



Industry Innovation Report How Will EVs Impact the Convenience Industry?

Innovation opportunities for fuel retailers, business
leaders, and strategic decision makers

pditechnologies.com/ev

Foreward

Accelerating Innovation for the Energy Transition

When defining our approach to innovation at PDI, we realize that we're only one part of the fuel and convenience ecosystem. The other key players are:

- Consumers who are continually adjusting their behaviors and expectations based on their experiences
- PDI customers (such as fuel and convenience retailers) that are focusing on how to serve those consumers
- PDI solution partners that are working diligently to simplify the technology ecosystem

Technology innovation resides at the center of all those market dynamics. One of the most exciting areas of innovation is the ongoing energy transition from internal combustion engine (ICE) vehicles to electric vehicles (EVs).

During the most recent PDI Innovation Forum, we surveyed several PDI customers and exchanged ideas on how e-mobility and the energy transition will impact the fuel and retail convenience industry. This report covers what we discussed, including the latest data about the energy transition.

We hope you find this report helpful as you define your own sustainability strategy and identify how to prepare your business for the ongoing transition.



Vlad Collak
VP, Innovation & Web Services

The Energy Transition Is Coming, But How Soon?

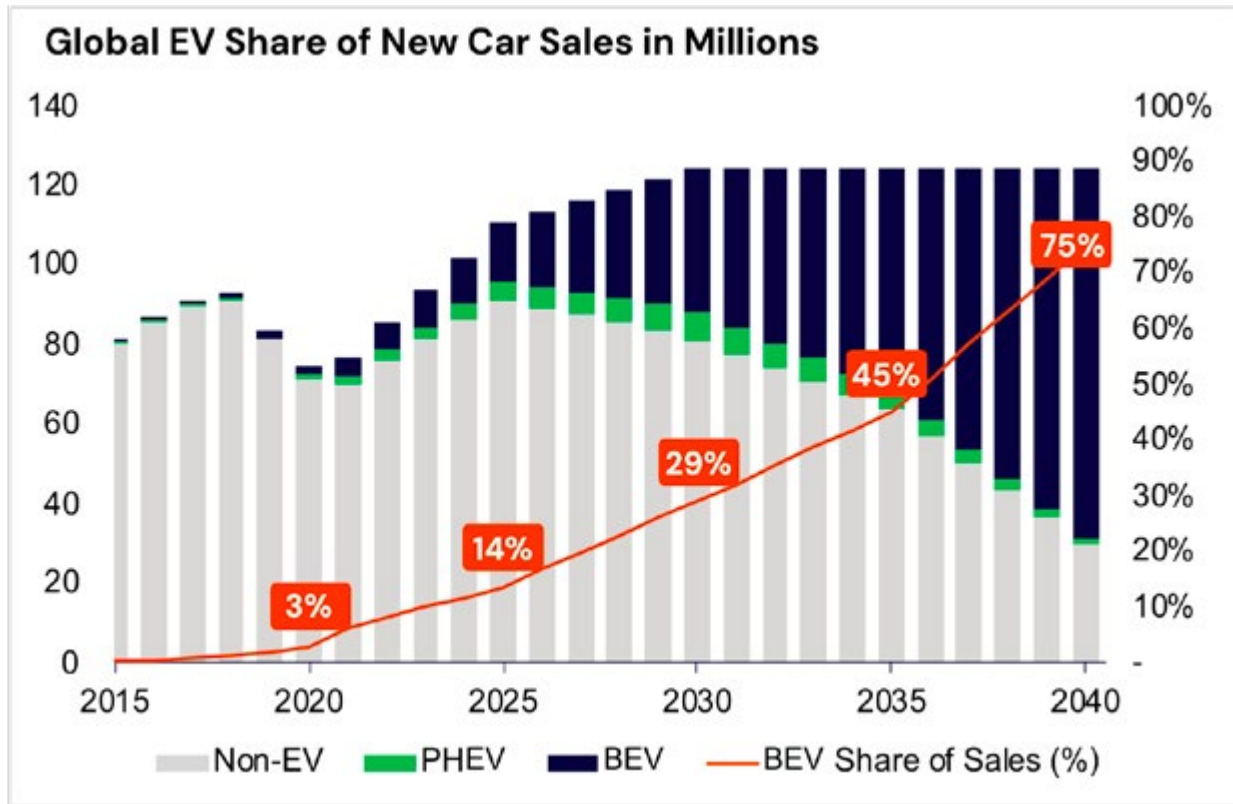
When analyzing the data around the energy transition, we've identified clear trends, challenges, and opportunities for fuel and convenience retailers. There's no doubt that the popularity of EVs is growing, especially as more consumers embrace a more sustainable lifestyle and both governments and auto manufacturers set new regulations and goals to promote the advancement of EVs.

