

Electric Auto Association



CURRENT EVENTS

November 2018 Promoting the use of electric vehicles since 1967 Vol. 50 No. 11

A GLIMPSE INTO THE FUTURE!

**Election
Nominations
Open - See Pg 4
Due Nov. 30**

*The Kona Electric has
plenty of something that
really matters among EVs.*

See Page 8



**Harley Davidson's
LiveWire
... page 22**



**EAA Joins Tax Credit
Coalition
... pages 25-27**



**Charging Station
Progression
... pages 28, 30, 33**

Articles

- 1 A GLIMPSE INTO THE FUTURE!
- 3 CONSUMER ENGAGEMENT . . . THE HEART OF ELECTRIC AUTO
- 4 NOMINATIONS OPEN! — The upcoming election for three Board of Director positions
- 5 DO YOU SHOP AT AMAZON? THANK YOU TO OUR SUPPORTING MEMBERS
- 6 BOARD PROFILES — Nathalie Belanger & Kelly Berry
- 8 FINALIST FOR GREEN CAR REPORTS BEST CAR TO BUY 2019: HYUNDAI KONA ELECTRIC
- 12 2019 HYUNDAI KONA ELECTRIC: FIRST DRIVE OF AFFORDABLE 258-MILE CROSSOVER — First test-drive time
- 16 CHECK OUT TESLA'S NIFTY SEMI TIRE INFLATION PATENT — Making progress on future trucks
- 18 AUTOMAKERS SEND MUDDLED SIGNALS ON CALIFORNIA VEHICLE GHG AUTHORITY — Environmental Legislation
- 20 INDUSTRY EYES CCS, SOLAR TO 'DECARBONIZE' HYDROGEN FOR FUEL-CELL VEHICLES — Environmental Legislation
- 22 HARLEY-DAVIDSON BETS ITS FUTURE ON THE LIVEWIRE ELECTRIC MOTORCYCLE — Powered by a permanent magnet electric motor
- 24 NISSAN FRONTIER PICKUP MADE MISSION-READY WITH TWO LEAF BATTERY PACKS
- 25 ABOUT THAT EV TAX CREDIT — Passed by Congress in 2008 to boost the market for EVs
- 26 TESLA, GM, NISSAN, AND OTHERS FORM COALITION TO REFORM ELECTRIC VEHICLE TAX CREDIT — A "coalition" with the aim to "reform and recharge"
- 28 ELECTRIFY AMERICA READIES ITS FIRST CHARGING SITES IN CALIFORNIA — Two distinct types of DC charging locations
- 30 ARE TESLA AND ELECTRIFY AMERICA WORKING TOGETHER? SORT OF — New DC vehicle fast charging facilities side by side at a California shopping mall
- 32 TESLA MODEL 3 PROTECTS OWNER FROM UNSAFE AIR EVEN WITHOUT BIOWEAPON DEFENSE MODE
- 33 UPDATE ON CALTRANS DISTRICT 9 (SIERRA NEVADA EAST SIDE) DC FAST CHARGER PROGRAM
- 34 BMW, NORTHVOLT AND UMICORE JOIN FORCES TO DEVELOP BATTERIES RESPONSIBLY
- 35 CHALMERS RESEARCHERS ONE STEP CLOSER TO USING CARBON FIBER AS A STRUCTURAL BATTERY
- 35 DAIMLER DOUBLES WORKFORCE FOR BATTERY PACK PRODUCTION AHEAD OF MERCEDES-BENZ EQC LAUNCH
- 41 TESLA PUBLISHES THE PARTS CATALOG FOR ITS EVs — Detailing all the components for cars ranging from the original Roadster to the Model 3
- 43 BOLLINGER MOTORS ANNOUNCES ELECTRIC PICKUP TRUCK B2 — No-nonsense back-to-basics all-electric sport utility truck

Columns

- 3 PRESIDENT'S COLUMN
- 36 & 37 EVENTS & CONFERENCES
- 38 & 39 NOTABLE VIDEOS
- 40 EAA MEMBERSHIP FORM
- 42 & 43 CHAPTER LISTINGS



© *Current Events* is a members only e-magazine. No reposting of any issue is allowed on any website. Copies marked "For Display Only" may be showcased to the public. However, *Current Events* may not be distributed to non-members without the written consent of an EAA Board of Directors member. Unauthorized use of copyrighted material will be prosecuted to the fullest extent permitted by law.



Follow us on Facebook
<https://www.facebook.com/ElectricAutoAssociation>
 On Twitter: @EAANational <https://twitter.com/EAANational>



©2018 *Current Events* is a publication of the Electric Auto Association. All rights reserved. While *Current Events* and the Electric Auto Association strive for clarity and accuracy, we assume no responsibility for usage of this information. Permission to copy for other than commercial use is given, provided that full credit is given to originator of material copied. This permission does not extend to reprinted articles. In accordance with Title 17 U.S.C. Section 107, this material is distributed without profit to those who have expressed a prior interest in receiving the included information for research and educational purposes.

Officers:

President: Raejean Fellows
Vice-President: Marc Geller
Secretary: Guy Hall
Treasurer: Kelly Berry

Directors:

CE Publication: Ron Freund
 Nathalie Belanger, Jack Brown,
 Marina Cerin-Stith,
 Simon Freedman, John Higham,
 Carl Vogel
Board Participant, Chapter Liaison:
 Charles Gerena

Membership:

Will Beckett



Current Events Staff:

Editor: Ron Freund
Associate Editor: Guy Hall
Managing Editor: Dorothy Foglia

Article Submissions:

The deadline for articles is the first of every month for consideration in the next issue of CE. Articles received after this date will be retained for future issues of CE. Send submissions to: CurrentEvents@electricauto.org.

Advertisements:

A full advertiser's information package and Rate Sheet can be sent by E-mail. Please contact CE Staff for details.

National EAA:

Web Site: electricauto.org
Mailing: 3401 Adams Avenue, Suite A160
 San Diego, CA 92116 USA

Membership/Address Changes:

E-mail: membership@electricauto.org
Mailing: EAA Membership
 323 Los Altos Drive
 Aptos, CA 95003-5248 USA

If you have comments, please send them to ceeditor@electricauto.org.

Current Events Back Issues

The EAA has put most of its issues from 2001 to 2018 on its website.

Please visit

<http://electricauto.org/> and from the home page, click on "Documents" in the top navigation bar.

The resulting page has a listing of years (in a folder), which, when selected, will list the issues for each month. In that folder you will be able to download the PDF that contains the issue you choose.

Consumer Engagement . . . the Heart of Electric Auto.

*Chapter Connections across the U.S. and
Canada to increase in 2019*

*EV Educate offers future opportunities for Members
to be paid for outreach.*

EAA chapters do such great work engaging the public. We hear all the time of consumers who bought EVs because of the outreach by our chapters. Our EV Owner/Educators do such a great job in educating the consumer of the benefits of driving with cleaner fueled vehicles.

Yes, adoption is growing. This is very encouraging. However, the facts remain. The public is still largely uninformed about what it means to drive an electric car.

Several months ago, EAA conducted a Chapter Leadership survey, lead by **Director, Jack Brown**. The survey results concluded that many Chapter leaders want to connect with other chapter leaders. Chapters want to learn, share and problem solve together. And they would like to do this in their own regions.

The Board has formed a new **Education Committee** to assist EAA chapters grow and excel, which will result in increased consumer engagement.

The newly formed Education committee, co-lead by Director Guy Hall and Chapter Liaison, **Charles Gerena**, will:
“Empower, Educate and Equip Members/Chapters for Consumer Engagement.”

Primary objective: To increase the quality and quantity of chapter outreach education events.

How will this work?

Empower: EV Lead. We will hold Chapter Dialogues on webinars/go to meeting/conference calls, connecting regional leadership in order to share best practices of chapters.

Charles Gerena, Lead. ChapterVoices@ElectricAuto.org.

Educate: A new program “EV Educate” will offer an EAA certification program for EV Owner/Educators, offering opportunities to learn the most effective ways to engage the consumer. Certified EV Owner/Educators will be eligible for



Raejean Fellows

opportunities to work at paid Events for as much as \$150/day.
Dennis Griffin, Lead. dhgriffin@gmail.com

Equip: Provide collateral materials, for example, EV 101 Charging, Electric Vehicle Guide, “Ask me about my EV” pins and more.

How you can help.

EV Lead will begin with setting up Regional Chapter Captains. We will be looking for Regional Chapter Captains to help plan and lead the *Chapter Dialogues*. Experience using web-based tools helpful, but not necessary.

EV Educate is looking to develop a certification program, unique to Electric Auto. This program will eventually have its own website. This idea of certifying our EV Educators will offer many future possibilities for funding and expansion, and even pay for our members. If you have experience in instructional design, please contact: Dennis Griffin

We are proud of our spirit of volunteerism at Electric Auto. We are looking for some “hand raisers” to help get our programs going. There is great strength in numbers and in our unity. Contact Charles or Dennis to join in. Be part of these important initiatives to use our “collective brain” to accelerate the adoption of electric vehicles!



Nominations Open!

Upcoming Election for Three EAA Board of Director positions

We extend an invitation to all interested EAA members and especially to women, to people of color, to all ages, consider becoming a candidate for a Director position on the EAA Board. In this time of huge growth for EVs and for our association, we need your voices and talents now more than ever.

The election will be held at the official Electric Auto Association **Annual Meeting, Saturday, January 26th, 2019, 10 am – Noon**. Lunch to follow (optional). San Francisco Bay Area location to be announced. EAA members will receive a Notice of Annual Meeting and a Proxy/ballot by mail. While we encourage you to attend the annual meeting, you need not be present at the meeting to vote. You can mail in your proxy/ballot. Candidate statements will be posted in the Members Only area (far right menu pull down) on www.electrictauto.org for members to review the candidates prior to voting.

Candidate statements must be submitted no later than **November 30th, 2018** when nominations close. You can nominate yourself, or someone else. Sample candidate statements are available. To submit nominations, for questions and additional information on Director commitments, please contact, Simon Freedman, Director at: SimonF@roadrunner.com.

We welcome your participation in our democratic electoral process. For those who step up to EAA leadership, the rewards you will receive, knowing what a difference you are making in the EV world, are electric!

If you live in the Bay Area or within driving distance, the election and the meeting/lunch will be worth the trip!

Save the Date!

EAA Annual Meeting and Elections: January 26th, 2019

Space limited. Registration recommended.
www.electrictauto.org/calendar

Deadline for candidate statements: November 30, 2018.



Do You Shop at Amazon?

Your purchases can benefit the Electric Auto Association!

Amazon will donate 0.5% of the price of your eligible purchases if you start each shopping session at the URL <http://smile.amazon.com> and designate Electric Auto Association as your preferred charity. Amazon Smile will make the donation as long as you CHECKOUT from the Smile.amazon.com domain.

If you like using Amazon's app and put stuff into the cart, it won't work with smile. The solution: after adding items to your cart switch over to Smile.amazon.com for checkout.

Visit Your AmazonSmile Impact

<https://smile.amazon.com/>

Welcome to
amazon smile

You shop. **Amazon gives.**

- Amazon donates 0.5% of the price of your eligible AmazonSmile purchases to the charitable organization of your choice.
- AmazonSmile is the same Amazon you know. Same products, same prices, same service.
- Support your charitable organization by starting your shopping at smile.amazon.com

Questions? [Learn more about AmazonSmile](#)
 Not interested? [Shop Amazon.com](#)
 Represent a charitable organization? [Visit org.amazon.com](#)

Sign In

Your email address or mobile phone number:

Your Amazon password:

[Forgot your password?](#)

[Sign in using our secure server](#)

[New to Amazon? Create an account](#)

Thank you to our Supporting Members

High Voltage - \$500 France, Jason; Green, James; Hinton, Tiffany; Thesen, Sven; Dowling, Tom

Supercharged - Plus \$240

Brown, Alexander
 Casner, Karen
 Cronic, Scott
 Dowling, Tom
 Freund, Ron
 Geller, Marc
 Greenberg, Steve
 Lervold, Joe

Supercharged Up - \$120

Arrison, Alan	Mathisrud, August
Braun, Stephen	McVeigh Wagner, Cindi
Bussler, Michael	Moret, Bernard
Callaway, Anton	Moyers, Jordan
Clayton, Don	Nisewanger, Jeff
Comstock, Keith	Pease, Norman
Cuzzort, Kyle	Rogers, Kim
Donnaway, Jay	Sanchez, Maurilio
Finn, Jeff	Schiller, Mark
Graunke, Gary	Shipp, Richard
Hayden, Christopher	Thorp, James
Higham, John	Thwaite, Michael
Jakobi, Lawrence	Walton, Matt
Kominowski, Rick	Williamson, Stuart
Matarese, Margaret (Peggy)	

Charged Up - \$60

Bagdasarian, Areg	Knight, Sam
Bakke, Kent	Kutz, Ray
Ballard, Lon	Heggie, Jen
Belanger, Nathalie	Leury, Raymond
Brentlinger, Douglas	MacDonald, Douglas
Bresswan, Tom	McCann, Sarah
Chatty, Omar	McCaston, Robert
Conley, Steve	Meyer, Marla
Cornelius, Peter	Miller, Gary
Crow, David	Mitchell, Duff
Cummings, Mike	Oring, Jeff
Distante, Stephen	Overstreet, John
Duncan, Monica	Sasnett, Mike
Flax, Todd	Shahidi, Ramin
Gilbert, Steven	Stack, Jim
Gilles, Patrick	Steiner, John
Haupt, Phil	Swackhammer, Chuck
Heaney, Michael	Terpak, Jared
Henke, Phillip	Voss, Joseph
Hoech, George	Wypysczak, Steven
Hughes, Mark	Zuteck, Michael
Jungreis, Jason	

Your generous donations are vital to supporting our activities.

Nathalie Belanger



Nathalie Belanger is a passionate and authentic leader with over 10 years of experience as a senior executive in large global organizations. She has worked in the fields of retail, e-commerce, CRM, loyalty marketing and technology for almost 30 years.

