I am sure my wife does not want me to have a sports car either.”
- “I don't know too much about what is available regarding EVs. I know Nissan has the Leaf. I don't know much about their performance, but I am sure they are no match for Tesla's performance.”
- “I have not heard a lot about new EV models in 2014. Tesla's name keeps coming up, and people are surprised—including me—that Tesla is thriving. They are helping to mature the technology.”
- “People who buy hybrids are after economy. There are a lot of hybrid SUVs, but I would not want one unless I really had a need for four-wheel drive. If Audi and BMW had a really effective high-mileage offering, I would imagine that it would be effective competition, but it would be an incredibly expensive vehicle.”
- “The pending release of Tesla's Model X SUV does not affect my likelihood of buying an EV or hybrid vehicle this year at all. Teslas are way out of my league.”

Buyer Profile

- “People with a lot of money will be the initial buyers of the Model X. A Tesla SUV could be a real formidable entry into the market. If it has the range and performance of a hybrid SUV, I think a lot of people might go for it. And frankly, I would sure like to look at one just for the heck of it.”

3) Tesla Showrooms

All five sources said demand for and sales of Tesla's Model S continue to meet or beat expectations. They also have seen a greater number of financially qualified and serious buyers year to year. Three of the five sources noted a broader customer base that goes beyond “early adopters.” The Model X will not affect demand for Model S, and few Model S owners are expected to trade in their vehicles to purchase the X.

KEY SILO FINDINGS

Sales Trends

- All 5 said Model S sales have met or exceeded expectations for the first quarter and likely will do the same for the full year.
- Interest has increased from financially qualified and serious buyers.

Competition

- Tesla has a large technological and manufacturing lead over the EV competition. Well-known auto makers are working their way into the EV space but will not threaten Tesla.

Buyers

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- 2 sources said Model S demand is coming from early adopters, but the other 3 cited a broadening customer base.
- The Model X buyer will be a current SUV owner or will be concerned with all-wheel drive. Model S owners will be more likely to add a Model X to their collection than to do a trade-in.

1. Tesla showroom manager; repeat source

Potential buyers are seeing Teslas on the streets and are increasingly drawn into the showrooms. The driver profile is widening to include gas car and hybrid drivers, performance and luxury car owners, car collectors and soccer moms. Goals for 2014 outpace 2013 sales, and expectations are to meet or exceed goals at this location. Deliveries have been on time. Model X reservations are being taken with a \$5,000 deposit, even though it is still a concept car and no release date is yet available.

Sales Trends

- "More Teslas are out on the road now, raising interest. Our name recognition is definitely growing, and more people are curious about our car. I do think more of our store visitors are interested in exploring ownership than this time last year, when people came in just to check out the shiny, cool car in our showroom."
- "Test drives are strong, more than a year ago. The quality of the buyers is much improved over a year ago. ... Most of the drivers are interested in ownership and usually are qualified to purchase."
- "Traffic at our location continues to increase. I am sure we have more shoppers than last year."
- "We are definitely selling more cars than a year ago. Deliveries are on time and as promised."
- "Our goals [for Model S sales] are to surpass 2013 sales for sure. Demand is strong and growing, so I have no reason to think we will not meet or even beat our goals."
- "Our pricing is all set, and every sale is customized to what the customer wants and can pay for. We really do not do any discounting or special deals. There is a federal tax credit for electric car owners, and some states offer tax incentives."
- "We are taking reservations for the Model X now, and demand is already strong. Customers put a \$5,000 deposit down to get on the waiting list for a concept car they have never seen."

Competition

- "Model S owners are usually already driving high-end, luxury performance sedans like BMW, Audi or Mercedes."
- "We are alone in our class. We are the only all-electric luxury or performance car available, and no one competes with our range. Tesla will still be leading the pack next year and for the next several years."
- "Tesla is well established as the leader in electric car technology. No one will catch up with us for at least five years. And even then, I expect our cars will remain ahead of their development."

Buyers

- "We still have a lot of early adopters, but we are seeing more luxury performance-car owners investigating the possibility of going with Tesla, both hybrid and gas car owners."
- "The profile is really a widening audience. Shoppers may be driving a gas car or hybrid. We see car collectors interested in Tesla because it is unique. We see performance car owners and luxury car owners. I think the Model X will appeal to soccer moms. It is definitely a broader mix than it was a year ago."
- "I would say the larger percentage of shoppers drive gas model cars now and are interested in Tesla because they will have zero cost of gas to operate it. It ultimately pays for itself."
- "We are already outselling some of the best luxury cars in the country."
- "Model X drivers are probably driving an SUV, either a gas or hybrid. But we are not really focused there yet. It is still a concept car. We do not know for sure when it will be available or at what price."

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Tesla Showroom Manager

Tesla Motors Inc.

2. Tesla showroom manager; new source at a repeat location

State law exempts zero-emissions vehicles from sales tax on autos. As a result, Tesla makes up 1% of all cars on the road in this area. Test drivers are increasingly considering ownership and are financially qualified, unlike the curiosity seekers a year ago. [The Tesla factory in Fremont](#) has ramped up production, but more units are being shipped to Europe and Asia. Existing markets for Tesla are strong and growing. The company is planning more showrooms and more service centers in U.S. cities. The Model X will appeal to women and families who already drive SUVs, as well as to drivers of four-wheel-drive vehicles.

Sales Trends

- “Our foot traffic is fairly similar to traffic a year ago, but the draw is different. Last year our showroom car was a novelty. People would just come in to look at it. But now people come in because they have heard of Tesla and are interested in a car that uses no gas.”
- “More test drivers are qualified and interested in owning a Tesla than they were a year ago, for sure. Last year we did a lot of fun drives just to get our name out there.”
- “One out of 100 cars on the road around here is a Tesla. That is a huge increase over last year.”
- “All of our cars are built in the Fremont factory, and they are ramping production. However, more and more of those cars are being delivered in Europe and Asia, significantly more than a year ago.”
- “I don’t know that we have a goal really, but I expect we will sell as many as last year or more.”
- “Tesla does not offer any discounts. The pricing is all standard; it just depends on what the customer orders. There are tax incentives out there though.”
- “Model X sales are not expected to have any impact on Model S demand. It will be a new customer, a different appeal in addition to our Model S customers.”
- “We have already had an enormous response to our Model X reservations. Customers put down \$5,000 for the standard Model X and up to \$40,000 for the premium edition. The response is significantly stronger at this early concept-car stage than it was for the Model S, but then our name and reputation have grown a lot since then.”

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Tesla Showroom Manager

Competition

- “We have a five-year lead in technology for electric cars. No one is even close to us at this point. The only thing that can stop us or even slow us down is us.”
- “Audi [A6](#) and [BMW 5 series](#) are probably our closest luxury/performance sedan competitors, but nothing in electric even compares.”
- “BMW i3 is probably the next electric car that will be available on the American market, but it is not really a competitor to the Tesla Model S. Our range is significantly greater at this point, and the i3 is expected to be very expensive for a much smaller car.”

We will have Model S owners that add a second all-electric to their garage and own both an S and an X. I do not expect we will see many Model S owners trading for the Model X.

Tesla Showroom Manager

Buyers

- “Last year at this time we were selling cars to early adopters only. We still have a lot of early adopters, but the buyers are definitely moving into the mainstream now. Tesla is seeing broader acceptance now, a growing audience of people who do not want to buy gas. That has a broad appeal.”
- “Model X buyers are going to be more women, more soccer moms. They are already driving SUVs, either gas or hybrids. And we’ll have a segment of performance car buyers that want more room than the Model S offers. In Northern, colder areas that all-wheel-drive feature is more important, so we will have that segment as well. And we will have Model S owners that add a second all-electric to their garage and own both an S and an X. I do not expect we will see many Model S owners trading for the Model X.”
- “A hybrid driver is five times more likely to go all-electric than a driver of a gas-powered vehicle.”

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3. Tesla showroom manager; new source at a repeat location

Foot traffic has increased, thanks to Tesla's growing name recognition and the flashy car sitting in the showroom. Tesla outsold all other premium luxury sedans in the United States during the last two quarters, and this source expects it will continue to lead the high-end electric car market for the foreseeable future. Tesla's development has been designed to appeal first to early adopters. The Model X will continue to widen the audience to include families and those who want all-wheel drive.

Sales Trends

- "Foot traffic is increasing. We are in a really high traffic area. The cool car in our showroom draws a lot of attention by itself. But our Tesla name recognition is definitely growing now too."
- "We cannot do sales at this location, so all our customer meetings are informational only. Overall sales continue to increase. 2014 is expected to outpace 2013, but we do not track or report sales here."
- "Federal tax credits are \$7,500 a year so that is a nice incentive, but Tesla does not do any discounting."
- "We have probably 450 Tesla owners in our local area now, so that raises some interest. We definitely have more people exploring ownership and test-driving our car. But it is hard to identify a percentage of test drivers who buy because sometimes it may be two years before they come back and commit to the car."

Competition

- "We outsold all the premium luxury sedans in America over the last two quarters. There is nothing else out there all electric in our class. And nothing on the horizon will compete with us on style, luxury, performance or range for an all-electric. Tesla will be leading the pack for the foreseeable future."
- "Our Model S shoppers have been driving Mercedes E or S class, Audi 7 or 8 series, something comparable."
- "So much will change in the next three to five years; it is hard to look that far out. I expect the industry will grow in that time frame, and Tesla may have some competition by then. Tesla may also become more affordable as our technology advances. I expect there will be a lot more hybrids on the roads too."

Buyers

- "When we started, Tesla Roadsters were designed to appeal to the early adopters, the people really into technology and leading-edge advancements. Roadster also appealed to those who wanted performance and speed. Then the Model S had a broader appeal to people more concerned about carbon emissions and being 'green,' a broader audience who also wanted luxury and safety. Tesla's awareness has grown significantly, and now our buyers are families concerned with safety and economy."
- "We are in the midst of that transition to appealing to the general population in America. It is a big curve and we have a long way before we have reached the top of it, but we are well on our way. Model X will broaden that appeal even more to families with a need for more room and also those who have four-wheel drives now."
- "It is still too soon to comment on demand for the Model X. We do not even have a prototype available to drive or look at, so we are not focused on it yet."

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Tesla Showroom Manager

4. Tesla showroom manager; repeat source

This location has been open for less than a year but has seen an increase in customers seriously exploring ownership. BMW's i8 and i3 are not expected to threaten Tesla's Model S. The Model X is expected to broaden Tesla's audience to include drivers of SUVs and four-wheel-drive vehicles.

Sales Trends

- "I cannot really compare traffic to a year ago. But we are in a high traffic mall location and we have this cool car in the showroom, so we have a lot of traffic."

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- “We are not able to do sales at this location, but we do have lots of informational meetings with customers considering ownership possibilities. If they choose to buy, they order online themselves, but we are certainly here to answer any questions and help them make informed decisions.”
- “The federal tax credit remains a good incentive. ... Tesla does not offer discounting, so any credits are from the government. But not having to buy gas? That is a huge incentive in itself.”
- “The pricing is all dependent upon the options a buyer chooses.”
- “The Model X will grow demand, but since we do not really have any dates yet, it is too early to discuss in detail. We have a goal to have it available by the end of the year.”
- “I have a rough idea how many who test-drive are serious buyers. I do think it is growing, but it is not a number we track since we do not do the sales through our facility.”

Competition

- “Tesla has no competition in the U.S. yet. Europe has the BMW i8 and i3, but it is too early to know when they will be available here. Maybe by the end of the year? Even then, they are not likely to compete with Tesla on style, price or range.”
- “I expect Tesla will remain the leader in high-end electric cars for some time to come. I expect competition will definitely increase over time. It is just too soon to see what competitors may take hold and when.”

Buyers

- “Our buyer profile is pretty similar to last year. I think it will begin to broaden more when the Model X becomes available.”
- “We are still capturing early adopters. A lot of people are waiting for Tesla to have more history, maybe some used models available, maybe some less-expensive options.”
- “The Model X buyer is more likely to be new to the EV space, driving an SUV already, probably gas-powered, maybe a hybrid. It will have more family appeal and draw people in the North who want the control of a four-wheel drive.”

5. Tesla showroom assistant manager; repeat source

Traffic is steady. Last January the store was taking early reservations for the Model S. Goals are to meet or beat last year's sales for the first quarter and all of 2014. This location has a test-drive vehicle on site and does an average six drives a day. The drive often cements the start of the ordering process. The Model X will broaden the appeal of Tesla to a wider audience. Tesla is likely to remain the high-end electric leader in the United States for some time. It is expected to release a model in the \$30,000 to \$40,000 price range. Also, within two years the supercharger network will expand across the country.

Sales Trends

- “We have been in this location since November 2012, and our traffic is steady. I think our name recognition is growing, and that helps draw people in to check out the car.”
- “Our sales are going strong, growing steadily. Last year in January we were just taking reservations, so it is not a fair comparison. We took a lot of reservations, but it is easy to put your name on a list and then go figure out how to pay for it before it is actually available. A few of those who made reservations backed out when the car was available, but most followed through.”
- “Our goals are to meet or beat last year during the first quarter and the full year. I believe we will do that.”
- “Tesla pricing is set and only changes when new options become available, and then the buyer can choose.”
- “The Model X will have a different draw. People who live in colder weather want the all-wheel-drive feature and an SUV style. Some Model S buyers may trade, but I expect more will just buy a second Tesla.”
- “Every store has a different plan for test drives. We have a test-drive vehicle and will average six test drives a day. I cannot say how many end up being buyers, but I will say 60% of their decision is based on the drive experience. It is often the convincing factor that gets them to start the ordering process.”

