

TSLA Is A Zero

Capital

• Stanphyl

• Spiegel

• Mark B.

Presented By

Although my presentation is called “Tesla is a Zero,” I actually think that because of the debt, the equity in Tesla is worth *less* than zero...

But of course, a stock price can't be a *negative* number...

...at least not until Nasdaq is run by
Mario Draghi or the Bank of Japan.

3 Broad Reasons Why The Equity in Tesla Is Worth “Zero”

- Current financials are horrible with NO direct long-range EV competition yet MASSIVE competition is coming
- Tesla has no meaningful proprietary technology- it open-sourced all its patents (as far as I know no one’s using ANY of them) and its hard assets are worth significantly less than its \$6 billion of debt (including SolarCity)
- A “bet on Elon” is a bet on someone who can’t be trusted- he has a long track record of making hugely misleading statements

I know Tesla longs think it's "all about the future" so here's just a *quick* look at the *current* financials:

- Q3 GAAP loss excluding one-time ZEV credit sales was \$117M
- GAAP loss per car sold or leased excluding ZEV sales was \$4710
- This loss was NOT because Tesla is in "growth mode":
 - Porsche (Musk's "margin hero") sells 3x as many cars as Tesla and is a SLOW grower and yet...
 - If we adjust Tesla GAAP loss to Porsche's per-car levels of R&D & capex, Tesla *still* would've lost \$1677/car excluding ZEV sales
- I estimate Tesla's Q4 free cash flow will be around *minus* \$1.5B. This is because:
 - Q3 payables ballooned & have to be normalized
 - \$1.1B in capex was deferred to Q4
 - There will be minimal Q4 ZEV credit sales
- We should also note that all these horrible numbers were generated *before* Tesla absorbed the boat anchor known as SolarCity, which itself has nearly \$2 billion/year of negative free cash flow

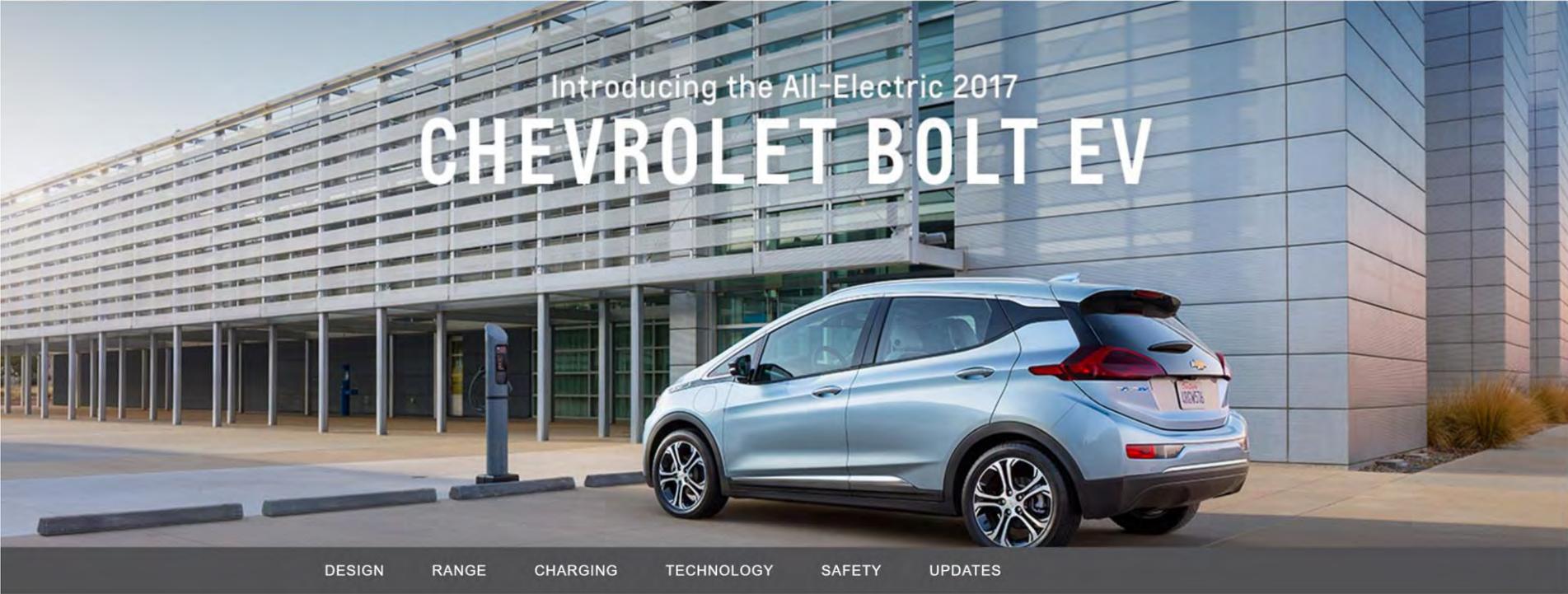
But Teslemmings and Teslarians say Tesla is worth its over \$30 billion enterprise value because “it’s all about the future!”

Okay, let’s look at that future...

Over the next few years a *massive* number of long-range electric cars will be on the market, often at prices subsidized by profits from their makers' conventional vehicles, an option Tesla doesn't have. So pricing pressure on Tesla will be *intense*.

Here's what Tesla faces...

The new Chevy Bolt— available now-- has the same interior passenger space as a Tesla Model S, and it's \$30,000 cheaper than the least expensive Tesla and has 20 more miles of range



	EPA-estimated 238 miles per charge ²		Starting MSRP \$37,495		Available late '16
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All-Electric Audi Q6 e-tron Coming in 2018 with 300+ Miles of Range

Audi goes full speed ahead with new EVs.

By: Joseph Capparella | January 25, 2016



Audi A9 e-tron production confirmed

Audi's new luxury saloon is set to have three electric motors, a 300-mile-plus range and sophisticated self-driving technology; expected to be on sale by 2020

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Audi A9 e-tron as imagined by Autocar

Next step in electric offensive: Mercedes-Benz to build first electric car of the new EQ product brand in its Bremen plant



27.

October 2016
Stuttgart/Bremen

- Global production network of Mercedes-Benz Cars is preparing for electro mobility
- Battery electric production model is based on show car EQ in the look of a sporty SUV Coupé
- Passenger cars “made in Bremen“ will cover the entire range of intelligent drive technologies

BUSINESS NEWS | Fri Nov 25, 2016 | 11:40am EST

Daimler to invest \$11 billion in electronic vehicles: paper



All-electric Porsche Mission E confirmed for production

Development of Stuttgart firm's Tesla Model S rival looks to be on track with latest sighting



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Porsche Is Reportedly Planning a Smaller Version of the Mission E Sedan

The Mission E's scalable chassis means it could spawn several different electrified Porsche models.



Porsche



BY BRIAN SILVESTRO

🕒 SEP 14, 2016

1.8k





Tim Pollard

*Digital editor-in-chief
and motoring news
magnet*

Porsche Cayenne Coupe: meet the hunkered-down, electric SUV

Published: 05 August 2016



- ▶ [More info on Porsche Cayenne](#)
- ▶ [Mule spied for Porsche Cayenne Coupe](#)
- ▶ [This one's an all-electric prototype](#)
- ▶ [Target: Tesla Model X, Jag's e-SUVs](#)

VW's new electric car will cost less, and go farther than, Tesla's Model 3

by Peter Valdes-Dapena @peterdrives

🕒 September 29, 2016: 2:17 AM ET

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Volkswagen unveiled a new long-range electric car Tuesday in Paris, and, in terms of cost and range, it's miles ahead of anything coming to market soon.



CARS

Jaguar Unveils All-Electric I-Pace SUV, Targets Tesla Model X

The four-door, five-seat SUV will go on sale in 2018.

by **Hannah Elliott**

November 14, 2016 — 11:30 PM EST

Jaguar Land Rover says half of its new cars will have electric option by 2020



The electric Jaguar I-PACE concept SUV is unveiled before the Los Angeles Auto Show in Los Angeles, California, U.S. November 14, 2016. REUTERS/Lucy Nicholson

BMW to Expand Electric-Vehicle Offerings

Auto maker to begin producing electrified versions of entire luxury lineup



An electric vehicle by BMW being charged at the Paris Auto Show last month in Paris. PHOTO: ASSOCIATED PRESS

By [TIM HIGGINS](#)

Oct. 11, 2016 7:32 p.m. ET

 22 COMMENTS

After seeing lackluster results with its pricey line of niche electric vehicles, [BMW AG](#) will take a more aggressive swipe at [Tesla Motors Inc.](#) by offering electrified versions of entire lineup of luxury vehicles.

Nissan confirms next-gen Leaf will have over 200-mile range

'It's coming,' one engineering director tells us.

Navigation bar with social media icons: Facebook (f), Twitter, Google+, Email, Reddit, LinkedIn (in), Pinterest (p), and a document icon.



Meet Ford's Kevin Layden, who'll spend \$4.5 billion on 13 new electrified vehicles

March 29, 2016 @ 11:30 am

355
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Layden, 53, has had a hand in developing many of Ford's award-winning European diesel engines as well as the trend-setting, 1.0-liter, three-cylinder engine available in the Fiesta and Focus.



SUNDAY, NOVEMBER 6, 2016

Volvo to link up with LG Electronics to develop future electric cars



200-Mile Hyundai IONIQ Electric Coming In 2018

59 mins ago by [Eric Loveday](#) 9



Hyundai IONIQ Electric Marina Blue

Hyundai announces 4 new all-electric cars by 2020

Fred Lambert - 1 day ago [@FredericLambert](#)



Honda Will Re-Enter the EV Race in 2017 with an All-Electric Version of Its Clarity

APRIL 21, 2016 AT 5:00 AM BY [JOSEPH CAPPARELLA](#)

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Mazda CEO Says Electric Cars Coming in 2019

CEO Masamichi Kogai said the company would introduce zero-emission vehicles as standards tighten in the U.S.



Masamichi Kogai, president and chief executive officer of Mazda Motor Corp., at the wheel of the company's Roadster RF in Tokyo last week. Mazda said it would introduce an electric car by 2019. *PHOTO: BLOOMBERG NEWS*

By **MEGUMI FUJIKAWA**

Nov. 16, 2016 4:15 p.m. ET

Mitsubishi To Launch New All-Electric and PHEV Compact SUV Between 2017-2020

1 month ago by Mark Kane 9

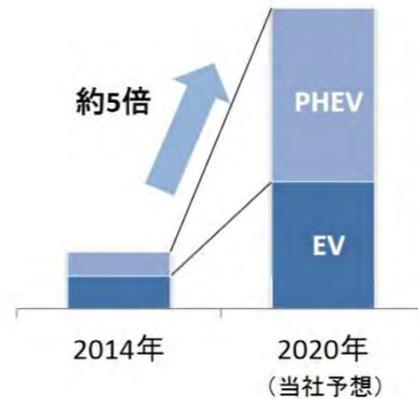
周辺環境



電動車市場の見通し

- 電動車(EV+PHEV)市場は20年には14年対比で約5倍に拡大

電動車の需要予測



Mitsubishi expects high growth of BEV/PHEV sales

There has been a lot of media reports and interviews indicating that Mitsubishi will introduce more plug-in models to the market in the near future.

Now we have confirmation in the form of a new production presentation for years 2017-2020.

取り組み方針 ~選択と集中による開発リソースの最適配分~

② 電動車ラインアップ強化



Toyota, in about-face, may mass-produce long-range electric cars: Nikkei



Toyota Motor Corp's new Prius hybrid car is displayed during its Japan launch event in Tokyo, Japan, December 9, 2015. REUTERS/Toru Hanai



Toyota Motor Corp is looking at mass-producing long-range electric vehicles (EVs) that would hit the market around 2020, the Nikkei newspaper reported on Monday, in what would be a dramatic reversal in strategy for the world's top-selling automaker.

Aston Martin Lagonda [+ Add to myFT](#)

Aston Martin gears up to take high road on electric drive

Luxury British marque aims for 25% of sales from green machines within a decade



© Bloomberg



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Bentley Mulsanne to swap its V8 for electric power

Bentley will switch to all-electric for the Mulsanne but admits maintaining the 'fun factor' is a challenge



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Bentley Mulsanne



by **Sam Sheehan**

11 July 2016

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The current-generation **Bentley Mulsanne** could get an all-electric powertrain to meet the increasingly stringent demands of global emissions regulations.

OUR VERDICT >>

Bentley Mulsanne



Maserati executive confirms electric Alfieri

By Glenn Brooks | 23 November 2016



An EV rival for the next Porsche 911 and Jaguar F-TYPE will be released in 2020, a Maserati executive has told just-auto.com.

Speaking on the sidelines of the UK launch of the Levante SUV, Peter Denton, who is Region Manager for North Europe, said an electric version of the Alfieri sports car is planned.

When pressed for a release date, Denton said the variants with combustion engines would come first, followed by the BEV. This would be in "2019/2020, with the full electric in 2020" he believes.