What stands out the most is the rapid growth of EVs and their share of new car sales. Although the US still lags Europe and China in overall share of new EV sales, the US experienced 70% growth in

EV sales volume from 2022 to 2023. Even when accounting for a relatively small baseline, this represents significant growth.

Projecting forward, we anticipate continued global climate-focused policy pledges and announcements by both governments and vehicle manufacturers.

That momentum is expected to steadily increase the percentage of EVs on the road over the next decades.



PHEV - Plug-in Hybrid, BEV = Battery EV

Sources: Cox Automotive; projections based on PDI estimates and IEA's Announced Pledges Scenario (APS), which assumes EV sales achieve climate-focused policy pledges and announcements globally.



Consider These Statistics

By 2040

40% of global vehicles in use are projected to be EVs

By the mid-2040s

EVs are projected to surpass 50% of the vehicles in use

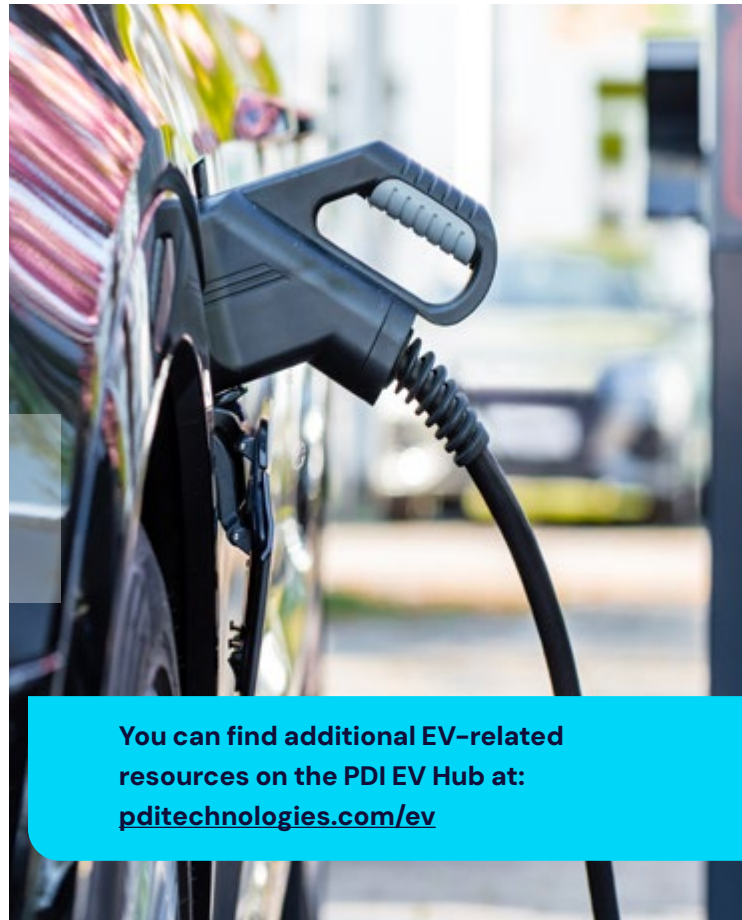
Although the ramp-up of EVs is already happening—especially in US urban areas and the coastal regions—expect to see an equal number of ICE vehicles in use for the foreseeable future. The implications are that fuel and convenience retailers must be prepared to support both ICE and EV driver needs for both the short and long term.

