BMW RIDERS VANCOUVER ISLAND

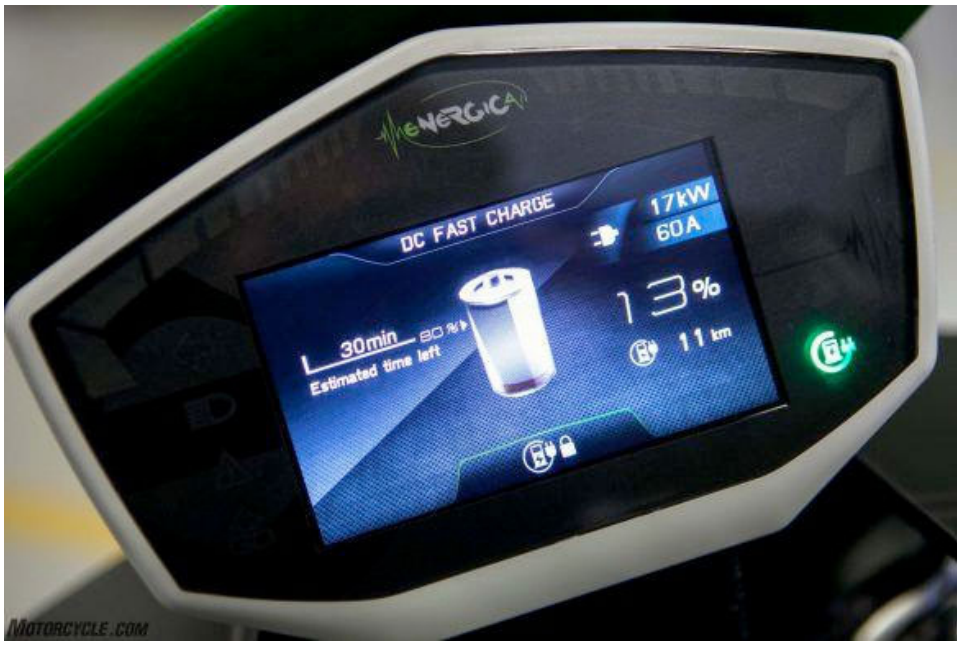
THE BEEMER READER

VOL. 30 • NO.9 • SEPTEMBER 2019

2020 Electric Motorcycle Shootout

Article and Photos from Motorcycle.com

They say the first auto race started the moment the second car was made, and the same holds true in motorcycling, too. With the introduction of the 2020 Harley-Davidson Livewire, this marks the first time a major manufacturer – actually, the major-ist manufacturer (yes, new word) – has entered the electric motorcycle space in large numbers. And while they are a fraction of the size of Harley, Energica and Zero have the benefit of a years-long head start in the e-bike biz.



Click the above photo to go to Motorcycle.com for the full article

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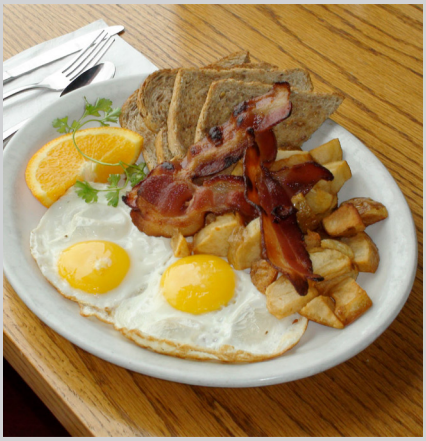
Next Breakfast/Brunch