Alfieri concept's debut was at 2014 Geneva show

New 2017 Renault ZOE ZE 40: 400 km Range*, 41 kWh Battery

2 weeks ago by [Jay Cole](#) 114



Renault ZOE – Now with 400 km* range (NEDC)

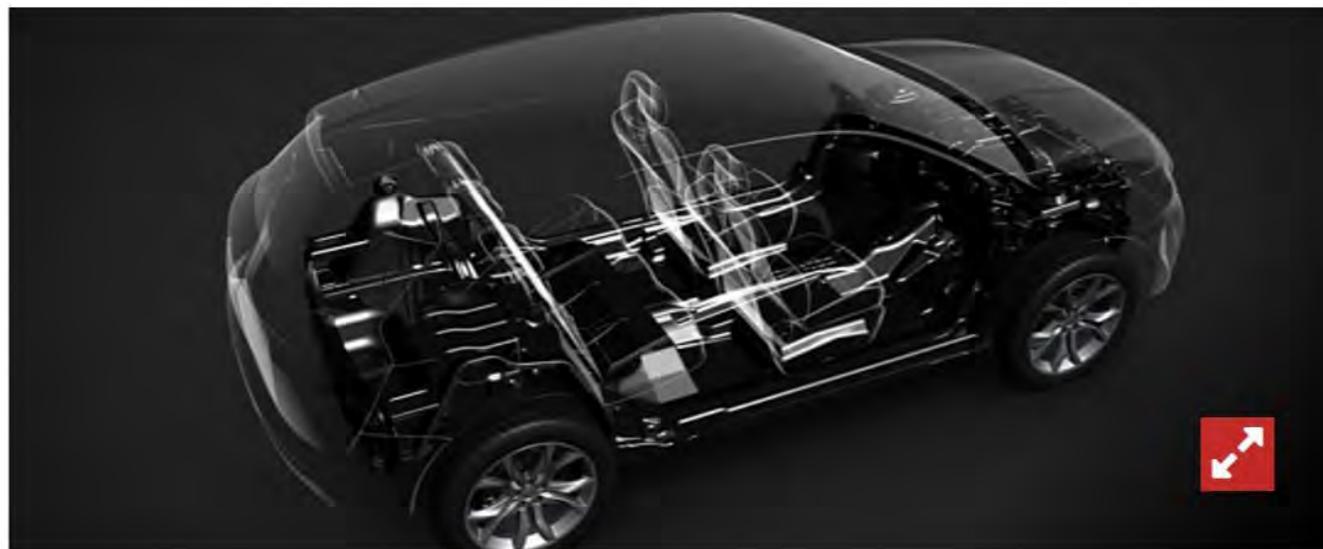
The Paris Motor Show is not yet upon us, but that hasn't stopped Renault's media department in the Netherlands from spilling the details on the updated **ZOE ZE 40**.

Peugeot and Citroen Promise 450 km (280 Miles) Electric Vehicle in 2019

[/ Home / News / Industry](#)

26 May 2016, 12:41 UTC · by [Vlad Mitrache](#)

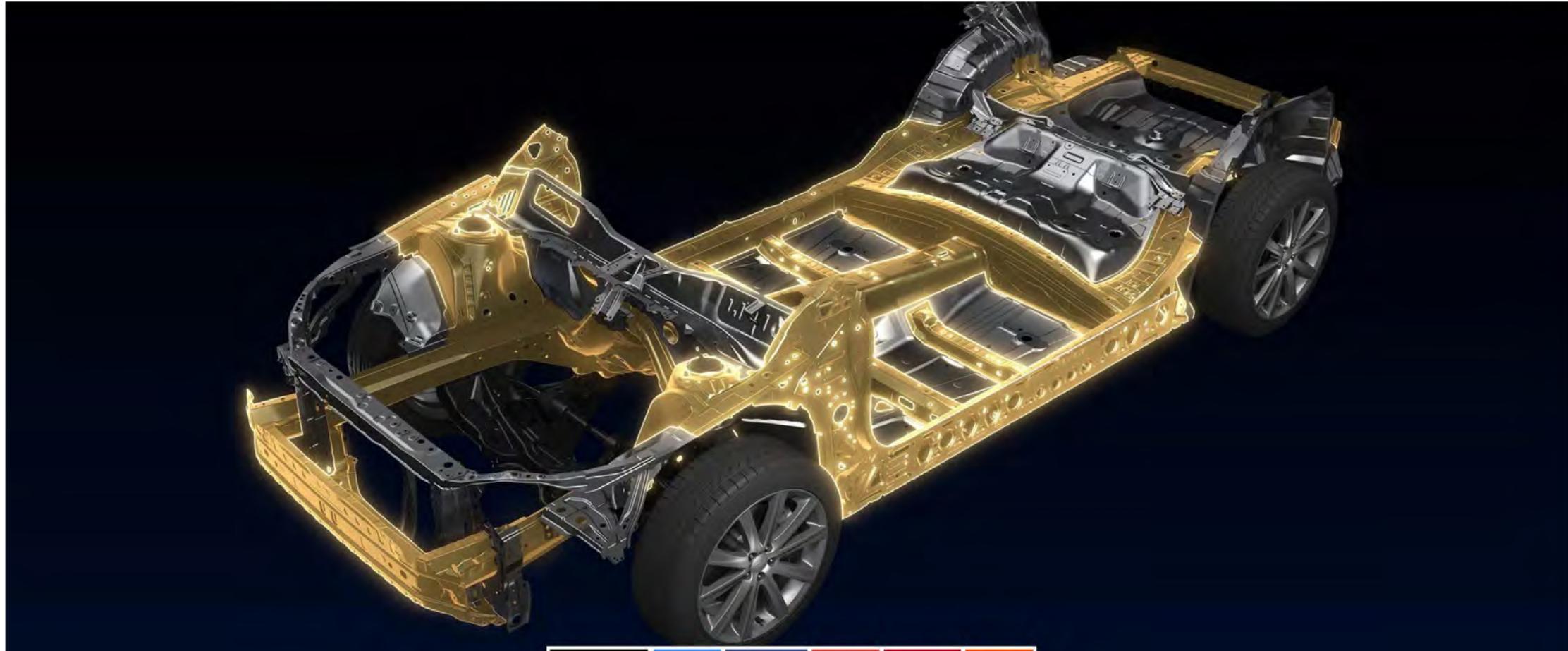
The PSA Group (made up of the three French brands of Peugeot, Citroen, and DS) has been trying to find its place in the automotive industry for the past few years.



Subaru to reportedly launch an all-electric crossover by 2021

Fred Lambert - 2 months ago [@FredericLambert](#)

SUBARU



Skoda electric SUV under development

Skoda's first electric model is planned for launch in 2020, based on Volkswagen's new MEB electric vehicle platform



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Borgward plans 10,000-unit car plant in Germany



Borgward will begin German assembly of an electric BX7 SUV in 2018.

Photo credit: Borgward

PHOTO GALLERY: Borgward BX7 TS



[PHOTO GALLERY >>](#)

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David Jolley
Automotive News Europe

October 27, 2016 11:23 CET

FRANKFURT -- Borgward, a storied German brand that is being revived with Chinese backing, plans to open a factory in Germany to build 10,000 cars a year.

The company, once Germany's third-biggest automaker, is returning to its former home, the north German city of Bremen, where it plans to build its BX7 electric car from semi-knocked-down kits starting in 2018.

Start-up Lucid Motors launches with 300-mile plus premium electric sedan

Automotive startups face daunting hurdles to viability, but Lucid Motors boasts a stellar staff and in two years of development is far along towards its over 300 mile electric sedan.



» **Cunningham**

@way4ne

er 20, 2016

5 PM PDT

Roadshow › News › Electric Cars › Start-up Lucid Motors launches with 300-mile plus premium electric sedan



A new automaker pulled aside the curtain in Silicon Valley, revealing its name as Lucid Motors and showing off its prototype car, a premium electric sedan. The company previously existed under the name of Atieva, where it got its start developing battery packs for electric vehicle applications.

Impressively, in just two years of development the company is so far along with its first vehicle that it already has a body-in-white, an automotive term for a welded sheetmetal body.



2017 KARMA REVERO IS UNVEILED WITH \$130,000 PRICE TAG AND NEW DETAILS

Erick Ayapana Words - September 9, 2016

Dyson car: former Aston Martin product development director joins Dyson

Electric car rumours surrounding tech giant Dyson are fuelled by former Aston Martin product development director's move to the company



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by **Jimi Beckwith**
20 September 2016

 Follow @JimiBeckwith

The Dyson car looks more likely than ever, as former **Aston Martin** product development director Ian Minards has moved into the same role at electronics company Dyson.

OUR VERDICT >>

Aston Martin DB11

NextEV teases 1,000-horsepower electric supercar



Viknesh Vijayenthiran



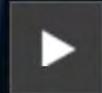
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Sep 28, 2016

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Teaser sketch for NextEV supercar

Image 1 / 4



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Tencent-Backed Company Aims to Launch Smart-Electric Cars Before 2020

Chinese auto startup Future Mobility seeks eventually to sell several hundred thousand luxury vehicles a year



A BMW electric car at a Beijing car show in April; Future Mobility has hired about 50 engineers from car makers including BMW for its smart-electric-vehicle project. PHOTO: REUTERS

Updated July 12, 2016 8:00 a.m. ET

2 COMMENTS

BEIJING—An auto startup backed by internet giant [Tencent Holdings](#) Ltd. plans to start selling premium electric cars globally by 2020, joining other Chinese car makers in taking aim at an increasingly crowded luxury market.

Tesla Is Playing Catch-Up With China's BYD in Nearly Every Business Category



By the time Fremont's flamboyant physicist declared his intent to create a vertically integrated clean energy company, China's quiet chemist had already built one.

by Matthew Klippenstein
August 09, 2016

Daimler strengthens dedication to emission-free mobility with new DENZA 400 EV for China



- Introducing DENZA 400 from BYD Daimler New Technology Co., Ltd. (BDNT), China's first Sino-German joint venture focused on electric vehicles
- DENZA 400 vehicle with upgraded battery, electric motor and electronic control rolls off the production line, providing a range of up to 400 km

Volkswagen in Talks to Make Electric Cars in China

German auto maker plans joint venture with state-run China Anhui Jianghuai Automobile



A VW dealership in Louisville, Ky., in August. PHOTO: BLOOMBERG NEWS

Updated Sept. 7, 2016 6:41 a.m. ET

6 COMMENTS

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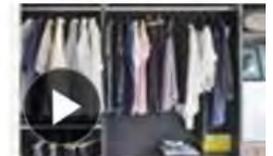
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5. Want to Avoid Getting the Flu?



BAIC E260 Rises To #1 In China Electric Car Sales

November 1st, 2016 by [Jose Pontes](#)



This article is also being published on [EV Obsession](#) and the [EV Sales blogspot](#).

China Electric Car Registrations (September 2016)

Chery Breaks Ground on \$240M EV Factory in China



Chinese automaker Chery Automobile began work on a new plant capable of making 60,000 pure electric vehicles a year at its headquarters in Wuhu, Anhui.

But what about electric car batteries? Tesla's a "battery company," right? And what about the "Gigafactory"?

- Tesla's battery cells are made by Panasonic
- Panasonic will sell its cells to anyone
- Cell-making is fully-automated; beyond a certain point (much smaller than the Gigafactory) there are few additional economies of scale
- Panasonic's so-called "investment" in the Gigafactory is really a *capital lease* of its equipment to Tesla

So here's the competition in
electric car batteries...

LG Chem targets electric car battery sales of 7 tln won in 2020

2016/09/25



SEOUL, Sept. 25 (Yonhap) – LG Chem Ltd., a South Korean chemicals company, aims to post annual sales of 7 trillion won (US\$6.3 billion) in electric car batteries in 2020, according to the company Sunday.

Helped by a growing demand for electric car batteries, LG Chem expects to post 3.7 trillion won annual sales of batteries in 2017, compared with expected sales of 1.2 trillion won this year.



Panasonic to build green-car battery plant in China



Panasonic makes lithium-ion batteries for electric vehicles at its Kasai plant in Hyogo Prefecture.

OSAKA -- [Panasonic](#) will construct a 50 billion yen (\$412 million) Chinese factory for automotive lithium-ion batteries.

The plant in the northeastern city of Dalian, Liaoning Province, will churn out rectangular-shaped batteries for electric vehicles and plug-in hybrids. It is expected to go online in 2017 via a joint venture with a Chinese partner.

Samsung SDI Presents Batteries That Enable 370 Miles (600 km) Of Range At 2016 NAIAS

10 months ago by Mark Kane 90



Samsung SDI introduced new battery products include the prototype of high energy density battery cell for EVs that enables them to drive for up to 600/372 miles kilometers by charging once, 'low height pack' and 'low voltage system (LVS)' for EVs at the 2016 North American International Auto Show in Detroit

China's BYD takes aim at Tesla in battery factory race



A man walks past a BYD store in Wuhan, Hubei province, March 20, 2014. REUTERS/Stringer



By **Nichola Groom** | LOS ANGELES

Chinese automaker BYD (1211.HK) Co Ltd (002594.SZ), backed by Warren Buffett's Berkshire Hathaway Inc (BRKa.N), aims to triple its production of batteries as it takes on Tesla Motors (TSLA.O) in the race to supply electric vehicles and boost energy storage.

Shenzhen-based BYD plans to add 6 gigawatt hours of global production for batteries in each of the next three years, and hopes to keep adding at that pace afterwards if demand is solid, Matthew Jurjevich, a spokesman for the company, said on Friday.

That means BYD could ramp up from 10 GWh capacity at the end of this year to about 34 GWh of batteries by the beginning of 2020. This would put it about even with Tesla's planned \$5 billion Nevada gigafactory.

SK Innovation to quadruple capacity of EV batteries, nears M&A deal

2016.10.28 17:11:31 | 2016.10.28 17:11:55



SK Innovation Co. plans to quadruple domestic capacity to produce batteries for electric vehicle by adding the second facility in Seosan, South Chungchong Province.

WEATHER

Seoul

Mon 31 October 2016



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4.0°C



TUE
-2/8°C



WED
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4/14°C

MOST READ

- 1 **SK Innovation to quadruple capacity of EV batteries, nears M..**
- 2 IMO's cap on sulphur emissions to bring opportunities to S. ..
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- 6 Doosan Heavy close to signing \$1.75

Daimler subsidiary ACCUMOTIVE begins construction of second Li-ion factory; batteries for 1st EQ model, 48V systems

24 October 2016

Daimler subsidiary ACCUMOTIVE has begun construction of a second Li-ion battery factory at its site in Kamenz. With an investment of about €500 million (US\$545 million), the site in Kamenz will be one of the biggest and most modern battery factories in Europe.