Analysis

Many consumer households will feature a “mixed fleet” of EVs and ICE vehicles for the next few decades, so you must identify how soon you’ll need to support EV drivers with charging points or other services.

Opportunity

The extended EV ramp-up period will likely afford you ample time to evolve your business model and adjust to local or regional trends. Use this time to start exploring how you can appeal to new EV customers.



You can find additional EV-related resources on the PDI EV Hub at: pditechnologies.com/ev

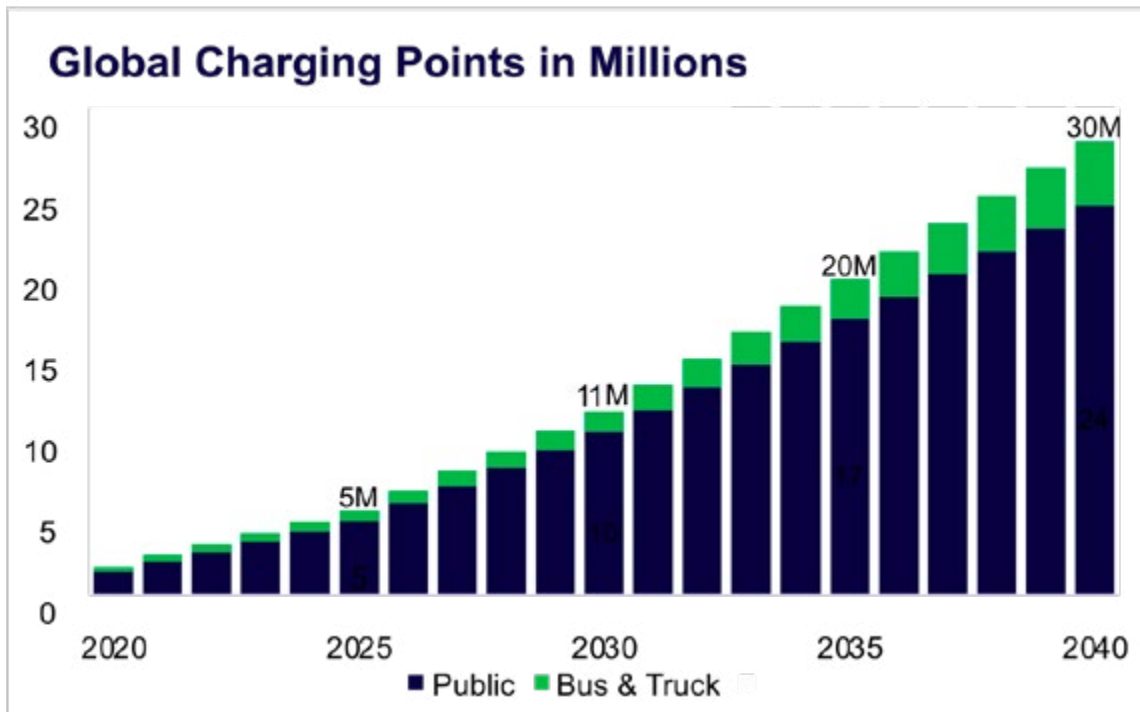
What Will Determine the Energy Transition Timeline?

Two of the biggest factors in determining how soon the energy transition will happen are the pace of technology innovation and the level of convenience that consumers experience. Both of these factors will depend greatly on advancements in battery capacity (the mileage range of an EV) and battery charging speeds.

Many consumers will only consider purchasing an EV if they have a fast, reliable charging option where they live. For example, if you don't own a home or have easy access to a shared station in an apartment building, you typically must rely on public charging stations.

Unfortunately, the lack of public charging infrastructure is a clear challenge to EV adoption. In fact, industry projections call for 30 million charge ports needed globally by 2040, with nearly 5 million needed in the US alone.