Competition

The Model X will have a different draw. People who live in colder weather want the all-wheel-drive feature and an SUV style. Some Model S buyers may trade, but I expect more will just buy a second Tesla.

Tesla Showroom Assistant Manager

Tesla Motors Inc.

- “The buyer of a Model S is likely already driving a Panamera, Mercedes S or [Jaguar Range Rover Ltd.’s] [Range Rover](#).”
- “BMW i8 is available in Europe, but it is not as nice as a Model S and much more expensive. Their i3 will also be available soon, but both only offer about 100-mile range so it is really not comparable.”
- “The EV group in America will be led by Tesla for a while. Even those who are developing all-electrics are well behind our technology. We have the name and the reach and the best car available.”
- “Within two years I expect our supercharger network will be available across the country, and Tesla is likely to have a new model available in the \$30,000 to \$40,000 range. That will make a huge impact on our appeal to a very broad audience in America.”
- “As other car companies move into the EV space, they will add charging stations, and that will expand the appeal and reach of the all-electric car. It will be good for everyone.”

Buyers

- “Our Model S buyer has the same profile as a year ago. The car has increased in price some because they have improved the battery.”
- “Our buyers are still early adopters, learning the new technology and how to care for and drive an electric car.”
- “I expect the price will have to drop before our appeal will reach outside the early adopters. Maybe in a couple of years when some used Teslas are on the market, or a lower-priced model is in production.”
- “I expect Model X to appeal to more kinds of drivers, hybrid owners and those new to the EV space. We may even see some Model S owners trade up or add a second electric to their garage.”

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Tesla Showroom Assistant Manager

4) Tesla in China

These five sources all expect Tesla to sell just a few hundred Model S units in China this year. The announced price of approx. US\$121,300 will restrict initial sales to wealthy customers who desire the brand as a status symbol. Tesla has no direct competition, but offerings from Toyota, Toyota’s Lexus, BMW and Nissan could affect Tesla’s potential in Asia. Additionally, a new competitor could emerge if an EV falls under Asian ownership. China lacks charging stations, but this is a reflection of low EV demand rather than an impediment to a potentially robust EV market.

KEY SILO FINDINGS

Trends

- All 5 Chinese sources said Tesla will have a slow start to sales in China in 2014, with no charging station infrastructure as of yet.

Competition

- Toyota, Lexus, Nissan and BMW offer competition to Tesla’s business in Asia, but are not yet direct competition for Tesla’s all-electric luxury vehicle with its longer battery range.
- Competition in Asia may surface in Hong Kong or South Korea, which are more environmentally aware than China. An acquisition (such as Fisker) by an Asian corporation could create a formidable new competitor.

Buyer Profile

- Tesla buyers in China will be younger, wealthy customers purchasing their first EV.

Batteries and Other Developments

- 4 of 5 sources see battery developments as no obstacle for sales; 1 believes a supply issue could develop. All note that a battery technology breakthrough is needed for a more affordable EV to emerge.
- All 5 sources noted a lack of charging stations in China; however, 4 of the 5 said this dearth is not holding the industry back. Rather, the lack of EV interest is responsible for the slow development of a station infrastructure.

Tesla Motors Inc.

1. VP for a manufacturer of lead-acid batteries and advanced batteries for hybrid and EVs

Demand for Tesla's Model S will be small in China and throughout Asia this year. Toyota's Aqua (known as the [Prius C](#) in the United States) and [Lexus CT 200h](#) are major EV/hybrid competitors in China, and BMW will join the fray in 2015. Most Tesla buyers will be wealthy, young, well educated, and will be new to EV and hybrid car ownership. Super-capacity lithium-ion battery development will be the next technological improvement for EVs.

Trends

- "Demand for Tesla's Model S vehicles will not be strong in China and Asia. In China, customers' environmental awareness is still weak. Also, Tesla's sales strategy is unclear. I expect Tesla's sales will be very bad. I think they will sell no more than 200 to 300 units in 2014 in China."
- "The USA still has the strongest demand for Tesla, followed by Europe, because both regions have better environmental awareness compare to Asia. In Asia, Toyota's EV is dominating the Japanese market. Koreans prefer domestic brands in order to support the Korean economy. Maybe Tesla could sell better in Hong Kong because the people there care more for the environment."
- "Tesla Model S will not have any supply problem in Asia because its demand is small."
- "The pending Model X release will not affect Model S demand or sales in China because both cars are not familiar to Chinese customers. Tesla is for a niche market. The customers who want this car definitely know which model they want."

Competition

- "Tesla will meet strong competition from both EV and hybrid cars in Asia. The biggest competitor now is Toyota's Aqua. It is cheaper and launched two years ago. Another one is the Lexus CT 200h. In addition, BMW i5 is already accepting reservations in China now. In 2015, EVs and hybrids will not have market leaders, but I believe BMW i8 will be Tesla's direct competitor based on price and target customers."
- "Tesla's sales and marketing strategy will most likely affect Tesla sales. How to show its car to Chinese customers is the main issue for Tesla."

Tesla's sales and marketing strategy will most likely affect Tesla sales. How to show its car to Chinese customers is the main issue for Tesla.

VP, Hybrid & EVs Battery Manufacturer

Buyer Profile

- "In China, wealthy and well-educated young people ... will be the major buyers of Model S. Also, they have some environmental awareness. Most of them are new to electric/hybrid cars. This trend will not change in the following two years."
- "I don't really know Model S demand outside of the early adopters, but I believe its demand will not be strong."
- "I have no idea who will be the initial Model X buyers. I think it depends on how much it will sell in China."

Batteries and Other Developments

- "Battery supply will not be the issue to hold back sales because Tesla's battery has no unique technology, so its supply ability is enough for its small demand."
- "Lithium-ion battery development is very stable. Their cost depends on the yield. There have been no technological changes recently, but I believe the super-capacity battery will be the next technological improvement."
- "The charging stations buildup in China is very bad, and it will not improve in short time. If it speeds up, it definitely will help electric car sales, but the help will be limited. Currently, there are no positive policies to drive the buildup because the investment and the return are not directly proportional. If [State Grid](#) can jump in, it may drive this industry more."

2. Sales director of a leading supplier of automotive seating and electrical

Demand for Tesla's Model S will be small in Asia in 2014, but its sales in China will account for 30% of its global sales in the long term. The Model X release will enrich Tesla's product line and drive overall sales. Currently, Tesla has no strong competitor in the pure EV market. Its major competitors still are traditional car vendors. Wealthy people in their 20s to 40s will be the primary Model S buyers. The battery is a key issue for EV industry development. A new battery must be introduced and must be safe, longer lasting and quickly rechargeable. Charging station buildup is lagging in China.

Trends

Tesla Motors Inc.

- “Asia is a new market for Tesla, so an increase in demand will need time. Hence, I forecast Model S sales in Asia will be only 100 to 200 units. However, its long-term demand and sales will be good compared with Tesla’s sales in other countries. I think China will be 30% of Tesla’s global sales in the long term.”
- “North America and Europe still represent the strongest demand for Tesla because the recharging station network in Asia is very limited.”
- “I have no idea about Tesla Model S supply because it just announced the prices last week.”
- “The Model X release will not affect Model S demand and sales in China because their target customers are different. Model S sales may decrease slightly after the Model X release because customers will have more choices, but we also can say that the Model X’s launch will enrich Tesla’s product line.”

Competition

- “Tesla will not have strong competition for two years although BMW and Mercedes-Benz have a similar product plan. Tesla is leading in pure EV market. Tesla’s competition is not from the EV market but from similarly priced traditional and hybrid cars. Customers are still not familiar with electric cars.”
- “A unique character will be the major factor in driving Tesla’s sales at the beginning of its release. Safety will be a major concern for the next three years until customers know this car more. ... I think price will not be a major factor for Tesla’s sales.”

Buyer Profile

- “In China, Model S customers will be from wealthy families and will be 20 to 40 years old. Most of them will be new electric/hybrid customers. Along with Model X release, I expect the customer group will expand to middle- to high-income class. In China ... reputation is very important. This buyer profile will not change in two to three years.”
- “In Southeast and South Asia, wealthy people will comprise most Model S customers. In Japan and South Korea, EVs will be more readily accepted.”
- “Tesla’s sales strategy should focus on China’s high-income group, especially entertainment and sport stars, fashionable people and high-end business people.”
- “I don’t have data about Model S customers outside of the early adopters, but I believe its demand will not be strong at the beginning of the release.”
- “Model X buyers won’t be Model S buyers. Most of them will be new EV buyers. Some of them will buy Model X due to existing Model S customer recommendations.”

Batteries and Other Developments

- “Battery supply will definitely be an issue that holds back sales. For EV, battery is the key technology for its development.”
- “Lithium-ion battery costs will continue to decrease. However, Tesla needs to focus on battery development, not only in 10 years but also in 20 years, if it wants to be the EV market leader.”
- “When lithium-ion battery development peaks, it will invent a new material battery. I think the new battery must be safe, have long endurance and a fast recharge.”
- “The charging stations buildout in China is not satisfactory. I think increasing the charging stations number will not drive EV sales in short time, but the lack of charging stations will slow down the whole EV industry’s development.”
- “If charging stations could bundle with existing gas stations, it would boost EV car sales.”

Asia is a new market for Tesla, so an increase in demand will need time. Hence, I forecast Model S sales in Asia will be only 100 to 200 units. However, its long-term demand and sales will be good compared with Tesla’s sales in other countries. I think China will be 30% of Tesla’s global sales in the long term.

Sales Director, Leading Automotive Seating & Electrical Supplier

Lithium-ion battery costs will continue to decrease. However, Tesla needs to focus on battery development, not only in 10 years but also in 20 years, if it wants to be the EV market leader.

Sales Director, Leading Automotive Seating & Electrical Supplier

3. Chief engineer for a Chinese vehicle manufacturer

Demand for Tesla’s Model S in China will be small in 2014. The electric/hybrid car market has no leader; Nissan, BMW and Audi are Tesla’s major competitors. Compared with traditional car manufacturers, Tesla has little going for it in terms of price accessibility and brand reputation. Lithium-ion battery prices continue to decrease, but the current battery’s price

Tesla Motors Inc.

and performance cannot guarantee electric cars' ability to compete with traditional and hybrid cars. The charging station buildout in China is lagging.

Trends

- "It is difficult to predict demand for Tesla's Model S vehicles. A car is not only a transportation instrument but also a luxury product in China. From this point, it is possible that Tesla could succeed. However, Model S demand will be small ... because it is still new and not as reputable as traditional automobile companies. Although the Model S price is cheaper than expected, ¥734,289 [\$121,370] is not a cheap price. Hence, I think it will not be strong in China."
- "The United States has the strongest demand for Tesla. In my opinion, Tesla is not a car product but more like a financial product whose reputation is hyped by Wall Street."
- "The Tesla Model S will not have any supply problems in Asia because its brand orientation is just for small group of customers."
- "I guess that Model S could sell 300 to 400 units in Asia in 2014, and a significant number of those may be bought by different car manufacturers. Many Toyota Prius hybrids were sold to other car manufacturers in its first year."
- "The pending Model X release will not affect Model S demand and sales in China because their target customers are different. I believe Model X sales will be even smaller than Model S."

Competition

- "Tesla does not have many competitors. Actually, there are no leading vendors in electric/hybrid car market now. If I have to name a competitor, Nissan's Leaf is one. I think Audi and BMW hybrid cars will be very competitive to Tesla."
- "Tesla will not have any strength when traditional car manufacturers enter the electric/hybrid car market because these vendors can control costs much better and easier than Tesla."
- "The Chinese government will give the subsidies to Chinese electric/hybrid car manufacturers in 2014–2015. This policy will benefit China-based auto companies. The foreign companies are not on this list."
- "Brand reputation and price will most likely affect Tesla sales in China."

Buyer Profile

- "Rich [young consumers] will be the major buyers of the Model S in China. Most of them will be new buyers of electric/hybrid cars. They buy Tesla not because this is a great car but for showing off. I think this trend will not change until 2020."
- "I don't know Model S demand from customers outside of the early adopters, but I think demand will be small."
- "I have no idea who will be the initial Model X buyers, but I guess public [figures] ... because they will want to show to the public how much they pay attention to the environment although they will not really drive this car a lot."

Batteries and Other Developments

- "Battery supply will not be an issue that holds back sales because the battery technology used in EV car is very stable now. Supply and quality are both reliable. However, the current battery's price and performance can't guarantee the electric car will compete with traditional and hybrid cars."
- "Lithium-ion battery development is very stable. The capacities from different battery vendors are similar, and there has been no breakthrough technologies invented in these two years."
- "Lithium-ion battery costs are decreasing very fast in these two years, which can decrease about 25% year to year. This decline will slow down in the following two years. Prices will be very stable until 2018–2019."
- "The charging station buildout in China is not optimistic. If EV demand and sales can't expand, it is impossible to build more charging stations. Actually, the core point is that EV costs are too high, not a lack of charging stations."

4. Chief engineer at an international auto manufacturer in China

Tesla's Model S will experience some demand in the short term because it is a fresh concept, but its long-term outlook is not good. The Model X should have better demand because a city SUV or family car is more appealing to Chinese consumers. Tesla has no direct EV competitor; its major competitors are hybrid cars. Model S buyers will be young adults whose parents are new to wealth or are high-ranking officials. The Model S will be a second or third family car, but will be the buyer's first EV/hybrid car. Chinese government subsidies for EV/hybrid car manufacturers will not benefit Tesla even if it were to build a factory in China.

Trends

Tesla Motors Inc.