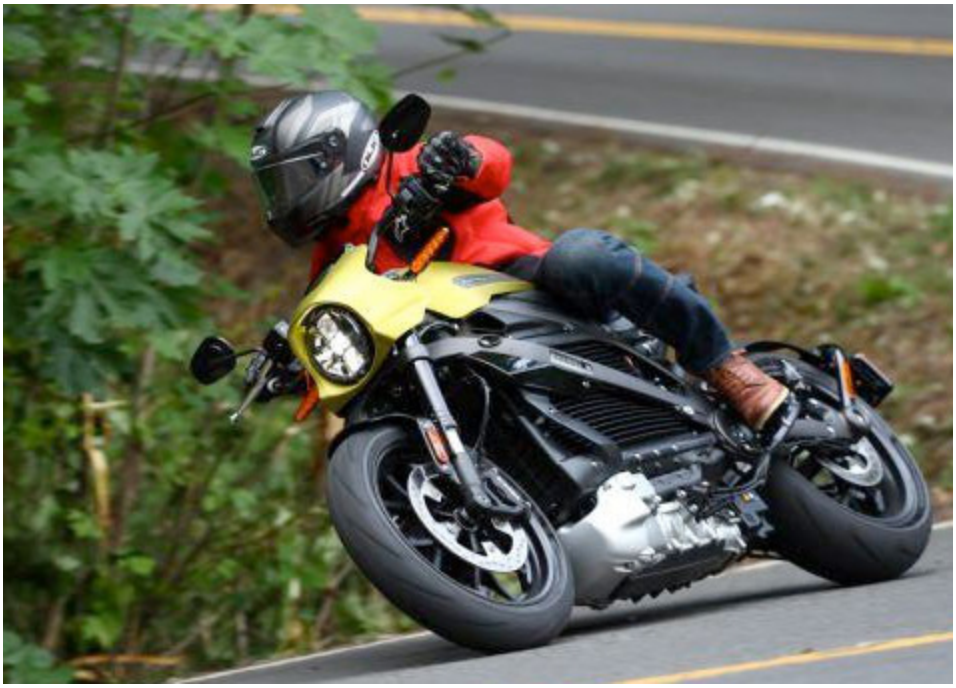
Sunday, September 1



WHERE:
Timberland Pub
1680 Timberlands Road
Ladysmith, BC

Meeting Place:
8:00 am at Tim Hortons Millstream below Costco for an 8:15 am departure

Harley enters the game with the Livewire



Harley-Davidson Livewire - *Motorcycle.com photo*

The Harley-Davidson Livewire is the newest player in the electric motorcycle space, but we want to know how it compare to its rivals from Energica and Zero.

Now, after riding the Livewire, we're left to wonder – how exactly does it stand up to the competition? Specifically, we're looking at the Energica Eva and the new Zero SR/F. We're working on getting all three machines in the flesh to settle the score, but in the meantime, we've compiled some specs on all the bikes. Fancy a little bench racing, anyone?

Comparing Base Models

Before getting hung up in the many different permutations the Energica and Zero are offered in, let's start with a three-way comparison of the base versions of each bike. At $18,995, the standard version of the Zero SR/F is the least expensive offering here, followed closely by the $21,656 Energica Eva without any options. There's only one version of the Livewire available, with its price tag reading $29,799.

Representing the most performance-oriented model of this e-bike group, the Energica Eva features components from Brembo, Marzocchi, and Bitubo, just to name a few. (Photo: Marcello Mannoni)

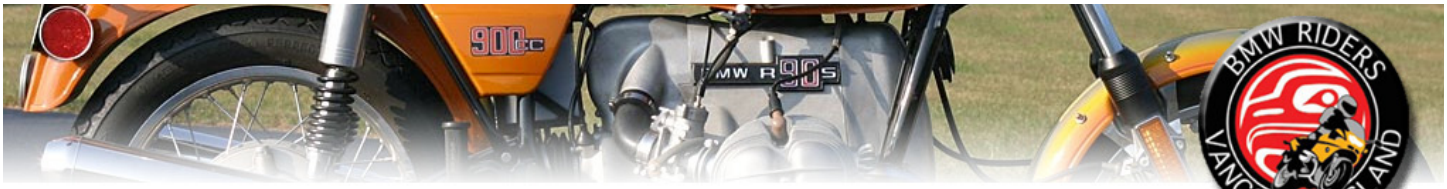
No matter which trim package or options you choose, all three come with a standard battery and motor. The Eva's battery produces a max of 13.4 kWh, with a nominal rating of 11.7 kWh – the lowest in this group. However, battery capacity isn't the whole story, as the Eva's oil-cooled motor is rated at 145 hp (107 kW) and a massive 148 lb-ft (200 Nm) of torque!