When you consider that there are fewer than 5 million charging points globally today, it's easy to understand the enormous scale of that challenge and the significant investment required going forward.



Sources: National Association of Home Builders (NAHB); PDI estimates based on PwC and BloombergNEF "Electric Vehicle Infrastructure: What's in Store for 2040?"

Building the private and public EV charging infrastructure will require a significant investment—and directly impact the timeline for EV adoption.

EV Bottlenecks

- Charging availability and range anxiety
- Raw materials supply and processing (lithium, cobalt)
- Power grid readiness (additional 20% capacity required)
- Price disparity for EVs (\$64K average) vs. ICE (\$48K average)
- Social justice / lifecycle environmental costs

EV Catalysts

- Public policy-driven consumer incentives (IRA EV credit)
- Bans on new ICE car sales (such as in California by 2035)
- Ongoing government pledges to promote EV adoption
- OEMs shifting to EV development (approximately 100 new models by 2025)
- Improvements in battery capacity and charging performance

Analysis

Supply chain limitations, raw materials, and the power grid capacity will all be key factors that determine the pace of EV adoption—as will technology innovations in charging time and battery capacity.

Opportunity

When EV drivers need to charge their vehicles, they'll spend more time onsite than they do with a fuel-up. Can you incentivize them to visit your store by delivering loyalty rewards, fresh foodservice offerings, clean bathrooms, in-store seating, or unique (and higher-margin) merchandise?

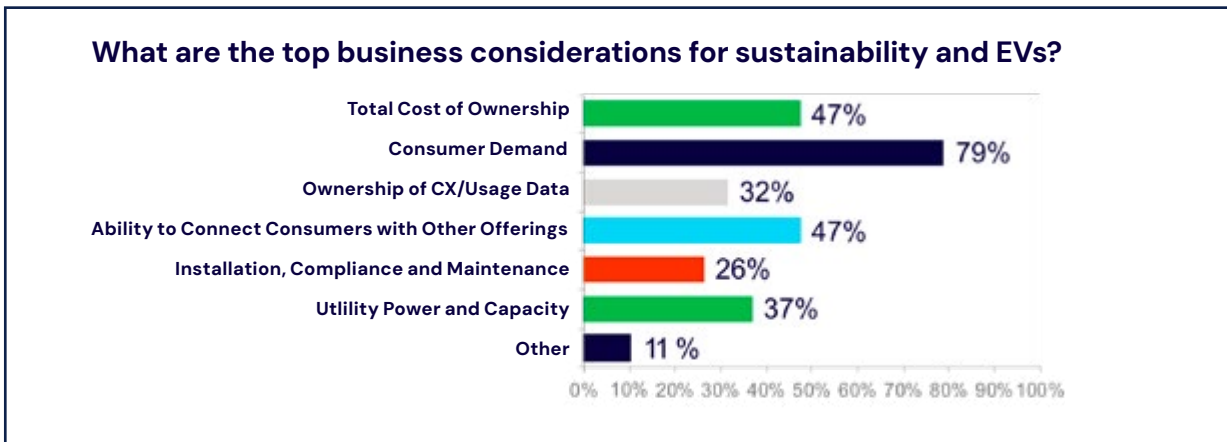
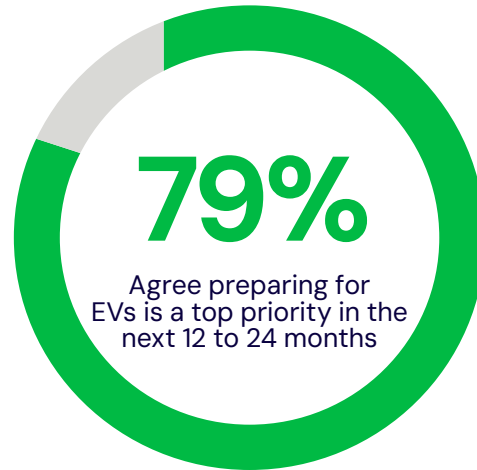


Pulse Survey Results: What Are the Top EV Priorities?