The new production facility is planned to start operations in the middle of 2018. The area of about 20 hectares is located in immediate proximity of the existing battery factory in Kamenz, about 50 kilometers from Dresden. With the construction of the second facility, the production and logistics area will be quadrupled to about 80,000 square meters. The workforce will double by the end of this decade.

By 2025, our passenger car product portfolio will contain more than ten fully electric vehicles. At the same time, we are continuously pushing our plug-in-hybrid offensive and the introduction of 48-volt-systems. Highly efficient battery systems are an important aspect of our strategy. They are an integral part of the vehicle architecture and not a ready-made product. The development, production and integration of those complex systems into our vehicles is one of our core competences.

—Prof. Dr. Thomas Weber, Member of the Board of Management of Daimler AG, Group Research & Mercedes-Benz Cars Development

Daimler already has a variety of electrified vehicles on the market and the product portfolio is set to grow continuously. At the Paris auto show, Mercedes-Benz presented its new product brand for electromobility, EQ. ([earlier post](#)), which will offer a comprehensive electromobile ecosystem consisting of products, services, technologies and innovations.

Forerunner of the new brand is the “EQ”-Showcar that made its world debut in Paris. Series production of the EQ with a range of up to 500 kilometers (311 miles) will start within this decade in the SUV segment. A model offensive will follow subsequently, complementing the portfolio of Mercedes-Benz Cars with electrified models. ACCUMOTIVE will deliver the batteries for the first EQ production model.

Daimler is investing a total of €1 billion (US\$1.1 billion) into the global production of battery systems.

MONDAY, NOVEMBER 21, 2016

VW to Invest €3.5B in Battery Cell & Modular Electric Drive Plant



BMW Shows Off Its Battery And Electric Motor Production Facility

1 month ago by [Mark Kane](#) 23



Production of electric components in BMW's Dingolfing facility for plug-in vehicles



DEC 10, 2015 | DEARBORN, MICH.

FORD ACCELERATES EXPANSION OF ELECTRIFIED VEHICLE BATTERY RESEARCH AND DEVELOPMENT, BENEFITING CUSTOMERS WORLDWIDE

- Ford is expanding its global battery research and development footprint for electrified vehicles this year, adding research and engineering capabilities in Europe and Asia to take advantage of new market opportunities
- The company has invested in a world-class battery research and development facility at the University of Michigan to accelerate advanced battery research and development
- Ford is the top seller of plug-in hybrid vehicles and second in total sales of electrified vehicles in America and has recently expanded its offerings in growing markets, including China, Taiwan and Korea

Warming to lithium-ion, Toyota charges up its battery options



A Toyota Prius Prime is seen during the media preview of the 2016 New York International Auto Show in Manhattan, New York, U.S. March 23, 2016. REUTERS/Brendan McDermid/File photo

1/2



By **Naomi Tajitsu** and **Norihiko Shirouzu** | TOYOTA CITY, JAPAN

Engineers at Toyota Motor Corp say they have tamed volatile lithium-ion battery technology, and can now safely pack more power at no significant extra cost, giving the Japanese automaker the option to enter the growing all-electric car market.

How Bosch is developing the battery of the future

🕒 October 12, 2015

400 million euros invested annually in electromobility

- More than twice the energy content and significantly lower costs by 2020
- Bosch approach: improving rechargeable lithium-ion batteries
- Technological breakthrough thanks to a Silicon Valley start-up

Sony will enter the EV battery business

BY PEDRO LIMA · AUGUST 28, 2016

The image shows the Sony logo and slogan. The word "SONY" is written in a large, bold, white, sans-serif font against a dark blue background. Below it, the slogan "make.believe" is written in a smaller, white, lowercase, sans-serif font. The background of the entire image is a gradient of blue and green.

SONY
make.believe

SONY

Dyson Commits \$1.4 Billion for Battery Development

by David Z. Morris

@davidzorris

AUGUST 27, 2016, 3:30 PM EDT



A long bet on tech that could threaten Tesla.

James Dyson.

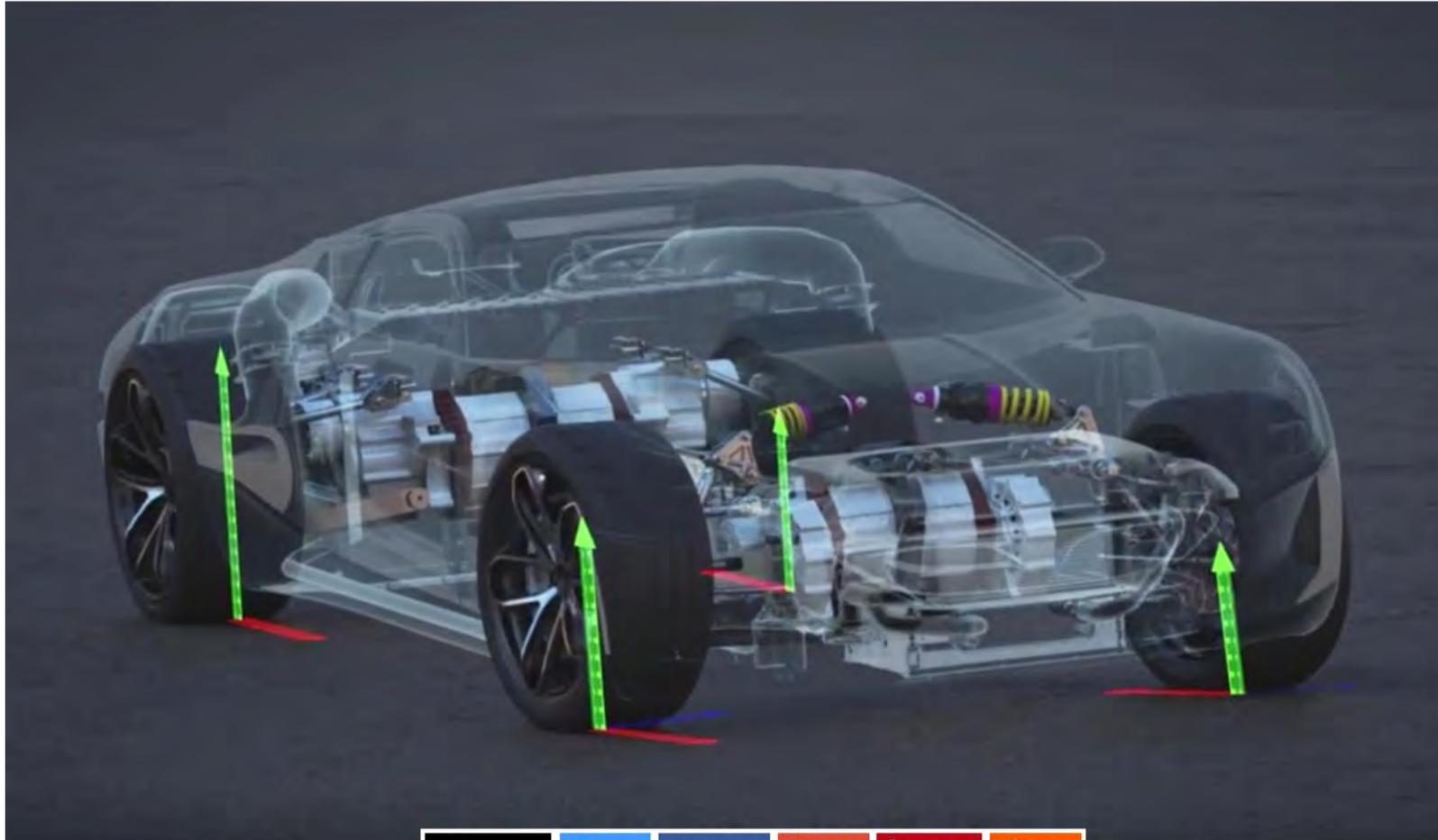
Larry Busacca — WireImage

Rimac is going to mass produce batteries and electric motors for OEMs

Fred Lambert - 1 min ago [@FredericLambert](#)

RIMAC

RIMAC AUTOMOBILI



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Rimac Automobili is best known for being the maker of the all-electric 1 MW supercar, Concept_One, but the small Croatian company is slowly positioning itself as a supplier for automakers that want to make performance electric cars.

Kreisel Electric Gaining Attention From Automakers Looking to Join the Electric Car Revolution

by [Jon LeSage](#) | September 22, 2016

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Three Austrian brothers say they have the electric drive technology to take on Tesla, and it's grabbing the interest of automakers.

Kreisel Electric GmbH, based in Freidstadt, Austria, said it's getting 20 inquiries a day from the likes of German automakers BMW and Volkswagen and British sports carmaker McLaren Automotive. The Kreisel brothers – Johann, Markus and Philipp – say that automakers are looking at their offerings as a way to join the electric-car revolution.

Okay, but what about battery *storage*? THAT'S
the REAL Tesla opportunity, right?

Battery storage is at LEAST as competitive as electric cars. Here's what Tesla's up against
there...



Energy Storage

Energy Storage Solutions

Energy storage is crucial in sun deprived locales like British Columbia [Learn More](#)



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Energy Storage Solutions

Why store energy?

As organizations begin to implement large-scale renewable energy projects into their facilities and the grid, questions concerning power storage have surfaced. Unless used almost immediately, most electricity disappears shortly after it's generated, forcing grid operators to engage in a constant balancing act of supply and demand. And when the scales tip toward scarcity, electricity prices spike – a misfortune that occurs most often on hot days when air conditioners are running nonstop, or when a storm damages utility infrastructure.

Solving the storage problem

Fortunately, better batteries and other smart energy technologies have stepped up to the plate, offering a solution to the power storage predicament. Few companies offer much experience in designing and deploying energy storage systems to meet the growing commitment to renewable energy and reduction of carbon emissions. Panasonic is at the forefront of these breakthroughs, developing comprehensive solutions utilizing our leading lithium-ion battery technology.

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Energy Storage System

From KWh to MWh, Samsung has a solutions



Eco-friendly energy solutions for our future. Samsung SDI is leading the world market with Lithium-ion energy storage.



ESS Battery

Optimized Solution for Energy Saving & High-quality Power

Energy Storage System(ESS) stores electric energy and utilize them for later consumption. It is purposed to improve energy efficiency, by enhancing the quality of renewable energy that results stabilization of power supply system. LG Chem provides most optimal energy solution for the users using our state-of-the-art energy storage system with a long lifespan and a top-notch quality.

[ESS Partner Portal](#)[LG Energy Solutions Site](#)

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Renewable Energy Storage

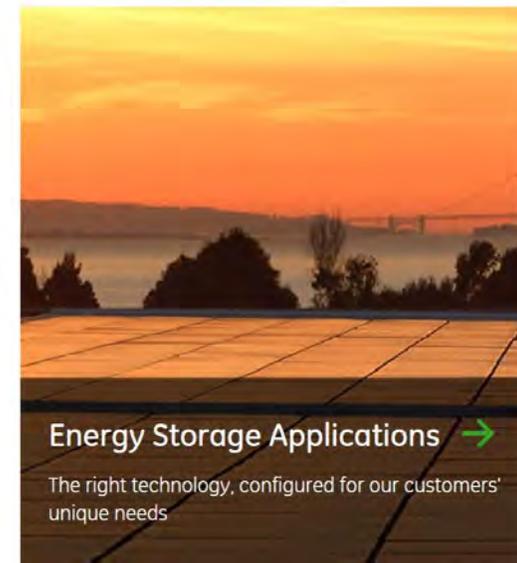
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Powering the Future

GE works at terawatt scale. As a company, we have more than 100 years of experience powering the world, and we are excited to continue. We believe that energy storage could grow to be a \$6 billion dollar market by 2020, and we will remain a stable, reliable technology provider as the industry evolves.

To date, GE's energy storage solutions are present in 25 countries with over 50 megawatt hours (MWh) of grid storage installed in a variety of applications. Our team is made up of experts in safety and compliance, and we have broad global experience and deep expertise in other grid-connected technologies, including wind, solar and thermal.

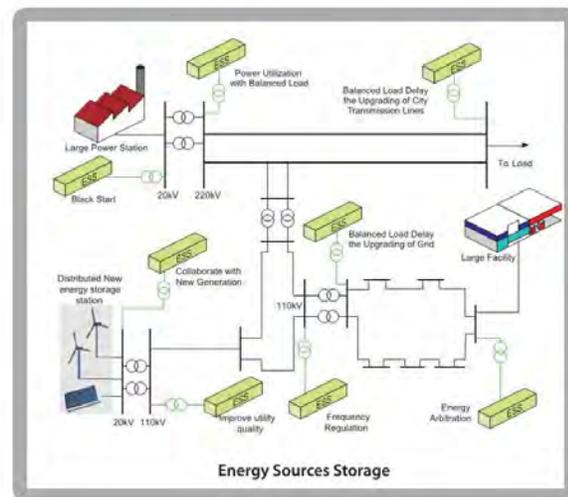
Working together with our customers, we are ready to power the future.



BYD Energy Storage Solutions

Relying on the advanced Fe battery technology, BYD can provide large-scale energy storage, distributed energy storage and micro-grid, which forms a complete set and series of energy storage system solutions. For example, the Indoor solution (figure 1) / outdoor solution (figure 2) with on-grid and off-grid function, which can achieve peak shaving & load leveling, smooth the wind/solar output and regulate the frequency etc.

BYD ESS technology offers a modular, flexible design and can be easily tailored to meet a diverse set of customer needs. Up to now, BYD has a lot of successful cases of battery storage solutions from KW sized to MW sized system at home and abroad.