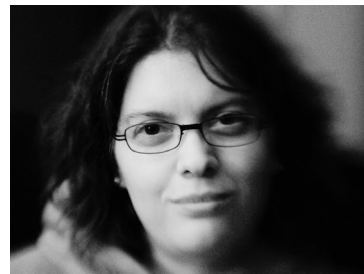
She recently left the corporate world to find some balance in her life. In her current role as a freelance consultant with Ascendis Commerce, she helps companies with their eCommerce, Digital Marketing, and CRM/Loyalty strategies. This has afforded her time to follow other pursuits such as mentoring start-ups, volunteering, exercising, travelling, and generally enjoying life to its fullest.

Nathalie has a passion for technology and spent half her career working in companies that offered CRM, POS and omnichannel solutions for retailers. Her priority has always been on delivering business benefits when implementing new systems. In the early days of CRM, she helped retailers such as Chanel, Footaction, Armani, and Chico's leverage their customer databases to deliver higher customer engagement and lifetime value.

Nathalie spent three years as Vice President, e-Commerce at Reitmans where she was responsible for the e-commerce sites of the six brands as well as digital strategy and customer insights. During her time at Reitmans she made significant impact in the company's digital footprint and developed a roadmap for omnichannel and customer-centricity. Under her leadership, e-commerce sales grew 500% in three years.

Kelly Berry

Kelly has 15 years of accounting and financial analysis experience across multiple industries, currently working as a Sr. Financial Analyst for a bank located in the Upper Midwest.



Although Kelly's electric vehicle ownership is relatively recent, she has been fascinated by EV technology and the related positive environmental impacts for several years. She is excited about contributing to the effective financial oversight of EAA as Director and Treasurer. She lives outside of Minneapolis with her husband and two dogs, and is also passionate about dog rescue, volunteering as a rescue transporter.

Prior to Reitmans, Nathalie was Vice-President Rewards at Aeroplan (AIMIA) where she built the non-air rewards portfolio from \$2M to \$100M in five years by launching innovative new products. At Aeroplan (AIMIA), Nathalie also held the role of Vice-President, Travel Partnerships where she was responsible for achieving annual revenue targets of \$350M.

While Nathalie is passionate about technology and loves keeping up with the latest trends and gadgets, she has a pragmatic view on evaluating how it will be used by companies and adopted by consumers. When she isn't working, Nathalie likes to spend time with friends and family, savoring a delicious home cooked meal and wine inspired from her international travels.

Nathalie first fell in love with electric vehicles when she sat in a Tesla Roadster in 2010. She made a reservation for a Tesla Model 3 on the first week they were available but couldn't wait any longer and bought a Model S in late 2017. Her husband, 16-year-old son and she now share the Model S and the Model 3.

Nathalie hopes to contribute to the Electric Auto Association's membership efforts as well as marketing, the EAA web site and social media.

EV Educational Resources

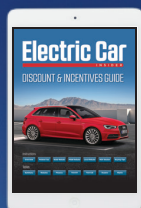
for Individuals, Groups and Organizations

Electric Car
INSIDER



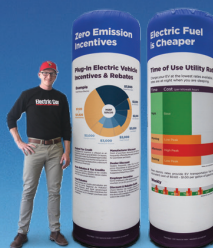
EV Buyers Guide

Compare electric cars with comprehensive full page profiles



Discount Pricing Guide App

Save thousands of dollars on EV purchases and leases



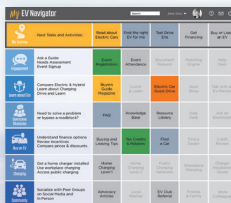
Educational Exhibits

Large scale interactive exhibits for indoor and outdoor events



Electric Car Guest Drive

Test drive the latest EVs and learn from EV owners



EV Navigator

Activity framework to guide prospective EV drivers on the path to EV ownership and advocacy

ECI creates educational resources to promote EV adoption from awareness to advocacy. Email or call us for a complete catalog of products and current pricing.

sales@electric-car-insider.com

619-337-4589

Finalist for *Green Car Reports* Best Car to Buy 2019: Hyundai Kona Electric



By Bengt Halvorson

In our quest to find *Green Car Reports'* Best Car To Buy, the 2019 Hyundai Kona Electric is shaping up to be the “no drama” candidate.

By now, we’ve had four distinct experiences with this small, fully electric crossover – or tall hatchback, depending on how you see it. That’s included plodding along on congestion-choked Los Angeles boulevards; zigzagging along tight canyon roads just outside LA; running over potholed, battered suburban streets and highways around Detroit; and then, specifically for our Best Car To Buy roundup, at an undisclosed location in the American

Southeast, taking additional test drives on curvy back roads and a variety of road surfaces.

Through all these use cases, we’ve found the Kona Electric to fit right in – even, surprisingly, with the canyon roads, where its lower center of mass added confidence despite low-rolling-resistance tires that didn’t give us a lot to work with. The 201-horsepower (150-kW) electric motor system makes the Kona Electric feel strong, even tire-scorching at times. Like the Chevrolet Bolt EV, motor torque is delivered only through the front wheels.

Around town is where the Kona

Electric makes the most sense. With a near-perfect seating point for most drivers, it’s easy to get in and out, and you have a good view outward. Seats are generously padded, there’s enough headroom in back, and there’s no versatility compromised for the sake of a big battery pack. The rear seat backs fold flat (when compressed) to make a flat load floor. Parking is a cinch, thanks to the Kona’s subcompact footprint (it’s just 164.6 inches long and 70.9 inches wide).

Yet the Kona Electric has plenty of something that really matters among electric cars: driving range and reasonably quick charging rates. Its

continued next page

liquid-cooled 64-kWh battery, packed with LG Chem prismatic cells, seemed to overdeliver on its 258-mile EPA range estimate as far as we could tell, and in all those driving conditions we never saw an instance of driving range unexpectedly dropping.

The pack charges up in just over 9.5 hours on Level 2, using its 7.2-kW on-board charger, according to Hyundai. Thanks to the loan of an eMotorWerks JuiceBox Pro 40, we were able to bring this UL-listed device to our testing location, plug it into a semi-outdoor NEMA 14-50 socket, and charge the Kona Electric up from just under 50 percent to 100 percent in less than five hours.



And if you happen to find a 100-kW or higher CCS Combo DC fast charger, it can recover up to 206 miles in just 54 minutes.

We continue to be impressed with the Kona Electric's highly customizable brake regeneration functions, which

allow you to customize each of three (Normal, Eco, Sport) modes with their own default levels of brake regen, ranging from 0 (coasting) to 3 (aggressive).

Pulling the left paddle to engage relatively mild one-pedal driving felt

awkward in our first drive but we've found it intuitive in follow-up drives, so this is something that you'd find second-nature after a while, coasting gradually to a stop without touching the brake pedal in some cases.

continued on page 10

2019 Kona Electric

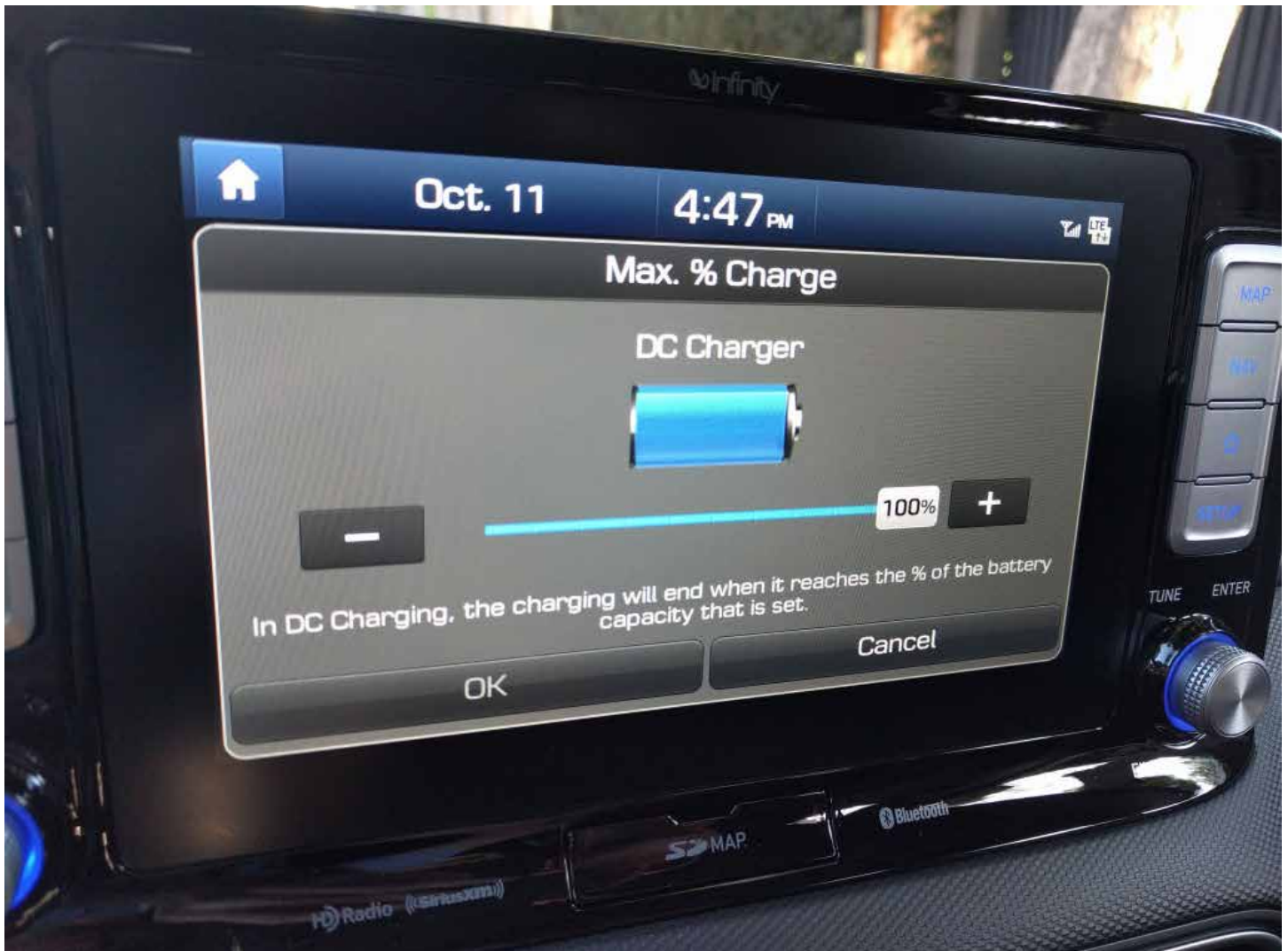
continued from page 9



The Kona Electric comes with an infotainment system that's easy to navigate and responsive and yet doesn't take up a vast swath of the space around the driver. Hyundai has also teased an entire suite of remote-and-connected features like charge scheduling, climate preconditioning, remote charging management, and compatibility with Google Home, Android Wear devices, and Apple Watch apps. You can set minimum and maximum charging levels with simple sliders—something that's not possible with many rival models.

We haven't found any gaps in our initial impressions of an exceptionally well-hushed cabin, damping out wind and road noise, and most of our editorial staff has grown to prefer the more understated look of the Kona Electric to that of the standard Kona. As we said in our first drive, some versions

continued next page



get a little too liberal with somewhat illegible matte-metallic switchgear facing too soon to be 2005-retro.

If this all sounds abundantly positive, it is. But there are two big questions that remain unanswered. One is pricing. Hyundai hasn't released details yet, but it says that it wants Kona Electric to start below \$30,000 when factoring in the federal EV tax credit.

The second is availability. The Kona starts reaching California dealerships before the end of the year, with East

Coast dealerships and other CARB-observant states getting them in early February.

Hyundai says you'll be able to walk into any dealership and order one, but that leads to one of the key questions: Is the Kona Electric just another compliance car? Or will it truly sell as many as it can? That remains to be seen.

Photos: Kona



https://www.greencarreports.com/news/1119742_finalist-for-green-car-reports-best-car-to-buy-2019-hyundai-kona-electric

2019 Hyundai Kona Electric: First Drive of Affordable 258-Mile Crossover



By Bengt Halvorson

Our first test-drive time with the Hyundai Kona Electric included plenty of what's very familiar to Los Angelenos: plodding along to the next stoplight on wide boulevards, waiting another few minutes, and repeating—with occasional squirts into traffic gaps and quick merges into the carpool lane.

It's a use case that many of the Kona Electrics Hyundai sells in the U.S. are likely to encounter. The company sees about 80 percent of the current U.S. market for EVs such as the Kona Electric in California, and company officials described a pecking order to it: California first (in January 2019), then the rest of CARB ZEV states, and then the rest of the nation. But in this year that Tesla is leading sales of all-electric models to new highs, it's a travesty for Hyundai to limit it to what sounds, at the start, like a compliance machine—especially for a vehicle that, based on our preliminary impressions, is this good.



As you scan downward in this first drive report, there are a couple things we really can't comment about yet: pricing, which won't be detailed for a little while, and the Kona Electric's 258-mile driving range, which is the most currently

continued next page

EPA-rated for any non-Tesla model. Our drive route included a lot of elevation changes, and we finished our drive of the Kona Electric at a lower elevation than where we started. It wasn't surprising that the range estimator adjusted upward.

The Kona Electric instantly strikes us as a more “normal” vehicle than its obvious cross-shop rival, the Chevrolet Bolt EV. Both are price-conscious electric crossover-hatches with mammoth “skateboard” battery packs stocked with LG Chem cells (pouch for the Bolt EV, prismatic for the Kona Electric). The Hyundai is slightly lower and wider than the Bolt EV, but it rides on an identical 102.4-inch wheelbase and 164.0-inch overall length.

Cabin priorities are starkly different between these two, though. For instance, even though the Bolt EV has about three inches more rear legroom by the official numbers, the Kona Electric feels more spacious in back because its sides don't taper as aggressively upward—revealed by the Kona's nearly two-inch advantage in rear shoulder room. Lift the hatch and you get the same cargo capacity as in gasoline versions, and the 60/40-split rear seatbacks flip forward to a flat floor

It's easy to get in and get comfortable in the Kona Electric. Seats aren't as high as most SUVs and crossovers, and there's plenty of headroom. The front ones are more generously padded than in the Bolt EV, and the lower seat cushions are longer, for more thigh support—a big difference for this tall driver.