Move next to the Zero, and the SR/F's lithium-ion battery is rated at 14.4 kWh max, 12.6 kWh nominal. Meanwhile, its air-cooled motor puts out considerably less power at 110 hp (82 kW), but its 140 lb-ft (190 Nm) nearly matches the Eva's.

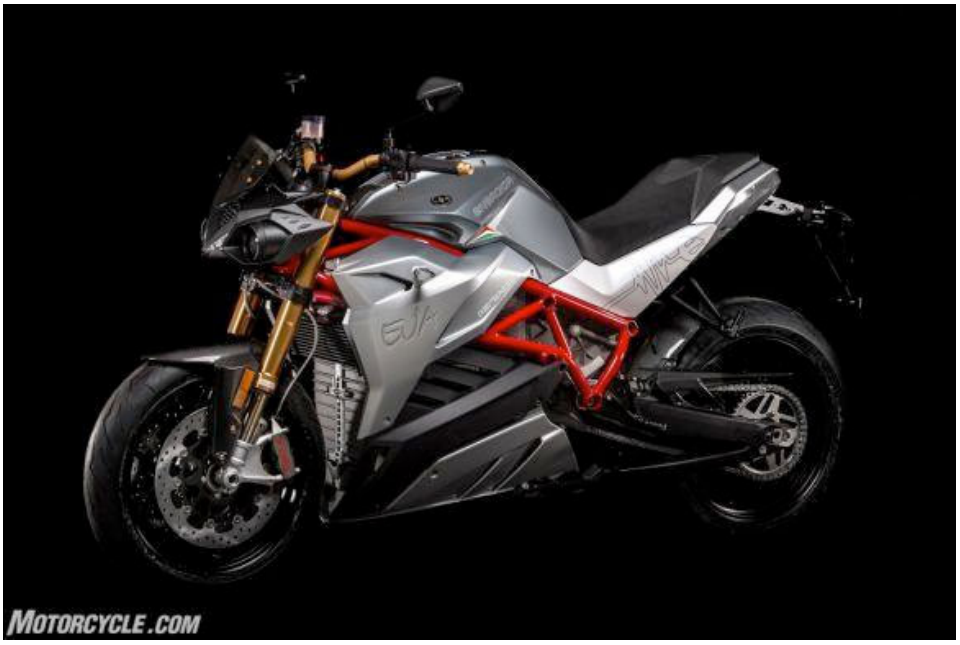
The Zero SR/F is the company's new flagship model, and is also the only one in this trio with an air-cooled motor.

Lastly, there's the Livewire, with its max battery capacity of 15.5 kWh and nominal rating of 13.6 kWh. Harley-Davidson states the Livewire's makes 105 hp (78 kW) and 86 lb-ft (116 Nm). Interestingly, the Livewire is the only one of the trio cooling the motor with water.

Horsepower and torque numbers are one thing, but how it's applied to the ground is another. This is where things get interesting. Looking strictly at the numbers, the Livewire's 86 lb-ft. of torque would seem highly outclassed in this field, but factor in its massive 3.24 gear reduction and 3.00 final drive ratio, and the Livewire's calculated torque to the wheel jumps to 835.9 lb-ft. The Energica's 1.82 reduction and 2.75 final drive land its 148 lb-ft of motor torque at 741.5 lb-ft at the wheel, while the direct-drive Zero only has its final drive ratio of 4.50



Range is a determining factor in electrics



Energica Eva - *Motorcycle.com photo*

to amplify its 140 lb-ft. to 630 lb-ft.

Being base models, the costs go up from here with different hardware options, which will be explained next.

Range

With battery and motor setups established, we move on to the business of depleting the batteries and how long that takes. Of course, like an internal combustion engine, mileage will vary depending on your riding habits. This is even more significant on electrics, as heavy right hands can make an electric's range plummet fast. Still, various standardized tests for city, highway, and combined mileage at least give us a (very) rough guess as to how far one can go on a tank full of electrons.