ESS Application Fields

- Wind power plant
- Photovoltaic power station
- Large-sized load center (factory, commercial center etc)
- Emergency power supply occasion
- Areas of limited situations of environment and field (airport, isolated island etc)
- "Black start" of grid
- Grid frequency modulation

Features of BYD ESS

- Peak shaving & load leveling
- Make compensation for PV/wind generating, and smoothen the power output
- Minimize wire loss, increase the lifespan of wires and electric apparatus
- Act according to requirement of urban grid alteration, ensure safety of the grid
- Optimize the overall arrangement of system, stabilize output of the grid, and ameliorate the energy quality
- Use for urgency transient active power response and/or voltage supporting



Energy Storage

[ADVANCION](#)

[DEPLOYMENTS](#)

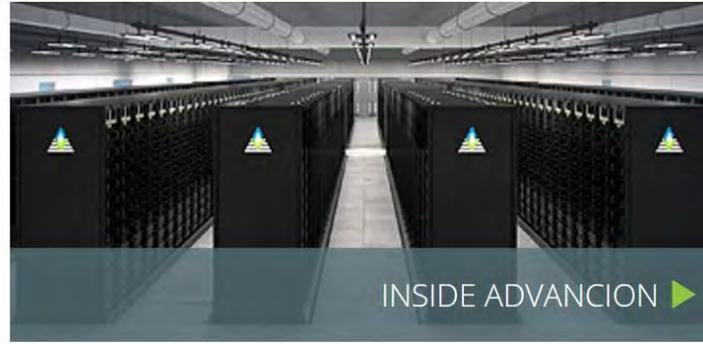
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INTRODUCING ADVANCION® 4 ▶



INSIDE ADVANCION ▶

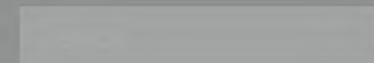


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Global Network

HOME ▶ Products ▶ Energy ▶ Energy Storage System

Energy Storage System: Lithium-ion Battery Product



The demand for energy storage system is considered to be growing rapidly, which is used not only for cutting peak demand and as ancillary services, but cooperating with renewable power plants.

- » Specifications
- » Uses
- » Installation Examples

INQUIRY

Lithium-ion Battery Product

Product

- ▾ Energy Storage System
 - » Specifications
 - » Uses
 - » Installation Examples

News Release

Technical Review

Catalogue Download

GRID ENERGY STORAGE

FLEXIBLE POWER UNLEASHED.

Using energy storage combined with intelligent controls, we provide turnkey solutions that ensure electric power grid reliability while enabling ever-greater amounts of renewable energy to power our lives.

GRID STORAGE

BATTERY SYSTEMS

DSS™

DISTRIBUTED STORAGE SOLUTION

Introducing the DSS™ Distributed Energy Storage Solution, a turnkey, integrated AC energy storage solution for commercial and industrial business.

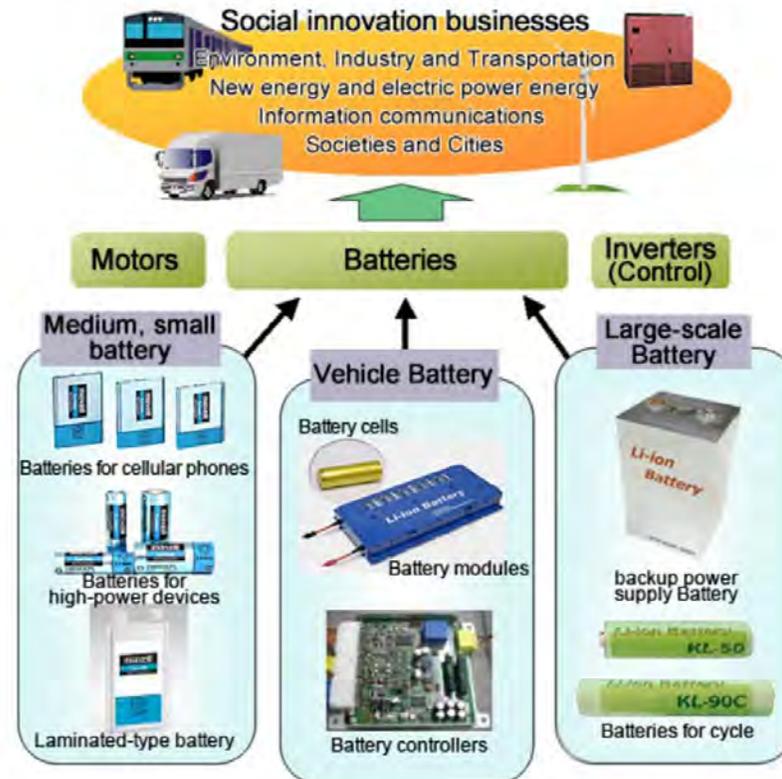
GRID STORAGE

DISTRIBUTED STORAGE

Activities in Lithium-Ion Battery Business

Hitachi Lithium-Ion Battery Striving Toward the Creation of a Green Society

As the third core technology following motors and inverters, Hitachi lithium-ion batteries support social innovation businesses in various fields, including "green mobility" and new energy.



Power generation

Power transmission and distribution

Services for consumers

Business operations

Smart Grid

Smart grid promoted by Hitachi

Regional energy management

Consumer side solution

Renewable energy solution

Such as power electronics technology supporting smart grid

STATCOM(Static synchronous compensator)

HVDC(High-Voltage Direct Current)

Activities in Lithium-Ion Battery Business

Amorphous transformer

Power generation equipment

Battery Energy Storage Systems (BESS)



Electrical energy cannot be stored directly, but it can be stored in other forms and then converted back to electricity when needed.

Storing electrical energy efficiently

With our range of dynamic Battery Energy Storage Systems, ABB has developed an effective and efficient approach that enables energy produced by either conventional thermal generation or renewable sources to be stored and then made available as required.

As a major contribution to achieving stringent environmental targets, our battery systems do not emit any CO₂ emissions. They also maximize the efficient use of renewable energy sources by reducing their inherent intermittency, facilitating integration into the power chain.

Energy storage - Keeping smart grids in balance

Overview brochure (pdf)

ABB has over a decade of expertise in implementing energy storage systems

Interactive presentation



INTENSIMUM® MAX

Rechargeable
Li-ion

BATTERY SEARCH

BATTERY REQUEST FORM

CERTIFICATIONS

See our quality and environmental
certifications listed by plant

MARKETS

Defense
Grid & Renewables
Marine
Railways

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Documentation/Downloads

Saft's Intensium® Max is a ready-to-install containerized solution designed for today's electricity grids and for the smart grids of tomorrow. It provides a complete, fully integrated energy storage system at the megawatt scale comprising Li-ion battery modules, power management and control interfaces, air conditioning and safety devices.



→ Download

▼ Features / Benefits

The containerized energy storage system is ideal for medium to large scale on-grid solar and wind power schemes, where the effective implementation of Saft's state-of-the-art Li-ion technology can smooth the intermittent generation and ramp rates inherent in renewable power sources. Intensium® Max is also used in medium and low voltage grids to provide various grid support functions such as peak management or voltage support.

- > Built around Saft's range of Synerion® E, M or P Li-ion modules.
- > Modules provide maintenance-free energy storage in a compact, adaptable format combining high operational reliability, long cycle life and outstanding efficiency with the capability to provide hundreds of kWh of energy from a single unit.
- > Modules complete with fully integrated electronic supervisory and power management systems with each battery string supervised by an electronic Battery Management System (BMM), and a Master Battery Management System (MBMM) providing overall control of the parallel battery strings.
- > Best energy efficiency of all available energy storage systems available today

→ Technical specifications

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Solar & Renewable Energy



The EnerSys range of batteries for solar panels, wind turbines and water turbines applications have been specially designed to provide high cycling performance and a safe, uninterrupted supply of energy. We take our responsibility to the Earth very seriously and continually research ways to make our stored energy solutions environmentally-friendly. Our engineers have developed battery technology that meets environmental, economical, and technical demands for solar as well as renewable energy.



Blue Energy's Lithium-ion Batteries used in Honda's NSX Adopted for innovative hybrid system SPORT HYBRID SH-AWD

🕒 2016.10.20



GS Yuasa Introduces Wall-mounted 10 kVA Power Conditioner Three-phase LINE BACK αIV
- Strong and reliable power conditioner realizes high efficiency, eliminates cooling fan and is resistant to salt damage-

🕒 2016.10.11



GS Yuasa Delivers Regenerative Power Storage System, Featuring a Function Available for the First Time in Japan, to Tokyo Tama Intercity Monorail
-Emergency running test carried out ahead of commencement of operation-

🕒 2016.09.06



Read more >

GROUP Companies



Blue Energy Co., Ltd.



GS Yuasa Lithium Power, Inc.



G



E.ON Begins Construction on Iron Horse Battery Energy Storage Project

Tucson Electric Power will use Iron Horse's 10 MW for Frequency Response, Voltage Control



Iron Horse Project is First of Several Battery Storage Projects in Development for E.ON

NEWS PROVIDED BY

E.ON →

Oct 31, 2016, 14:44 ET

SHARE THIS ARTICLE



TUCSON, Ariz., Oct. 31, 2016 /PRNewswire/ -- E.ON today began construction on its Iron Horse battery energy storage project. Iron Horse, the first energy storage project for E.ON North America, is a customized 10 megawatt (MW), lithium-ion battery energy storage facility with an adjacent 2 MW solar array. The project is located in the University of Arizona Science and Technology Park, southeast of Tucson, and is expected to be completed in the first half of 2017. Iron Horse's batteries will provide the benefits of a conventional generation system's availability and response capability, but will be capable of responding to shifts in power demand more quickly, increasing system reliability and efficiency.

DELIVERING THE PROMISE OF ENERGY STORAGE:

THE ALL-IRON FLOW BATTERY



SAFE

Non Toxic
Non Flammable
Recyclable

LOW COST

Capital Cost
Operations & Maintenance
Electrolyte & Materials

LONG LIFE

10,000 Cycles
25+ Years
8 hr Storage Capacity

[Learn More >](#)



ENGINEERED FOR YOUR NEEDS



SOLARWATT MYRESERVE 500 STORAGE SYSTEM

Until recently, PV battery storage systems were too expensive and not profitable. The MyReserve 500 storage system from SOLARWATT is the first affordable storage system for private households. Now storing solar power and consuming it internally finally pays off - MyReserve makes it possible:

- use solar power when you need it,
- significant increase in internal consumption,
- increased independence,
- noticeable reduction in your power bill,
- personal energy revolution.

Also for aesthetic purposes - the SOLARWATT MyReserve 500

Modern design in a high-gloss look with space-saving wall installation make MyReserve an eye-catcher and underline the claim of a trend-setting, reliable and user-oriented storage system.

Thanks to the outstanding design quality, MyReserve was distinguished with the [German Design Award 2016](#). The battery storage system was already distinguished with the Intersolar Europe 2015 [EES Award](#) as an outstanding and innovative solution for energy storage.

Mercedes-Benz Energy Storages enter the U.S.



03.

November 2016
Stuttgart/Sunnyvale

Stuttgart/Sunnyvale – Daimler AG is expanding its stationary energy storage business to the U.S. market. After this year's founding of the German Mercedes-Benz Energy GmbH, a completely new subsidiary responsible for the development and global sale of Mercedes-Benz brand stationary energy storage, Daimler marks a further step towards growing the market. The newly established Mercedes-Benz Energy Americas, LLC is assuming the development and sale of stationary energy systems for residential, commercial and utility applications for the North-American market. Boris von Bormann, U.S. solar industry expert, has been selected as the CEO for the branch. System production will remain the core expertise of Daimler's wholly owned subsidiary, Deutsche ACCUMOTIVE GmbH & Co. KG. Working in collaboration with Mercedes-Benz Research & Development North America in Sunnyvale, California, Mercedes-Benz Energy Americas will bring initial product offerings to the United States starting early 2017.

Energy Storage System

Smooth the intermittency of renewable energies, stabilize the transmission and distribution systems, or optimize your energy consumption by integrating an energy storage system from a bankable partner. Whatever the application, wherever on the globe, we'll be here to support your energy storage needs.

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The sonnenBatterie



sonnenBatterie eco



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Events

Kokam Energy Storage System (KESS)

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TOTAL ESS SOLUTION

Battery + PCS + Transformer + Switchgear



The SmartStorage[®] System Cuts Demand Charges

WHAT YOU PAY NOW

For **businesses**, peak demand charges in some cases can represent more than 50 percent of a company's monthly utility bill, significantly affecting their bottom line.

Your '**demand**' is the highest spike of instantaneous electricity you consume in a month.

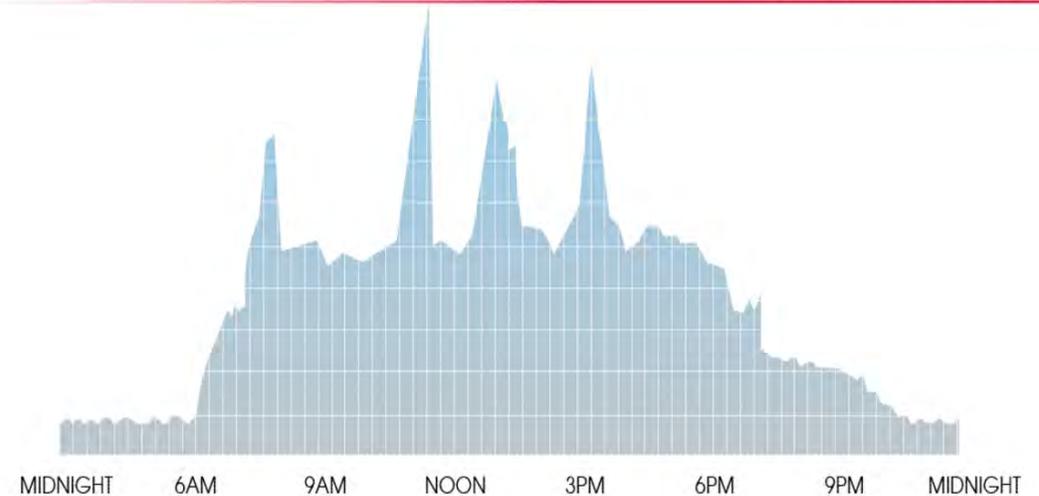
For Example: Any time periodic electric loads (like air conditioners, manufacturing equipment, elevators, etc.) operate at the same time, you get a spike in demand. Those spikes can cost you \$100s-\$1000s a month in peak demand charges.