Gas gone electric—but you might not know

While there's no gasoline Bolt EV, there is a gasoline Kona, and it's one of the finest (and newest) specimens of the compact crossover class—neither conceived to look too outdoorsy nor aiming too far afield in design. To take it electric, Hyundai gave it a smoothing-over that makes the whole design a whole lot less busy than the gas model, but carried the rest of the goodness forward. The sharp squint of the headlamps are the most overt aspect of the design; otherwise the Kona feels a bit like a stylish hatchback car that's gone sans serif and sans italics. Cargo space is abundant, rear seatbacks fold flat, and there are none of the sore compromises that can call out a compliance car.

Hyundai has added what it calls a “bridge-type center console with high-tech image.” Translation: With shifting between Park, Reverse, Neutral, and Drive performed by four big buttons replacing the traditional shift lever (with the

parking-brake toggle just behind), there's a lot more space freed up for a large storage area below.

A drive mode button, important to note, is also atop the bridge. There are three primary charge modes: Eco, Normal, and Sport, each with a different calibration for how the accelerator and steering boost respond. Hold down the button for a few seconds and you'll get to a fourth, Eco+, which essentially just cuts out the climate control.



Out on the open road (yes, we did get some of that, too), the Kona Electric feels very perky, with its permanent-magnet motor delivering 201 horsepower and 291 lb-ft of torque. Even if the calibration doesn't make it feel quite as uproariously enthusiastic and tire-burning as the Bolt EV off the line Hyundai says it has the same 7.6-second acceleration to 60 mph. The Kona Electric can reach a top speed of 104 mph versus the Bolt EV's 90.

As we zigzagged on canyon two-laners, the Kona Electric really underscored the car side of the equation. It feels sporty and more balanced—likely the result of a better weight distribution and lower center of mass, even though it likely can't muster as many Gs in corners as those other versions on its low-rolling-resistance tires. The Kona Electric gets an upgrade to a trailing-arm independent suspension, replacing the torsion-beam setup in the gasoline Kona, plus a front subframe bushing and hollow stabilizer bar, so that may help with the impression.

The best brake-regen functionality yet?

There are three levels of regenerative braking in the Kona Electric—0, 1, 2, and 3, with 3 being the most aggressive and 0 being freewheeling/coast mode. The car defaults to 1 for

continued on page 14

2019 Kona Electric

continued from page 13

Normal and Sport modes and 2 for Eco, and you can click up the regen with the left paddle or down with the right paddle. But here's where it all gets interesting: It doesn't have to be that way. Hyundai has smartly decided to make those default levels of regen for each drive mode customizable via menus on the instrument cluster. So if you set the default to 3, you can get a strong almost-one-pedal level of regen every time you get in.

Doing a longer pull on the left paddle serves two purposes. Do it as you're coasting down and it enables the system's maximum brake regen of 0.25g (a slight step more than '3'). Or do it as you're gradually slowing to a stop and it disables creep, allowing you to gently (the operative word) reach a stop without pressing the brake pedal, until you start back up. It's almost one-pedal driving.

A smart regeneration mode uses the radar sensors from the adaptive cruise system to automatically adjust your regen mode up or down. We did try this system, which engages via vehicle-configuration menus on the instrument cluster, for a short distance and couldn't fully understand what it was doing in traffic and why. We'll update you in the future, over a longer drive on familiar roads.

One other impression held every step of the way: This is a very quiet vehicle inside. With acoustic glass for the windshield and front side windows to help keep wind whoosh out, a suite of underbody covers and deflectors that double in keeping road noise away, and any motor whine well-muted, the only thing that finds its way into the cabin at city speeds is the intergalactic whir of Hyundai's low-speed pedestrian warning.

Hyundai has, through all these wind-cheating measures (the active front fascia



included), cut the coefficient of drag to a low 0.29. That may play a part in the Kona Electric's MPGe ratings of 120 combined (132 city, 108 highway)—versus 112 combined (125 city, 100 highway) for the Nissan Leaf.

Charging: light and fast, with thoughtful controls

The big pack is liquid-cooled and uses LG Chem prismatic cells; the entire battery system weighs less than 1,000 pounds, and by weight the

pack's energy density is 141.3 wh/kg—better than that of the Bolt EV, which uses LG Chem pouch cells. In terms of total curb weight, the Kona Electric weighs only slightly more than a top-trim gasoline model (about 3,400 pounds).

DC fast charging is standard on all versions of the Kona Electric (it points out, rightly so, that's not the case for the Chevrolet Bolt EV and

continued next page

Nissan Leaf). It lists nine hours and 35 minutes as the charge time at Level 2, using the AC onboard charger rated at 7.2 kW. And for cold weather, a battery warming feature helps speed up slower charging. A Hyundai official did not care to cite an official time for Level 1 (120V) AC charging, suggesting (as the numbers do) that it would take most of a weekend.

If you can find any of the latest 100-kW or 150-kW DC fast charging stations, the Kona Electric is (somewhat) ready to take advantage of the added power. With either, the big 64-kWh pack can regain up to 80 percent in just 54 minutes. Hyundai now specifies that translates to a power of 70 kW—or in Ohm's Law napkin math, 71.2 kW, as the system draws a maximum of 200 amps at its 356 volts.

The Kona Electric comes with straightforward features for charge scheduling and charging limits—like being able to set the maximum percentage for AC or DC fast charging with a simple slider on the touch screen. All models come with three years of Blue Link telematics services that link with Google Home and allow app-based features like remote start, remote lock/unlock, climate preconditioning, destination voice search, a car finder, and remote management of charging. Some of these features can be managed with Android Wear devices and Apple Watch apps.

Between SEL, Limited, and Ultimate, you get the same battery size, performance, and charging speed. The difference is mainly whether you find certain safety or convenience features critical. The SEL comes with heated front seats, Android Auto and Apple CarPlay connectivity, and a suite of safety systems (forward collision



warning, blind-spot warning, driver attention warning). Limited models add a moonroof, power driver's seat, and Qi wireless charging, among other extras, and the Ultimate is the way to go for the top 8-inch infotainment and Infinity audio, plus a flip-up head-up display, rain-sensing wipers, ventilated front seats, and a heated steering wheel.

The Ultimate also includes adaptive cruise control, and those sensors are put to use with forward collision avoidance (with pedestrian detection) and the smart regenerative-braking mode.

A few shorts in the long game

One surprise is that the Kona Electric won't include a heat pump, which can in some climates improve driving range by up to 20 percent (so say suppliers) by reducing the amount of resistive heating needed.

One turnoff was the legibility of the instrument-panel theme, which subs in thin gray lettering on matte-metallic button faces and proved challenging at some angles on a bright, sunny day. Perhaps it's better at night, but

we wished they'd just kept with the gasoline models' white lettering on black buttons.

There's really little else to quibble about here. Perhaps the most grievous misstep is its limited availability. Hyundai officials confessed that part of the reason behind that is how the U.S. is being allocated fewer Kona Electrics than it knows it can sell. It's working on that.

At first look, what we see is quite the sweet spot to win over new electric-vehicle drivers. If shoppers still unsure about EVs actually see the Kona Electric at dealership lots, the performance, driving range, and thoughtful features—with the affordability Hyundai has suggested—may altogether be the convincing argument they've been waiting for.

IB Automotive accepted lodging plus some meals and travel expenses in order to bring you this first-person drive report.

Photos: Hyundai Kona



https://www.greencarreports.com/news/1119348_2019-hyundai-kona-electric-first-drive-of-affordable-258-mile-crossover

Check Out Tesla's Nifty Semi Tire Inflation Patent

We may see this in action on the upcoming Tesla Semi, Model Y, and pickup truck.



By Simon Alvarez

During Tesla's third-quarter earnings call, Elon Musk noted that the company continues to make headway on its future vehicles. Musk noted that he had already approved the production of the Model Y prototype, while pointing out that the company is making progress on the next-generation Roadster and the Tesla Semi. Musk reiterated his enthusiasm about the Tesla pickup truck as well, which he admits is a vehicle he is most excited about.

Some of the improvements to the Tesla Semi appear to have been teased in one of the company's recently-published patent applications. The patent, which was published on October 18, 2018, and titled "Automatic Tire Inflation System with Thru-Hub Air Feed," outlined a system enabling Tesla's vehicles to inflate or deflate their tires as necessary. While several vehicles today already have Automatic Tire Inflation Systems, Tesla's patent application notes that conventional ATIS have much room for improvement.

"These prior solutions had a number of shortcomings. With some prior art techniques, air was fed through hollow drive axles to a fitting located on the end thereof. The fitting was then coupled to the air inlets of the tires. To couple the air into the hollow drive axles, a rotatingly attached fitting coupled air from an air storage to the inside of the hollow axles. This fitting was subject to leakage of contaminants. These contaminants interfered with the operation of the ATIS and eventually caused the ATIS to fail."

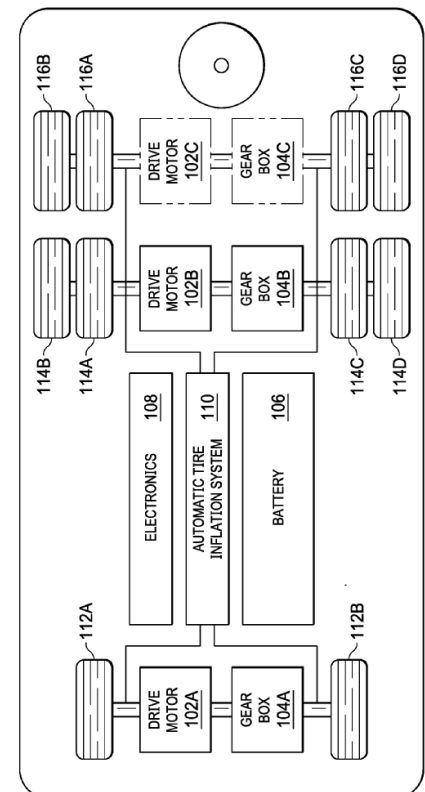
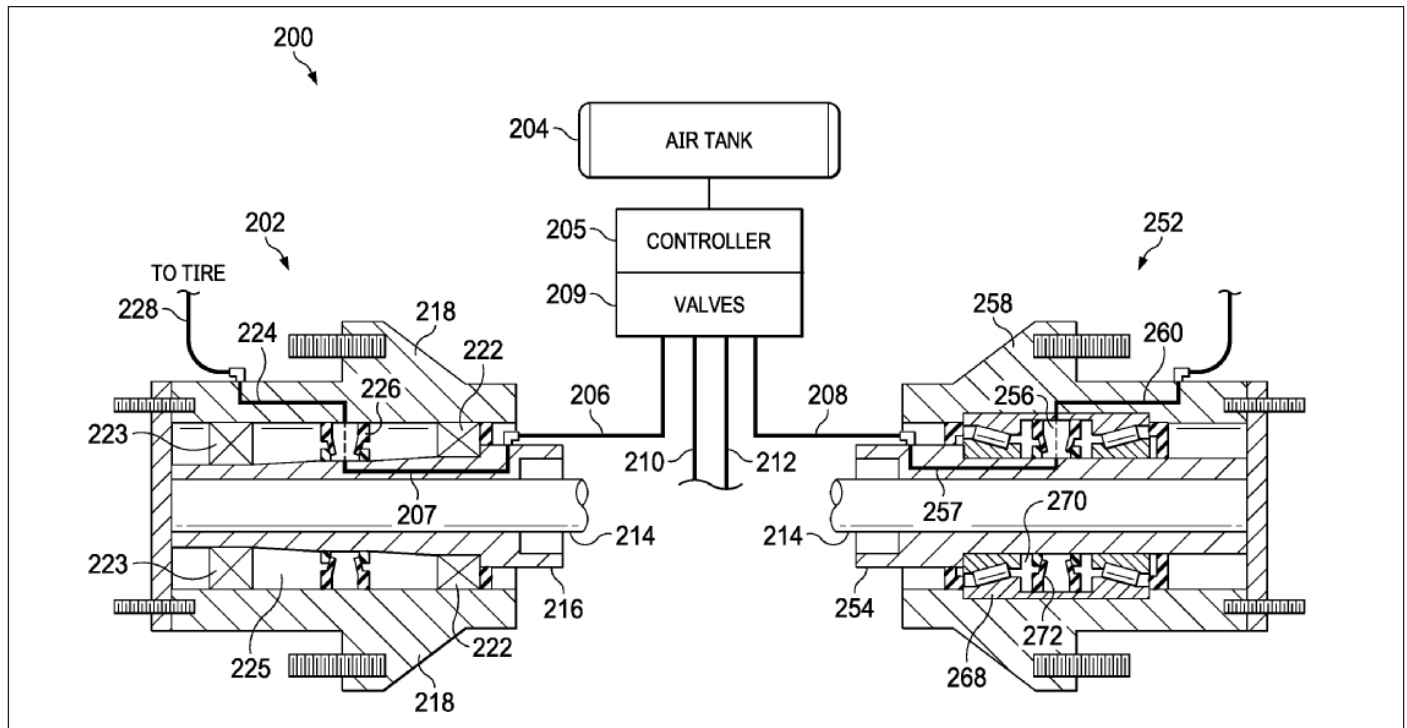


FIG. 1

continued next page



Bottom of page 16 and Above: Diagrams of Tesla's Automatic Tire Inflation System. [Credit: US Patent Office]
[Photo previous page: Teslarati]

Tesla's ATIS patent involves a system that features valves, a rotary air seal, and bearings, to avoid contamination. With such a system in place, Tesla notes that the wheels of its vehicles would likely last longer, and tires would require even less maintenance.