- “Tesla Model S will have some demand in the short term because it can sell a fresh concept in its first release year, but demand for the long term will not be good because it will lose this freshness. Tesla said they would sell around 1,500 units in 2014 in China; I doubt it.”
- “I don’t think Tesla really earns the money from selling the car, so I think it will not increase the supply.”
- “There is no supply problem if Tesla regards the prospects of the Chinese market favorably. If demand is really big, Tesla even can build a factory in China.”
- “The Model X release will not affect Model S demand because their target customers are different.”

Competition

- “Tesla has no apple-to-apple competitors now. Even in the electric/hybrid car market, it does not have many competitors. BMW’s i3, i5 and i8 will be competitive. [AB] Volvo [STO:VOLV-B/VOLVY] has released a hybrid car, the [V60](#), for one year in Europe, and sales are OK. In China, it will change the model to S60, and will release late 2014. Cadillac will release electric car based on the Chevrolet Volt. I am positive for this car. Nissan’s Leaf is selling pretty well in China now.”
- “The Tesla Model S is a nice car, but it is priced too high as an electric car. Toyota’s [Lexus] CT 200h is not as high-end as the Model S, but its price is only one-third of the S so it is selling well in the Chinese market.”
- “Although Tesla has no competitors in EV market, its major competitors are in the hybrid car market. Gas car to hybrid car and then to electric car is the trend of car development, and now it is still in second step in which the hybrid car is more competitive in both technology and price. Maybe the electric car will be more popular in 20 years, but Tesla is releasing too early.”
- “Buyers will pay more attention to a car’s safety and durability. Tesla has had a few safety issues in United States, so I think it will most likely affect Tesla sales in Asia when these reports are learned by Chinese consumers.”

Buyer Profile

- “Rich ‘second-generation’ and [children of high-ranking officials] will be the major buyers of Model S. This will be their family’s second or third cars, but will be their first electric/hybrid car.”
- “I read a media report that Model S demand from customers outside of the early adopters is good, but I don’t know if it is true or not.”
- “The Chinese government will give the subsidies to Chinese electric/hybrid car manufacturers, but Tesla will not get it even if it builds a factory in China or sets up a joint venture in China. ... The subsidies are only given to Chinese companies. ... If it is a joint venture, a Chinese partner would own the core intellectual property rights. I don’t think Tesla will transfer its core intellectual property rights to a Chinese partner.”

Batteries and Other Developments

- “Battery supply will not be an issue, but current battery technology will hold back electric car sales. It is not an issue for hybrid cars.”
- “Lithium-ion battery size will be smaller, and the costs will be lower. If the lithium-ion battery could have a international unified standard, it would help to decrease the costs.”
- “The current lithium-ion battery is not suitable for electric cars, but it is good for hybrid cars.”
- “The charging stations buildup in China is very bad. I think the lack of charging stations will not hold the industry back, but rather the slow development of the electric car will hold back the charging station buildup.”
- “Tesla does not have enough charging stations on the roads, so it is only for people who drive less than 100 km a day. ... If they want to drive long distance, the charging speed is not fast enough. ... Nobody wants to stop a few hours after just driving 400 to 500 km.”

The Model X release will not affect Model S demand because their target customers are different.

Chief Engineer
Intl. Auto Manufacturer, China

The Chinese government will give the subsidies to Chinese electric/hybrid car manufacturers, but Tesla will not get it even if it builds a factory in China or sets up a joint venture in China.

Chief Engineer
Intl. Auto Manufacturer, China

5. Director of a multinational automotive parts company in China

Demand for Tesla’s Model S will be small in China and all of Asia this year, but the Model S release price is lower than expected. Currently, Toyota and its Lexus are major competitors in China’s EV and hybrid market. The BMW i5 is expected

Tesla Motors Inc.

to be Tesla's direct competitor. Audi's [A3 e-tron PHEV](#) and Fisker could become competitive in 2015. Most Tesla buyers are wealthy, young people. Lithium-ion battery costs have not decreased much because a technology breakthrough has not occurred recently. Battery development will be the next technological improvement for EVs. Tesla has no charging station infrastructure in China.

Trends

- "It is hard to predict Tesla Model S demand. Although its release price is lower than expected, I like to say its demand will be still so-so. It probably can sell about 500 units in Asia in 2014."
- "Demand in Beijing, Hong Kong and Singapore will be better than other places in Asia. Hong Kong and Singapore have a stronger environmental awareness; plus, their areas are small, so EVs are more suitable. Beijing has a stronger demand for any kind of car. Japanese EV cars have developed for a few years, and their own brand Toyota is selling well."
- "The United States still has the strongest demand for Tesla, according to sales numbers."
- "The Tesla Model S does not have enough to supply to all the people who want to buy. This has not only happened in Asia but everywhere else in the world. I have heard customers need to wait at least a half year to get the car."
- "The pending Model X release will not affect Model S demand and sales in China, but its sales will also not exceed the Model S. I think Tesla cars are only targeting a unique customer group."

Competition

- "Toyota and Lexus are two major competitors for Tesla in the EV market, but I believe BMW's i5 will be Tesla's more direct competitor [based on] price and configuration."
- "In 2015, some more competitors will show their ability in the electric/hybrid market. One is the Audi A3 e-tron PHEV. I really expect strong demand for it. ... Another one might be Fisker. Currently, two companies from China and Hong Kong [are interested](#) in buying Fisker. If they are successful, the market will become very competitive because Fisker will be closer with China and the Asia market."
- "An unclear sales strategy will most likely affect Tesla sales in Asia. At least, outsiders don't understand its sales strategy."

Battery supply will not be an issue that holds back sales because Tesla's battery technology is pretty mature.

Director, Multinational Automotive Parts Company, China

Buyer Profile

- "In China, wealthy, young people will be the major buyers of Model S. Most of them are new to electric/hybrid cars. This trend will not change in the following two years."
- "I haven't heard anything about significant demand for the Model S outside of the early adopters. I also think demand from these early adopters is not big."
- "Initial Model X buyers must be related to Model S buyers. For example, if one person from my social group buys a Model S, it may attract more friends to buy. ... China's population is so huge that if Tesla can lock a group of loyal customers, its sales will be big enough."

Batteries and Other Developments

- "Battery supply will not be an issue that holds back sales because Tesla's battery technology is pretty mature."
- "Lithium-ion battery costs must decrease, but price cuts in these past two years have not been fast because there is no new technology breakthrough."
- "The next technological development or improvement in electric vehicles must be in the battery, but I don't know the details."
- "Charging station development in China is very slow, but it will not affect electric car sales or hold the industry back. Tesla has no charging stations in China now, and I don't think its U.S. method ... would be accepted in China because State Grid will not open this market to Tesla."

5) Tesla in Europe

These six sources said Tesla will grow its European sales in 2014 but off of a very low base. Except in Norway, most European consumers cannot afford a Model S, so sales have come mostly from the corporate sector. Tesla will not take an immediate lead in the European EV market, where established models already enjoy popularity and brand loyalty. Batteries remain an area of focus in Europe, so Tesla's superior range may become a catalyst for sales when charging stations are more built out.

Tesla Motors Inc.

KEY SILO FINDINGS

Trends

- All 6 sources expect Tesla to grow its business in the first quarter, albeit off of a low base a year ago.
- Tesla's Model S has no direct competitor.

Competition

- Cheaper EVs and local EV/hybrid vehicles are not direct competitors to Tesla, but will continue to sell well. Tesla will not take share away from competitors; rather, it will grow with Europe's expanding EV market.

Buyer Profile

- Except in Norway, in which incentives are plentiful, many Tesla purchases in Europe have been corporate and for company cars.

Batteries and Other Developments

- Battery range and charging issues are at the forefront of EV issues in Europe; Tesla's superior range will not be a significant edge until charging stations become more built out.
- As in other geographies, sources in Europe anticipate a technological breakthrough that will lead to a smaller, more powerful battery that is also considerably less expensive.

1. Marketing manager for an EV association in the Netherlands

Holland is one of Tesla's biggest European markets, where it experienced better than expected sales in the first few months after the Model S launch in September. The car is regarded as a status symbol, and sales are likely to continue to grow in 2014. However, an attractive incentive program finished at the end of December, so sales growth during the first half of the year is expected to be slower than in the fourth quarter of 2013. Overall battery capacity continues to be an issue. Many people still are waiting for a breakthrough in battery technology for the sector to really take off.

Trends

- "People in this country are more willing and more environmentally aware to spend the extra money on electric vehicles."
- "Sales of electric vehicles and hybrid cars during the fourth quarter were just phenomenal, especially during November and December—much better than expected. Everyone wanted to benefit from the incentives before they expired on Dec. 31. Those incentives were mainly fiscal and were really good."
- "In the long term we expect this sector, which of course includes Tesla, to grow very significantly, but we predict the first half of 2014 to be more modest compared with the fourth quarter of 2013. Sales had been artificially boosted by the attractive incentive program, and many people who would have bought their cars later bought them before end 2013 only because of that."
- "It is very difficult to forecast sales for 2014 due to the artificial boost in 2013, but we expect Tesla to carry on increasing, albeit from a lower rate during the first half of this year. It is very difficult for me to predict sales for the second half of the year as well."
- "However, incentives this year are much less interesting than last year, so at least the beginning of the year will slow down vs. year-end 2013. It will continue to grow vs. same quarter last year but from a very low base."


Consumers are still waiting for a breakthrough in terms of battery development to really show significant demand. Many are reluctant to buy electric cars because of their doubts about being able to recharge the car smoothly and conveniently.

Marketing Manager
EV Association, Netherlands

Competition

- "Tesla is No. 1 in its niche [EV] due to its very attractive design, which has received lots of acceptance according to our surveys, its relatively good [charging station] infrastructure and its higher battery capacity."
- "Tesla's most direct competitor in the electric car sector in Holland is the Nissan Leaf, whose most clear advantage vs. Tesla S is its lower price. But its battery capacity is still limited and it is still seen as a city car, whereas Tesla is regarded as both a city car and a car for longer distances."

Buyer Profile

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- “Most Tesla buyers are so far companies and not private consumers.”
- “Many companies were attracted by the appealing packages, with three different types of fiscal deductions with the purchase of such cars.”
- “Consumers didn’t receive so many incentives.”
- “Early adopter customers are still buying into the Model S because they basically account for the bulk of the electric car market in Holland. The market is still at an infant stage.”

Batteries and Other Developments

- “Consumers are still waiting for a breakthrough in terms of battery development to really show significant demand. Many are reluctant to buy electric cars because of their doubts about being able to recharge the car smoothly and conveniently.”
- “Battery supply has been an issue holding back sales, but it is expected to be offset with the wider infrastructure of battery changing stations.”
- “It is true to Tesla’s battery has improved its capacity, but there are still a number of people who are waiting for a real breakthrough in the industry for the sector to really take off.”

2. Marketing manager for a EV group in Norway

Tesla continues to be a success story in Norway, where it has managed to sell more Tesla S models than in Denmark, Holland and Germany combined. Sales were helped by a number of tax incentives on EVs, making its final price relatively affordable and more attractive than a mainstream car, which is subject to tax. Battery issues linger, but Tesla is set to continue to outpace the competition. This also will be helped by more charging stations, positive publicity and word of mouth.

Trends

- “The market for electric cars in Norway is in top form, having managed to grow by about 100% during 2013 and is expected to increase at an even higher rate in 2014.”
- “Norway is Tesla’s biggest export market and one of the most successful markets for electric cars in the world.”
- “This [EV] is getting to be a real market; 10% of our car sales last year were of EVs.”
- “The main reason behind this is the very attractive government support to the sector, especially in the form of all kinds of tax-exemption programs and incentives for the EV purchasers.”
- “Also, this is helped by a high consumer awareness of environmental protection and high per capita income.”
- “Sales of Tesla grew by approximately 100% and are expected to accelerate in 2014, with the help of incentives, greater marketing and a wider battery charging stations.”
- “Tesla has continued to grow during January and is expected to continue to grow during the first quarter and the rest of 2014.”
- “The launch of Tesla S took place six months ago; its sales have been much better than expected and will continue to be so.”

Competition

- “Tesla doesn’t really have any competition to worry about in Norway at the moment.”
- “The Nissan Leaf was launched two years ago. Although it is still one of the best selling EVs in Norway, it will soon be surpassed by Tesla because of Tesla’s superior battery capacity and the car itself, which is of superior quality.”
- “More EV models by supposedly competing manufacturers are being launched during 2014, such as the new model from BMW and Volkswagen [AG/ETR:VOW3/VLKAY]. I don’t think that they will really compete with each other, but they will definitely make the market grow.”

Buyer Profile

- “The profile of the average EV consumer in Norway is not so exclusive as in other countries, thanks to the great incentives one gets from the government.”
- “Thanks to the fact that these cars are tax-free ... anybody from the C income consumer group [middle class] could afford a Tesla in Norway. This is probably the one of the very few countries where a teacher could afford a Tesla.”
- “The average buyer of a Tesla is someone between 30 and 40 [years old], belongs to the middle class but is not rich.”
- “Even the skeptical potential consumers are now buying Tesla; success generates success.”

Tesla Motors Inc.

- “People have begun to see buying a Tesla car as an investment. In Norway for a mainstream car, the more expensive the car is, the more taxes people have to pay, which could be even more than 50%, which ends up making these cars [Tesla] relatively affordable.”
- “Many of its buyers have or ordered a Tesla because it is a status symbol and gives off an image of climate consciousness.”

Batteries and Other Developments

- “The battery capacity is still an issue in the industry, including Norway but with plans for a wider supercharger infrastructure to be set up here, I believe this is going to fuel sales even further.”
- “With our topography and low temperatures, one would think that Norway wouldn’t qualify as a good market for electric cars, but it has been a great success.”
- “Batteries have always been a concern. ... There are increasing concerns and complaints about recharging the cars in Norway, when temperatures drop below the freezing point.”
- “This problem is tied to the recharging cables that come with the Model S cars because they don’t hold the charge in cold weather; this hasn’t been a widespread problem but could be something that Tesla will have to look into.”