The **SmartStorage[®]** system predicts demand spikes to cut expensive demand charges.

SmartStorage[®] Energy Storage System Knows When to Discharge

SAVINGS WITH SMARTSTORAGE[®] SYSTEM

CURRENT DEMAND CHARGE (kW)



News

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▶ News Releases

Nissan and Eaton make home energy storage reliable and affordable to everyone with 'xStorage'

Date: 5/10/2016

- Designed to be the most reliable and affordable energy storage system in the market today
- Helps consumers avoid expensive energy tariff periods
- Developed in collaboration with Eaton and designed in the UK at Nissan Design Europe in London
- Sales expected to exceed 100,000 xStorage units within the next five years

LONDON (UK) 10th May 2016: Automotive leader Nissan and power management leader Eaton, have joined forces to unveil a new residential energy storage unit – designed to be the most affordable in the market today. Available to pre-order from September 2016, the 'xStorage' solution will give consumers the power to control how and when they use energy in their own homes.

Connected to residential power supply or renewable energy sources such as solar panels, the unit can save customers money on their utility bills by charging up when renewable energy is available or energy is cheaper (e.g. during the night) and releasing that stored energy when demand and costs are high. If a home is equipped with solar technology, this means that consumers can power their homes using *clean energy* stored in their xStorage system, and be rewarded financially for doing so by avoiding expensive daytime energy tariffs.

The home energy storage system also provides the ultimate back-up solution to consumers, ensuring that the lights never go out – ideal at a time when energy grids are coming under enormous strain. Moreover, customers can also generate additional revenues by selling stored energy back to the grid when demand and costs are high.

The xStorage unit will be the first device of its kind in the market to provide a fully integrated energy storage solution for homeowners. This means, unlike other storage devices, this factory made integrated unit ensures safety and performance when storing and distributing clean power to consumers. Once set-up by a certified installer, it is ready to go, giving consumers the ability to plug in and power up easily. It will also have smartphone connectivity to allow consumers to flick between energy sources at the touch of a button.

Paul Willcox, Chairman, Nissan Europe said: "It is high time consumers were given the flexibility and power to control how and when they use energy in their own homes. The new xStorage solution combines Nissan's expertise in vehicle design and reliable battery technology with Eaton's leadership in power quality and electronics, resulting in a formidable second life battery solution. We want to make energy storage exciting and affordable to everyone, not least because it delivers real consumer benefits whilst ensuring smarter and more sustainable energy management for the grid."

Beyond its high specification functionality, the xStorage system has also been designed with aesthetics and usability in mind to ensure it fits seamlessly into the home environment. This design expertise comes directly from the brains at Nissan Design Europe, UK who are renowned for their world-class vehicle design and styling.

Providing a sustainable 'second life' for Nissan's electric vehicle (EV) batteries after their first life in cars is over, the new unit is powered by twelve Nissan EV battery modules and has the potential to revolutionise the way people manage energy usage in their own home, providing added flexibility and multiple cost savings.

Cyrille Brisson, Vice President Marketing, Eaton Electrical EMEA said: "The collaborative development between Eaton and Nissan enabled us to optimize development and production costs and deliver a well-integrated offer to consumers. Our system will be provided to end-users completely ready to use, with all required elements including cabling and installation by a certified professional, at a starting price of €4,000 for 4.2KWh nominal. Our policy is to avoid hidden extra costs and achieve a lower total cost of ownership than other major offers already announced.



Eaton Nissan xStorage
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Eaton Nissan xStorage
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Eaton Nissan xStorage
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Lithium Battery Storage Container

Ready Lithium - Battery Systems (EES) for a secure and long-term operation at low-voltage grid (On and Off Grid).

Energy storage, clean and simple.

Aquion manufactures safe and sustainable saltwater batteries.



Safe

The safest batteries in the world; non-flammable, non-explosive, non-hazardous, and touch-



Sustainable

No heavy metals or toxic chemicals and the only batteries in the world to be Cradle to Cradle



Cost-Effective

Low upfront installed systems cost due to simple architecture, and minimal to no operating



Simple

Maintenance-free, no battery management required, and compatible with all leading power



Resilient

Long-lasting and tolerant to wide temperature ranges, partial state of charge cycling, and daily

MAVERO

HOME ENERGY STORAGE SYSTEM

The revolution for your sustainable home.



MAVERO is a highly efficient and flexible energy storage solution for private and industrial applications. The modular construction matches exactly the given conditions.

With MAVERO Kreisel Electric sets new standards for energy storage solutions.

Markets & Solutions

- Transportation
- Microgrid solutions / Utilities / Grid
- Home and small business storage
- Custom Designed Batteries
- Consumer Goods

Storing solar energy



Energy storage for home and business

Solar energy has no limits.

Solar installations produce energy when most people are not at home. The challenge therefore lies in the capacity to store this energy for consumption when you really need it, like in the evening and in the morning at home, or during the day for small businesses.

Energy storage systems by Leclanché are far ahead of their time. They are easy to install and are compatible with the main inverter solutions on the market. Whether you decide to use Lithium-ion Graphite/NMC technology or the unique Lithium Ion Titanate technology, your battery will last as long as your solar installation.

Our [ApollionBox™](#), [ApollionCube™](#), [TiBox™](#) or our [SR2025](#) storage system are all designed for a lifespan of up to 15 years, between 5000 and 15000 charge/discharge cycles. All systems come with a seven-year warranty.



Contact

Get in touch with us



SSFE - 25 kWh Energy Storage Solution for Off-grid house

 **Leclanché**
Energy Storage Solutions

100% RENEWABLE ENERGY OFF-GRID HOUSE





Lockheed Martin Energy

HOME

SOLUTIONS

WHY US?

LET'S TALK



We provide turn-key energy storage systems for commercial, industrial, and utility applications.

Our energy storage systems save our customers money, make the grid more efficient, and enable the increased use of renewable energy.

Energy storage drives sustainability.

While you do good for the environment,
energy storage helps your bottom line do well.

[Learn how.](#)



In the past seven years, we've seen many companies join us in the energy storage space, escalating the race for battery installations to megawatt-hour madness. It doesn't seem sustainable--and that's important to us. That's why we make it our business not to sell you as much battery storage as *we* can, but rather to help you save as much money as *you* can by improving your power efficiency.

One solution that serves both sides of the meter

We're in the business of aligning interests with and between our customers - so we all benefit.

GROUNDBREAKING ENERGY STORAGE SOLUTIONS

The world needs radical new energy solutions. Imergy is supplying them now. Our paradigm-shifting Energy Storage Platform (ESP) fits as seamlessly into a remote village as it does into a large-scale commercial application. Cost savings and ROI are deep and fast. Scaling up is simple and inexpensive. Smart technology ensures efficient consumption. And the sustainable design meets today's highest standards for responsible energy systems.

Solutions For:

[Commercial and Industrial](#) [Utilities](#) [Telecom](#) [Residential](#)

RELEASING ENERGY TO THE WORLD

Exergonix provides the missing link to the advancement of innovative, clean energy solutions around the world

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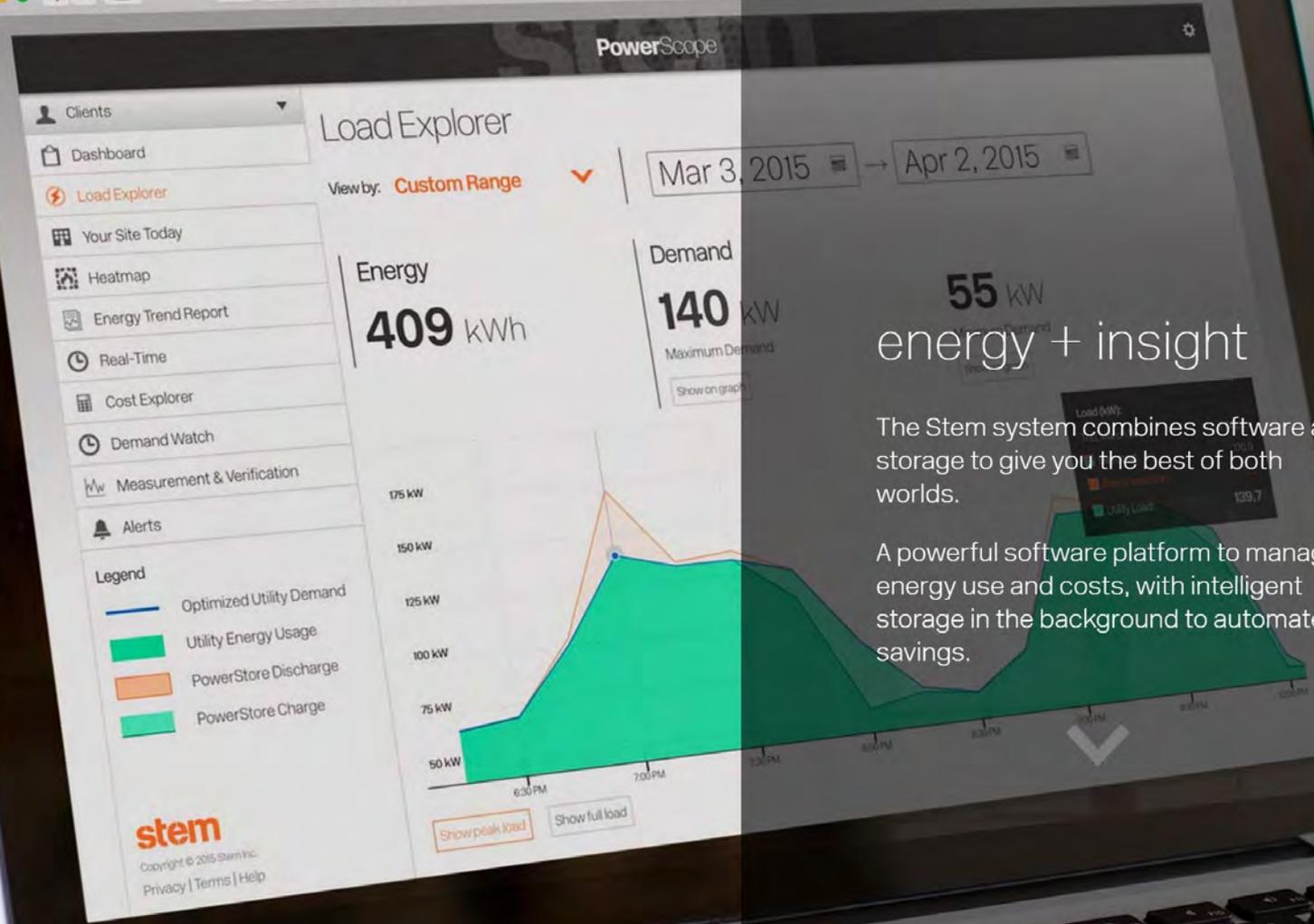


CODA is now **Exergonix/CODA**
ENERGY



Our proprietary energy storage systems employ new and significantly improved technologies

With nano-battery cell design, environmental packaging, and advanced electronic controls, we offer advantages over competing energy storage products - higher energy density battery provides





NON-FLAMMABLE LITHIUM-ION ELECTROLYTE

ALEVO BATTERY TECHNOLOGY (ABT)

Alevo Battery Technology brings the first non-flammable, non-combustible lithium-ion battery to the marketplace, bringing unprecedented attributes to the energy storage market. The driver behind this breakthrough technology is in Alevolyte, an inorganic electrolyte that is only available through Alevo.

ALEVOLYTE™
Proprietary Inorganic Electrolyte



ORDER HERE

Eos produces cost effective energy storage solutions that are not only less expensive than other battery technologies, but less expensive than the most economical alternative used today to provide the same services—gas turbines for peak power generation and transmission and distribution assets for delivery capacity.



Utility

Grid-scale energy storage will transform the way we produce, deliver, and consume electricity. With storage, utilities can rely on



Commercial & Industrial

In today's high tech world, commercial and industrial facilities require better power quality and reliability and new means of



Renewables

Renewable energy accounts for an increasing portion of our electricity supply; however, the fastest growing of these





Uni.System™

Each Uni.System™ delivers 600kW power and 2.2MWh maximum energy in a compact footprint of only five 20' containers. Designed to be modular, multiple Uni.Systems can be deployed and operated with a density of more than 20MW per acre, and 40MW per acre if the containers are double-stacked.

- Engineered & built from the ground up for MW-class applications
- Designed for rapid deployment and dispatch flexibility
- Uses a single, cost-effective, adaptable product platform
- Produced with mature core components
- Applies UET's breakthrough electrochemistry, originating from Pacific Northwest National Laboratory, with support from US DOE, Office of Electricity
- Standard string configuration of four 20' battery containers and one 20' inverter and transformer container, providing 600kW power and 2.2MWh energy in a compact footprint of only five 20' containers





solarfacts

SUSTAINABLE, SAFE AND FAST AS LIGHTNING
THE BELECTRIC EBU DELIVERS 1,300 KW OF POWER TO YOUR GRID WITHIN A FRACTION OF A SECOND.

[Home](#) | [Energy Storage](#)

BELECTRIC Energy Buffer Unit

Energy Storage System for Reliable Energy Supply

The Energy Buffer Unit is one of the most recent innovations on the energy market. The high-capacity battery storage system is used directly in the primary frequency response market. Boasting an output of 750 kilowatts (VAC) for 40 minutes for each battery container, the energy storage system is an efficient solution to help stabilize national energy grids and thereby guarantee reliable energy supply during the energy turnaround.