"In order to overcome the shortcomings described above among other shortcomings, an Automatic Tire Inflation System (ATIS) for use with a vehicle according to a first described embodiment includes a controller, valves controlled by the controller, the valves having an air supply inlet, and a plurality of air outlets. Further, the ATIS includes, for at least one drive axle having inner bearings and outer bearings, a channel formed in a spindle, first hosing coupling a valve of the valves controlled by the controller to the channel formed in the spindle, a channel formed in a hub, a rotary air seal residing between the inner bearings and the outer bearings and coupling the channel formed in the spindle to the channel formed in the hub, and second hosing coupling the channel formed in the hub to at least one wheel."

"Thus, as compared to the prior ATIS systems, the ATIS of the first embodiment, significantly reduces contamination in the ATIS air stream. Reduction in contamination extends the life of the ATIS, extends spindle life, extends hub life, and extends serviced wheel/tire lives and extends maintenance intervals."

While the diagrams in the patent application suggest that Tesla's upcoming ATIS would be used for the Semi, the applications for the automatic tire inflation system for the company's other, upcoming vehicles are notable. Having the capability to automatically inflate tires depending on the terrain, after all, would allow Tesla to start giving its vehicles some form of off-road capability. Under-inflated tires are key to off-road driving, since they are capable of flexing more, allowing vehicles to "crawl" over rocks and other sharp, irregular terrain. Under-inflated tires also have a wider contact path, allowing vehicles to gain more traction in terrain like deep sand or soft snow.

For now, Tesla's vehicles are optimized for city and interstate driving, and while there are accounts of the Model X being taken off-road (EV YouTuber Bjorn Nyland's extreme driving test sessions come to mind), the company's electric cars are yet to have features that are specifically geared towards off-road driving. With an ATIS system, Tesla's upcoming vehicles such as the Tesla pickup truck, and even the company's SUVs like the Model Y and a future iteration of the Model X, could have the ability to explore areas beyond paved roads. Such capabilities would likely be invaluable, considering that legendary vehicles like the Ford F-150 and the Chevy Blazer established their legacies by proving themselves capable in areas where neither asphalt nor concrete is present.

<https://www.teslarati.com/tesla-semi-auto-tire-inflation-patent-pickup-truck-model-x-model-y-off-road/>

Automakers Send Muddled Signals On California Vehicle GHG Authority

The following report comes from the Inside Cal/EPA newsletter which is available at <http://insideepa.com/newsletters/inside-cal-epa>

Automakers are reiterating their view that preempting California from regulating vehicle greenhouse gases and zero-emission vehicle (ZEV) sales makes poor strategic sense, even though they are sympathizing with federal officials' legal arguments in their proposal that would scrap the state's authority.

Meanwhile, the Golden State and its environmentalist allies are issuing pointed legal critiques of the Trump administration's preemption plan, underscoring their readiness to aggressively challenge the move in the courts. It is not clear how the auto industry's mixed messages on state preemption will fare at U.S. EPA and the National Highway Traffic Safety Administration (NHTSA), particularly as other industry allies of the White House, like the oil sector, are wholeheartedly embracing the preemption proposal.

The issue is critical for the administration's underlying plan to roll back Obama-era vehicle GHG and fuel economy requirements because of the significant leverage that California and its allied states currently have.

These states, representing about a third of the auto market, can continue enforcing the current limits even if the federal agencies scale back their standards. That would force automakers to comply with two separate sets of requirements — a situation they strongly oppose.

However, targeting California's existing authority will lead to years of "costly and protracted litigation," according to Oct. 26 comments from the Association of Global Automakers. While industry agrees "with this important policy goal to coordinate national standards, we do not believe that federal preemption is the best means for achieving it." Relevant documents are available on InsideEPA.com. (Doc. ID: 216381)

The Trump administration's proposal would block state vehicle GHG and ZEV rules in two key ways. First, it would find they are preempted by federal fuel economy law. Second, it would revoke California's existing waiver of federal preemption under the Clean Air Act, a waiver that

allows states to copy the Golden State's rules under section 177 of the air law.

Global Automakers argues that EPA has "no need" to revoke California's waiver because the state currently allows compliance with federal standards to satisfy the state requirements. However, the industry group does note that the state is poised to revoke its "deemed to comply" provision in its rules. If this happens, "EPA could determine whether the amended regulations meet the standard for a waiver," Global Automakers says.

The group also expresses sympathy for NHTSA's claim that it can preempt California's GHG rules under the Energy Policy & Conservation Act (EPCA), which says that states are barred from enforcing any rules "related to" fuel economy.

"NHTSA's position on this question is long-standing and consistent," Global Automakers says, adding that the agency merely declined to assert such preemption under the Obama administration.

It also charges that two federal district court rulings rejecting EPCA preemption adopted "novel theories," and have not been reviewed by appellate courts.

In addition, separate Oct. 26 comments from the Alliance of Auto Manufacturers say that EPA and NHTSA "have grounds for determining that state GHG standards and ZEV regulations are preempted," but they should decline to do so in the interests of reaching a deal on changes to the rules.

If the current "One National Program" of EPA, NHTSA and California rules were to "dissolve," the alliance says the agencies "may decide to follow through with regulatory actions to preempt GHG-related state standards, as proposed."

Multi-Faceted Attack

But the California Air Resources Board (ARB) in its Oct. 26 comments levies a multi-faceted attack on the agencies'

continued next page

preemption plan. The effort is “entirely unsupported by evidence; contravenes congressional intent and the cooperative federalism model established by Congress; and would impermissibly interfere with California’s ability to protect its people and its resources from an existential threat,” the board says.

The state charges that EPA has no authority to revoke an existing air act waiver, in part because the law includes no specific mechanism to do so, and because the law also allows states to adopt California’s rules in certain circumstance once a waiver is issued.

“EPA’s proposal assumes, albeit implicitly, that Congress expressly permitted multiple other states to escape federal preemption by adopting California’s waiver standards while simultaneously leaving the door open for EPA to retroactively pull the rug out from under California and those other states,” ARB argues. “This assumption begs credulity, to say the least.”

Assuming that EPA has inherent authority to rescind a waiver, a key question would be whether California meets the standard in section 209(b)(1)(B) that it “need[s] such state standards to meet compelling and extraordinary conditions.”

The Trump proposal says California’s GHG and ZEV rules fail this test because climate change is a global problem and does not present “extraordinary” threats to the state, like conventional pollution does.

However, ARB counters that EPA has historically looked at the state’s “whole program” of vehicle standards when reviewing waiver requests, and that every waiver decision by the agency — except for the Bush administration’s initial denial of the state’s GHG waiver — has not “interpreted ‘compelling and extraordinary conditions’ as only conditions ‘unique’ to California,” as the current proposal does.

ARB argues that the state’s high percentage of GHGs from the transportation sector, its large population of vehicles and its geographic and climate conditions “are all plainly ‘compelling and extraordinary conditions’ within the meaning of EPA’s historic interpretation.”

The board also takes aim at NHTSA’s EPCA arguments, citing the federal district court cases holding that “EPCA’s

preemption provision does not apply to emissions standards for which California has obtained a valid waiver under the Clean Air Act — like those at issue here.”

It adds that Congress has “repeatedly preserved” the state’s right to regulate vehicle emissions, most recently in the 2007 Energy Independence & Security Act (EISA), which updated EPCA. That plainly contemplated California’s GHG standards, the state argues, adding that the law was passed shortly after the Supreme Court in *Massachusetts v. EPA* determined that EPA’s vehicle GHG rules were not incompatible with NHTSA’s fuel economy authority.

“Those decisions, and the existence of California’s greenhouse gas emission standards, were ‘a part of the contemporaneous legal context in which Congress legislated,’” ARB argues. “Congress chose not to disturb that context, enacting a savings clause in EISA that expressly preserved existing state authority to regulate greenhouse gas emissions.

Section 177 States

In addition to leaving the door open to a future rule that preempts California’s GHG rules, automakers are also expressing concern about the state’s ZEV sales mandate, which has been adopted by nine section 177 states, mostly in the Northeast.

Global Automakers, for instance, argues that California’s ZEV waiver likely is not illegal, but that EPA “needs to assess ZEV feasibility in Section 177 States. EPA has previously taken the position that it is without authority to do so, but we view that as reading Section 209(b) too narrowly.”

The agencies should also adopt changes to the federal GHG standards to “alleviate compliance problems” with the Northeast ZEV rules, Global Automakers says. If EPA determines the “ZEV mandate is simply not feasible in the Northeast states, then the agency should take appropriate action on the waiver.”

Such steps could include offering additional compliance in the GHG rules for ZEVs, creating a process to evaluate the “feasibility” of ZEV rules in other states, or ensuring that the impact of the current mandate “does not grow” beyond the roughly 30 percent of the market covered by the rules.

continued on page 20

Muddled Signals

continued from page 19

Separate comments from the American Fuel & Petrochemical Manufacturers (AFPM) take the argument a step further in broadly supporting the Trump administration's legal arguments for preemption. The oil refining group charges that the air law wholly bars any state from adopting the ZEV standards because section 177 is limited to air pollutants covered by EPA's national ambient air quality standards (NAAQS).

"There is currently no NAAQS for GHGs. Without a need to come into compliance with an existing GHG NAAQS, States are precluded from adopting California's ZEV mandate," the group says.

However, joint Oct. 26 comments from several major environmental groups reject this claim. They argue that section 177 merely requires a state seeking to adopt California's rules to have one area that is in nonattainment or

has a "maintenance plan" for a NAAQS. Most states satisfy this condition, they say.

The environmentalists note that EPA only seeks to block states' adoption of California's GHG rules, but does not seek to block adoption of the ZEV standards. It argues such a step would be illegal "because the ZEV mandate is clearly connected to reducing criteria air pollutants."

Further, they argue that EPA has no authority to limit section 177 adoption of rules to non-GHG standards. "These other states are either preempted, or they are not, according to the statutory language. EPA has no role in this determination, in contrast to its initial gatekeeping role under Section 209(b) with respect to California standards."

They add that section 177's reference to nonattainment areas restricts "which states could adopt California standards, [but] it did not include any limitations on what standards states can adopt." — *Lee Logan*

Industry Eyes CCS, Solar To 'Decarbonize' Hydrogen for Fuel-Cell Vehicles

Hydrogen producers are evaluating carbon capture and sequestration (CCS), as well as solar, wind and biomethane energy to help meet a new 2030 industry goal to "decarbonize" all hydrogen used for powering fuel-cell electric vehicles (FCEVs) and other transportation modes, according to experts.

California policymakers may eventually make that 2030 target a state requirement, some sources add.

"I am aware of quiet discussions taking place here in California based on that announcement," says one industry source, referring to a Sept. 14 announcement by the international Hydrogen Council during California's climate change summit to ensure that 100 percent of hydrogen used for transportation is decarbonized by 2030.

State law currently requires hydrogen fuel suppliers for FCEVs to ensure that at least 33 percent of the gas they sell is "renewable." However, roughly half of the compliance for that law comes from credits that suppliers purchase from

energy companies, officials say, meaning that most of the actual hydrogen fuel being sold is not renewable.

The push for renewable hydrogen is also being spurred by new regulatory amendments to California's low-carbon fuel standard that will soon require a 40 percent renewable content for companies to qualify for newly established station capacity credits (Inside Cal/EPA, Oct. 5).

To ramp up efforts to decarbonize hydrogen, companies are assessing multiple technologies, sources say.

For example, because most of the hydrogen being produced today is made from natural gas, companies are examining the implementation of CCS to slash the fuel's carbon footprint.

Expanding on this concept, Southern California Gas Co. (SoCalGas) announced earlier this year that it is helping to test an innovative solar-powered hydrogen generation

continued next page

system that uses sunlight to convert natural gas and water into hydrogen and CO₂. The steam methane-reforming project in San Diego is a partnership between SoCalGas, Pacific Northwest National Laboratory and the STARS Corp, according to a May SoCalGas press release.

A larger-scale method of producing carbon-free hydrogen employs electrolysis using solar and wind power. For example, the National Renewable Energy Laboratory (NREL) in Colorado is demonstrating with Xcel Energy a “Wind- to-Hydrogen Project” that links wind turbines and photovoltaic (PV) arrays to electrolyzer stacks, which pass the generated electricity through water to split it into hydrogen and oxygen.

The resulting hydrogen is stored for later use at the site’s hydrogen fueling station or converted back to electricity via a hydrogen internal combustion engine or fuel cell and fed to the utility grid during peak-demand hours, according to NREL.

However, such projects are considered extremely expensive and are difficult to locate for specific hydrogen fueling stations.

Renewable hydrogen can also be produced from biomethane generated at an anaerobic digester at an agricultural or other facility.

Hydrogen industry representatives are pressing California for large subsidies to build such projects and related distribution infrastructure to capitalize on the installation of hundreds of digester units mostly in the state’s Central Valley, the source says. This is occurring as a result of new state laws and regulations to curb emissions of the potent greenhouse gas methane.

Industry officials will also be pushing state lawmakers and the California Public Utilities Commission to advance new specifications to allow hydrogen to be injected into the state’s natural gas pipeline system to greatly enhance storage and distribution of the fuel around the state, the source says.

Significantly increasing hydrogen production in California will be critical to meeting the California Fuel Cell Partnership’s (CAFCP) 2030 targets of putting 1 million FCEVs on the road and having 1,000 hydrogen fueling stations operating in the state.

Currently, there are only 35 operating retail hydrogen stations and just under 5,000 FCEVs on the road — marks that fall far short of the state’s prior goals.

In July, the California Air Resources Board (ARB) released a report showing that the state must significantly ramp up efforts to have any chance to meet certain targets, including having 200 hydrogen stations operating in 2025 and putting 1 million FCEVs on the road by 2030 (Inside Cal/EPA, Aug. 10).

A separate report on the industry released late last year said it would take at least seven more years for the state to reach its target of 100 operating hydrogen stations, which is at least four years later than lawmakers expected in 2013 when they approved \$20 million annually to help achieve the goal.

FCEVs are a critical component of the state’s bid to cut transportation sector GHGs, and to achieve its GHG targets of 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

As part of this strategy, Gov. Jerry Brown (D) previously set a goal of having 1.5 million zero-emission vehicles (ZEVs) on California roads by 2025. In January, he established another goal of 5 million ZEVs on California roads by 2030. But a trend has emerged in which state officials set goals or targets for FCEVs and hydrogen stations and several years later set newer, longer-term goals after failing to meet the previous targets.