Energica isn't very helpful in its provided materials, simply saying the Eva can get "up to 120" miles. With so little to work with, we can only assume those would be the most boring, mind-numbing 120 miles anyone would ever ride on a motorcycle, as you'd have to ride so slow to get that far.

Meanwhile Harley and Zero are more forthcoming with relevant information, with the former claiming 146/70/95 (city/highway/combined) figures for the Livewire according to MIC standardized tests, and Zero claiming 161/82/109 numbers according to SAE J2982 standards.

Having spent time with both bikes recently, the 95-mile and 109-mile combined figures, respectively, seem optimistic but doable under normal riding/commuting. To get there would likely require more conservative ride modes, smart application of regenerative braking, and a gentle throttle hand – all things the average commuter could get used to without too much adaptation. Expect those numbers to come closer to the highway figures (or lower) once you reach the fun roads and crank up the power and/or turn down the regen.

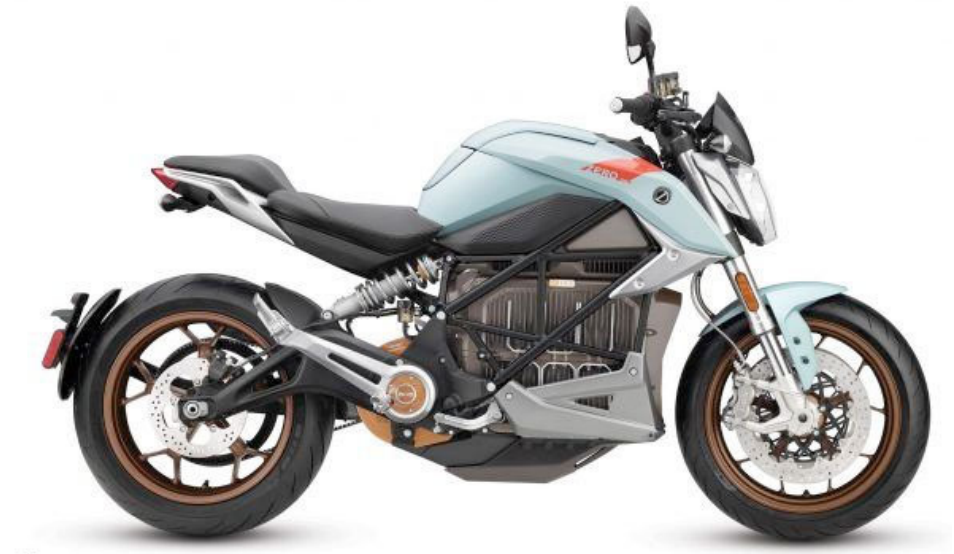
This is where we reach the first price upgrade with the Zero, although the exact amount is yet unknown as of press time. Like Zero's S and DS models, Zero will offer a Power Tank accessory for the SR/F at a yet undisclosed price, offering up to 223 miles (claimed) of city range. Considering the S/DS Power Tanks cost nearly $3000, it's reasonable to expect the SR/F Tank to have a similar price tag.

As far as we're aware, none of the standardized range tests take wheelies into account.

Charging

Obviously, when you run out of battery, you have to recharge. Here all three companies have taken a slightly different approach to their charge strategies. There's no surprise all three have Level 1 provisions to plug into the wall outlet in your home, but the differences come when you want to speed things up. Both the Eva and SR/F accept Level 2 charging, but the Eva is equipped to accept up to

Zero allows you to upgrade charging systems



Zero SRF - *Motorcycle.com photo*

24 kW of DC Fast Charge, allowing a completely drained battery to reach 85% State of Charge (SoC) in as little as 20 minutes.

The Zero is not compatible with DCFC, but its approach to recharging, in addition to the included 3 kW on-board charger, is to allow the customer to upgrade to the Premium model which adds an additional 3 kW charger and $2000 to the price. Another $2300 gets you another 6 kW of charging, for a total capability of 12 kW, which completely replenishes a dead battery in one hour. This also brings the total price to $23,295.