Advantages of the EBU at a glance:

- Independent of location and scalable thanks to sophisticated container design
- Low maintenance and long service life through automated battery management and remote monitoring
- Cost-efficient due to the use of high-performance lead acid batteries
- Short project times thanks to our wealth of experience in the solar power plant sector

The high-current-compatible lead acid batteries have been optimized especially for this application and guarantee reliable and secure operation of the system. The innovative control concept and battery management system from BELECTRIC ensure the longevity and security of the EBU. Thanks to the container design of the storage system, it can be used at any location and can be scaled to almost any size you require. The system can achieve an AC output into the multi megawatt range without any problems.

Downloads

-  [Datasheet EBU Lion \(li-ion\)](#)
-  [Datasheet EBU 1000 \(lead-acid\)](#)
-  [Datasheet EBU 1200 \(lead-acid\)](#)
-  [BELECTRIC EBU Pre-qualification](#)
-  [Brochure EBU & Conversion Unit](#)

Impressions



Sunverge Solar Integration System

The Sunverge Solar Integration System (SIS) is an intelligent distributed energy storage system that captures solar power and delivers it when needed most. It combines batteries, power electronics, and multiple energy inputs in a UL-certified appliance controlled by software running in the cloud. The SIS is a utility-grade product designed for the consumer market.

Featured Research

Navigant Research Report: Making Sense of New Public Power DER Business Models

It is possible to create win-win scenarios for public utilities and customers by leveraging the diverse services that energy storage can provide. This white paper by Navigant Research featuring Sunverge Energy, Inc. highlights key advantages public power entities have to develop new relationships with customers if they embrace energy storage in an intelligent way.

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[Solar Integration System](#)

[Sunverge SIS on Site](#)

[Sunverge SIS Grid](#)

[Customer Sited Storage](#)

[Reliability](#)

[Call to Action](#)

Sunverge SIS at the Site

SIS units are installed at homes and businesses, integrating with new or existing solar systems, and connect to the grid and the local electricity supply. Each unit runs applications to automatically lower electricity bills, improve reliability, and protect the



Breakthrough. Clean.
Intelligent. Global.

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Changing Lives



Fluidic Energy is the first new, advanced energy storage technology in 15 years proven in broad scale, real-world applications. Fluidics' cost effective long duration metal-air battery technology is powering remote villages, telecommunication sites and backing up critical loads worldwide in the harshest environments on the planet. We are changing lives for the better, with reliable energy storage.



BIG BATTERIES *for the* SMART GRID

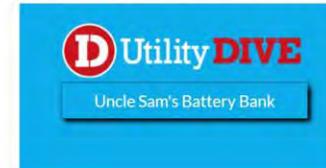
PRIMUS POWER is a privately held, Northern California based producer of flow batteries. These patented, liquid batteries provide flexible capacity from 25kW to 25MW, for stationary, grid scale applications. Primus' EnergyPod provides 5 hours of energy discharge and a long twenty year life span. The company's innovations provide for more robust systems and high power density to yield grid parity pricing and dependable performance.

Primus Power's EnergyPod are installed at customer sites in the U.S. and internationally. They are integrated into the electric grid for use daily, helping to reliably manage & deliver stable low cost electricity to end users. PrimusPower flow batteries are not prone to thermal run away, making them inherently safe. The EnergyPod is low maintenance.

The company has proven technology with installed systems that are working in the field. With an international footprint, growing backlog, and partnerships with leading electrical component suppliers, systems integrators, and customers, Primus Power is poised to take advantage of the vast, growing market for energy storage.



Primus Power in the News





AccESS™

[Click to Download PDF Info Sheet](#)

SimpliPhi your power with AccESS to a fully integrated energy storage and management solution

- AccESS power security with safe, reliable, non-hazardous and efficient energy source
- AccESS any power generation source with intelligent management
- AccESS your own power when and where you need it – inside or outside your home or business

Renewable**Energy**Storage

Stabilise intermittent renewables using Vanadium Energy Storage.

Long durations and 100% depth of discharge allows you to maximise the potential of wind and solar generation.



[Find Out More](#)

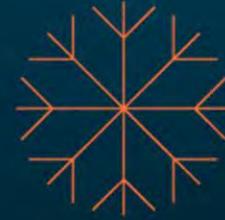
Utility**Energy**Storage

Off-Grid**Telco**Storage

Improved**Genset**Efficiency



THE UNIQUE FLOW BATTERY SYSTEM DESIGNED FOR YOUR HOME OR OFFICE

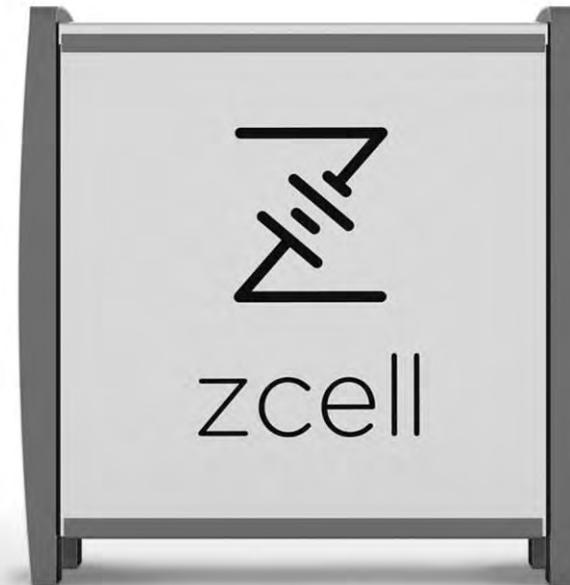


What is ZCell?

The Australian-designed ZCell is a storage system built around a unique zinc-bromine flow battery.

ZCell can deliver 10 kilowatt hours (kWh) of stored energy each day, harvesting energy from solar panels or lower-cost off-peak power, for use when you need it.

Installing ZCell with a suitable inverter as part of your energy management system can lower your power costs, provide resilience during grid power cuts and increase your energy independence.



Okay, so Tesla has tons of competition in cars, car batteries and storage batteries, but what about autonomous driving?

2017 Audi A8 to feature fully autonomous tech

Audi claims new A8 will be the first fully autonomous car on sale. Next-gen A8, A7 and A6 will also feature artificial intelligence functions



 Tweet

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by **Jim Holder**
13 July 2016

 Follow @Jim_Holder

The **next-generation Audi A8** is set to be the first fully autonomous car when it goes on sale in 2017 - and the technology will filter down into the new **A7**, **A6** and **Q8** as they are subsequently launched.

The fully autonomous function, reported to be called Traffic Jam Assist, will operate at up to 60km/h (about 37mph) in congested motorway traffic and - unlike any system currently available - fully control the car without any input or monitoring from the driver. A

OUR VERDICT

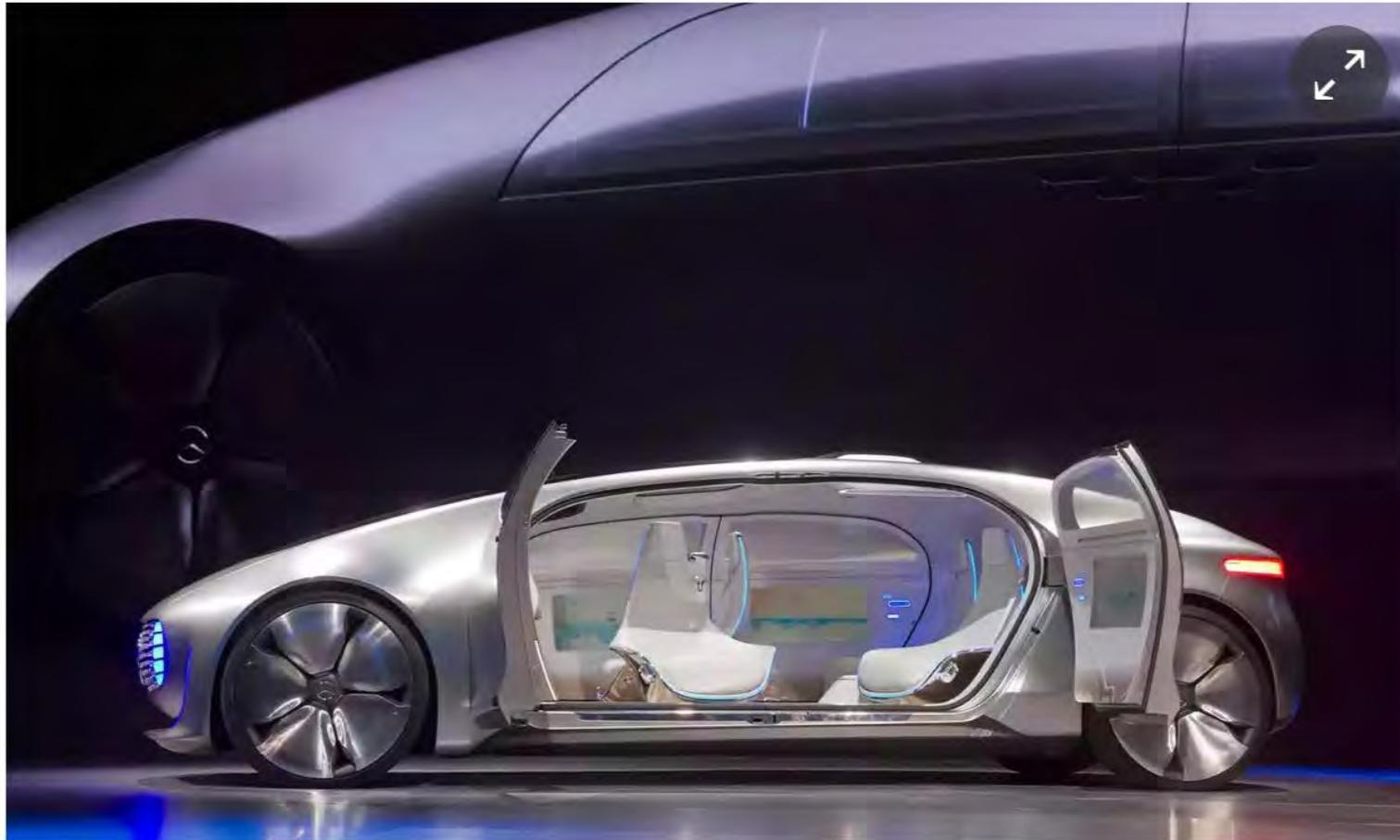
Audi A8



The Audi A8 is a highly capable and desirable

Mercedes-Benz announces plans to develop luxury driverless cars

CEO of parent company, Daimler, says Mercedes premium driverless cars are a 'concrete development goal'



 The Mercedes-Benz F015 Luxury in Motion autonomous concept car is shown during CES 2015. Photograph: Steve Marcus/Reuters

Volvo Plans to Offer Fully Self-Driving Car to Luxury Buyers

by **Keith Naughton**

September 29, 2016 — 12:35 PM EDT *Updated on* September 29, 2016 — 12:35 PM EDT

The self-driving car that Volvo Car Group plans to offer in five years will be sold to individual buyers, with the autopilot features adding about \$10,000 to the vehicle's cost, the company's top executive said.

Volvo's autopilot will be an optional feature that will let occupants completely disengage from driving, Chief Executive Officer Hakan Samuelsson told reporters Thursday at the Global Mobility Leadership Forum near Detroit. The car will still have a steering wheel for when the owner chooses to drive it, he said.

TECH

Volvo, Uber to Jointly Develop Autonomous Sport-Utility Vehicles

Uber plans to eventually buy driverless SUVs for use in ride-hailing fleet



Volvo Car and ride-hailing giant Uber Technologies have signed a \$300 million agreement to co-develop autonomous sport-utility vehicles. PHOTO: BLOOMBERG NEWS

By JOHN D. STOLL

Aug. 18, 2016 7:09 a.m. ET

4 COMMENTS

Volvo Car Corp. and ride-hailing giant Uber Technologies Inc. have signed a \$300 million agreement to co-develop autonomous sport-utility vehicles that will either be used as self-driving taxis or sold to consumers.

Microsoft Cloud | WSJ. CUSTOM STUDIOS



Gil Hanse
President
Hanse Golf Course Design

GOLF'S DATA REVOLUTION

In a game defined by complex variables, cloud-based analytics are surfacing new insights that can inform players and course designers in innovative ways.

LEARN MORE

BMW to develop driverless car technology with Intel, Mobileye



The logo of German manufacturer BMW is seen at a 1957 BMW 503 Coupe Serie 1 car during a preview of an auction by Swiss Oldtimer Galerie International in Zurich, Switzerland June 10, 2016. REUTERS/Arnd Wiegmann



By **Edward Taylor** | FRANKFURT

BMW (BMWG.DE) is teaming up with Intel (INTC.O) and Mobileye (MBLY.N) to develop new technology for the auto industry that could put self-driving cars on the road by around 2021.

General Motors Announces Expansion of Connected and Autonomous Vehicle Engineering and Software Development Work in Canada to Reach Approximately 1000 Positions With Oshawa Tech Centre Now at Capacity, GM Will Open New Markham Software Centre this Year

2016-06-10

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Oshawa, Ont. (June 10, 2016) – General Motors was today joined by Prime Minister Justin Trudeau and Premier Kathleen Wynne in Oshawa to announce a major expansion of its engineering and software work in Canada with focus on supporting the development of innovative new automotive systems and technologies for the future.

GM will expand its Canadian engineering base to reach a total of approximately 1000 positions over the next few years. The new GM Canada work will be focused in the areas of Autonomous Vehicle Software & Controls Development, Active Safety and Vehicle Dynamics Technology, Infotainment and Connected Vehicle Technology, all important areas for the development of new connected, autonomous and shared vehicles and mobility systems.

GM and Lyft aim to make autonomous taxis available in early 2019

Fred Lambert - 2 months ago [@FredericLambert](#)

CHEVY BOLT EV



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There are dozens of companies working to bring autonomous driving to market and as many timelines to make a system commercially available. Most aim for the end of the decade or early next decade. Now GM and Lyft have leaked a timeline for their own system, which is currently under development [with prototypes in San Francisco and Scottsdale.](#)

It looks like GM, which already confirmed that they want to first use autonomous driving for taxi/ride-sharing with Lyft, plans to have a fleet in operation by January 2019.