Nevertheless, CAFCP officials reported earlier this year that ARB and other state officials are still projecting that FCEVs will eventually outnumber battery-electric vehicles on California roads within two decades.



Harley-Davidson Bets Its Future on the LiveWire Electric Motorcycle



By Kirsten Korosec

It's been a four-year wait since Harley-Davidson first showed off a concept electric motorcycle. Now, the production-ready bike — called the Harley-Davidson LiveWire — is finally here. Well, almost.

The Milwaukee, Wisconsin-based company unveiled the production-ready electric motorcycle Tuesday at the EICMA motorcycle show in Italy. It won't be available, though, until next year.

Harley is placing a big bet on electrification in hopes that it will revive the brand, which has struggled in recent years. LiveWire is supposed to be the first in what will be a portfolio of electric Harley-Davidson motorcycles that will be available by 2022.

To encourage the switch to electric, Harley will install Level 2 public chargers at dealer locations that sell the electric bikes.

Harley didn't release pricing or range and performance information on LiveWire. There were some new (and of course some rehashed) details on the specs of the bike though.



Adjustable Suspension

The bike will be powered by a permanent magnet electric motor that is located low in the motorcycle to lower the center of gravity and improve handling at different speeds and make it easier to control when stopped, the company said. The LiveWire will have two batteries: the main battery, composed of lithium-ion cells surrounded by a finned, cast-aluminum housing, and a small 12-volt lithium-ion battery that powers the lights, controls, horn and instrument display.

continued next page

HARLEY LIVEWIRE



The bike can be charged with a Level 1 charger that plugs into a standard household outlet with a power cord that stores below the motorcycle seat. For faster charging, it can also be charged via Level 2 and Level 3, or DC Fast Charge (DCFC), through a SAE J1772 connector in the U.S., or CCS2 – IEC type 2 charging connector in international markets.

LiveWire will have seven riding modes, three of which are rider-defined. The modes will be tuned with adjustable high-specification Showa suspension. The bike will also have an adjustable color touchscreen display located above the handlebar. The screen gives

riders access to the interface for Bluetooth connectivity, navigation, music and other features.

The bike won't have that trademark gas-powered sound, so Harley has given it a tone that will increase in pitch and volume with speed. The company says the new sound "represents the smooth, electric power of the LiveWire motorcycle."

The bike is fitted with Brembo Monoblock front-brake calipers gripping dual 300 mm-diameter discs. It also has an anti-lock braking system and traction control system, which will come standard.

The company says it will reveal more product information on LiveWire, as well as details about the pre-ordering process, in January 2019.



<https://techcrunch.com/2018/11/07/harley-davidson-bets-its-future-on-the-livewire-electric-motorcycle/?yptr=yahoo>

Nissan Frontier Pickup Made Mission-ready with Two Leaf Battery Packs

Photos from Nissan Frontier Sentinel concept – São Paulo auto show.



By Bengt Halvorson

In a concept vehicle for the São Paulo Motor Show, Nissan has outfitted its local-market Frontier pickup with two Leaf battery packs – creating what it’s calling the Frontier Sentinel.

But it’s not anything close to what you might suspect. The Sentinel isn’t Nissan’s hint of what it could do in applying its Leaf technology to a long-established format – the mid-size body-on-frame pickup – but a diesel vehicle “designed for rescue missions in all types of Brazilian terrain.”

To accomplish that, Nissan has upfitted the cargo bed to



keep the two battery packs snug and safe (and, we would hope, ventilated). Assuming these are second-life 24-kwh packs, they together should provide 30 kwh or more of power – enough to power the average American house, which is hardly a paragon of world efficiency, for a day.

The top of the cargo bed and battery cover also acts as a platform to serve as a launch pad for a drone, and the cargo bed has a set of drawers for tools and supplies. With a strengthened roll bar, Nissan says the truck is sturdy enough for “the most extreme and remote areas.”

https://www.greencarreports.com/news/1119795_nissan-frontier-pickup-made-mission-ready-with-two-leaf-battery-packs#image=100678140

About that EV Tax Credit



The electric vehicle tax credit was passed by Congress in 2008 to boost the market for EVs. It is considered a true benefit because it goes directly to consumers, not car manufacturers or other companies. As a result, this critical federal tax incentive has proven to be a major factor in the purchase decision of car buyers willing to consider an electric vehicle.

Unfortunately, the structure of the tax credit included a cap on the total number of consumers who can use the credit per car manufacturer. That cap will result in a less than level playing field in the EV space. This has created unbalanced market incentives and will soon make it harder for consumers to purchase the cars they want.

The \$7,500 tax credit is a significant purchase factor for car buyers and is essential to the continued development of the EV market. Without a modifica-

**WITHOUT A
REFORMED
TAX CREDIT,
CONSUMERS
MAY BE
DISINCENTIVIZED
TO CONSIDER
PURCHASING
ELECTRIC
VEHICLES**

tion to the policy, consumer demand will suffer and so will the future of EVs in the U.S.

The benefits of a strong and stable EV market are substantial. Beyond creating nearly 300,000 jobs across the U.S., the credit also makes the U.S. more energy independent and reduces air pollution. And EVs are the foundation for even more advanced transportation technologies, such as autonomous vehicles and EVs in shared mobility services, that will be critical to future mobility.

Reforming the credit will create a level playing field for ALL electric vehicle manufacturers, giving consumers the freedom to decide which car they want in a free and fair market. More options lead to more competition, which spurs American innovation and maintains our position as a global leader in automotive technology.

[The press release published by the Coalition appears on page 27.]

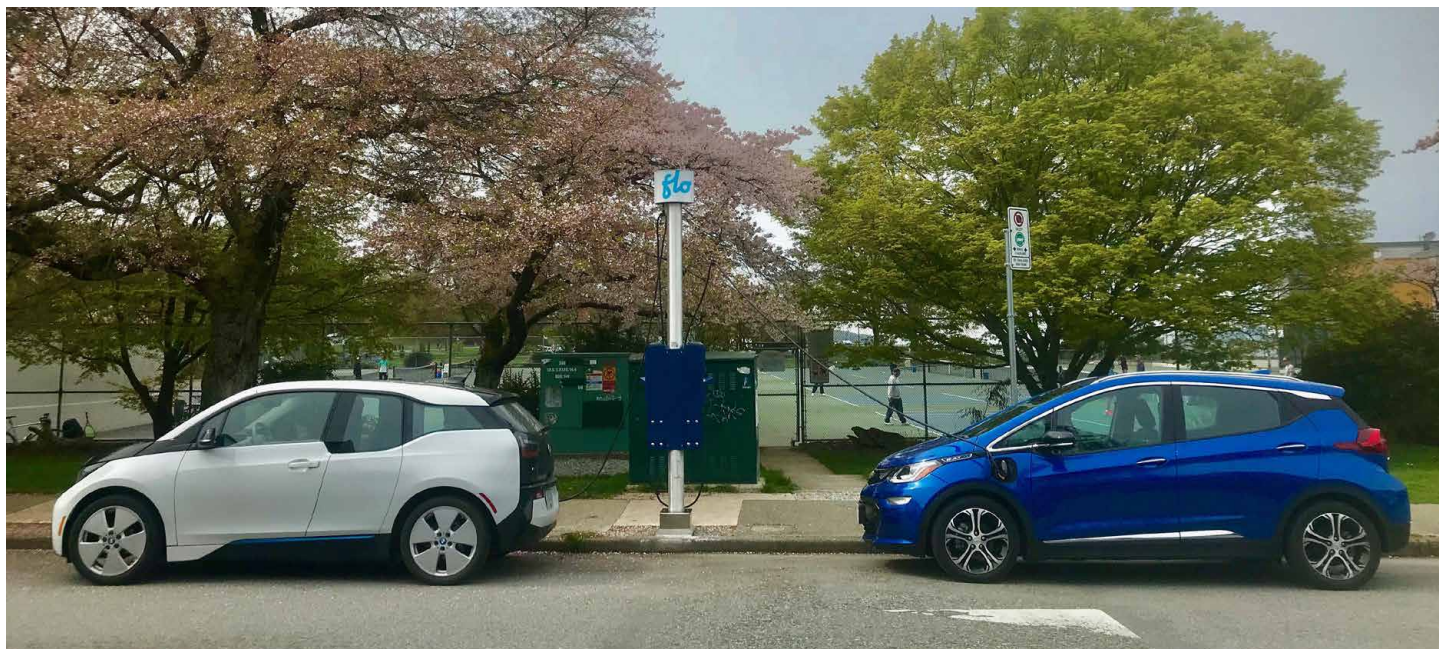
<https://www.evdrivecoalition.com/about-the-ev-tax-credit>

Unbalanced Market Incentives

If the U.S. is going to continue to produce, purchase and drive new electric vehicles at a large scale, policymakers need to reform the current tax credit for electric vehicles. The original tax credit has been a successful incentive so far, but the market is far from fully mature. And its cap on the number of consumers who can use the tax credit per car manufacturer has created unbalanced market incentives and will soon limit options for consumers in the EV market. Without a reformed tax credit, and while there are still limited models available, consumers may be disincentivized to consider EVs at all, and the market may contract – putting American jobs and our position as a global leader in the EV market at risk.

The EV Drive Coalition is made up of supporters of EVs and a reformed EV tax credit. Together we are working to ensure a flourishing, mature, cost-competitive U.S. EV market.

Tesla, GM, Nissan, and Others Form Coalition to Reform Electric Vehicle Tax Credit



By Frederic Lambert

Several automakers, including Tesla, GM, and Nissan, have joined forces with other players in the electric vehicle space to launch a “coalition” with the aim to “reform and recharge” the electric vehicle tax credit. [The EAA has joined this coalition along with others to reinforce our commitment to EV rollout over the past years.]

The situation around the federal tax credit for EVs is weirder than ever right now.

As Tesla hit the 200,000 delivery threshold to initiate the phase-out, there are two different legislative efforts to change the program.

Last month, a Republican senator introduced a new bill to end the \$7,500 federal tax credit for electric cars and tax them even more instead.

But a few days later, another Republican senator proposed a new bill to remove the federal tax credit cap for EVs and expand it to 2022.

Republican Senator Dean Heller, who introduced the pro EV tax credit bill that would see it extended instead of capped, was defeated in the mid-term elections earlier this month.

With those two distinct bills, the Democrats regaining control of the House, and Republicans expanding their majority in the Senate, it’s really unclear what will happen to the EV federal tax credit.

The new coalition is pushing for a clear reform that would see the cap lifted, which would be particularly good for Tesla, who already hit it, and Nissan and GM, who are about to hit the cap.

They have written a press release and launched a new website.

“The original electric vehicle tax credit, which goes directly to consumers not manufacturers, catalyzed the market, increased consumer awareness and grew a nascent industry. To promote continued market growth and stabilization, members of the EV Drive Coalition are advocating for reform to lift the current cap on the number of consumers who can take advantage of the credit through each manufacturer.”

Several other well-known companies are part of the coalition including, ABB, ChargePoint, [Electric Auto Association], Plug-in America, Proterra, and Volta.

The full press release appears on the next page.

continued next page

EV DRIVE COALITION LAUNCHES TO REFORM & RECHARGE ELECTRIC VEHICLE TAX CREDIT Urges Congress to Pass Electric Vehicle Tax Credit Reform

Washington, D.C. (November 13, 2018) – The EV Drive Coalition, a broad coalition with a focused goal to reform the federal electric vehicle (EV) tax credit, today announced its official launch as Congress convenes for its lame duck session. The EV Drive Coalition brings together a diverse group of industry, consumer and environmental stakeholders with a single unifying mission: encourage passage of legislation reforming the federal electric vehicle tax credit to ensure that it works better for more consumers for a longer time frame and spurs increased growth of the U.S. EV market.

The original electric vehicle tax credit, which goes directly to consumers not manufacturers, catalyzed the market, increased consumer awareness and grew a nascent industry. To promote continued market growth and stabilization, members of the EV Drive Coalition are advocating for reform to lift the current cap on the number of consumers who can take advantage of the credit through each manufacturer.

“Arbitrary constraints with the federal credit limit consumer options and make it harder for consumers to purchase the cars they want,” explains Joel Levin, Executive Director of Plug In America. “Lifting the cap would create a more level playing field for all manufacturers, giving consumers the freedom to decide which car they want in a free and fair market. Increased competition spurs more American innovation and technology”

“A federal tax credit to help make electric vehicles more affordable for all consumers is integral to reaching a zero emissions future and establishing the U.S. as the leader in electrification,” said Dan Turton, Vice President, Public Policy at General Motors North America. “We feel that the tax credit

should be modified so all customers continue to receive the full benefit going forward.”

“A reformed tax credit will affect more than those who purchase electric vehicles,” reassured Janet Peace, Senior Vice President at Center for Climate and Energy Solutions. “While a mature EV market will be a boon to the American economy, it will also play a major role in reducing greenhouse gas emissions, a significant contributor to climate change. This would be a win for consumers, for the economy and the for environment.”

“We’ve been able to make tremendous strides in the underlying technology of electric vehicles. The battery power and the range have improved significantly over the last few years. With every new advancement, we get closer to becoming an economically sustainable market. However, we’re not there yet, and keeping the cap will have a negative impact on a sustainable U.S. electric vehicle market,” explained coalition spokesperson Trevor Francis. This is an urgent issue. Choosing not to reform the tax credit will severely hinder America’s ability to compete in a global market. “At that point, it wouldn’t be just an automotive issue. As it stands now, electric vehicles are responsible for nearly 300,000 jobs. This is a jobs issue and an economic issue in addition to a consumer issue,” emphasized Francis.

A reformed electric vehicle tax credit will ensure the domestic manufacturing, infrastructure and market of electric vehicles continues to grow. Electric vehicles are the way forward and the EV Drive Coalition will work to ensure a flourishing, mature and cost-competitive U.S. EV market. To learn more about the coalition, its members, its mission and the proposed legislation, visit <http://www.evdrivecoalition.com/home>.

