

Your EV is **Not** a Car

The real revolution starts when we stop thinking of Electric Vehicles (EVs) only as vehicles.

Ilana Weitzman & Chris Henderson

In the transportation space, people often say an EV is “just a battery on wheels”. Usually that means that whether you stack a bus or a truck on top, it is all the same. But let us take it one step further. The familiar shape tricks us into thinking of them as only cars, but what we see is energy storage that happens to drive.

The vehicle is simply a chassis. The real value? The battery. It is the most expensive and most flexible component in the system. It is capable of delivering value continuously even when the vehicle is sitting in a driveway, as it does in many households about 90% of the time. **Think batteries first, mobility second.** This inversion of perspective - viewing EVs as mobile energy units - has wide-ranging implications for who leads, profits, and participates in this transformation.

Think batteries first...



Car battery on Ioniq 5 = 78 kWh



Power used for average daily driving (50 km per day) = 10 kWh



Only 8% of the time and 13% of the energy is actually used for driving on a daily basis
= **87% of power available**

Three key players have the opportunity to leverage this untapped resource.

1. **Electricity Utilities** understand the potential of grid-integrated storage. They want to build advanced electricity infrastructure and convince car owners to let them draw on unused EV battery capacity to meet power demand.
2. **Charging Infrastructure** companies are already beginning to build new business models around energy services, allowing them to become arbiters or traders between EV owners and electricity companies.
3. **Automakers** focus almost exclusively on the powertrain and mobility business, the exceptions being powerhouses like Tesla and BYD that are EV-first companies.

It will be fascinating to see who moves first to treat the battery not as a feature but as the *product itself*. Two questions underline the opportunity. First, where is the car owner in this equation? Second, can any one player move, without all players taking interconnected steps together?

Therein lies the EV mind shift. The original purpose of EVs as vehicles may end up being secondary or, more accurately, complementary to the value of the battery as an essential part of the global energy transition.

Such economic repositioning has happened before with other new innovations. Consider the Slack platform. It began as an internal communications tool for a video game project, but eventually creators realized *the tool* was the true product.

EV batteries must be a critical piece for a new decarbonization electrification economy. The mobility they provide is an added bonus. The true product is the significant power they contain.

The Hidden Value of an EV

If we embrace the EV as being a battery first, what does that unlock? Think of your mobile phone. Sure, it can make calls, but just look at your screen time for the last week. You use your phone to find directions, to read the news, to listen to music, for social media or to watch videos.

In a similar vein, EVs have a variety of untapped uses that can generate significant value. Filovi Kloutse Ayevide, a Senior Researcher at Hydro-Québec put forward the concept of an **EV Value Stack** at [Electric Autonomy's 2025 kWh Summit](#). This stack can be leveraged for a range of interests as we accelerate towards an electric future.

Let us put the pieces of this roadmap together.

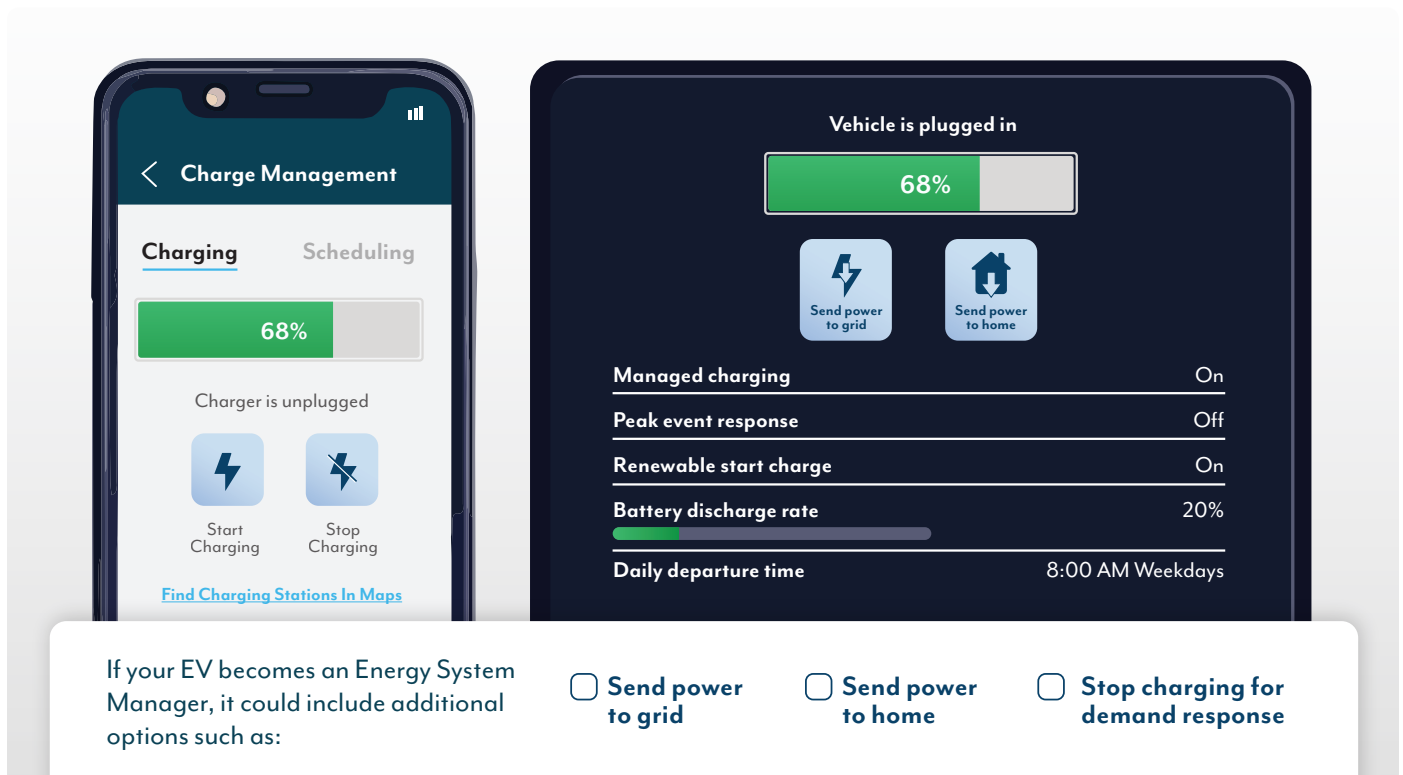
- **Vehicle-to-Grid (V2G):** EVs can charge up overnight when electricity is cheaper and available and sell power back to the grid during peak demand. Providing this energy access at scale across an economy or a utility-region has the potential to materially reduce peak electricity generation needs.