Ford Developing Fully Driverless Car

Auto maker acquired Israeli firm SAIPS and invested \$75 million in Velodyne



Ford plans to release a driverless car within the next five years, with an eye towards producing fleets of cars for ride-sharing and delivery services. Photo. Ford.

By **CHRISTINA ROGERS**

139 COMMENTS

Updated Aug. 16, 2016 2:09 p.m. ET

[Ford Motor Co.](#) plans to release a fully driverless car without a steering wheel or pedals in the next five years, the latest salvo in a [technological arms race](#) engulfing the global auto industry.

Nissan debuts ProPILOT auto drive system but warns on safety



Nissan's new Serena minivan equipped with ProPILOT (left) follows a Leaf leader vehicle at the company's test drive facility in Yokosuka.

Photo credit: REUTERS/Toru Hanai



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Hans Greimel

Automotive News Europe

July 13, 2016 09:50 CET

YOKOHAMA, Japan – Nissan Motor Co. has unveiled a new technology that allows nearly hands-free highway cruising as its next step toward self-driving cars. The automaker cautioned that automakers must warn about proper usage after the recent fatal crash of a self-driving Tesla.

Toyota Bets Big On Autonomous Tech, Swallows Millimeter Wave Radar Maker



Bertel Schmitt, CONTRIBUTOR

I have written about the auto industry all my life. [FULL BIO](#) ▾

Opinions expressed by Forbes Contributors are their own.



Automotive News reporter Hans Greimel inspects prototype millimeter radar sensor in Lexus GS (Photo: Bertel Schmitt)

When it comes to autonomous driving technology, “legacy automakers” are putting their money where Tesla’s mouth is. Today, Toyota agreed to take control of Fujitsu Ten, one of the world’s leading developers of millimeter wave radar, a key technology for dependable autonomous drive.



Jaguar Land Rover to start UK tests of self-driving car technology

A fleet of connected and autonomous research vehicles will take to the roads around Coventry and Solihull later this year



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Jaguar Land Rover roadwork assist



by **Matt Burt**
13 July 2016

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Jaguar Land Rover will start testing connected and self-driving vehicle technology on a 41-mile test route in the Midlands before the end of this year.

OUR VERDICT >>

Jaguar XE



Expectations are high

Hyundai Shows Off Fully Autonomous Version Of The IONIQ At Los Angeles Auto Show

November 17th, 2016 by [James Ayre](#)



Hyundai has pulled something of a fast one and debuted a very interesting looking fully autonomous concept version of the IONIQ at the Los Angeles Auto Show, making the field of self-driving car tech even more interesting than it was before.



Second Generation Automated Acura RLX Development Vehicle Revealed in California



English ▾

NEWS PROVIDED BY

[Acura](#) →

May 18, 2016, 08:00 ET

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TORRANCE, Calif., May 18, 2016 /PRNewswire/ -- Acura has revealed its second generation automated development vehicle in California, a modified version of the RLX Sport Hybrid SH-AWD™ luxury performance sedan. The RLX has been fitted with a new suite of radar, Lidar, camera and GPS sensors, complemented by higher performance CPUs and GPUs, and improved cabling, heat management and circuitry. These enhancements have been combined with new, more intelligent software algorithms to support more complex testing scenarios.

Google Self-Driving Car Project and FCA Announce First-of-its-kind Collaboration

NEWS PROVIDED BY

[FCA US LLC](#) →

May 03, 2016, 16:06 ET

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AUBURN HILLS, Mich., May 3, 2016 /PRNewswire/ --

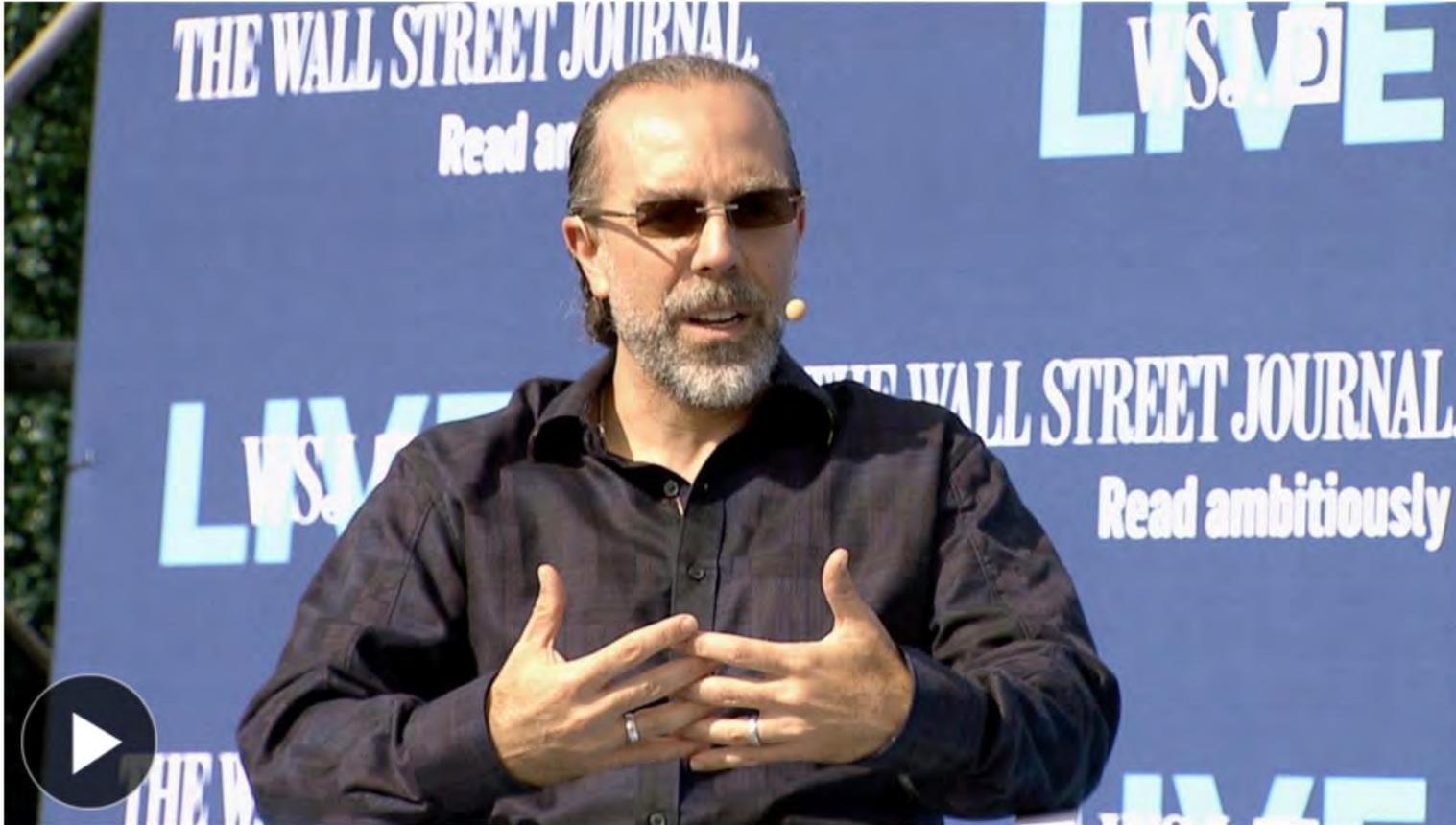
- **Google expands self-driving test program with the all-new 2017 Chrysler Pacifica Hybrid minivan**
- **FCA engineers to work alongside Google engineers to integrate self-driving technology into vehicle**
- **Self-driving cars have the potential to make our roads safer and make transportation more accessible for millions of people**

[Continue Reading](#)



Alphabet Creating Stand-Alone Self-Driving Car Business

Google parent likely to roll out self-driving cars incrementally over the next several years, says X chief Astro Teller



Astro Teller, captain of Moonshots for Alphabet's X, describes how his company is structured to come up with breakthrough technologies. He speaks with WSJ's Rebecca Blumenstein at the WSJLive conference in Laguna Beach, Calif.

By [JACK NICAS](#)

Oct. 26, 2016 7:28 p.m. ET

3 COMMENTS

LAGUNA BEACH, Calif.—Google parent [Alphabet](#) Inc. is graduating its self-driving-car project from its research lab X into a stand-alone business, said X chief Astro Teller, a major step in the vehicles' path to commercial operations.

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Delphi, Mobileye Join Forces to Develop Self-Drive System

Pair designing fully autonomous-driving product for car makers to plug into future vehicles



An Audi SUV equipped with Delphi Automotive's technology traveled from San Francisco to New York City last year. Delphi and Mobileye plan to join forces to develop a fully autonomous system for car makers. PHOTO: STEPHEN LAM/REUTERS

An advertisement for Avenue language school. At the top, it says "Avenue THE WORLD SCHOOL GRADES N-12". Below that, the text reads "Second language is our first priority". A button says "Learn why at an Information Session". The main visual is a close-up of several keyboard keys: a key with the German character "ö", a key with the Chinese character "书", a key with the letter "W", and a key with the Turkish character "ç". At the bottom, it lists "Math in Chinese", "History in Spanish", "Language Immersion", "new meaning", and "nursery through fifth grade".

By MIKE COLIAS

Aug. 23, 2016 12:00 a.m. ET

38 COMMENTS

Top auto-parts suppliers [Delphi Automotive PLC](#) and [Mobileye NV](#) are joining forces to develop a fully autonomous driving system that car makers could begin placing in their vehicles beginning in 2019.

Bosch: We'll Have Fully Autonomous, Connected Vehicles In Four Years' Time

BY NIKKI GORDON-BLOOMFIELD • JANUARY 5, 2016

At this year's CES in Las Vegas, everything from heart monitors to kitchen appliances, cars and watering equipment for your garden has one thing in common: they all connect to the Internet of Things in some way or other. This, claim the manufacturers behind all these products, will make our world smarter, safer and more convenient for everyone.



German electronics manufacturer and tier-one automotive parts supplier Bosch is no exception. During a 45-minute long press conference this morning at the Mandalay Bay Conference Center, Dr. Volkmar Denner, Chairman of the Board of Management of the Bosch Group, unveiled the company's vision for a 'simply connected world' in which always-on Internet connections make our homes, our cities and our cars smarter and better connected.



NIKKI GORDON-BLOOMFIELD

Self-confessed geek and mother of two, Nikki has been talking and writing about cars ever since she passed her driving test. Back then, her Internet contributions were all classic car-focused. Now, she's all about greener, cleaner, safer and smarter cars.

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AUTONOMOUS DRIVING

BOSCH

CONNECTED CAR

Apple using former BlackBerry engineers in Canada to develop self-driving car systems

by James Farrell | Oct 25, 2016 | 0 comments



But Tesla has 120kw *SuperChargers*...
What about *THOSE???*

BMW Group, Daimler AG, Ford Motor Company and Volkswagen Group with Audi & Porsche Plan a Joint Venture for Ultra-Fast, High-Power Charging Along Major Highways in Europe



29.

November 2016
Stuttgart

- Joint Venture to deploy a high-powered DC charging network for battery electric vehicles (BEV) covering long-distance travel routes in Europe
- Power levels up to 350 kW significantly reduce charging time compared to available systems
- Build-up of about 400 ultra-fast charging sites planned in Europe
- Network is based on the Combined Charging System (CCS) standard which uses a connector that is fully compatible with most current and next generations BEVs

White House announces new 'EV corridors' to accelerate deployment of electric vehicles and charging stations

Fred Lambert - 1 min ago [@FredericLambert](#)

ELECTRIC VEHICLES

EV INFRASTRUCTURE



BMW and Volkswagen Take on Tesla Motors With a New U.S. Fast-Charging Network

Ninety-five new DC Fast charging stations will allow seamless electric-car travel on the East and West Coasts without waiting hours for recharging. They'll work with most brands of electric cars.

John Rosevear ([TMFMarlowe](#))
Sep 13, 2016 at 11:32AM



AUTHOR



John Rosevear
([TMFMarlowe](#))

John Rosevear is the senior auto specialist for Fool.com. John has been writing about the auto business and investing for over 20 years, and for The Motley Fool since 2007.



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ARTICLE INFO



Sep 13, 2016 at 11:32AM



Industrials

Volkswagen pays \$2 billion to fund clean cars infrastructure

By **Adolfo Diaz** - August 11, 2016



Updates You Should Not Miss



Jaguar F-Pace review
precision driving SUV

Hector Morales - October 22, 2016



Qualcomm's 5G modem will make reality

October 22, 2016



The Walking Dead amidst the 7th

October 22, 2016



Maserati delay
Maserati Alfieri

Switzerland is getting a new fast-charging network worthy of the Tesla Supercharger: 150kW chargers at 100 sites

Fred Lambert - 4 months ago [@FredericLambert](#)

CARS

TESLA

TESLA SUPERCHARGER

SWITZERLAND

FAST CHA



Fastned Readies For 150 kW, 300 kW Charging

1 year ago by Mark Kane  40



But what about the “\$35,000 mass-market”
Model 3? Isn't that the REAL reason to own
Tesla?

- Q3 Tesla gross profit (excluding ZEV sales) for non-leased cars averaged just \$25,200/car at an ASP of \$105,900, meaning it cost Tesla almost \$81,000 to build each car it sold.
- There are no higher volume per-car savings in engineering or R&D costs because Tesla expenses those— they’re not part of COGS
- I estimate the **base** Model 3 will **cost** Tesla **at least** in the high \$40,000s to build, so it can either sell them at a gigantic loss starting @ \$35,000 or price them into a *much* smaller market segment. Neither choice validates the hype.
- After Tweeting the Model 3 reservation number continually leading into May’s stock offering and prominently featuring it in the prospectus, Musk now *refuses* to update it; when asked about it on the Q3 conference call he said it was “not a figure of merit.”