<https://electrek.co/2018/11/13/tesla-gm-nissan-coalition-electric-vehicle-tax-credit/>



Electrify America Readies its First Charging Sites in California

By Jeff Nisewanger

The first five California locations listed by Electrify America as “coming soon” are in varying stages of construction but the community DC charging ones are nearly complete.

The company is building two distinct types of DC charging locations.

So-called community or metro area DC charging locations primarily serve local residents and workers with between three and six charging spaces. Some locations feature 50 kW charging while others may support 150 kW.

Highway corridor locations are designed for long-distance travelers and have between four and 10 charging spaces which are all capable of supporting up to 150 kW CCS charging. Typically two of those spaces support up to 350 kW.

The first three metro sites in California use new 50 kW charging pedestals made by BTC Power of Santa Ana, CA. BTC is known for making many of the 50 kW chargers used by charging provider EVgo across its US network.

The new BTC Power units follow the general Electrify America design pattern being followed by the other three vendors supplying DC charging equipment to Electrify America. The new design features tall white dispensing pedestals that are easier to find in parking lots.

As with its highway corridor locations, each metro site supports one charging space with a CHAdeMO cable and connector while all charging spaces contain a CCS cable and connector. Each of these metro charging locations also includes a single 240V AC pedestal.

On non-CHAdeMO DC pedestals, both cables are equivalent which provides redundancy in case of cable or connector failures. One cable or the other might also more easily reach the charging inlet on different vehicle designs.

The spending plan during this first 30-month cycle of construction calls for at least 50 highway sites and about 110 community sites among six metro areas in California. A proposal for the next 30-month plan beginning in July of 2019, was recently submitted for approval by the state’s Air Resources Board.

These first five sites were visited and photographed recently.

Elk Grove

This town is 15 miles south of the state’s capitol city of Sacramento.

This location in the Walmart parking lot at the Laguna 99 shopping center is still surrounded by temporary fencing. It seems to be only missing a utility transformer to connect it to the underground medium voltage distribution line.



Montebello

Montebello is a suburb located near the middle of the larger Los Angeles area. The nearby town hills were once dotted with petroleum field pumps operated by Standard Oil.



continued next page

ELECTRIFY AMERICA CHARGING SITES

The equipment here is the same as in Elk Grove but is arranged differently to match the parking lot layout.



This photo appears on the PlugShare page for the Torrance location.

BTC is also making other styles of pedestals and higher-powered chargers for other companies.

Altogether, Electrify America is planning to build around 110 metro DC charging locations in California. Others are being built in the 11 metro areas included in Cycle 1 outside of California.

Novato

This is a highway corridor design along US-101 and is located at the Novato Fair Shopping Center. Novato is in Marin County north of San Francisco.

The nearly completed conduits appear to indicate that this location will have a long row of 10 charging spaces.



Torrance

Again, three 50 kW chargers (one of which has a CHAdeMO cable) and a 240V AC pedestal. This is located at the Country Hills Shopping Center near a supermarket.

continued on page 30

CA Charging Sites

continued from page 29



Dunnigan

This location is in the parking lot shared by a Motel 6 and an America's Best Value Inn. It's just off of I-5 on the edge of this small town only 40 miles northwest of Sacramento and yet it is clearly in the rural Central Valley.

When this photo was taken last week, there was a crew trenching and boring conduit for the high voltage distribution feed running along a nearby street — a lot of work to support four charging spaces (at the moment).



<https://electricrevs.com/2018/10/09/electrify-america-readies-its-first-charging-sites-in-california/>

Are Tesla and Electrify America Working Together? Sort of.



By Jeff Nisewanger

They may not be the best of friends elsewhere but Tesla and VW's Electrify America are cooperatively building new DC vehicle fast charging facilities side by side at a California shopping mall.

The new location, at the San Francisco Premium Outlets, is actually in Livermore some 40 miles away from the City by the Bay along I-580. It is one of 16 Electrify America locations under active development and listed as "coming soon".

Tesla is constructing what appears to be a 20-stall Supercharger location while Electrify America is adding

continued next page

TESLA AND ELECTRIFY AMERICA TEAM UP

an unknown number of chargers that can be used by other brands of electric cars. A large chain-link fence surrounds the entire area.

Both Tesla and Electrify America are known to use Black and Veatch as their general contractor for large regions of the United States including California.



The wood cartons along the right side contain Electrify America charging equipment from ABB.



Plastic wiring conduits emerge at the curb edge indicating where Tesla Supercharger dispensers will be installed.

The target date for completion is unknown but from this stage of the work it seems likely to be operational by early next year.

Another charging provider, EVgo, already has two 50 kW charging areas with pairs of charging spaces in other parts of the mall's expansive wrap-around parking lot.



A cluster of white Tesla charger cabinets is installed to the right of a large gray electrical switchboard.

The Tesla charging area is towards the end of the park lot row 29 further away from the mall shops.



Workers prepare conduits and wiring in preparation for a concrete pour.



<https://electricrevs.com/2018/10/31/are-tesla-and-electrify-america-working-together-sort-of/>

Tesla Model 3 Protects Owner From Unsafe Air Even Without Bioweapon Defense Mode

By Simon Alvarez

Amidst the ongoing threat of the California wildfires, a Tesla Model 3 owner has posted a brief demonstration of the electric sedan's capability to maintain the air quality inside its cabin, despite the vehicle not being equipped with the Model S and X's hospital-grade HEPA filter or a dedicated "Bioweapon Defense Mode."

Elon Musk took to Twitter last week to offer the Model S and Model X as vehicles that can be used to transport people away from the ongoing CA wildfires. The Model S and X are capable of scrubbing the air inside the car, thanks to their large HEPA filters that are fitted with separate acid and alkaline gas neutralization layers. Later social media updates and anecdotes from Model S and X owners driving through the CA area indicate that Bioweapon Defense Mode helped maintain the air quality inside their vehicles.

In a follow-up tweet, Elon Musk noted that the Model 3's air filtration system is not on the same "hospital-grade" level as that of the Model S and X, since the smaller vehicle does not have enough space to accommodate the HEPA filtration system in Tesla's two flagship vehicles. This could be seen in the parts catalog for the vehicles, where the Model X HEPA filter was listed as "FILTER, HEPA, MDL X," while the Model 3's system was simply listed as "HVAC, CABIN FILTER, M3."

If a recent video from a Model 3 owner is any indication, though, the electric sedan, even without a hospital-grade HEPA filter or Bioweapon Defense Mode, is still capable of keeping the



Air quality readings inside a Tesla Model 3 with "recycle air" on and fan speed set to 5. [Credit: sensohax/YouTube]



Air quality readings inside a Tesla Model 3 with the windows down. [Credit: sensohax/YouTube]

A comparison of air quality readings inside the Model 3's cabin. [Credit: sensohax/YouTube]

air inside its cabin clean. The Tesla owner opted to conduct the Model 3's air filter test in the San Jose area, which has been affected by the smoke from the Camp Fire (Paradise, CA). Prior to the test, the Model 3 owner recorded a PM2.5 level of up to 135 $\mu\text{g}/\text{m}^3$ with the vehicle's windows down.

Upon closing the windows, the Model 3 owner activated the "recycle air" feature and set the fan speed to 5. Within two minutes, the air inside the electric sedan's cabin improved to less than 50 $\mu\text{g}/\text{m}^3$. Keeping the same settings, the air quality inside the vehicle continued to get better, hitting 5 $\mu\text{g}/\text{m}^3$ within nine minutes. For a vehicle with a filter that Elon Musk simply described as "good," the results of the Model 3 owner's test were quite impressive on their own right.

It should be noted, though, that when

the "recycle air" setting was disabled, the air quality inside the cabin dropped. Within five minutes, the air inside the Model 3 was back to the 75 $\mu\text{g}/\text{m}^3$ level. These results are in line with Tesla's announcement through its official Twitter account last week, when the company advised Model 3 owners to "set manual recirculating air and turn up the blower speed" to get the best air quality inside the electric sedan.

Overall, the findings of the Model 3 owner's test are to be expected, considering Tesla's intense focus on vehicle and passenger safety. The Model 3, after all, is among the safest vehicles on the road today, thanks to its all-electric design and its standard safety features like forward collision warning systems, dynamic brake support, crash imminent braking, and lane departure warning features. The

continued next page

Model 3 Air Protection

continued from page 30

Model 3's suite of cameras and sensors, as well as capabilities like Autopilot, make the electric sedan even safer.

Just last month, the National Highway Traffic Safety Administration awarded the Model 3 a flawless 5-Star Safety Rating, just like the Model S and X. Based on the NHTSA's crash test data, Tesla has noted that the Model 3 now holds the distinction of being the vehicle with the lowest probability of injury among all cars that the agency has tested to date. The Model S and Model X immediately follow the Model 3, standing at second and third place.

Tesla Model 3 Cabin Air Filter Test



See this video and read the article at the URL below.



<https://www.teslarati.com/tesla-model-3-filters-unsafe-air-without-bioweapon-defense-mode/>

Update on CalTrans District 9 (Sierra Nevada East Side) DC Fast Charger Program

By Paul Gipe

Proposition 6, the measure to roll back an increase in gasoline taxes, failed in California's midterm election. Projects that depended upon the tax increase, such as CalTrans' 30-30 program, will now have their funding stream restored.

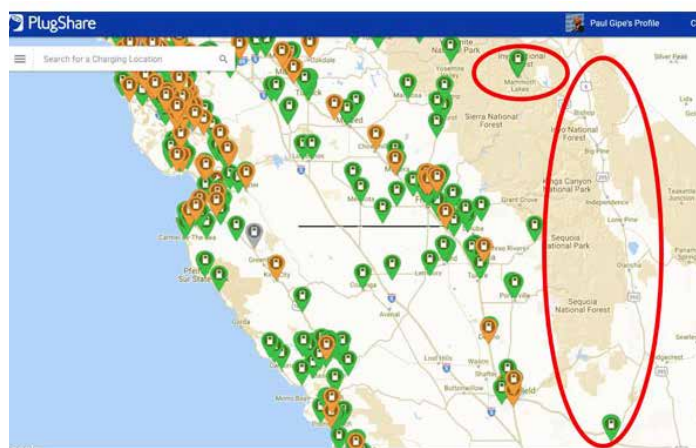
CalTrans 30-30 program was proposed by the Jerry Brown administration to install at least 30 DC fast-charge stations across California, often at roadside rest stops.

Development of the stations has been delayed by Proposition 6. If Proposition 6 had passed, the stations would not be funded.

Caltrans' District 9 serves the East Side of the Sierra Nevada. Currently there are no non-Tesla charge stations—neither DCFC nor Level 2 stations—on US 395 from Gardnerville, Nevada to Mojave, California, a distance of 330 miles.

The resumption of funding for the program will be voted on in mid-March 2019 by the California Transportation Commission. Once the decision is made to resume the program, each project will be sent out to bid. Construction on the East Side is not expected before late summer 2019.

http://www.wind-works.org/cms/index.php?id=84&tx_ttnews%5Btt_news%5D=5243&cHash=feb25bae8be22e69ef1fcd6f58e79f5f



East Side charging desert along US 395. There are no non-Tesla charge stations, neither DCFC or Level 2, from Gardnerville, Nevada to Mojave, California, a distance of 330 miles.

Operation of the stations is unlikely to begin before year end.

In its first report to California's Air Resources Board, Electrify America proposed at least three DCFC stations on US 395. There's no word on whether those stations are still part of Electrify America's plans or, if they are, when they might be installed.



BMW, Northvolt and Umicore Join Forces to Develop Batteries Responsibly

By Gabriel Nica

One thing nobody seems to be paying particular attention to when it comes to electric cars is also probably the most important component of them all: batteries. Car makers need to make sure that the batteries they use in their vehicles don't add up to the pollution problem we're trying to get a grip on and in this regard BMW has signed a joint venture with a Swedish company and a Belgian one to make sure the cells they use in their electrified cars fall into what they call a complete and sustainable value chain.

Basically, the BMW Group will be working with Northvolt, a Swedish company which is currently building Europe's largest battery manufacturing plant, to make sure there will never be a shortage of batteries in a Bavarian plant. The cells made by Northvolt will be featuring a recyclable cell design from the get go and the manufacturing process will mostly use renewable energy.

The batteries will then be used in BMW vehicles in a first stage, followed by a second stage where they will be used in various scenarios, as a stationary energy storage device. At the end of its life cycle, the cell is recycled and the raw materials reused, thereby completing the loop. Because battery cells contain essential resources and materials, feeding these back into the loop becomes more and more important as electric vehicles multiply in number.

As Umicore is a global leader in the development and production of active materials for battery cells and resource recycling and the BMW Group boasts tremendous expertise in material and



One thing nobody seems to be paying particular attention to when it comes to electric cars is also probably the most important component of them ...



Photos appeared in BMW Blog

cell design, there are high hopes for some major achievements in this area too. Sustainability and efficiency are both crucial factors for Umicore. The Belgian company has recently

announced it will soon start building a cathode material manufacturing facility in Europe and already runs a recycling plant for lithium-ion batteries in Europe.

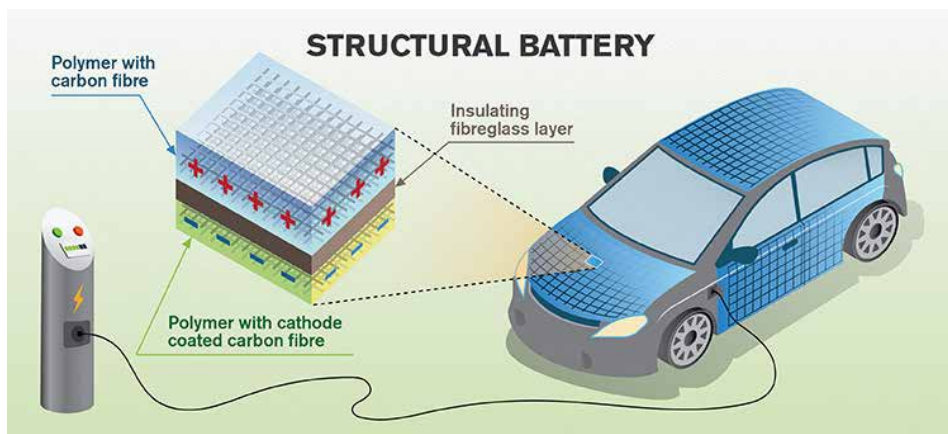
—o—o—

<https://www.bmwblog.com/2018/10/15/bmw-northvolt-and-umicore-join-forces-to-develop-batteries-responsibly/>

Chalmers Researchers One Step Closer to using Carbon Fiber as a Structural Battery

By Miles Gopie

Sweden's Chalmers University of Technology has been experimenting with carbon fiber as a structural electrode. The team has studied the relationship between carbon fiber's microstructure and electrochemical capacity, and is working to develop a combination that is both mechanically sound and energy dense. In short, they would like to use an EV's body as its battery.