3. Vice president of a German EV association

In Germany, Tesla is at its infancy in terms of market penetration and demand. German buyers of EVs receive no significant tax incentives. Although the government supports the sector in terms of R&D, it still has a cautious attitude because of growing concerns over emissions necessary for electricity. Tesla continues to grow, but from a low base and relatively slowly. Some potential German consumers are concerned about battery capacity and the recharging network. This could be solved by an agreement signed between Tesla and [Deutsche Bahn](#) to provide a much wider supply of charging stations by the end of 2014.

Trends

- “In spite of the fact that the Germans are generally highly environmentally aware and there are enough people here who could afford an electric car ... this market is fairly small.”
- “Tesla has got a lot of potential in this country. ... The problem here is just the lack of support from the government to the final consumer.”
- “The government does support the sector with investment subsidies in research and development but not to the final consumer, which means that it is being cautious with the market until perhaps it develops a bit more.”
- “German car manufacturers ... can make so much money with standard cars; why invest so much money on something that is going to require lots of extra investment?”
- “Tesla is expected to continue to grow next year, roughly at the same rate as in the last few months, but it is currently having delivery problems and is likely to remain a very niche market in Germany.”
- “There was a lot of expectation with the launch of the Tesla S. As a result supply didn’t manage to meet the demand for this car, which meant that the average waiting time has broadened to four to six months. This has deterred some people.”
- “It is a bit too early to predict whether the launch of Tesla X will affect Tesla S as it is not expected to happen until 2015.”

Many German consumers are not just concerned about battery capacity or a real breakthrough in this sector but [also] are worried about the energy used to produce the electricity needed for an EV, including Tesla.

Vice President
EV Association, Germany

Competition

- “Tesla will be competing with BMW and VW new electric models into the market, as Germans tend to be very loyal with their German makes.”
- “However, Tesla is being regarded as young, chic and cool, which is already attracting a segment of relatively young successful businessmen.”
- “The main problem that I see regarding Tesla at the moment is its price. ... It is still competing with other cars that are subject to leasing.”
- “BMW, which recently launched the i3 electric vehicle, and Daimler, which offers an electric version of its [Smart](#) car, are marketing these vehicles as ‘city cars,’ suitable mainly for short distances. Tesla has started marketing its S

Tesla Motors Inc.

model ‘not just as a city car’ with a range of 500 kilometers. But a lack of a charging infrastructure has limited its appeal.”

Buyer Profile

- “This market is still in an infant stage in this country, and of course Tesla buyers are still early adopters.”
- “Most buyers are those belonging to the tiny niche comprising relatively young successful, rich people who are fanatical about cars and see Tesla as a status symbol.”
- “The other buyer profile that comprises the bulk of Tesla buyers in Germany is corporate, usually startups or young companies run by relatively young people who want to give an image of environmental awareness, success, being avant-garde and, of course, of status.”
- “This is the segment that doesn’t so much loyalty toward German car makers.”

Batteries and Other Developments

- “Many German consumers are not just concerned about battery capacity or a real breakthrough in this sector but [also] are worried about the energy used to produce the electricity needed for an EV, including Tesla.”
- “One of the reasons why the government is not supporting the final consumer with incentives is because of worries over the source of the electricity needed for EVs.”

4. EV research manager for a German insurance company

Germany’s market for EVs is very small but growing very rapidly. Approximately 3,000 EVs were sold in 2012, 6,000 were sold in 2013, and 10,000 to 15,000 unit sales are expected in 2014. This still represents an almost negligible niche in Germany where some 4 million new cars were registered last year. The German government supports EV R&D, but does not offer financial incentives to buy these vehicles.

Trends

- “This is a car for people who want to show off, really show their status and money, and many Germans who really wanted to show off would buy a Ferrari or a Lamborghini, instead of a Tesla.”
- “The wider network of charging stations, which will be put in place during 2014, will help Tesla sales in this country, but I am a bit cautious about widespread acceptance for Tesla.”
- “One of the hindering factors for Tesla’s growth is the consumer concern about its battery capacity.”
- “Although Tesla markets its Tesla S as a car with a capacity of up to 500 km, German consumers know that in practical terms it will be less because of the extreme low temperatures we can reach here.”

Competition

- “This market is getting a lot of competition from what we call extended range cars [comprising a battery and a motor engine fueling its battery] and hybrids, which are regarded as more practical and reliable by German consumers.”
- “The main competition Tesla is facing is coming from cheaper EVs in the market, such as Smart, [Renault \[S.A./EPA:RNO/RNSDF\]](#) and Nissan Leaf and new launches by German manufacturers priced at relatively good prices.”
- “I don’t see the market in 2014 led by Tesla because of its really high prices and consumer concerns about battery capacity.”

Buyer Profile

- “The typical buyer of a EV is a company. Consumers are almost nonexistent in this sector, and that applies to Tesla too.”
- “This is not the United States; consumers there are more daring and are more prepared to try new things. We are much more cautious and tend to wait until a product is a bit more established in the market.”

Batteries and Other Developments

- “Along with the price, the main issue deterring consumers from buying Tesla and fully electric cars in general is their concern about the battery capacity and battery prices.”
- “Some consumers, as well as people in the industry, are waiting for battery prices to go down because they believe they will go down.”

Some consumers, as well as people in the industry, are waiting for battery prices to go down because they believe they will go down. ... Some potential consumers are also waiting for a real breakthrough in the sector to buy an all-electric car.

EV Research Manager
German Insurance Company

Tesla Motors Inc.

- “Some potential consumers are also waiting for a real breakthrough in the sector to buy an all-electric car.”

5. Head of Communications, trade association in the United Kingdom

The UK market for all-electric cars grew by 99% during 2013 and is expected to gain momentum in 2014. EV sales have outpaced hybrid and plug-in cars, which grew by 10% and 8% year to year. Of the 2.2 million registered cars in the United Kingdom, only 2,800 of them are EVs. Tesla's presence is still negligible in the UK market. Its Tesla S was launched at the end of 2013 and is not being delivered into the market until March. The Nissan Leaf holds almost half the total EV sales.

Trends

- “Tesla is expected to grow but from a very low base. There is a market for these cars in the UK, but Tesla will face lots of competition from cars that are already established.”
- “Tesla is expected to do very well, but like with the rest of the EVs here, the government and the industry association are working together in increasing consumer awareness of the advantages of driving such cars in the medium to long term.”
- “2013 sales were helped by great incentives in terms of tax exemptions and funding to EV buyers, which will continue to boost the market in 2014.”
- “It is amazing how this sector is being supported; I don't think it will just be a fad. The government is even giving grants summing up to £5000 for the purchase of an EV.”
- “It will be like with mobile phones over a decade ago; when they first came into the UK market, everybody was very reluctant to buy them. But with time as people became increasingly aware of the advantages of using a mobile, soon after that everybody owned a mobile.”
- “Tesla X won't be launched until late 2015 or even early 2016 in this country. It is still too early to see whether the X model will cannibalize the other model.”

Competition

- “Tesla will receive lots of competition, but we believe instead of Tesla competing with BMW and the others, the new launches will make the market grow.”

Buyer Profile

- “So far Tesla's consumer profile is someone of a high-income group between 35 and 50 [years old]. And most of them are early adopters who want to get the best in the market.”
- “Older consumers are not so attracted by Tesla as they tend to be more reluctant to try new things and haven't placed lots of trust on the reliability of electric cars yet.”

Batteries and Other Developments

- “Tesla announced it will have a full network of battery charging stations by the end of the year. This definitely will boost sales of their Tesla S.”
- “The biggest concern for potential consumers is the battery capacity and the network of charging stations, which continue to be an issue.”
- “This market is likely to continue to be a very niche market here in the short to medium term. Of course, there is already a market for Tesla in the UK, but for it to really grow more significantly, consumer awareness of the advantages to EVs needs to be increased.”

6. Deputy managing director of a eco-car consultant company in Switzerland

EVs accounted for 0.3% of Switzerland's total car sales in 2013. The sector is expected to grow in 2014, boosted by greater EV supply. New passenger vehicle registrations in Switzerland contracted by 6.2% to 307,885 cars in 2013, but the EV market continued to outpace the overall market. The fastest growing car manufacturer was Renault because of its prices and model availability.

Trends

Tesla Motors Inc.

- “[The Model S] is regarded as the best electric car in the world, but the main reason hindering its sales is the high price. However, as there is a consumer group in this country of ultra-rich people, there is definitely a market for Tesla S.”
- “Switzerland is a very Volkswagen-oriented country. ... Although this could pose a threat to Tesla in theory, I think that because of the good publicity of the Tesla and the fact that most Tesla S consumers are relatively young, loyalty toward German brands in this segment is not as high.”

Competition

- “I don’t think 2014 will be a year dominated by Tesla in the EV sector, but the Tesla brand will continue to grow at a fast rate than the EV market in this country and will be one of the main players in the premium segment.”
- “This will also be helped by a wider infrastructure of battery charging stations not just in Switzerland but also in Germany, Holland and Austria.”
- “People keep on comparing Tesla with the other Renault or [Citroën](#) [owned by Peugeot S.A./EPA:UG/PEUGY] electric models. But these models are more in the C segment, whereas Tesla is regarded as a luxury car and will be competing more directly with BMW’s new electric car.”

Buyer Profile

- “The bulk of Tesla consumers are either company owners or high executives who buy a Tesla as a company car or as a status symbol.”
- “Tesla is very expensive in Switzerland because consumers don’t receive any kind of incentives to buy such cars. In spite of this, sales are increasing.”

Tesla is very expensive in Switzerland because consumers don’t receive any kind of incentives to buy such cars. In spite of this, sales are increasing.

Deputy Managing Director
Eco-car Consultant Co., Switzerland

Batteries and Other Developments

- “The key problem hampering the sales of Tesla and other EVs in this country is related to concerns about battery range, capacity and charging possibilities. Of course, this is going to be helped by a greater number of battery stations in Central Europe. Although this will help, consumer perception is still that anyone can run the risk of being stuck in the middle of a highway without any electricity left and nowhere near to recharge it.”
- “Another concern ... is that batteries can take a long time to be recharged. ... [This is] perhaps a challenge for Tesla to really communicate to potential consumers about its battery infrastructure in Central Europe and the fact that half of its battery capacity can be recharged in a few minutes.”
- “I don’t expect any major development in batteries in the near future.”

6) Auto Industry Specialists

Nine of these 10 sources commented on Model S demand, which they said has remained strong, and added that only capacity will constrain 2014 sales. Tesla has no direct competition in the luxury EV space. Six sources see the Model S buyer base as expanding beyond the early adopter. Still, Tesla’s demographic will continue to be restricted to wealthy consumers, at least until the more economical Model E is released in two to three years. The anticipated battery breakthrough of a more powerful but less expensive and smaller battery has not yet emerged.

KEY SILO FINDINGS

Trends

- Tesla continues to see enough demand to sell everything it produces; the only constraint on 2014 sales will be capacity.
- Sources reported no issues in Tesla’s production or supply.

Competition

- Tesla has no direct competitor. BMW garnered the most mentions as a potential threat, followed by Nissan, Mercedes and Porsche.

Buyer Profile

- The Model S buyer profile has moved beyond the early adopter.

Batteries and Other Developments

- The expected battery breakthrough (leading to a lower-cost, more powerful, smaller battery) has yet to occur.

Tesla Motors Inc.

- The pending Model X will not affect Model S demand. 4 sources questioned whether the X's "[Falcon Wing](#)" rear doors will prove popular.

1. Executive for a trade association; repeat source

Demand for the Tesla Model S remains strong in the United States, and Tesla is building momentum worldwide. The early adoption phase is over, and current buyers are people who have been caught up in the hype. Interest in the Model X will also boost demand for the Model S; with several models out, people will begin to look at Tesla as a company that is here to stay. Tesla has a space advantage over the high-end competitors, such as BMW i3, which has limited backseat room. The future will bring numerous EV competitors because of high public demand. Tesla is building a manufacturing plant to make its own batteries, and the company is ahead of schedule in its five-year charging plan.

Trends

- "The Model S is still strong in the United States and gaining worldwide. There is still a Tesla demand, and there will continue to be one. Last year, Tesla was producing 550 cars a week and had a three-month backlog. Now they are producing up to 600 cars per week, with just a one-month backlog. That 600 cars per week is a worldwide figure because they are starting to sell the cars in other countries. Tesla's goal is to reduce the waiting time for cars; it will be interesting to see how this changes."
- "Tesla has an upgraded version that is [designed for the Autobahn](#) in Germany; the car is designed to go faster. They don't manufacture Tesla in Europe; they ship the car in five parts and reassemble it in Europe to dodge the tax laws. Mercedes-Benz does the same thing in reverse."
- "I don't know of any Tesla incentives, but there is the federal tax credit of \$7,500, and different states have rebates as well. California gives a rebate of \$2,500 for electric vehicles, and one county in California, I'm not sure which one, adds another \$2,500 rebate on top of that." [Since August 2012, [San Joaquin County](#) has offered EV buyers an additional \$3,000 in rebates.]
- "Tesla is only using a fraction of the plant that they have in Fremont, so there is plenty of room to expand the facility for the Model X. They have all the equipment in place right now, and they are probably doing Model X safety testing and preassembly now."
- "Batteries were an issue for Tesla, but I think they are covering that. I haven't heard of any other problems."
- "The Model X will start delivery this year, which should boost demand for both models in 2015. If you look at any of the buzz around new releases, a new model always boosts interest in whatever is going on. Tesla is a single-model manufacturer. But when Tesla goes to the second model and then to the third, the Model E, people will view Tesla as a more viable long-term company."
- "You hear rumors about General Motors buying Tesla, but there is no reason for [Tesla CEO] Elon [Musk] to sell to GM. It would be a death for Tesla."