The economics are enticing, and not just for cars. There are 18,000 school buses in Quebec that are already wired for V2G, largely sitting idle during the evening peak from 5 to 8 pm. In British Columbia, BC Hydro is testing how this can work with a [first-of-its-kind project](#) in Canada that turns electric school buses into mobile power sources, sending electricity back to the grid during peak demand and provide backup power during outages.

Will this degrade car batteries faster than would otherwise be the case? New research from pioneering lithium-ion battery developer [Jeff Dahn](#) of [Dalhousie University](#) has shown that the shallow charge and discharge cycles for V2G has a negligible effect on battery longevity.

- **Backup & Resilience (V2B):** An EV can power your home, replacing or reducing electricity grid load during the day especially during demand peaks, or supply energy when outages hit. Integrating this will require grid modernization and digital technology – a key challenge to overcome to realize the energy storage potential of EV batteries.

Your EV's app could now focus on charging as illustrated below.



- **Carbon Credit Generation (CCG):** Compliance energy credits and offsets are mechanisms of incentivizing reduction of greenhouse gas emissions when non-emitting power is utilized. These allow projects that reduce climate-damaging emissions to sell credits to entities that seek to reduce carbon footprints, say as part of a corporate responsibility commitment or to meet regulatory obligations set by governments. Tesla has jumped on that opportunity. In 2024 the company generated [\\$US 2.76 billion](#) from selling these environmental attributes generated by the owners of Tesla's cars. Should the company be the only beneficiary of this windfall? Or do car owners deserve a share?
- **Second-Life Battery Use (SL):** Even after 10+ years in a vehicle, batteries have lots of juice that can be repurposed for stationary grid storage and other energy applications. We have seen SL battery bundling for use in remote communities and off-grid cabins. Conventionally, batteries are sold in a package along with the vehicle, but SL battery opportunities are an unrealized business. There is even a case for utility companies or automakers owning batteries and leasing them out to customers.
- **Grid Flexibility (GF):** It is a little-known fact that a significant percentage of power generation is wasted when it cannot be absorbed to meet power demand at the time. Simply put, you need to use electricity when it is generated or store it for future use. This is particularly pertinent for intermittent renewable energy generation. EVs can soak up and store excess clean power during periods of overproduction – sending energy back to the power grid when needed. If one were to conclude this needs sophisticated control systems and dynamic electricity pricing, that would be correct.
- **Demand Response (DR):** Current demand response programs try to turn off consumers' air conditioning during a peak heat wave, which is in direct competition with someone's needs at that moment. By incorporating EV batteries into current demand response programs, utility companies can more effectively meet the needs of consumers. EVs can be instructed to charge up when energy is abundant and cheaper as a part of managed charging programs. During peaks, they can be throttled down or instructed to send power to the home instead.

- **Mobility Plus (MP):** An EV's battery's value is multi-faceted. In addition to providing transport, adding an EV Revenue Stack encourages more people to “host” these batteries in their driveways and garages, making use of existing space instead of building more large-scale energy storage facilities.