The base SR/F gets the forward 3kW charger, and the Premium model gets the one just behind it. An accessory 6kW Charge Tank will be available later.

Harley skips Level 2 charging entirely, making the Livewire DC Fast Charge-ready, which brings the battery from 0%-80% in 40 minutes. Wait another 20 minutes and it's fully topped off. Since the vast majority of public charging stations out in the wild are Level 2 stations, we wonder why Harley made this choice.

Though they are increasing in number, Level 3 DCFC stations are still relatively scarce, which means the challenge for all three machines is finding suitable charging stations that can provide enough electricity.

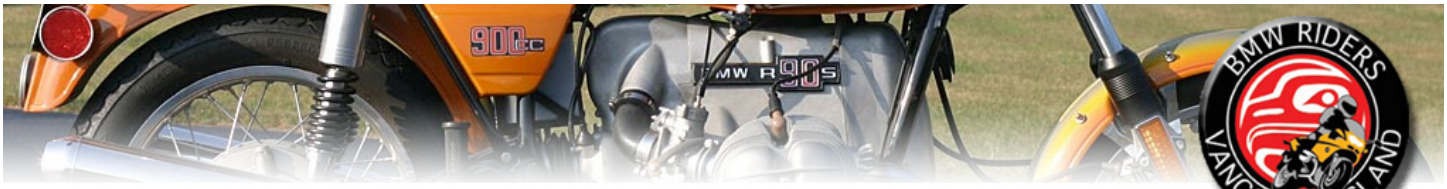
Other Interesting Bits and Bobs

Not long ago e-bikes didn't feature much in the way of rider aids. An odd thing considering the amount of torque being channeled through the rear tire. Now, all three motorcycles come equipped with safety features like ABS and traction control, though the Livewire and SR/F are equipped with IMUs (Inertial Measurement Units), upping the ante further with Cornering-ABS and lean-sensitive traction control. Drag torque slip control (basically like a slipper clutch on a ICE motorcycle) is found on the Harley and Zero, while the Livewire also features rear wheel lift mitigation.

When it comes to the more traditional pieces found on a motorcycle – suspension and brakes – all three stack up relatively evenly. Showa provides fork and shock bits for both the Livewire and SR/F. The Big Piston-Separate Function Fork is found on each, while the shocks are slightly different. Each are tuned to the respective manufacturer's specifications.

With a hefty 615 lbs to slow down, the Eva can use all the brakes it can get. Hence the 330mm discs and Brembo 4-pot, radial-mount calipers.

The Livewire gets the smallest rotors here; two 300mm floating rotors are squeezed by 4-piston monoblock radial-mount calipers. In contrast, the Zero sees twin 320mm floating discs clamped by J-Juan radial 4-piston calipers. Besting them all, however, is the Eva's 330mm discs and Brembo radial-mount calipers. The bigger discs make sense since the Energica is also the heaviest bike here by a significant chunk: 615 lbs compared to 549 lbs for the Livewire and 485