Competition

- "Tesla already has competitors. BMW's new model i3 has just come out, and even [Elon Musk](#) says that it is a significant competitor to Tesla. But the i3 is a smaller car, and I've heard negative things about it. The new BMW is a purpose-built machine, and it is still too new to tell how it will compete. However, there's no backseat room. This is a critical piece, when you think about two adult passengers in the back of a car. And the [Fiat 500e](#) [Fiat S.p.A./BIT:F/FIATY] is also smaller. The Chevy Spark, however, is roomier in the back."
- "The Nissan Leaf is the top player because it was the first on the market, and it already has more vehicles on the road than the others. The next biggest seller is the Tesla S. And then you have a series of production or compliance vehicles like the Chevy Spark. There's a high demand for electric vehicles, and it is the production or compliance category that could change in the next two years."
- "The Chevy Spark EV has not been out for a full year yet, so it is too early to tell how it will do. The Spark has a great [educational video](#) out; it is right on spot. It is outstanding in using the right language and terms. There's also a safety issue and efficiency issue with the smaller cars. The Spark has a smaller battery, 21 kW, and it runs for 80-plus miles. The Nissan Leaf has a 24 kW battery, and it runs for 73-plus miles."

Tesla is a single-model manufacturer. But when Tesla goes to the second model and then to the third, the Model E, people will view Tesla as a more viable long-term company.

Executive, Trade Association

Tesla Motors Inc.

- “There is much more acceptance of the EVs because the hybrids came first and paved the way. It took awhile for the public to say hybrids are OK and then finally that they were really fabulous.”
- “Safety was an issue for Tesla for a short while, with the fires. That issue doesn’t appear to have affected them.”

Buyer Profile

- “Early adopters are no longer Tesla buyers; we’ve already gone through that. That’s why the backlog has dropped from three months to one month.”
- “The Tesla buyers now are those who have been caught up in the hype. I saw someone test-drive a Tesla and then immediately sign up for one. His only concern was the waiting time.”
- “One of my neighbors is on the waiting list to get a Model X. He has been a big electric vehicle fan for a long time, and he likes SUVs.”
- “Tesla’s Model E, its economy car, will sell for about \$40,000, which may fit more people’s budgets. It will have smaller batteries and a smaller chassis than the Model S or Model X. The Model E has a whole new chassis design, and I believe they have started working on it. I’ve heard that Tesla will come out with a pickup truck, but I think that might just be a rumor.”

Batteries and Other Developments

- “Panasonic [Corp./TYO:6752/PCRFY] is the [No. 1 supplier](#) of batteries to Tesla, and Tesla is the No. 1 consumer of lithium-ion batteries in the world. I have heard that Tesla is now building their own battery manufacturing plant, and it won’t be at Fremont. This will take awhile to get established, but I don’t think Tesla will have battery supply problems. Tesla makes everything at the Fremont plant, including their leather upholstery.”
- “There’s a company in Seattle, [EnerG2](#), that now makes a carbon terminal, energy-density battery that has five times the energy at a fraction of the cost and can go up to 500 miles. I’m not sure when this battery is coming out nor who can buy it, but they are manufacturing it now. The facility has 7,300 square feet.”
- “There is still some battery range anxiety. We are two years away from a 300- to 500-mile battery at the fraction of the cost, but when this new battery is introduced, range anxiety will be a nonissue.”
- “Tesla now has a charging station infrastructure all around the country. Drivers [just took the Tesla](#) around the country for free in four days. Tesla has done a good job of covering all the major roads and corridors. You can now drive a Tesla from Florida up to the Northeast and on Highway 5 up the West Coast. There are charging stations across the country in climates that are hospitable, and more charging stations will be opening down south.”
- “Tesla has a five-year charging station plan, and they are ahead of schedule. ... This allows them to continue to sell more cars. And as they fill in the stations, range anxiety will be better.”
- “Tesla cars use the infrastructure daily. One problem that has occurred is hogging of charging stations; people leave their Teslas in the stations overnight. This is a new dynamic, and we will need to talk about charge station etiquette in the near future. But it is not a big deal.”

The Tesla buyers now are those who have been caught up in the hype. I saw someone test-drive a Tesla and then immediately sign up for one. His only concern was the waiting time.

Executive, Trade Association

2. Battery specialist; repeat source

Tesla is proving that it is hard to beat, and the company will remain stable in its high-niche market. Tesla should have no problem with sales although the Model X may fragment its market. The EV market will continue to grow as long as gas prices remain high and countries maintain emissions-control standards. However, European countries now are leaning toward less rigid standards, which may create a problem for the EV market. Battery technology is not really changing, and the number of battery companies is dwindling. Engineers are working on reconfiguring charging stations, thereby allowing more cars to be charged simultaneously.

Trends

- “I don’t think Tesla will have any problem with sales. They are a commodity item, with plants all over.”
- “I hope Tesla will remain strong. They are beautiful cars. As a high-end niche market, the company will be stable.”
- “Model X sales could take away from the Model S. I don’t think the Model X will expand Tesla’s market; it will just fragment their market.”

Competition

- “Tesla competition is the high-end makers like BMW and Porsche and also the regular makers, like GM, that have high-end cars.”

Tesla Motors Inc.

- “There are a number of different EVs out now, and in a year there should be more. Tesla is proving that this is a market that is hard to beat.”
- “The EV market competes with gas prices and fuel emissions regulations. To compete, EVs need to prove that they are cost-effective and provide cleaner energy. If gas prices stay low, this could be a problem. I’m also worried about Europe. They have reneged on [carbon emissions](#); the people are pushing this back. [Poland](#) has started fracking, and there is a huge investment in fossil fuels. This could create a problem for electric vehicles.”

Buyer Profile

- “I don’t really know the buyers. Many are believers in green technology.”

Batteries and Other Developments

- “Unfortunately, battery technology is not really changing. We had high hopes for a different technology, but nothing is really panning out. [Argonne National Laboratory](#) said they developed a new material, and they licensed the technology to many companies; GM invested in these high-energy batteries. But as people looked into the material, they saw more and more [problems](#) with the positive side of the material. It took years for the story to come out. The battery had good capacity, but the energy or voltage faded overtime. It doesn’t work for anyone, and it is not a solvable problem. This is a [difficult technology](#) and may require up to 10 years to solve.”
- “The number of companies making batteries was increasing for a while, but now it is decreasing. Everyone is cutting back.”
- “[EnerG2](#) in Seattle uses the carbon technology; it is an incremental modeling technology that [adds a little more to the battery at a time.]”
- “I am very skeptical that Elon Musk can build a battery manufacturing plant ... because of the economics involved. Why would they do this, unless Panasonic stops making their batteries? They would need to have a huge increase in their Tesla market.”
- “There is a lot of pressure to reduce battery costs. But the major suppliers are selling the batteries at cost now; some may even be taking a loss. There will not be a cost reduction unless the market expands a lot.”
- “I went to a meeting on charging stations, and they had some interesting things to say. One thought was to encourage Tesla drivers to carry a cardboard clock in their car and put it on their dashboard to let people know when their car would be fully charged. It was also suggested that four parking spaces could be used around a charger, thereby allowing four cars to be charged at once, possibly with the charge rotating. There are different configurations that could work.”

There are a number of different EVs out now, and in a year there should be more. Tesla is proving that this is a market that is hard to beat.

Battery Specialist

3. Senior editor of a trade magazine; repeat source

Tesla will be in demand in 2014, and will sell all the cars it can make. It is a small part of the overall automobile market, and will not experience supply problems until at least 2020. Tesla is a family’s second car; people will need to choose between the Model X and Model S. The Model X is designed to stand out in a market of many small to midsized SUVs, and Tesla is committed to reducing component costs and ultimately lowering the Model X price tag. Unless battery costs are reduced, they will be a cost factor for Tesla’s mass-market Model E.

Trends

- “The demand for Tesla is still there in 2014. Wealthy people want to make social and environmental statements.”
- “I’m not sure of sales figures, so I can’t give you any. But Tesla is premium-priced, and they sell all they can make.”
- “I keep hearing about supply problems, but I don’t think Tesla has a supply problem. In the short term, there is no worry because they are still a small piece of the pie. It may be a different problem in 2020 or 2030.”
- “Families will have to choose between the Model X and Model S. They will either buy one or the other car, they won’t buy both.”
- “Tesla is still planning on using the wing doors in the Model X. I find them very impractical, and they are expensive to produce and assemble. Will the open doors fit in your garage? Apparently Tesla thinks so. Some people will like it, and some people won’t. Tesla is competing with the compact to midsized SUV, and they feel the wing doors will make the Model X stand out. The [Mercedes SL](#) had wing doors in the 1950s, and now they are coming back again.”

Competition

Tesla Motors Inc.

- “The Model S competes with all the exotic high-end stuff like [Fiat’s] [Maserati](#), BMW, Mercedes, and the plug-in [Cadillac ELR](#). If you have \$110,000 to spend on a car, then you have a lot of choices. But there’s no one else in the pure-electric luxury car market, and Tesla will have the market to themselves.”
- “They are trying to get the Model X price down to the \$50,000 range. When Tesla gets the price down, they will have more competition. Tesla is looking at reducing component costs, and they will remain committed to this.”
- “What is the long-term future for Tesla? Will it be purchased?”

Buyer Profile

- “We’re now into the second and third adopters. These are people who have listened to their friends who are the early adopters. There are still some early adopters waiting for a supercharger network to be put in. These folks are still afraid of being stranded, and they will need more reassurances.”
- “The electric vehicle is still a family’s second car; more than 90% of EV owners still have other cars. A household that has all Teslas will be very rare.”

Batteries and Other Developments

- “The entire industry worldwide wants to drive battery costs down; there’s been pressure to decrease the cost in the last five years. The [nickel-hydride battery](#) has proven stable in the Prius, but doesn’t have the performance of the lithium-ion battery. But the lithium battery is still costly chemistry for an automotive. The bigger battery costs more but has a greater range. The battery cost is not much of a factor to high-end cars like the Model S, but it may be a factor for Tesla when they come out the Model E.”
- “The lithium-ion battery form factor, its physical shape, was a problem for Tesla. They were able to put all the cells in a small cylindrical pack, and it worked for them. Now the question is, how long will they continue with the cell? Will they change the form factor and have fewer cells? They don’t have the economy of sales yet because of this factor. It’s a chicken and egg situation, and they need a breakthrough. But this won’t happen right away.”

We’re now into the second and third adopters. These are people who have listened to their friends who are the early adopters. There are still some early adopters waiting for a supercharger network to be put in. These folks are still afraid of being stranded, and they will need more reassurances.

Senior Editor, *Trade Magazine*

4. Owner of a Tesla-authorized auto body shop

Tesla’s sales will continue to be strong in 2014. People are noticing the Model S, and Model X sales will add to its market. Tesla does not want to compete with the other manufacturers or put them out of business. The company simply wants to show everyone that a quality, all-electric car can be made. Tesla will overcome roadblocks from big oil, the auto industry, and battery supply issues. Car dealers are a strong organization bent on blocking sales of Tesla from outside the dealership chain. However, dealerships no longer serve a function, and the public, seeking to buy cars online, eventually will rise up against them. In a few weeks, Tesla will announce a new battery plant. Once construction is complete, Tesla could make up to 100,000 cars a year.

Trends

- “Tesla will have a key year in 2014. Nothing will stop them. They will have decent sales and continued growth in 2014. They made 25,000 cars last year, and they will make more cars this year and sell them. They will come out with the Model X in 2014, and there are enough Teslas on the road that people are now taking notice. Tesla will continue to sell cars without marketing, but they have just hired a very competent journalist [[Hamish McKenzie](#)] to spread the word. They are committed to making a difference.”
- “Tesla does not really release sales figures, and we don’t have a store here yet. Someone estimated that in the past six months, we had 100 Model S cars in the state, and now we have about 150 to 200. It is slowly increasing. The growth of electric vehicles will be a long, slow process.”
- “I do know of any incentives that Tesla offers. In fact, I know they don’t.”
- “The Model X will not take away from the Model S. The doors on the Model X define the car; they make it different. For some people, the wing doors will get in the way and be irritating, but others will love it.”

Competition

- “There is no competition at all to the Tesla. ... The closest competition is the hybrid. The Chevy Volt looks OK, but only goes 40 miles and then you need gas. I hear it only goes 25 miles when it is cold, and it is not considered a good car. The Toyota [RAV4](#) goes just 25 miles on a charge. The Germans made the BMW i3, but it looks terrible; it is not going

Tesla Motors Inc.

anywhere. It only has a 100-mile range, and it handles terrible. The Audi's electric car only gets 100 miles on a charge, and it took \$1 million to build. The Tesla is good-looking, but the Nissan Leaf is ugly. The other cars appeal to the tree-hugger culture."