The car becomes a vital part of a dynamic, intelligent, low-carbon energy network. Imagine offering people lower lease rates, modest but not immaterial income, discounted charging fees, or a combination of these if they simply plug in whenever they are not driving.

Indeed, you may end up managing your EV's energy potential with your phone.



Who's Trying What

Pioneering companies are road testing out-of-the-box thinking to realize an EV Value Stack.

1. Octopus Energy + BYD in the UK

Offering cheaper leases and free home charging in exchange for using the vehicles as V2G assets.

2. Grizzl-e chargers

Allowing drivers to earn carbon credits through home charging as part of a subscription, with potential to layer other utility programs on top.

3. Tesla Powerwall VPP

Paying homeowners about \$350 USD to allow grid control of a 14 kWh battery during summer peaks. An EV battery is often five times that size, meaning you would only have to “lease out” 20% of the battery capacity to generate that income.

4. Elastic Energy

Acting as a “home energy router” that coordinates capacity from EVs, heat pumps and thermostats to respond to energy prices and household needs.

Are consumers ready to embrace the power of an EV battery? “[Empowering Households](#)”, a recent report released by [Clean Energy Canada](#) found in a survey of thousands of Canadians in the Greater Toronto and Hamilton Area, and Metro Vancouver that 59% of households are inclined to buy an EV as their next car, and 56% and 57% respectively say it is important that their next home is energy smart. This is strong affirmation for the potential of a car + home electricity platform.

Connecting the Dots to Realize the EV Revenue Stack

Unlocking all these benefits for our energy system requires decarbonized and electrified transport leaders and keystone companies to make *four game-changing commitments*.

Open-Source Collaboration

The DNA of this new system needs to be shared. Electricity utilities, automakers and charging companies should not focus strictly on their own corporate gains but instead work together to unlock these benefits, including the driver in that mix. If any of these sectors tries to capture the lion's share of the rewards, they will waste years fighting over market share.