And how exactly will they *service* that high-volume Model 3?

Tesla owners plagued by service delays

Growth in shops may not be able to keep up with volume plans

November 13, 2016 @ 12:01 am

Katie Burke 

21
Shares



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Enter you

But hey, while you're waiting for your \$35,000 Model 3, why don't you get a \$49,900 Model S, as Musk promised before THAT car arrived?



PRICED: 2012 TESLA MODEL S TO START AT \$49,900, ARRIVES NEXT SUMMER

Erick Ayapana writer - December 20, 2011

Okay, despite all the competition and profitability issues, maybe you want to own Tesla because you believe in Elon Musk...

Really???

"Tesla does not need to ever raise another funding round"

-Elon Musk, February 2012

Subsequent Financings:

September 2012: \$195 million

May 2013: \$913 million

February 2014: \$2 billion

August 2015: \$652 million

May 2016: \$2 billion

Soon: Many more billions (if anyone gives it to them)

Elon Musk, November 2014:

"Essentially in the third quarter we sold every car, that was including cars from like showrooms and everything we basically had. There was just nothing left to sell."

Consumer Reports, November 2014:

"A source inside Tesla has told us that the company has about 2,300 remaining 2014 Model S cars, including showroom display cars, that the company is selling at a discount."

Elon Musk, February 2016:

“We do not discount our cars for anyone, including me.”

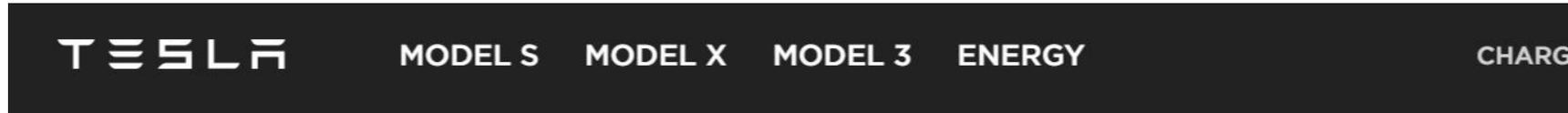
Fact:

Since July 2015, Tesla has *continually* run a \$1000 per car discount referral program open to *anyone*.

Elon Musk, October 2016:

“There were a few discounts... but they were few and far between and that has been absolutely shot down to zero.”

Here’s a screenshot of the discount referral program on Tesla’s web site, *as Musk was saying that*:



Support

Referral Program

The current Tesla Referral Program begins October 16 and will run until January 15, 2017. Anyone who orders a new Model S or Model X during this period using the referral link of a Tesla owner will get a \$1,000 credit towards the purchase price.

Tesla New Car Discounted Inventory Screenshot – November 12, 2016

(courtesy of EV-CPO.com)

VIN	cone: Facelift/ Classic	Location	Trim	AP 1.0	AP 2.0	Color	Roof	Wheels	Interior	Year	Miles	Price	Discount	Date Added (Eastern Time)
154396	Facelift	New York	90D	Y	N	Deep Sea Blue	Pano	19-Slipstream	Tan NextGen	2016	50	104,600	100	2016-11-10
154599	Facelift	No Location	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Black NextGen	2016	50	79,100	4,100	2016-11-10
156034	Facelift	New York	S75	Y	N	Mdnght Silv Mtlic	Pano	19-Slipstream	Tan NextGen	2016	50	80,100	4,100	2016-11-10
156046	Facelift	New York	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Tan NextGen	2016	50	79,200	4,000	2016-11-10
156059	Facelift	New York	S75	Y	N	Mdnght Silv Mtlic	Pano	19-Slipstream	Tan NextGen	2016	50	80,400	3,800	2016-11-10
156907	Facelift	Missouri	S75	Y	N	White Solid	Pano	19-Slipstream	Black NextGen	2016	50	81,600	3,600	2016-11-10
156989	Facelift	No Location	S75	Y	N	Mdnght Silv Mtlic	Pano	19-Slipstream	Black NextGen	2016	50	79,700	3,500	2016-11-10
158015	Facelift	San Diego/O.C.	75D	Y	N	Deep Sea Blue	Pano	19-Slipstream	Tan NextGen	2016	50	86,000	3,200	2016-11-10
158017	Facelift	San Diego/O.C.	75D	Y	N	Deep Sea Blue	Pano	19-Slipstream	Tan NextGen	2016	50	86,200	3,000	2016-11-10
160521	Facelift	San Francisco	S75	Y	N	Black Solid	Pano	19-Slipstream	Black NextGen	2016	50	80,100	2,100	2016-11-10
160522	Facelift	No Location	S75	Y	N	Black Solid	Pano	19-Slipstream	Black NextGen	2016	50	79,800	2,400	2016-11-10
160631	Facelift	San Francisco	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Black NextGen	2016	50	81,000	2,200	2016-11-10
160640	Facelift	Los Angeles	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Black NextGen	2016	50	80,700	2,500	2016-11-10
160780	Facelift	New England	75D	Y	N	Black Solid	Pano	19-Slipstream	Black NextGen	2016	50	86,600	2,100	2016-11-10
160782	Facelift	New England	75D	Y	N	Black Solid	Pano	19-Slipstream	Black NextGen	2016	50	86,600	2,100	2016-11-10
160796	Facelift	New York	75D	Y	N	Black Solid	Pano	19-Slipstream	Black NextGen	2016	50	86,600	2,100	2016-11-10
154698	Facelift	No Location-US	75D	Y	N	Mdnght Silv Mtlic	Pano	19-Slipstream	Black NextGen	2016	50	87,000	2,100	2016-11-07
159978	Facelift	New England	P90D	Y	N	Black Solid	BdyClr	19-Slipstream	Multi-Pattern Black	2016	50	116,350 Δ	4,100	2016-11-04
165045	Facelift	No Location-US	S60	Y	N	Titanium Metallic	BdyClr	19-Slipstream	Black Nappa	2016	50	72,200	1,400	2016-11-04
166737	Facelift	No Location-US	S60	N	N	Titanium Metallic	BdyClr	19-Slipstream	Black Nappa	2016	50	69,400	0	2016-11-04
161167	Facelift	No Location-US	S75	Y	N	Red Multi-Coat	BdyClr	19-Slipstream	Tan NextGen	2016	50	84,000	1,700	2016-10-18
168477	Facelift	No Location	75D	Y	N	Deep Sea Blue	Pano	19-Slipstream	Black NextGen	2016	50	87,500	1,500	2016-10-13
161163	Facelift	No Location	S75	Y	N	White Solid	BdyClr	19-Slipstream	Multi-Pattern Black	2016	50	77,500 Δ	2,700	2016-10-11
161217	Facelift	No Location	S75	Y	N	Titanium Metallic	BdyClr	19-Slipstream	Black Nappa	2016	50	72,400 Δ	1,700	2016-10-07
164327	Facelift	No Location	S75	Y	N	Red Multi-Coat	BdyClr	19-Slipstream	Tan NextGen	2016	50	81,500 Δ	1,700	2016-10-07
160537	Facelift	No Location	S75	Y	N	White Solid	BdyClr	19-Slipstream	Multi-Pattern Black	2016	50	77,000	2,100	2016-09-28
160603	Facelift	No Location	S75	Y	N	White Solid	BdyClr	19-Slipstream	Multi-Pattern Black	2016	50	77,000 Δ	2,600	2016-09-28
156006	Facelift	No Location	S75	Y	N	Red Multi-Coat	Pano	19-Slipstream	Black NextGen	2016	50	82,500	2,000	2016-09-27
158128	Facelift	No Location	S75	Y	N	White Solid	BdyClr	19-Slipstream	Multi-Pattern Black	2016	50	77,000	2,800	2016-09-27
160542	Facelift	No Location	S75	Y	N	White Solid	BdyClr	19-Slipstream	Multi-Pattern Black	2016	50	77,000	2,500	2016-09-27
158171	Facelift	No Location	75D	Y	N	Black Solid	Pano	19-Slipstream	Multi-Pattern Black	2016	50	83,500	3,100	2016-09-23
160561	Facelift	No Location	75D	Y	N	Deep Sea Blue	Pano	19-Slipstream	Tan NextGen	2016	50	87,000	2,500	2016-09-23
138419	Facelift	San Diego/O.C.	S70	Y	N	Mdnght Silv Mtlic	BdyClr	19-Slipstream	Black NextGen	2016	50	79,000 Δ	2,700	2016-09-22
158020	Facelift	Los Angeles	75D	Y	N	Deep Sea Blue	Pano	19-Slipstream	Tan NextGen	2016	50	85,000 Δ	3,200	2016-09-22
152824	Facelift	San Diego/O.C.	S60	Y	N	Red Multi-Coat	BdyClr	19-Slipstream	Tan NextGen	2016	50	81,000	3,800	2016-09-21
154553	Facelift	Los Angeles	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Multi-Pattern Black	2016	50	77,200 Δ	3,500	2016-09-21
154559	Facelift	No Location	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Multi-Pattern Black	2016	50	79,500 Δ	2,100	2016-09-21
154688	Facelift	Pennsylvania	S75	Y	N	Deep Sea Blue	BdyClr	19-Slipstream	Tan NextGen	2016	50	77,700 Δ	4,000	2016-09-21
156285	Facelift	New England	S75	Y	N	White Solid	Pano	19-Slipstream	Black NextGen	2016	50	78,500 Δ	3,700	2016-09-21
156955	Facelift	No Location	S75	Y	N	Red Multi-Coat	BdyClr	19-Slipstream	Tan NextGen	2016	50	81,000 Δ	3,500	2016-09-21
156964	Facelift	No Location	S75	Y	N	Red Multi-Coat	BdyClr	19-Slipstream	Tan NextGen	2016	50	81,000 Δ	4,000	2016-09-21
157051	Facelift	No Location	S75	Y	N	Deep Sea Blue	BdyClr	19-Slipstream	Black NextGen	2016	50	80,500	2,700	2016-09-21
157068	Facelift	San Francisco	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Black NextGen	2016	50	79,700 Δ	3,500	2016-09-21
157166	Facelift	No Location	75D	Y	N	Red Multi-Coat	Pano	19-Slipstream	Tan NextGen	2016	50	87,500	3,600	2016-09-21
157176	Facelift	No Location	75D	Y	N	Red Multi-Coat	Pano	19-Slipstream	Tan NextGen	2016	50	87,500	2,600	2016-09-21
158008	Facelift	Cleveland	S75	Y	N	Mdnght Silv Mtlic	Pano	19-Slipstream	Black NextGen	2016	50	83,100 Δ	3,100	2016-09-21
158166	Facelift	San Francisco	75D	Y	N	Black Solid	Pano	19-Slipstream	Multi-Pattern Black	2016	50	82,000 Δ	2,700	2016-09-21
158201	Facelift	San Francisco	S75	Y	N	Deep Sea Blue	Pano	19-Slipstream	Black NextGen	2016	50	80,700 Δ	2,500	2016-09-21

Okay, so maybe lying about discounts was the *only* misleading thing Musk did.

Uh, no...

Elon Musk Wants to Cut Tesla Spending, “At Least for the Next 4.5 Weeks”

by David Z. Morris

@davidzorris

SEPTEMBER 4, 2016, 1:52 PM EST



A lean Q3 would be “awesome” for fundraising.

Tesla CEO Elon Musk

Photograph by Bloomberg via Getty Images

Musk Talked Merger With SolarCity CEO Before Sale of Stock

by David Welch Dana Hull
 danahull

August 31, 2016 – 2:51 PM EDT *Updated on* August 31, 2016 – 6:59 PM EDT





STEPHEN LA

LEMON

How Tesla and Elon Musk Exaggerated Safety Claims About Autopilot and Cars

The autonomous program isn't meant for most types of driving, and the automaker compares its new luxury vehicles to older, cheaper cars.

NICK LUM, EDWARD NIEDERMEYER 07.14.16 1:00 AM ET

Tesla: Contrary To The Official Story, Elon Musk Is Selling To Keep Cash

May 19, 2016 2:11 PM ET | [487 comments](#) | About: [Tesla Motors \(TSLA\)](#)



Paulo Santos

Premium Research »

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Summary

- The Tesla believers have been fed prodigious amounts of untruths and still kept their faith.
- The latest untruth is that Elon Musk is just selling stock in the present secondary to pay his tax bill.
- As with nearly all stories coming from Tesla and Elon Musk, this is untrue. Elon Musk gets to keep cash -- a lot of cash -- from the secondary.

Tesla Timeline Shows Musk's Morality Is Highly Convenient

Jul. 1, 2016 11:34 AM ET | [509 comments](#) | About: [Tesla Motors \(TSLA\)](#), Includes: [SCTY](#)



Montana Skeptic ✓ Following (1,296 followers)

Bonds, long-term horizon, portfolio strategy, contrarian

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Summary

- Tesla has developed a nasty habit of hiding inconvenient facts from its shareholders.
- The rash of reported Autopilot misadventures meant the May 7 fatality was an accident waiting to happen.
- Musk has made absurd and inaccurate claims about "Autopilot".
- Musk likes to talk about morality. You know what's immoral? Tesla calling its software "Autopilot".

My Favorite Elon Musk Quote:

*“I’ve gotta make sure if something goes wrong on the flight [to Mars] and I die, there’s a good succession plan and the mission of... [SpaceX]... doesn’t get taken over **by investors who just want to maximize profit.**”*

-September 27th, 2016

To which I respond:

There's no danger of SpaceX investors
“maximizing profits” as long as you spend their
money on missions to Mars and...

...buying SolarCity debt:

Elon Musk's SpaceX will buy another \$90 million in solar bonds from SolarCity (SCTY)

Fred Lambert - 8 months ago [@FredericLambert](#)

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