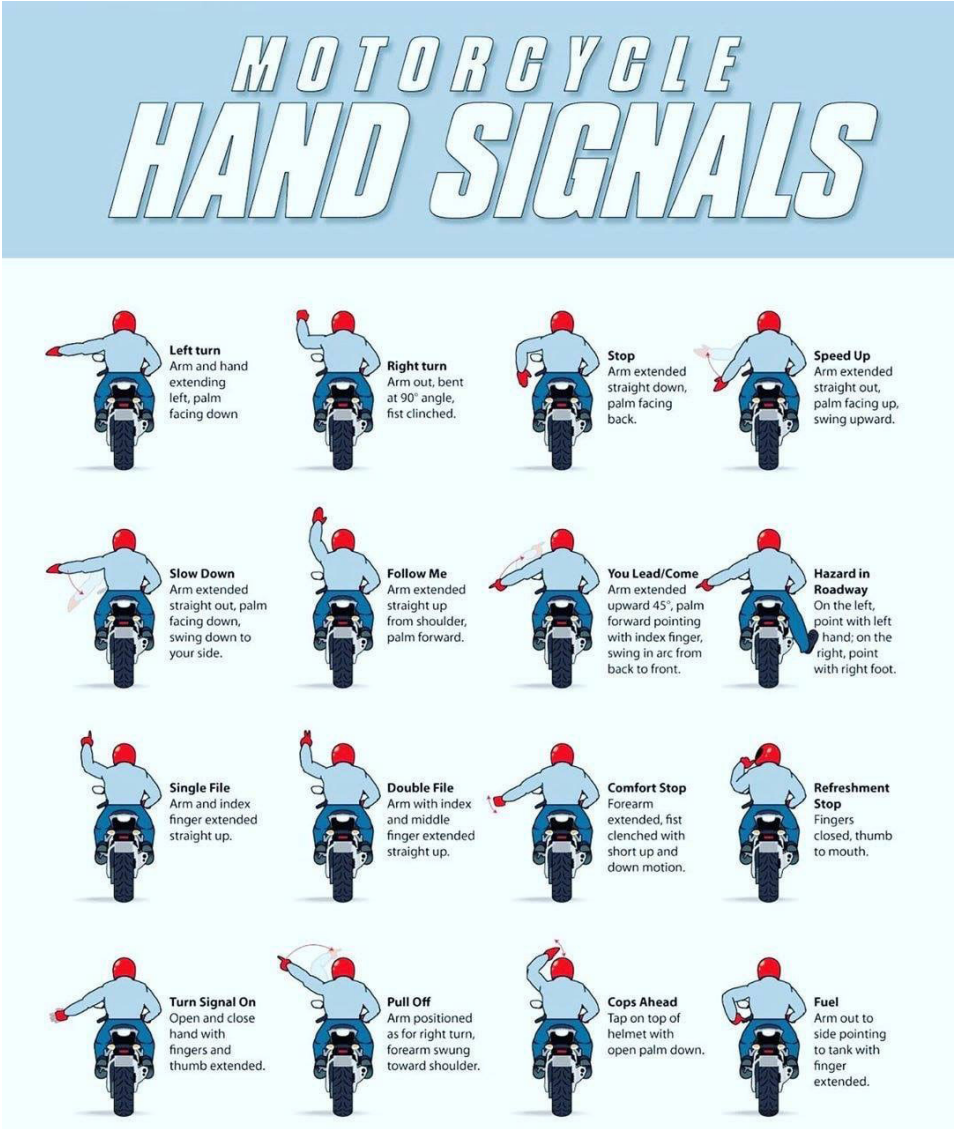


Cost a factor

lbs for the SR/F (which climbs to 498 for the Premium model). All three have regenerative braking abilities to also help slow them down.

Both Harley and Zero have features that allow for cellular connectivity with your phone to provide countless amounts of information about your bike – as well as the chance to alter certain settings.

Being the Italian performance company that it is, the price starts to jump with the Energica when it comes to suspension and wheels. As it comes standard, the Eva sees Marzocchi and Bitubo provide fully-adjustable fork and shock, respectively. Cast aluminum wheels are also standard. If that won't cut it, an extra $2000 will get you OZ forged wheels, and $3300 on top of that will swap the Marzocchi/ Bitubo combo for Öhlins pieces. Those two options alone bring the Eva's price to nearly $27,000.



Club 2019 Event Schedule

Date	Event	Location
Sunday, September 1, 2019	Monthly Gathering	Timberland Pub, Ladysmith
Saturday, September 21, 2019	Monthly Ride	Port Renrew / Cowichan Loop
Sunday, October 6, 2019	Monthly Gathering	The Crooked Goose
Saturday, October 19, 2019	Annual Meeting	SVI Rangers Clubhouse
Saturday, November 2, 2019	Monthly Gathering	Spitfire Bar & Grill
Sunday, December 1, 2019	Monthly Gathering	1550's Pub