The team's research has discovered that carbon fiber's electrical and mechanical properties can be carefully controlled by rearranging its graphitic order and crystallite sites. Fibers with small, disorganized crystals have better electrical characteristics with a stiffness slightly greater than steel. Large, highly-oriented crystals provide better stiffness (over twice

The researchers' vision is of vehicles where a large part of the car-body or aeroplane-fuselage consists of structural lithium ion batteries. Multi-functional carbon fibre can work as battery electrodes and load-bearing material consecutively. Illustration: Yen Strandqvist

that of steel), however, the reduction of electrochemical properties becomes too great for practical use as a battery. The team is exploring carbon fiber's aviation potential as well. They suggest that increasing the composite thickness would overcome the mechanical

challenges of structural electrodes while boosting total energy storage capacity.

[Interested? Read more and see the video at the URL below.]

<https://chargedevs.com/newswire/chalmers-researchers-one-step-closer-to-using-carbon-fiber-as-a-structural-battery/>



Daimler Doubles Workforce for Battery Pack Production Ahead of Mercedes-Benz EQC Launch



Check out this article by Fred Lambert in Electrek. Photo by Daimler.

<https://electrek.co/2018/11/06/daimler-battery-pack-production-mercedes-benz-eqc-launch/>



EVENTS

Keep Up on all Auto Shows & EV Related Conferences

US and International Events

CONNECTICUT INTERNATIONAL AUTO SHOW 11/16/18 - 11/18/18

SAN DIEGO INTERNATIONAL AUTO SHOW 12/27/18 - 12/30/18

NORTHEAST INTERNATIONAL AUTO SHOW 02/08/19 - 02/10/19

SAN FRANCISCO INTERNATIONAL AUTO SHOW 11/21/18 - 11/25/18

NEW ENGLAND INTERNATIONAL AUTO SHOW 01/17/19 - 01/21/19

PITTSBURGH INTERNATIONAL AUTO SHOW 02/15/19 - 02/18/19

PHOENIX, AZ AUTO SHOW THANKSGIVING WEEKEND 11-22-25

PENNSYLVANIA AUTO SHOW 01/24/19 - 01/27/19

AMELIA ISLAND CONCOURS D'ELEGANCE 03/08/19 - 03/10/19

LOS ANGELES AUTO SHOW 11/30/18 - 12/09/18

PHILADELPHIA INTERNATIONAL AUTO SHOW 02/02/19 - 02/10/19

WASHINGTON AUTO SHOW 04/05/19 - 04/14/19

ENERGY STORAGE SUMMIT 12/11/2018 -12/12/2018
SAN FRANCISCO

MOTOR TREND INTERNATIONAL AUTO SHOW - BALTIMORE 02/07/19 - 02/10/19

WASHINGTON AUTO SHOW 04/05/19 - 04/14/19




San Francisco Chronicle
61ST ANNUAL INTERNATIONAL
AUTO SHOW
NOVEMBER 21 - 25
MOSCONE CENTER
PRESENTED BY **Golden1** Credit Union
<http://www.sfautoshow.com>




ARIZONA INT'L AUTO SHOW
THANKSGIVING WEEKEND
PHOENIX CONVENTION CENTER · NOV. 22-25
November 22-25, 2018
<http://autoshowphoenix.com>



continued next page

Save the Date...



NEW ENGLAND INTERNATIONAL
AUTOSHOW

JANUARY 17-21, 2019
BOSTON CONVENTION & EXHIBITION CENTER

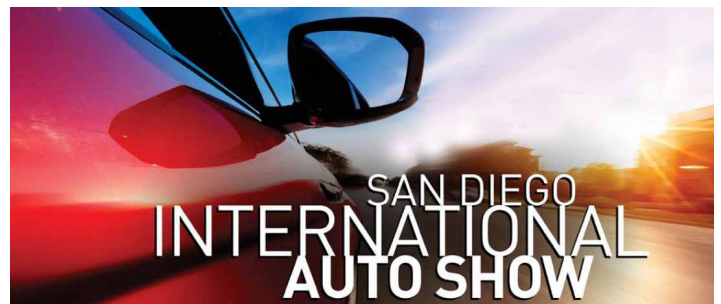
PRESS PREVIEW

The 2019 New England International Auto Show press day will take place on **Thursday, January 17, from 10:30 AM – 4:00 PM**. The show will open to the public at 4:00 PM.

To schedule a presentation or obtain press day credentials, please contact **Chris Russell** at 781-343-1661 or crussell@paragonexpo.com.

JANUARY 17-21, 2019
BOSTON CONVENTION & EXHIBITION CENTER
#BOSTONAUTOSHOW

<https://www.bostonautoshow.com/>



12/27/18 - 12/30/18



<https://visitsandiego.com/2018/10/san-diego-convention-center-wins-best-west>



AUTO SHOW PHILADELPHIA
FEBRUARY 2 - 10, 2019

BUY TICKETS!
SHOW INFO
EXPERIENCE
VEHICLES
GETTING HERE
CONTACT
PRESS
EXHIBITORS

BLACK TIE TAILGATE

Hello humans...
You are invited!



2019 PHILADELPHIA AUTO SHOW
BLACK TIE TAILGATE
2.01.19
PHILLYAUTOSHOW.COM

BLACK TIE TAILGATE

<http://www.phillyautoshow.com>

Don't Miss These...

From time to time there are articles and videos we would like to bring to your attention but are not able to reproduce in this newsletter. The Electric Vehicle is continuing to be newsworthy on many different levels so when we find interesting items we will share them with you.

Videos of Interest

Update on Tesla Gigafactory - Nov. 2018



This brief (3:30) factual background and summary of the biggest lithium cell production facility ever built, with some updated photos. They are beginning to provision the roof with solar to meet the factory energy needs and be sustainable.

<https://www.youtube.com/watch?v=ajvsusVovRY>

Best Tesla Road Trip Ever!! With Amazing Drone Footage of the Wonders of the Southwest.



This video is called: "Best Tesla Road Trip Ever!! With amazing drone footage of the wonders of the southwest." There is a good geographical review of some of the beautiful and out of the way features in the US Southwest. Driven in a Tesla, the creator explains how his autopilot features function. If you're considering an EV, this introduction to some great features and their advantages demonstrate the benefits nicely.

<https://www.youtube.com/watch?v=5tPfv4hhfHo>

100 Years on the Lincoln Highway



Have you ever wondered what it was like crossing the country just after the automobile was created at the turn of the 19th century, before we had the Interstate Highway system? Thinking about a long distance road trip in your new EV? Here is an interesting PBS video titled "100 years on the Lincoln Highway," stills and early footage of the trials endured by the early breed of auto pioneers. The focus is on Wyoming since that state created this nearly hour long documentary, it references some early resistance to the auto adoption, paralleling what some of us feel we're experiencing with EVs today. The Lincoln Highway still exists but is largely paved and labeled as US-30 and I-80.

<https://www.youtube.com/watch?v=SIW2-bH84u4&t=966s>

An Inside Look at Tesla's Gigafactory



CNBC reports from Tesla's growing Gigafactory on the company's battery production and what makes the battery advantageous over other companies. The video gives you an inside look at Tesla's gigafactory, a highly-automated plant run by thousands of robots to make Model 3 battery packs.

<http://cnb.cx/2DEsT0Q>

More Videos and Photos of Interest (cont.)

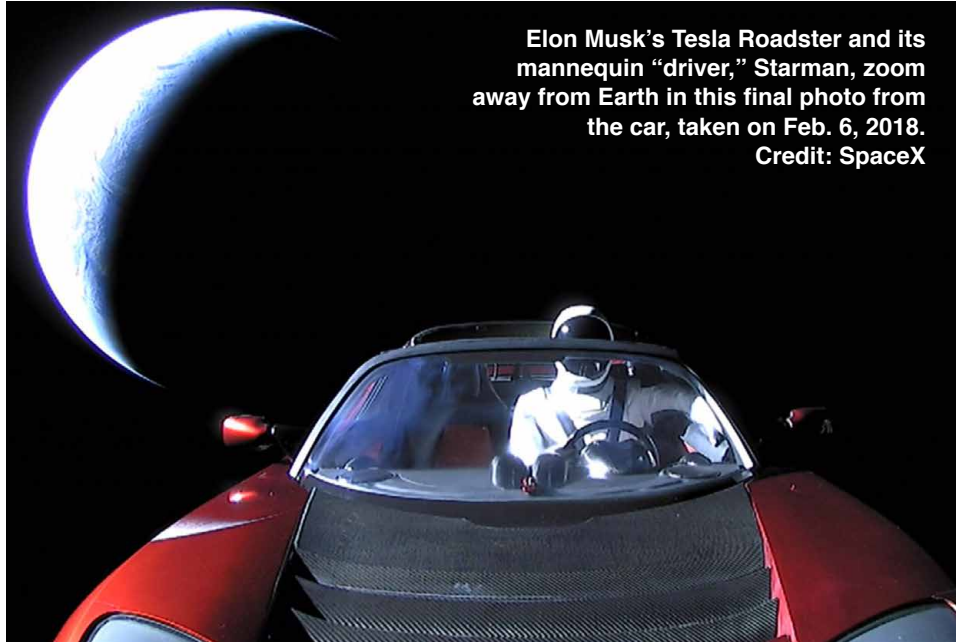
SpaceX's 'Starman' and Its Tesla Roadster Are Now Beyond Mars

By Mike Wall

Starman has put a lot of miles on his Tesla Roadster in the last nine months. The red electric car and its spacesuit-clad mannequin driver, which launched on the maiden mission of SpaceX's huge Falcon Heavy rocket in February, have made it beyond the orbit of Mars, company representatives said Friday night (Nov. 2).

"Starman's current location. Next stop, the restaurant at the end of the universe," SpaceX posted on Twitter Friday, along with an orbit diagram.

<https://www.space.com/39759-spacex-starman-tesla-roadster-space-road-trip-photos.html>



Elon Musk's Tesla Roadster and its mannequin "driver," Starman, zoom away from Earth in this final photo from the car, taken on Feb. 6, 2018.
Credit: SpaceX

The second sentence of that tweet, of course, is a nod to the late, great writer Douglas Adams. "The Restaurant at the End of the Universe" is the second novel in Adams' five-part "Hitchhiker's Guide to the Galaxy" series.

<https://www.space.com/39720-spacex-starman-elon-musk-roadster-journey-video.html>

<https://www.space.com/42337-spacex-tesla-roadster-starman-beyond-mars.html>

Worried About Battery Degradation? Tesla Model X, Bolt EV Owners Show The Way



Nikki Gordon-Bloomfield writes:

Battery degradation – the slow, inexorable loss of a battery's ability to store charge – is a very real problem. All lithium-ion battery packs can suffer it. In the electric car world, fears over battery degradation and the resulting loss in range have put some people off buying a plug-in car, especially after the horror that was the premature capacity loss experienced by early Nissan LEAFs caused by excess heat in Arizona. Now two very good videos have surfaced online teaching us that battery degradation on the Chevrolet Bolt EV and Tesla Model X isn't anything to be scared about... and why you're unlikely to notice it for many tens

of thousands of miles.

<https://www.youtube.com/watch?v=VJYXxWnvMV0>

We recommend that you watch Gordon-Bloomfield first, and then if interested, her other two referenced videos are below here:

Bjorn from Norway on his Model X



<https://www.youtube.com/watch?v=5FDaJQRHSfg>

Eric on his Bolt EV



<https://www.youtube.com/watch?v=lqB3od74sV0>



Welcome to Membership in The Electric Auto Association!

Educating and Advocating for EVs since 1967

Electric Auto Association (EAA) is *the* oldest and largest electric vehicle non-profit. EAA has a network of chapters across the United States and the globe. Our members promote and support electric vehicle acquisition and ownership to create a better future.

Membership Dues:

Regular Member: \$35

Supporting Members:

Charged Up: \$60

Supercharged: \$120

Supercharged Plus: \$240

High Voltage: \$500

Benefits and Bonuses

12 months of full color, 40+page E-Magazine "Current EVents"(CE)
Chapter meetings, speakers, meet EV owners,.
Help increase public awareness by volunteering.

In addition to the above:

"Current EVents" Personal Listing, "Electric Car Insider Guide"

EAA Polo Shirt, "Current EVents", Supercharged Personal or
Business Supporter listing (one issue)

EAA Polo Shirt, "Current EVents" , Supercharged plus Personal or
Business Supporter listing two issues)

Polo Shirt, "Current EVents" listing as a High Voltage Personal or
Business Supporter (three issues), "Who Killed the Electric Car"
movie

Electric Auto Association is a 501 3(c) non-profit organization.

Join Today!

www.electrcauto.org



Don't Miss These (cont.)

Tesla Publishes the Parts Catalog for its EVs

Ordering a part is another matter, but it's a start.



that's the law of the land in Massachusetts. While the company had promised to open up its repair docs in January 2017, it might not have had much choice before long. Whatever the reasons, it suggests that you might not have to talk to Tesla or an authorized center every time you need a fix.

[Ed: Browsing thru the mechanical assemblies, one is immediately impressed with the extensive effort that has gone into the design and production of every model Tesla has produced. Without CAD (computer-aided design) none of this would have been possible. The extensive flow of information between the designers and parts suppliers, for first article fabrication directives, and later for engineering changes (refinements / improvements) underscores the huge investment of time and effort to deliver the high quality cars available to purchasers today. We are witnessing history in the making!]