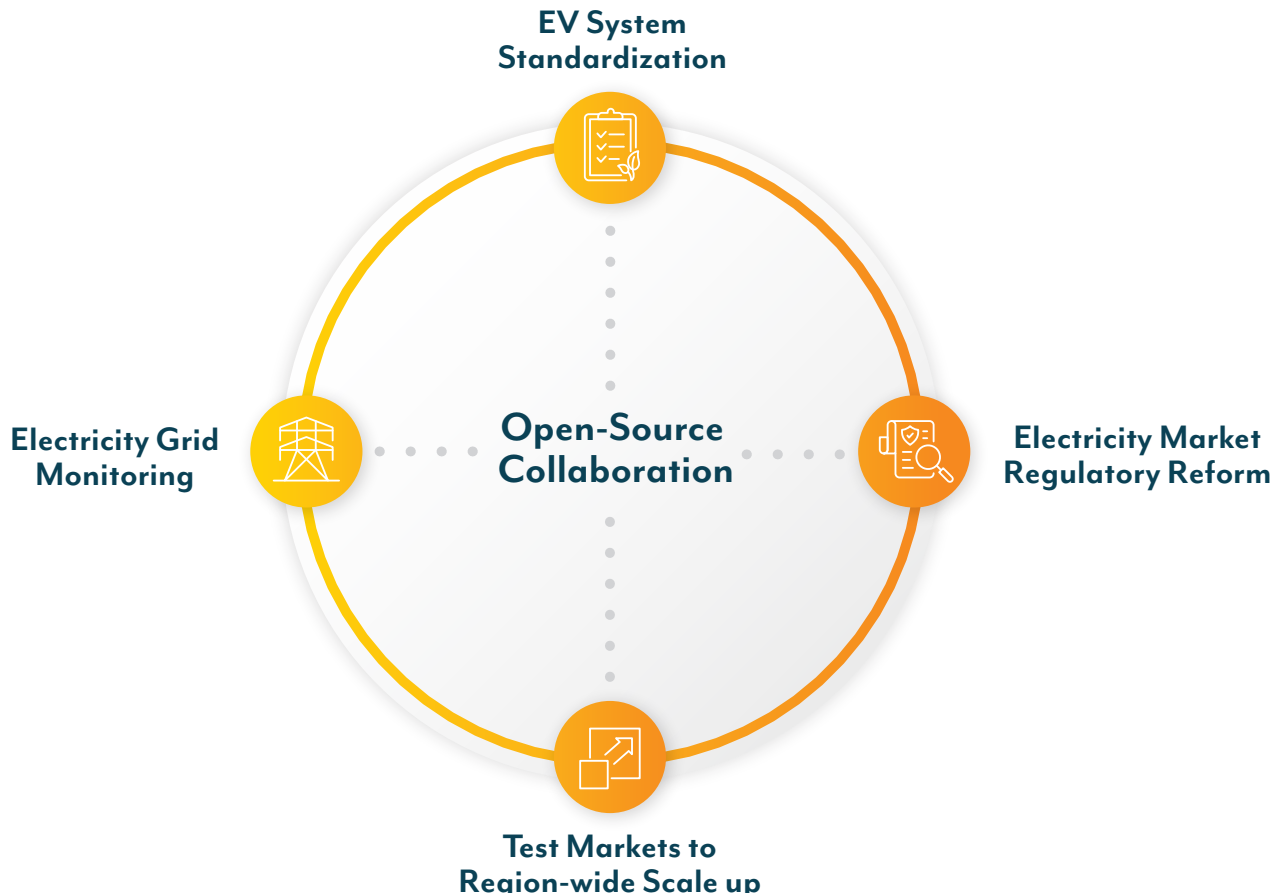
EV Systems Standardization

Right now, the systems are fragmented. Different devices, charging standards, apps, and utility programs create a mess of complexity. EV ownership is already suffering from poor user experiences, less-than-ideal dealer interactions and challenges with fragmented charging systems, especially across large urban centers and city-to-city driving. For example, some [new EV models](#) have two charging ports because of the monumental gap between Original Equipment Manufacturers (OEMs) and charging infrastructure providers. We need a seamless, universal system that works across brands and providers. A system that feels effortless for drivers from the moment they purchase or lease their vehicle in the showroom, through charger installation, to everyday use. Incentive programs like carbon credits or V2G should be built in and automatic, not something that requires technical know-how. A recent [report](#) that Dunskey Energy + Climate prepared for CSA Group provides a comprehensive look at the standardization needed for vehicle-grid integration.

Scaling the EV Revenue Stack

For the economics to work, participation has to be big enough to matter. If individual drivers are expected to take on the extra costs and effort to sell that value to all these different players, this is unlikely and unrealistic. It is time to develop market-wide offerings driven by the major, trusted players for consistent commercial and regulatory markets. Other innovators will follow, creating tools, software, and services that make the system even smarter and more accessible.

Driving EV Market Transformation in an Electrified Economy



Modernizing the Electricity Grid

Advanced systems management, regulatory provisions, and dynamic and incentivized power pricing and terms must underpin the electrification economy. The positive news is that AI can facilitate such systems integration. However seizing these opportunities requires new electricity market design, a challenge we should embrace for a decarbonized Canadian economy.

Instead of relying on costly, gas-powered plants to cope with peak demand, the electricity grid taps into the collective battery power parked in our driveways and garages. This generates power payments for EV owners in return.

When EVs become a core facet of a clean electricity economy, value for car owners increases. That should drive demand for EVs as net costs trend downwards. Implicitly, the business model for automakers would also need to evolve, manufacturing a higher volume of EVs ready to drive off the lot - wired for the electricity grid.

These system changes need to be pioneered in test markets, with electricity planning agencies and utilities buying-in. Let us test drive these ideas. We suggest mid-market, tech savvy communities like Oakville, Ontario; Burnaby, British Columbia, or St. John, New Brunswick – maybe prime places to explore such EV and clean electricity innovations.

Unlocking the Powerful Potential of EVs

Forget trying to get people to adopt electric vehicles because they are better technology and zero emissions. We have the story wrong. Once we flip the switch on the energy potential of EV batteries, it becomes evident that the personal combustion car is obsolete, suited only for a single, specialized, and more expensive job.

The technology exists today. We just need a new roadmap.

Driving Forward Thinking

Ilana Weitzman

Named a Top Woman in EV in North America in 2024, Ilana Weitzman serves as VP of Strategic Development, Clean Transportation at Electric Autonomy, where she shapes the conversation around sustainable transportation and energy innovation. Her work has been featured in leading publications including *Fast Company*, *Business Insider*, *Dwell* and *the Globe and Mail*. As a sought-after speaker, Weitzman has taken the stage at premier industry conferences across North America, from MOVE America to Manifest and Electric Autonomy's own [kWh Summit](#). Her approach to driving change centers on showcasing transformative ideas through original, impactful formats – whether that's orchestrating an [international design competition](#) or curating programming for the 2,000-delegate [EV & Charging Expo](#).



Chris Henderson, *Transformative Energy Curator*

Transformative Energy's Commentaries kickstart and add value to our collective transition to a new energy economy. With this commentary, I envision a curated process alongside [Electric Autonomy's](#) large-scale Trade Show and kWh conference in 2026 and beyond. This dialogue that invites key players to collaborate on systems designs to monetize the **EV Revenue Stack**. These are the building blocks of a decarbonized future. A change-oriented session would certainly merit support and sponsorship from partners.