- "General Motors and Volkswagen are hoping Tesla will go away. GM is studying Tesla, and they even went to the Tesla plant to find out what they do."
- "Tesla is really not in competition with all the other manufacturers; they are not interested in putting GM out of the business. They would be happy to help them, and supply parts to them. Tesla's point is to show everyone how to make a quality and efficient car, a better car than all EV."
- "Tesla will meet roadblocks from big oil, the auto industry and battery availability. The network car dealerships have been a strong organization since the Henry Ford days; they are very powerful. They have had laws changed in several states so that cars must be sold only through them. The car manufacturers are scared of them, so they will never make a racket. But the car dealership organization is a waste in the supply chain; they no longer serve a function. They don't like electric vehicles, and because Tesla doesn't use a dealership, they don't have a good rap. Some states block Tesla's direct sales. But the public likes to buy online now, and eventually they will make a racket; this will change. The electric car and simple economics will force [dealers] to shrink their operations to only those that have value for the customer. Customers do not know what they want in advance, but once they know there is a car that requires almost no service, they will expect them all to be that way."
- "I'm in the repair business, and I deal with dealer parts all the time. They claim they stock things but really don't. It takes a long time in a series of steps to get parts. They sell things the customers don't need, and the dealer adds two to three days to the process. Dealing with Tesla is not like this."
- "Tesla is ramping up the interest of solar energy, and solar energy is increasing interest in Tesla. People don't know how cheap it is to use solar and how good it works. If funding increases for solar, this will help Tesla as well."
- "Tesla's only limitation is its batteries."
- "Everyone thought the fires would be a problem, but they weren't. The U.S. government checked the car out, and the Germans also found no problems with the Tesla. The fires were contained to one battery unit. The Tesla is indestructible; it broke the roof test machine."

Buyer Profile

- "There are now two kinds of people who buy the Model S: the wealthy and the new attorney. There are also some people in the upper middle-class who are not super-wealthy. They decided not to buy that second home, and they struggle to buy the Tesla. They buy the car because it's the best car they have ever driven in their life. Tesla is easily the finest car ever made; they are that good. Tesla does not appeal to the tree huggers."
- "The young folks of today don't care about burning rubber anymore; they care about having a connection vehicle with a social component. They want to communicate with each other while driving around. The Tesla cars are all connected back to the factory; they all send data."

Batteries and Other Developments

- "The hope is that the lithium-ion technology will be fast-moving, and improvements will be seen in safety and performance. The aim is for a 300-mile range car."
- "Tesla is building a giant battery plant, which will be announced in a few weeks. It will be a 'gigaplant,' and when demand ramps up, Tesla could build 100,000 cars a year. They could never match up to 500,000 a week, like some of the larger manufacturers. They may make new batteries, and the batteries may be different than what they're using now."
- "We operate a community supercharge station, and it is not really a problem. It just takes 20 minutes to charge the Tesla on a supercharger. It's one of those small things in life, and then you can go for 265 miles. The average person drives only 40 miles a day; you can get a lot of days on one charge."
- "Gas car dealers really are clueless about their future and actually see their weaknesses as strengths. If they looked at everything they do from the viewpoint of the customer, they would be shocked to discover how little of it customers would actually be willing to pay for."
- "The hybrid has more parts than a gas car, because they have regular gas parts and they have electric parts. But if you look in the hood of an electric vehicle, it is empty; it is just the trunk space. The Tesla parts count is a lot lower, and they will put the parts people out of business."

The electric car and simple economics will force [dealers] to shrink their operations to only those that have value for the customer.

Owner
Tesla-authorized Auto Body Shop

Tesla Motors Inc.

- “We had contact with a number of the owners, and we decided to specialize in electric vehicle repairs. It is the future; it may take a long time, but EVs are here to stay.”
- “Elon Musk is a once-in-a-century type of person. Tesla’s success, however, does not depend on him. He does not want to put anyone out of business or be the biggest car company in the world. That means challenging the world’s car manufacturers to build more and better electric vehicles. He will measure his success by how many EVs are on the road. Whether they are Teslas or something else does not matter much to him.”

5. Jay Bower, CTO of Venus Motors Co. and president of Electric Car Options LLC, Oregon

Tesla’s sales will continue to increase in 2014, and the market will undergo significant changes during the next 10 years. When consumers finally understand that an EV is more cost-effective than a gas car, the entire market will grow. Tesla has succeeded at reaching out to the Model X consumer, and these sales will not affect sales of the Model S. Tesla is in control of its supply chain, and one of its business plans is to sell energy storage systems. Its lithium-ion battery works fine as is, but improvements will be made over time.

Trends

- “Tesla sales increased in 2013, and they will continue to increase in 2014. Once Tesla hits its five-year birthday, it will last forever.”
- “The demand for electric vehicles increased in 2012, when there were 50,000 electric cars on the road. According to the [Gartner research report](#), in 2030, 30% of the car industry, or 4.5 to 5 million cars, will electric out of 15 million cars on the road. When folks figure out that they can operate an electric vehicle for less money, then the drivers will get behind it and the market will grow.”
- “Tesla has a buyback program; in fact, they have several beneficial programs. They are asking the American family to take a risk, but we have enough risks right now. Tesla recognizes that they need to finance vehicles and reduce the risk.”
- “Tesla is in control of their supply chain. I run into supply issues all the time because I use supplies off the shelf; but that is something Tesla doesn’t do. Their [meld](#) with Toyota will help them.”
- “The demand of the Model X will have no effect on the Model S. They don’t touch each other. The Model X is a whole new market, and it is catering to a different price range. Tesla has done a great job at this new market. There will be a small percentage of people who won’t like the wing doors, but the majority will love it. Everyone has a car that is best for them.”

Tesla has a buyback program; in fact, they have several beneficial programs. They are asking the American family to take a risk, but we have enough risks right now. Tesla recognizes that they need to finance vehicles and reduce the risk.

CTO, Venus Motors &
President, Electric Car Options

Competition

- “Tesla is not in competition with anyone. The Nissan Leaf is not a competitor, and Tesla does not compete with hybrids.”
- “The early electric vehicles, like Fisker and the [Coda \[Automotive Inc.\]](#), were not really Tesla competitors. The needed batteries weren’t around then, and they were too costly. It was a timing issue more than anything. [Companies may pick them up](#) and eventually do well.”
- “The electric vehicle market is relatively new and growing. It is going through the process of defining itself and, as such, will be a cooperative effort on the part of everyone in the industry. Our first and biggest goal is to convince the American public that electrical vehicles are a viable option.”
- “I have nothing but good things to say about Tesla. They are very friendly and not a competitor. Tesla is plowing the ground for the rest of us, and they are doing a great job. They have lived up to their word, all along the way.”
- “There are hundreds of manufacturers building custom built EVs for about \$15,000 to \$20,000 total. The main expense is the battery; for a 100-mile range, it costs about \$8,000 to \$10,000. You can see the custom cars at [kitcarlist.com](#). The lighter cars, like the Honda and Toyota, are better for conversion. The Cadillac is not a good option.”

Buyer Profile

- “Electric cars have been around for a while now. Will we still be calling the buyers early adopters 10 years from now? More and more people are seeing EVs and getting a better view of the cars. They see them as viable options. The people who are holding off are not willing to take a risk. They are not early adopters, but this is OK.”

Tesla Motors Inc.

Batteries and Other Developments

- “The Tesla battery is OK as is. There are several things manufacturers are working on to make the lithium-ion battery work better, but it will be a matter of time before it changes.”
- “If you look at Tesla’s business plan, they will sell energy storage systems. They are innovative and have diversity, and that’s why they will be around.”
- “I’m not a big one on charging stations. Eighty percent of the miles put on a car are done within 25 to 30 miles of home. We don’t usually need charging stations; this is not a requirement.”
- “The electric vehicles of today are like the first Apple computer; we are now only seeing the basics. The changes the market will go through over the next 10 years will boggle the mind. When you have a car that improves the way you live, it will be amazing. Gas cars have run their course; they have done their thing. But electric vehicles will change our financial life a bunch. We are starting to look at a different employment picture. If you didn’t have to pay for fuel every day, That would cut commuting costs. It is better than a raise.”
- “You can put solar panels on your house and run the meter backwards to charge your car. That’s how Elon musk charges his car every day.”
- “I’m not sure of the payback time for a Tesla, but payback time for our cars are five years, 4.5 to five years if you run energy off a solar panel. The public doesn’t understand how inexpensive it is to run an electric car. There is a big payback. They save on both fuel and maintenance. First, the maintenance is low. Electric cars don’t have all the parts that a gas car or hybrid does. Then the gas versus electricity costs: People spend about \$2,000 per year on gas when driving a gas car. But an electric car only costs them \$200 in electricity a year. If you spread the expense of an electric vehicle over five or six years, then the car pays for itself.”

6. Senior program manager of a regional EV program; former Tesla employee

Tesla can sell all the cars it can make, but the battery and management system is holding it back. This problem will be addressed when the company opens its own battery plant. Tesla is trying to keep the price point down, to open up its vehicles to more buyers. The Model X will cater to a different type of buyer than the Model S. Tesla is the public leader in a niche market of other hybrid luxury cars and smaller electric vehicles, and many manufacturers now are playing catch-up.

Trends

- “Tesla is constrained by production, not by market. They can sell all the cars they can produce.”
- “The California Model S market may be saturated, but they need to touch the rest of the country and foreign countries as well.”
- “Tesla will continue to be successful on its own, without being snapped up by another company.”
- “I don’t believe Tesla offers discounts or incentives, but consumers qualify for the federal tax credit and the [AB118 \[Air Quality Improvement\]](#) rebate.”
- “The Model X is really a different price point than the Model S, but the Model S is a far better car. It is an SUV versus a luxury sedan. The Model X buyer is probably a totally different buyer. They may wait for the safety reports first, then consider a \$34,000 to \$50,000 electric SUV. It could open up an entirely different market for Tesla.”
- “Tesla’s customers buy the cars because they are a luxury vehicle, a cool car, or the latest thing to have. If you look at it this way, the Model X would cannibalize the Model S. But Tesla is pretty clever. They are trying to keep the price point down and open up their vehicles to more buyers.”

Tesla is constrained by production, not by market. They can sell all the cars they can produce.

Senior Program Manager
Regional EV Program

Competition

- “Tesla has a very nice niche. You could say that they directly compete with the Nissan Leaf or the Ford Focus Electric, but those cars have a small range and are not luxury vehicles. I doubt if buyers in these markets do cross-shopping for a Tesla. There is not really another all-electric car like the Tesla.”
- “Tesla sees itself as competing in the luxury sedan market, alongside Mercedes and Lexus, which are adding more electric drive features, at least as a plug-in hybrid.”
- “Tesla is probably the leader in terms of public presentation, and the Leaf is the second most well-known brand. The small Smart cars [Mercedes-Benz] are also very well known.”

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- “Many manufacturers, like GM and Chevy, are playing catch-up. They are not dedicated electric cars, but you never know how they will do in the future.”
- “The battery and management system is a big problem in terms of production. Tesla’s electric drive train is fine, but they need more cells, modules and packs. There are two problems: 1) Right now the battery production is limited in Japan because there is competition with consumer electronics, which uses a lot of batteries. And 2) the batteries are heavy. It is hard and expensive to bring them from Japan to the United States, and there are safety issues. Tesla will probably partner with Japan to make batteries over here. This will limit their shipping costs, which have restrictions, and give Tesla better control over the flow.”
- “Tesla managed the fires and the lack of range well.”

Buyer Profile

- “Electric car buyers are in the process of crossing a chasm. We went from the early adopters, and we are still seeing some, to people who are buying after the car has gotten greater use and good reviews.”

Batteries and Other Developments

- “The battery technology is in its infancy. There will be huge gains in five to 10 years. The new batteries will have more energy, be denser and smaller, and less expensive. There are new chemistries in development that will replace lithium-ion.”
- “The batteries now have two to three times the original range. People are still afraid of the limited range; they are afraid it takes too long to charge. Having enough charging stations is very critical to sales.”
- “For the most part, electric vehicles are a second car. You usually don’t take them on a long trip, and you don’t see a Leaf in the back country, although I am now seeing Teslas on the back roads. With charging stations set up around the country, then long-distance trips are now feasible.”
- “Tesla announced last year that they would build a new battery plant to build cells and the battery packs. They did not say where the plant would be, but it makes sense that it would be close to the Fremont plant to cut down on shipping restrictions and costs.”
- “I believe in Tesla. Their motives are fairly pure: to build great efficient non-gasoline cars. Their leader is driven to create a world that is not dependent on gasoline, to lower greenhouse gases for the world and the United States. They do a good job at making announcements and meeting their goals.”

7. Senior editor of a trade magazine

Tesla’s U.S. demand remains strong, and 2014 sales will be limited only by capacity. Demand is slower in Europe, where people are skeptical of the plug-in. The source was unsure how Tesla will fare in China. Tesla appears to be more aggressive and committed, and its goal is to make 100,000 cars a year. Tesla has worked with suppliers the past 18 months to revamp costs and refine the supply chain. Opening its own battery plant, possibly with the help of Panasonic or other battery suppliers, could ensure a continuous battery supply at a lower cost. Tesla is a statement vehicle, and buyers do not “cross-shop.” Although a Tesla usually is a second family car, some families may own two Teslas with the advent of the Model X.

Trends

- “The U.S. demand for Tesla is still holding strong. Initially the success was in Silicon Valley, but now it is all over the country. In Europe, there is a slower demand, especially in Germany. They are more skeptical of the plug-in.”
- “There is no reason to doubt that Tesla will be capacity-constrained in 2014. They are building up a stack of cars for China, but I wonder how the car will be perceived. Will they look at it as having limitations? Or will it be cool? China is an open question.”
- “Tesla made 2,400 vehicles in 2013, and they sell all they can make. That number will increase in 2014. I’m not sure if it will double, but in the last 12 months, Tesla has been more aggressive, more committed.”
- “I believe Tesla has made 30,000 Model S cars. I’m basing that on a sticker number of 28,800 I saw at the Detroit show.”
- “Tesla hasn’t commented on a backlog in a long time. It is possible that if you want something special, you need to order it and wait, but you can pick

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Senior Editor, Trade Magazine

Tesla Motors Inc.

up a demo or storeroom display more quickly.”