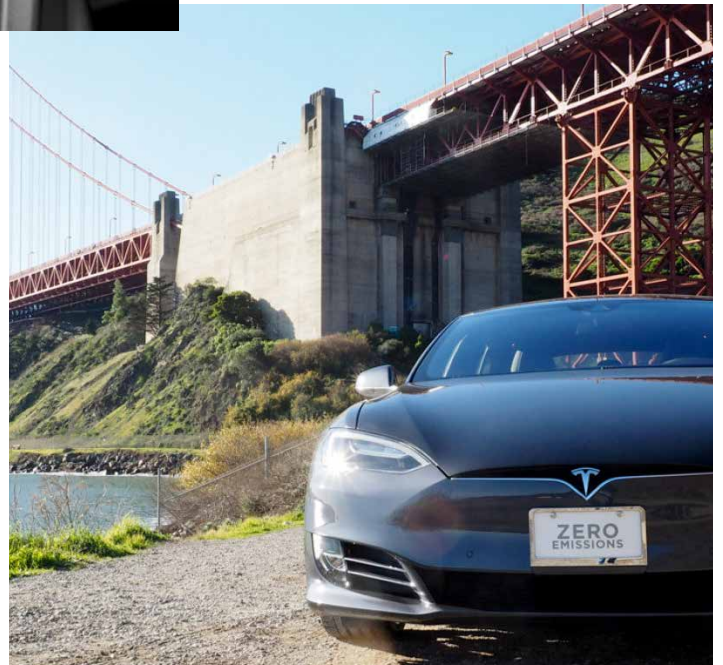


By Jon Fingas

Unless you're changing tires, you generally can't fix a Tesla car yourself -- not when the brand has made it difficult just to get documentation, let alone parts. It's inching in the right direction, though. Tesla has published its parts catalog, detailing all the components for cars ranging from the original Roadster to the Model 3. You'll even see [non-electrical] schematics showing how everything fits together.

Just don't expect to buy the parts yourself. You have to contact Tesla directly as a general rule, and some components are "restricted for use by your shop." This is meant more for professional mechanics than amateur grease monkeys, and that's not entirely surprising when parts can range from giant body panels to obscure motor components.

To some extent, Tesla is acknowledging a political reality. Multiple states have introduced "right to repair" bills, and



<https://epc.teslamotors.com/#/login>

International CANADA

EV COUNCIL OF OTTAWA

Web Site: www.evco.ca
Contact: Darryl McMahon
info@evco.ca

VANCOUVER EVA

Web Site: www.veva.bc.ca
Contact: Bruce Sharpe 604-897-9072

MEXICO

EVA of SONORA (AVES)

Web Site: Diadelautoelectrico.org
Contact: Oscar Vidal
662-105-6551

TAIWAN

TEVA | Taiwan Electric Vehicles Association

FaceBook: www.facebook.com/TaiwanElectricVehiclesAssociation
Contact: Mr. David Lane
Phone: 011 866 987 526 892

United States

NEDRA National Electric Drag Racing Association

Web Site: www.nedra.com
Contact: John Metric, 979-665-5621

PLUG IN AMERICA

Web Site: www.pluginamerica.org
Contact: Joel Levin
info@pluginamerica.org

ALASKA

JUNEAU EVA

Contact: Duff Mitchell, 907-723-2481

ARIZONA

PHOENIX EAA

Web Site: www.phoenixeaa.com
Contact: Jim Stack, 480-659-5513

TUCSON TEVA

Web Site: tucsonelectricvehicle.org
Contact: David Gebert 520-881-8010
tevadave@cox.net

CALIFORNIA

CENTRAL COAST (CCEAA)

Web Site: eaacc.org
Contact: Will Beckett, 831-688-8669

CHICO EAA

Web Site: www.chicoeaa.info
Contact: Jerry Brandstatt
530-343-0331

EVA OF SAN DIEGO (EVAOSD)

Web Site: www.evaosd.org
Contact: Elaine Borseth
858-395-8181

EVA OF SOUTHERN CALIFORNIA (EVAOSC)

Web Site: www.evaosc.org
Contact: Leo Galcher, 949-492-8115

GOLDEN GATE EVA

Web Site: www.ggeva.org
Contact: Dale Miller, 415-472-0378

MAMMOTH LAKES EASTERN SIERRA ELECTRIC VEHICLE ASSOCIATION (ESEVA)

Contact: Don Condon, President
EasternSierraEVA@gmail.com
Cell: 510-414-9948

NORTH (SF) BAY EAA

Web Site: www.nbeaa.org
Contact: Alan Soule, 707-477-1299

SACRAMENTO EVA (SacEV)

Contact: Guy Hall, 916-717-9158

SAN JOSE EAA

Web site: rotordesign.com/sjeaa
Contact: George Stuckert
408-377-5037

SILICON VALLEY EAA

Web site: www.eaasv.org
Contact: Tom Sidle, 408-446-1538

COLORADO

DENVER ELECTRIC VEHICLE COUNCIL (DEVCC)

Web Site: www.devcc.info
Contact: J David McNeil
719-633-4924

CONNECTICUT

NEW ENGLAND EAA

Web Site: www.neeaa.org
Contact: David Oliveria
860-526-1460

DELAWARE

COASTAL CAROLINA WILMINGTON

Contact: Blair E. Brown, 910-617-1643

FLORIDA

CENTRAL FLORIDA EVA (CFEVA)

Website: www.centralfloridaeva.org
Contact: Larry Wexler 407-256-6244

GOLD COAST EAA (GCEAA)

Contact: David Kerzel , 954-785-2184

NORTHWEST FLORIDA EAA

Contact: Nathan Kercher
850-472-0341

SUN COAST EAA

Web Site: www.suneva.org
Contact: Don Bouquet
941-739-2868

TALLAHASSEE AREA EVA

Web Site: www.taeva.org
Contact: Gillian Smith
954-829-1125

GEORGIA

EV CLUB OF THE SOUTH

Web Site: www.evclubsouth.org
Contact: Anne Blair 404-849-7929

HAWAII

BIG ISLAND EVA

Web Site: BigIslandEV.org
Contact: Noel Morin 808-987-7428
nmorin99@yahoo.com

IOWA

IOWA EVA

Web Site: www.evohinc.com
Contact: Jeff Hove 515-250-2966

IDAHO

PANHANDLE EV ASSOCIATION PEVA

Website: www.panhandleev.org
Contact: Gordy Ormesher
208-660-8539

ILLINOIS

FOX VALLEY EAA

Web Site: www.fveaa.org
Contact: Michael Willuweit
contactfveaa@fveaa.org

INDIANA

HOOSIER EVA

Web Site: HoosierEVA.org
Contact: Richard Steiner,
317-987-4890

KANSAS

MID AMERICA CHAPTER

Contact: Al Pugsley Jr, 913-381-1091

KENTUCKY

EvolveKY

Web Site: www.evolveky.org
Contact: Jon Tyson, 502-644-1719

MASSACHUSETTS

DRIVE ELECTRIC CARS NEW ENGLAND EAA

Web Site: neeaa.org
Contact: Mark Scribner
860-336-7295

PIONEER VALLEY EAA

Web Site: pveaa.org
Contact: Karen Jones

MICHIGAN

MICHIGAN EAA

Web Site: michiganEAA.org
Contact: Larry Tuttle, 734-995-9904
eea.mich@gmail.com

MINNESOTA

MINNESOTA EAA

Web Site: www.mneaa.com
Contact: Tom Helin, 651-246-5730

MISSISSIPPI

MISSISSIPPI EAA (MSEAA)

Contact: Luke Lundemo
601-981-6925

MISSOURI

GATEWAY EV (GEVA)

Web Site: gatewayev.org
Contact: Wayne Garver, 314-359-9626

NEVADA

EAA NORTHERN NEVADA

Web Site: www.lveva.org
Contact: Chuck Swackhammer
530-479-0269

LAS VEGAS EVA

Web Site: www.lveva.org
Contact: Lloyd Reece, 702-524-3233

NEW JERSEY

EASTERN ELECTRIC VEHICLE CLUB

Contact: Oliver H. Perry
609-268-0944

NEW JERSEY EAA (NJEEA)

Web Site: njeaa.org
Contact: Michael Thwaite
908-405-8688

NEW MEXICO

NEW MEXICO EVA (NNMEV)

Contact: Richard Dunn, 505-672-1095

NEW YORK

GREATER HUDSON VALLEY EAA

Contact: Seth Leitman, 914-703-0311

GREATER NY EAA

Web Site: lieaa.org
Contact: Carl Vogel, 516-443-1715

NORTH CAROLINA

BLUE RIDGE EV CLUB

Contact: Joe Baum, 828-645-1412

CHARLOTTE EAA

Contact: Jess Montgomery
704-302-4156

TRIAD EVA

Web Site: www.tevaNC.org
Contact: Jack Martin, 336-213-5225

TRIANGLE EAA

Web Site: www.rtpnet.org/teaa
Contact: Deanne Mott, 919-783-8439

OHIO

CENTRAL OHIO EV ASSOCIATION (COEVA)

Contact: George Anderson
614-487-9671

EAA OF NORTHWEST OHIO

Contact: Michael Hall 419-691-1569

GREATER DAYTON EV ASSOCIATION (GDEVA)

Contact: David Lyttle 937-837-2558

OREGON

OREGON EVA

Web Site: soheva.net
Contact: John Christian 503-524-0873

OREGON SOHEVA

Web Site: oeva.org
Contact: James Stephens
541-552-9393

PENNSYLVANIA

THREE RIVERS EVA

Web Site: www.threeriverseva.org
Contact: Jonathan Belak
724-387-8210

TENNESSEE

CHATTANOOGA EVA

Contact: Randy Whorton, 423-822-1840

KNOXVILLE EVA

Web Site: www.knoxev.org
Contact: Gary Bulmer
gpbulmer@gmail.com

TEXAS

ALAMO CITY EAA

Web Site: www.aceaa.org
Contact: Craig Egan, 210-542-7707

AUSTIN AAEAA

Web Site: www.austinev.org
Contact: Aaron Choate, 512-453-2710

HOUSTON EAA

Web Site: www.heaa.org
Contact: Kevin Douglass
713-927-6997
houstontxeaa@gmail.com

NORTH TEXAS EAA

Web Site: www.nteea.org
Contact: Ron Swanson, 214-352-8180

VIRGINIA

DRIVE ELECTRIC RVA

Contact: Charles Gerena, 804-560-3471

RENEWABLE ENERGY & EVA, DIY PROJECT CLUB

Web Site: www.reevadij.org
Contact: Mark Hanson, 540-473-1248

WASHINGTON**MID-COLUMBIA EVA**

Contact: Garrett Brown, 509-713-0806

NORTH SOUND EVAWeb Site: www.northsoundeva.org

Contact: Jason Thompson, 360-920-0287

SAN JUAN ISLANDS EVA

Contact: Bruce Nyden, 707-494-6693

SEATTLE EVA (SEVA)Web Site: SeattleEVA.org

Contact: Jay Donnaway

President@seattleeva.org

TACOMA EVA (TACEVA)

Contact: Stanley J. Lee, 253-383-4371

WENATCHEE EVA (WEVA)Web Site: www.pluginncw.com

Contact: Jack Anderson, 509-784-1747

WASHINGTON D.C.**EVA OF WASHINGTON DC**Web Site: evadc.org

Contact: Ron Kaltenbaugh

240-586-0014

WEST VIRGINIA**WEST VIRGINIA ELECTRIC
AUTO ASSOCIATION (WVEA)**Web Site: www.wveaa.org

Contact: Marty Weirick, 304 610-1617

WISCONSIN**WISCONSIN EAA**Contact: Benjamin J. Nelson
262-567-9348

Bollinger Motors Announces Electric Pickup Truck B2

By Charles Morris for Newswire & The Vehicles

Bollinger Motors is building a “no-nonsense back-to-basics all-electric sport utility truck” that fills a gap in the current EV market. The Bollinger B1 (profiled mid 2018) is built for the farm or the job site, a rugged work truck designed to haul large, heavy objects.

As Bollinger moves through the final stages of developing the B1, it has unveiled a preview of a new vehicle design: the B2 Pickup truck.

Both trucks sport dual motors, all-wheel drive, hydropneumatic suspension, in-wheel portal gear hubs, a 120 kWh battery pack, large front trunk space, and patented pass-through doors for transporting long items.

Like the B1, the B2 will be a Class 3 work truck (10,001 gross vehicle weight rating) with a hauling capability of 5,000 pounds. Storage capacity is central to its design. The Pickup’s bed is 4 ft 1 in wide by 5 ft 9 in long. With the

internal cab tailgate down, the truck can carry up to 72 4×8 sheets of plywood. The rear glass also opens up, allowing storage to the top of the cab.

“The new B2 incorporates everything that we’ve learned in making the B1, and takes it in an exciting new direction,” says company founder Robert Bollinger. “It’s always been the plan to have both the B1 and B2 start off our line-up. Now that we have so much incredible data from testing our B1 prototype, we can put all of that engineering knowledge into our final four-door B1 and B2 vehicles. It’s the Pickup I always wanted and something crazy better than what’s available on the market today.”

Bollinger Motors is currently taking reservations for the B1 and B2 on its web site with no money down.

[Ed: Their web site includes a background FAQ to address the questions not immediately answered on the rest of their web pages. <http://www.bollingermotors.com>]



<https://chargedevs.com/newswire/bollinger-motors-announces-electric-pickup-truck/>



FORWARDING SERVICE REQUESTED



Introducing the
ProMountDuo™
Universal Pedestal

RUGGED, ECONOMICAL
Accommodates two stations with no additional hardware necessary



LEVEL 2
240 Volt
CHARGING STATION
Starting at
\$379

LCS-20 shown



Single Mount
LCS-20
16A, LEVEL 2
CHARGING STATION
\$813



Single Mount
HCS-40
32A, LEVEL 2
CHARGING STATION
\$999

LEARN MORE CALL 877-694-4194

RELIABLE
POWERFUL
MADE IN AMERICA