- “Tesla recently said that in Germany, they will reimburse customers to switch to renewable cars; this also includes existing Tesla customers. It is a marketing gimmick that got a lot of attention.”
- “Tesla wants to make 100,000 cars per year, and that will sap up twice their current energy. Panasonic owns a piece of this, and Tesla may be talking to other battery folks.”
- “Tesla has worked with suppliers the last 18 months to revamp costs. They fired a handful of suppliers who couldn’t keep up. They have put a lot of effort into refining their supply chain.”
- “There may be a little cannibalization between the Model X and Model S because they are two different types of cars. But I’m not sure their buyers will be different.”

Competition

- “There is no competition for the Tesla, not even the Cadillac EVR. Tesla is the only all-electric that can go more than 200 miles. Possibly the [Mercedes-Benz S500](#) plug-in hybrid, but that is a hybrid. ... Maybe the Porsche Panamera, which sold 141 in January. That’s a stunning number.”
- “Tesla is a statement vehicle; they have found a market niche. People do not cross-shop. It is usually the third, fourth or even fifth vehicle in a household. There are some families who are buying a second Tesla.”

Buyer Profile

- “I’m not sure the Model S buyer has changed; it really is about who buys an EV. Possibly the current buyers are slightly more risk-adverse now than they were 25 years ago.”
- “There was a [UC Davis Institute of Transportation Studies] [purchase motivation study](#) on early adopting, and they noted five different types of motivation: 1) need to have the newest and latest, 2) love technology, 3) green motivation, 4) energy security and unwillingness to send money to other countries, and 5) looking to save money. What they found was that these people were not on the same political page. Tesla drivers aren’t always that green.”
- “The main issue is families with children. I know some families who could have one of each car. I think Model X drivers will be mostly female. It is more a family vehicle, a car to drive the kids and their gear around in.”
- “Some folks in California just buy a Tesla to get a sticker for the fast lane.”

Batteries and Other Developments

- “The cost of batteries will come down as the lithium-ion battery improves. Each year the battery improves by roughly 7%, in stair-step increments.”
- “Tesla has already lowered the cost of kilowatt per hour, and they will continue to work aggressively on this. They use thousands of small commodity cells, but their safety features are built-in to the modules, not the cells. They spray the design pack inside with flame retardant; it is their sweet sauce.”
- “Tesla has four to five buildings just standing at the Fremont facility, but I’m not sure if the current plant is adoptable to cell fabrication.”
- “As for new developments, the principals are unknown. Electric motors improve in efficiency less quickly than gas motors. Tesla is putting in a huge effort to reduce their rare earth metals, and there is a push for light weight.”
- “Charging stations are a necessary thing even if they are not used most of the time. Most drivers won’t use their cars this way, but the stations have publicly taken away some fears [of being stranded].”
- “I haven’t seen the Model X yet, but I hear the falcon doors open within an inch of the width of the car. They are not single pieces, but hinged down the spine of the roof. I’m not sure about height.”
- “Hybrids put fewer miles on their gas engine, so in that respect, the maintenance may be less than gas cars.”

8. Military senior research engineer and EV club member

Tesla has no competition in the luxury EV niche. It is selling more vehicles than even its own corporate leadership predicted, and 2014 is shaping up to be another great year. But the real future of electric vehicles is as a daily commuter car. A huge network of charging stations may not be necessary since consumers can charge their vehicles at home. EV owners also should push their employers to provide EV chargers.

Trends

- “From everything I hear, it is going to be a great year [for Tesla]. It is selling like hotcakes.”

Competition

- “The Tesla is a luxury car and in a world of its own, and it’s beating everything else. But it is not the future of EVs any more than a Porsche or Cadillac is a model for Pinto and Versa.”

Tesla Motors Inc.

- “I’m glad I will live long enough to see EVs dominate the market! Once people start to understand the convenience of home charging while parked, they’ll wonder why they hung on to gas for so long.”

Buyer Profile

- “The real bulk EV market will be the daily commuter car. Even at today’s prices, that market is at hand, if only people actually understood the long-term value promise of an EV for local transportation.”

Batteries and Other Developments

- “I don’t see why we should invest in charging stations. People are not going to buy electricity when they can charge their cars at home for pennies.”
- “A lot of people are saying, ‘Well, what about apartment dwellers who need public chargers?’ That’s fine, but 200 million people have detached homes with garages with a 120-volt outlet. That’s a lot of people! They don’t need a fast charger; they can charge their cars overnight.”
- “Employers should be installing EV chargers for their employees. We shouldn’t have to spend all this money on public chargers; people can plug in at work. You could create a monthly charge for employees who want to plug in at work. And no one will steal the electricity and drive off when it takes four hours to charge a car.”

I'm glad I will live long enough to see EVs dominate the market! Once people start to understand the convenience of home charging while parked, they'll wonder why they hung on to gas for so long.

Military Senior Research Engineer &
EV Club Member

9. President of an international association for battery, hybrid and fuel cell EVs; repeat source

Tesla's Model S will continue to increase its sales in 2014. EV sales still account for just about 1% of the entire car market, but they are here to stay. Battery charging technology is changing rapidly, with the possibility of dynamic wireless charging on roadways becoming more widely accepted. As vehicle emissions' role in greenhouse gasses and climate change receive more attention, EVs will play a more significant part in the European Union's climate strategy.

Trends

- “Tesla has a very high-quality product and experience, especially the Tesla S model. Sales are trending well and bode well for the future.”
- “Activities of electric vehicle associations are becoming more relevant as transport emissions form an increasingly important part of EU climate strategy.”

Competition

- “Since EVs still account for such a small percent of the market, we prefer to focus on cooperation rather than competition.”

Buyer Profile

- N/A

Batteries and Other Developments

- “Battery swapping projects like [Better Place](#) were too early. Still, we are convinced that the technology is improving very fast. Look at the batteries and the technology of mobile phones only during the last 10 years. We may see a similar development [in battery swapping].”
- “Electric vehicles will be a key element in the management of the grid and energy in the future. For example, you might have 1 million battery-powered electric vehicles charging during the night when the consumption is the lowest and the production of wind energy very high. This is a perfect combination that we should develop in the future. Another example of new technology for the future could be induction charging in static and dynamic [wireless] form.”
- “The issue of charging stations is an important one. There is different research with very good results already. Induction charging is one of them, in a static way for public, heavy transports in towns and maybe dynamic induction charging on roadways for lorries [trucks] and heavy transport vehicles. This system will reduce the size of the batteries and their costs.”

10. Daniel Doughty, Ph.D., president and founder of [Battery Safety Consulting Inc.](#)

Tesla models and other EVs are gaining in popularity, but regulations on EV battery safety are “behind the curve” and should be much stronger, according to Dr. Daniel Doughty, the principal investigator working on an electric vehicle battery

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safety roadmap for the Department of Energy. Flammable electrolytes used in EV lithium-ion batteries are a special concern, since many of the vehicles are charged in confined spaces like garages. His research will help to develop new federal safety regulations for battery use in EVs and hybrids. Lithium ion batteries should serve EVs well as long as there is rigorous safety testing and analysis, according to Doughty, who spent more than 20 years in battery research at Sandia National Labs. Critical areas of research in Li-ion battery safety include screening for internal short circuits, developing nonflammable electrolytes, improving anode and cathode safety, and preventing battery pack overheating, explosion and/or fire resulting from thermal runaway from cell to cell.

Trends

- “We are behind the curve [on regulations for battery use in EVs]. The federal government is working on fact-based standards. We need to get more and stronger regulations out there.”
- “Lithium-ion batteries should work well for electric vehicles, as long as safety testing and analysis is sufficiently rigorous.”

Competition

- “I hadn’t heard of [the Irvine, CA, garage fire where local fire authorities determined a possible link to the Tesla charger]. These vehicles take a lot of current. It would seem to me the solution is to make the charging more efficient. That way it won’t generate so much heat so as to have the potential for starting a fire. So Tesla’s new software designed to prevent overcharging seemed like an appropriate response.”

Buyer Profile

- N/A

Batteries and Other Developments

- “Battery safety in electrified vehicles creates challenges that are greater than for those used in portable computers and cell phones. They are subject to more difficult conditions and have to be able to tolerate abusive conditions, such as overcharge, short circuits, fire and crushing.”
- “If you submerge vehicles with Li-ion batteries in salt water, which is electrically conductive, the batteries will generate enough heat to burn. That happened to some Fisker EVs on the East Coast when a lot near the ocean was flooded during Hurricane Sandy. There is going to be a test for immersion; the National Highway Traffic Safety Administration is looking into that.”
- “I like to tell people that not many products combine a fuel source and an oxidizer together in a sealed container, due to the potential of explosion. High explosives and rocket propellant do it, and batteries do too. The fuel and the oxidizer inside a lithium-ion battery are separated, but in the rare case that they inadvertently react, it’s going to go to completion [combustion].”
- “We’ve got to take a holistic approach to safety. The chemistry of battery cells is among the most reactive you can find. How to get it to be stable is a difficult challenge.”
- “The good news is that in the event of a Li-ion battery failure, what’s inside a fuel cell will burn itself out. What you don’t want is propagation of thermal runaway, which will spread from cell to cell in a cascading failure. That means the whole battery pack could overheat, resulting in byproducts like heat and gas, which could produce a fire or explosion. If you can’t entirely prevent cell failure, it’s essential to prevent propagation that could result in the destruction of the entire battery pack.”
- “We also need to better understand the physics of propagation in Li-ion batteries. People are pushing to have higher energy cells, and what they don’t understand is that higher energy in the cell works against safety. It’s going to be more of a problem because the cell has more energy to dissipate. If propagation can’t be eliminated, then it has to be better controlled.”
- “Some scientists are also working on improving cathodes in Li-ion batteries. They are looking at ways to control the particles in the cathode so it could still function but not be so reactive on its surface.”
- “The Society of Automotive Engineers has published [guidelines](#) for first responders who need to understand [how to deal with battery fires] in EVs.”

Secondary Sources

The following eight secondary sources highlighted Tesla's entrance into China and the headwinds it will face there; its completion of charging stations throughout the United States; competition for the Model X; Tesla's potential battery factory; Tesla batteries being used in conjunction with solar panels; and a new, longer-lasting lithium-ion battery.

TESLA IN CHINA

These three articles discussed Tesla entering China with a decreased Model S price, as well as the company's potential sales and challenges in the Chinese market.

Jan. 25 SFGate article

Tesla has priced its Model S at \$121,280 for the Chinese market, with a goal of matching its U.S. sales by 2015. Tesla's next factory could be in China.

- “Tesla Motors’ Elon Musk said sales of electric Model S cars in China should match U.S. levels as early as next year, with demand from the world’s largest auto market eventually requiring a local plant.”
- “The electric-car maker said last week the Model S will be priced at \$121,280 in China when deliveries begin.”
- “For Tesla, ‘it could be as big as the U.S. market, maybe bigger. I don’t want to get overexcited about it,’ Musk said. ‘Even without building there locally, it’s always going to be the second-biggest market after the U.S.’”
- “If all goes well, Model S shipments to China can match U.S. sales by 2015, Musk said. ‘It’s not my firm prediction—it’s more like a low-fidelity guess.’”
- “The price of Tesla’s flagship Model S in China, a version equipped with a premium 85-kilowatt-hour battery pack, puts it in the same bracket there as Volkswagen’s Audi S5 sedan and BMW’s 5-series GT sedan, according to Autohome, a car-pricing website. It’s also 50 percent more expensive than in the U.S., where the equivalent model sells for \$81,070, according to Tesla.”
- “Since the Model S is imported to China from California, a duty of as much as 25 percent is added to the price tag, Musk said. The company also must cover shipping costs and taxes. Tesla could have charged more than \$160,000 had it followed standard industry practices.”
- “‘They’re basically calling us huge idiots for not ripping off customers in China,’ Musk said. ‘I don’t think ripping off customers is a good long-term strategy.’”
- “Tesla’s entry is also being closely watched by other automakers that have been trying to convince local consumers that electric vehicles are worth the hassle. China is lagging behind its target to have 5 million alternative-energy-powered vehicles by 2020 because of a lack of charging stations and high costs, even amid mounting concerns over worsening air pollution.”
- “To eliminate tariffs and potentially qualify for Chinese incentives for non-pollution autos, Tesla must produce there, he said. ‘Long-term, there’s no question we’ll have a factory in China,’ he said. ‘There is an argument for having that be our first major factory outside the U.S.’”

Feb. 1 English.EastDay.com article

Tesla is entering the Chinese market unopposed in the pure-electric SUV market. Although China's auto market was the largest in 2013 with a total of 21.98 million units, only 0.1% of those were all-electric. Experts agree that Tesla could push higher EV adoption through its sporty appearance, lower-than-expected price, and subsidies put in place by the Chinese government.

- “With its racing body, reasonable pricing and ecological concept, Tesla’s latest pure electric sports car has caught the eye of motor enthusiasts, industry insiders and environmentalists in China. Amid high sales expectations and cautious sizing up by Chinese automakers, there is also hope that the American upstart can bring fresh air to China’s stagnant new energy vehicle sector.”
- “The company made its debut in China this month with the Model S at a lower-than-expected price of 734,000 yuan (121,300 U.S. dollars), almost the same as in its home country, excluding taxes and transportation costs. The move was expected to bring a competitive edge for Tesla to gain a foothold in the world’s largest auto market and put pressure on its rivals.”
- “In 2013, vehicle sales in China totaled 21.98 million units, marking the country’s fifth straight year as the world’s largest auto market. Nevertheless, sales of new energy vehicles stood at just 17,642 units, with sales of pure electric cars even weaker, accounting for less than 0.1 percent of the country’s total car sales.”

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- “While the lackluster sales in China indicate a difficult market for Tesla, the figure also suggests the untapped potential of the emerging market and reveals there are few, if any, strong competitors that pose a threat to Tesla.”
- “Actually, no automakers in China consider electric sedans for individual customers a major development strategy, not to mention as luxury cars for high-end buyers,’ said Zhong Shi, an auto industry analyst.”
- “Chinese electric car buyers still face difficulties in finding charging stations when their batteries run low.”
- “More importantly ... price-sensitive Chinese car buyers are more inclined to choose gasoline vehicles that provide a more comfortable driving experience at the same or lower price.”
- “Even if homegrown manufacturers change their mind and try to catch up with their peers overseas, their technological reserves and financing mechanisms in China can’t support production and promotion of cars like Tesla’s, Zhong said.”
- “As Tesla targets high-end buyers, it is unlikely to be confronted with the harsh market facing Chinese automakers, which focus on inexpensive electric vehicles, since neither the price nor the inconvenience of charging are likely to dissuade wealthier buyers with their own villas and underground garages.”
- “Headwinds will only hit when Tesla starts to expand its business to China’s low-end electric sedan market,’ [Jia Xinguang, an industry insider] said. However, there are few signs of this happening in the near future.”
- “In 2010, China began a pilot program in five cities, including Shanghai, Shenzhen, Hangzhou, Hefei and Changchun, to encourage individuals to buy electric sedans with subsidies of up to 60,000 yuan. The program was upgraded in the last year with a national promotion project in 28 Chinese cities and city clusters where government subsidies will be provided for users and manufacturers from 2013 to 2015.”
- “The government expects both sales and production of pure electric and hybrid vehicles to reach 500,000 units by the end of 2015, but it won’t be an easy task.”
- “For Tesla, however, official subsidies are just the icing on the cake. With possible plans to build factories and charging stations in China, the company hopes the Chinese market will account for up to 35 percent of global sales growth this year.”

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[English.EastDay.com Article](#)

Jan. 27 China Car Times [article](#)

Tesla is entering the Chinese market saddled by two major flaws: the lack of public charging facilities, and the lack of home charging ability given the large number of apartment dwellers in the country. Tesla is bringing a supercharger network to China, but details have not been released. Tesla will have to compete with high-speed railway systems already in place.

- “Tesla’s pricing strategy has just been announced which has seems to be overly fair for the Chinese market, putting the price on par with the USA but due to import taxes the price gets bumped a little higher than the US. But there remains several hefty road blocks in the way before Tesla can make China a major market.”
- “Firstly, there is a clear lack of public charging facilities in China and information on where the facilities are is exceptionally low on the ground, there doesn’t seem to be any publicly available maps showing where to find charging facilities. Secondly, urban Chinese are largely apartment dwelling folks which leads to a lack of convenient home charging facilities.”
- “Tesla offers a home charging kit for its Model S, which offers an impressive 58 miles per hour of charge which is more than enough for most users however it again relies on the user having an electrical hook up in his parking lot or better yet an independent garage—not so common in China’s urban environment.”
- “Of course, Tesla are looking to snare those luxury consumers who may have their own independent house in China or at least a duplex garage. And for those that wish to dangle cables out of their 20th floor window, Tesla offers a universal plug charger offering 32 miles per hour of charge.”
- “Tesla’s plan to bring its supercharger network to China has gained headlines in the past few days, but where such a supercharger network will be is still a mystery. The US version runs east-west, but the Chinese version will

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likely run north-south to link major cities such as Beijing and Shanghai over a 1200km distance, but at the same time there is also a highly efficient high speed railway service that runs at 300 km/h (186 mph), and 250 km/h (155 mph) which takes just 4 hours and 48 minutes."

- "It also appears that Chinese consumers are focused entirely on branding rather than green and sports credentials, after all a person who can afford a 123,000USD car is not likely to be bothered by the cost of filling it up. A BMW 7-series, Audi A8 or Jaguar XJ are all lumped in the same price bracket as the Tesla Model S, but also carry decades of brand awareness with them. Tesla's best hope is to introduce an Apple style brand allure to snag Chinese customers into the brand before going mass market with cars priced in the 300,000RMB range in the near future."
- "A Chinese factory has been talked about over the past couple of days but no specifics have been revealed, not to have a factory in the world's largest automotive market seems like a big mistake but Tesla are not yet at the stage where they can offer a vehicle fit for the masses."
- "Overall, it seems that Tesla has the opportunity to become a leader in the Chinese market but at the moment they are in neutral rather than drive."

Overall, it seems that Tesla has the opportunity to become a leader in the Chinese market but at the moment they are in neutral rather than drive.

China Car Times Article

TESLA AND ITS COMPETITORS

These five secondary sources centered on Tesla's coast-to-coast charging stations in the United States; Audi working on a all-electric competitor to the Model X; Tesla's possible battery factory and its batteries being used in conjunction with solar panels; and EnerG2's development of a more efficient battery that will enable electric cars to travel 200 to 300 miles on a single charge.

Jan. 28 Geek article

Tesla has completed its coast-to-coast charging stations so U.S. drivers can drive between Los Angeles and New York. Free charging stations that could cover 98% of the U.S. population by 2015 is big news for those with long travel plans. Tesla also has introduced a battery-swapping feature in some new stations.

- "This week, Tesla Motors announced the completion of a coast-to-coast 'charging corridor' which allows owners of Tesla's Model S to drive from Los Angeles to New York with no long stop-overs. This represents a major step forward in Tesla's campaign to convince the average consumer that electric vehicles are versatile enough to serve as a primary form of all-around transport."
- "[I]n pursuit of the truly all-purpose electric vehicle, Tesla has set itself to deploying a network of fast-charging stations to make sure that virtually any North American road trip is not only possible, but convenient—even cheap. Use of the charging stations if free to Tesla owners, and the newest version of the charging technology can charge a dead Model S battery to 80% capacity in just 40 minutes. The final 20% takes another 40 minutes again, but Tesla's charging network is designed so that each station is reachable with an 80% charge."
- "Tesla's charging network is projected to cover as much as 98% of the US population by the end of 2015, but even then road-tripping with an EV will require more planning and stricter adherence to the Trip Plan than gas cars."
- "With Tesla introducing battery-swapping as a feature of some newer charging stations, bringing extra batteries on long trips could still end up being the best short-term solution for true peace of mind. It's worth pointing out that while the rapid-charge system is free, the battery swap service (instant recharge) will cost as much as \$80 a pop."

Feb. 4 GTspirit.com article

Audi has started working on a pure-electric SUV called the Audi Q8 e-Tron, which it hopes will beat the Tesla Model X in being released before 2017.

- "Audi is said to be hard at work creating an all-electric SUV dubbed the Audi Q8 e-Tron designed to rival the Tesla Model X which has yet to hit the market."

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- “Set to share battery and electric technology with the Audi R8 e-Tron (set to hit production in limited numbers soon), the Audi Q8 e-Tron is quite a few years away with a debut before 2017 unlikely. Nevertheless, Audi is said to be aiming for an impressive 370 mile range on the batteries.”
- “As mentioned, the car the Audi Q8 e-Tron will rival, the Tesla Model X, has yet to be previewed in production specification let alone showroom deliveries beginning. Nevertheless, with the Model X said to be just a few months away from being officially launched, Audi is evidently more than confident Tesla’s SUV will go ahead. The Audi Q8 is also said to feature a similar electric powertrain layout as the Model X with electric motors powering the front and rear wheels.”
- “Likely to be powered by a battery pack producing around 80kWh of power, the Audi Q8 e-Tron could perform similarly to the Tesla Model X. However, because the Q8 e-Tron won’t hit the market until a good two to three years after the Model X, its range will likely be even better thanks to advancements in battery power.”
- “Unlike the Tesla Model X however, the Audi Q8 e-Tron is said to be only one variant of an entirely new Q8 range. The Q8 will likely also be available with a selection of different petrol and diesel engines with a hybrid powertrain also likely.”

Feb. 5 Street Insider [article](#)

A Wall Street analyst believes that Tesla will build a massive factory for battery function in New Mexico as its production expands.

- “Global Equities Research analyst Trip Chowdhry is convinced that Tesla Motors will likely build a ‘Mega’ battery factory soon.”
- “The analyst sees the factory having 30 gigawatts of production capacity per year. This would make it the biggest in the industry, even bigger than the current total production of capacity Non-Metal-Air Battery (Lithium-Ion) in China, Korea and Japan, all taken together.”
- “He sees the factory being built in New Mexico and sees the company partnering with both Panasonic and Sanyo on the build out.”
- “In addition to its traditional battery, Tesla may also manufacture Hybrid Battery Pack, which includes both Metal-Air Battery as well as Non-Metal Air Battery. He sees the 2015 Model S getting a possible 10% to 15% increase in driving range—driven primarily by innovations in Battery Packs, including Hybrid Battery Pack.”

Dec. 5 [article](#) from *The Atlantic*

Tesla batteries now are being installed to store electricity created by [SolarCity's](#) rooftop solar panels. This new partnership wants to provide companies with a system that will use solar energy when the grid increases prices and will serve as a back-up generator.

- “Those Tesla Motors lithium-ion battery packs aren’t just powering electric luxury sports sedans for the 1 percent any more.”
- “They’ve started appearing in a small number of California homes to store electricity generated by rooftop solar panels, and beginning today SolarCity, the Silicon Valley solar installer, will start providing Tesla batteries for businesses that want to cut their utility bills. A big box retailer like Walmart could charge up a Tesla battery pack with cheap energy produced by its SolarCity rooftop photovoltaic array and then tap that power when demand—and electricity rates—spike.”
- “That would let them minimize paying their local utility high ‘demand charges’ for electricity when they need it most. And the cost of the SolarCity’s system, called DemandLogic? Effectively zero, according to SolarCity, since the monthly payments for energy storage would be less than the money saved by not forking over cash to the utility.”
- “Our business model is to become the energy company of the 21st century,” SolarCity chief executive Lyndon Rive told *The Atlantic*. “You’re still connected to the grid but the grid would be your secondary provider and the primary provider would be your solar system and your storage device.”
- “For now, though, it’s only a minor threat to utilities that levy high demand charges, such as those in California and parts of Massachusetts and Connecticut where SolarCity is offering DemandLogic. And to get the Tesla battery pack you have to sign up for a solar array, which means only businesses with low-rise buildings and flat roofs—retailers, corporate campuses—can take advantage of going solar.”
- “But the trend is clear. Another Silicon Valley company, Stem, has begun installing 54-kilowatt-hour lithium-ion battery packs for corporate customers, allowing them to store electricity from the grid when rates are low and use that power when demand charges spike.”

Tesla Motors Inc.

- “Tesla and SolarCity’s combined market cap—\$21.3 billion—exceeds that of the parent companies of Pacific Gas & Electric and Southern California Edison, the two big California utilities whose customers Rive covets.”
- “And SolarCity is pioneering the securitization of solar—giving it the ability to dip into a potentially vast pool of capital by packaging leases for photovoltaic systems into asset-backed notes that are sold to pension funds, hedge funds and other deep-pocketed investors.”
- “Rive says DemandLogic should save commercial customers 20 percent in demand charges. The system’s algorithms constantly monitor electricity supply and demand, charging and discharging the battery to minimize drawing expensive electricity from the power grid. The size of the battery pack will be customized for each business but would be able to store roughly 30 percent of the electricity generated by the solar array. And the Tesla batteries provide backup power if the grid goes down in an earthquake or storm—a key selling point as climate change spawns increasingly powerful hurricanes and tornadoes.”

Jan. 23 PR Web article

EnerG2 has created a new lithium-ion battery that uses a carbon/silicon blend to allow EVs to travel 200 to 300 miles on a single charge, compared with 75 miles in most current lithium-ion batteries. This new battery dwarfs the distance of Tesla's lithium battery as well.

- “EnerG2, a Seattle-based company manufacturing advanced nano-structured materials for next-generation energy storage breakthroughs, today announced that it has extended its product lines to further boost lithium-ion battery capacity and power performance.”
- “Blending carbon and silicon—while simultaneously providing additional electrochemically active hard carbon for greater control, stability and cycling—EnerG2’s cutting-edge and cost-effective new product is capable of replacing commonly used low-capacity graphite materials in lithium-ion batteries. The composite material has been scaled for commercial manufacturing and has far-reaching implications for a consumer electronics industry with ever-increasing requirements for energy storage.”
- “The solution will also have a special impact on the automotive business, where EnerG2’s silicon-containing materials will help electric vehicles travel anywhere from 200-300 miles on a single charge. In contrast, the component materials enabling the Nissan LEAF, for example, currently allow approximately 75 miles on a single charge; and the Chevrolet Volt has an all-electric range of 38 miles per charge.”
- “EnerG2’s new lithium-ion-battery product is the first solution of its kind to be commercially scalable and viable. The company operates the only manufacturing facility in the world dedicated to the commercial-scale production of nano-engineered carbon material for high-performance energy storage applications.”
- “Our competitors are still working in the lab,’ explains Rick Luebbe, EnerG2’s Co-Founder and CEO. ‘Meanwhile, we’re able to work rapidly at large scale, because this new product is a drop-in for our existing plant. U.S. manufacturing as a whole will benefit from our breakthrough, now that we’re competing as a successful lithium-ion battery materials supplier against Korea, Japan and China.’”

EnerG2’s silicon-containing materials will help electric vehicles travel anywhere from 200-300 miles on a single charge. In contrast, the component materials enabling the Nissan LEAF, for example, currently allow approximately 75 miles on a single charge; and the Chevrolet Volt has an all-electric range of 38 miles per charge.

[PR Web Article](#)

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