As part of the recent PDI Innovation Forum, we conducted a short “pulse” survey with the participants to assess how much they were prioritizing sustainability and the energy transition to EVs as part of their business strategy in the next 12 to 24 months.

The results revealed that 79% of the survey participants either agreed or strongly agreed that preparing for EVs would be a priority, while only 21% disagreed or strongly disagreed.

Although retailers are clearly willing to prepare for EVs, they still face a variety of challenges—and the economics need to make sense before they act. As you might expect, the top consideration in moving forward with an EV strategy is evaluating the market need, with 79% of respondents pinpointing consumer demand as the key factor. The next highest considerations include total cost of ownership and the ability to connect EV consumers with other offerings.



What are the Top Considerations for Sustainability and EVs?

Because of the need to justify any significant investment in EV infrastructure, many retailers are focusing on defining their overall sustainability strategy first. Uncertainty about the energy transition timeline makes it easier to start with long-term planning and identifying low-cost steps that can be part of an incremental, measured approach to sustainability.

One of the biggest questions is whether you can alter the economics to make EV infrastructure investments more viable. For instance, can you find ways to offset your startup costs by collaborating with EV manufacturers, applying for government grants, or partnering with local municipalities?

5 Tips to Prepare for EVs

Even if you're not yet ready to install EV charging stations today, you can begin evaluating the requirements and opportunities:

1. Make sure you have the physical infrastructure to simultaneously support fuel pumps and EV chargers.
2. Review your tech stack to understand extensions and upgrades required for EVs.
3. Familiarize yourself with your local zoning and permitting requirements.
4. Find out whether your local power grid will support EV charging stations.
5. Check the number of registered EVs in your area to evaluate your market opportunity and ROI.

Analysis

For the foreseeable future, you'll need to deliver a convenient experience to both ICE and EV drivers. That means having ample space and providing easy access to amenities near your fuel pumps and charging stations.

Opportunity

This is a chance to re-evaluate your customer experience and how "full-service" EV charging could add value to each store visit. Could you deliver food to waiting customers or provide cleaning/detailing services for EVs that are being charged?

How Do You Appeal to the Growing Appetite for Sustainability?

Based on a survey of over 1,000 American consumers, the 2023 PDI “Business of Sustainability Index” validates the growing consumer interest in buying sustainable products from sustainable businesses—across geographic, socioeconomic, political, and generational boundaries.

However, as eco-focused younger generations increase their buying power, retailers should expect a steady ramp-up of new EV drivers who are tech-savvy and who tend to demand a commitment to sustainability from the businesses they visit.

Key Findings on Sustainability

- 74%** Consumers want to buy sustainable goods and products
- 68%** Consumers are willing to pay more for an environmentally sustainable product
- 75%** Consumers would be more likely to choose a gas station offering carbon offsetting
- 64%** Consumers are considering buying or leasing an EV for their next vehicle



How Can You Leverage PDI Sustainability Solutions?

When you need to innovate quickly, an experienced partner can help you get there faster. The PDI Sustainability Solutions team combines deep industry expertise and proven solutions to help you incorporate sustainable elements and carbon offsetting into your business.



Loyalty, Fuel, and Convenience

Measure and offset emissions on fuel transactions while engaging consumers through new rewards and point redemption offers.



Branded Card Programs

Measure and offset emissions tied to private-label debit card transactions (consumer and fleet) while differentiating your card offer.



B2B Fleet and Logistics

Measure and offset emissions on last-mile delivery, corporate fleets, or bulk fuel delivery.



Mobile Payments

Measure and offset emissions via payment methods at the POS and with apps (private-label debit and other forms of payment).

Analysis

A growing number of consumers are willing to pay more for a product or service if it has a positive environmental impact—even across regional and demographic boundaries.

Opportunity

Think of new ways to make sustainability more convenient. Can you elevate your customer experience with services to fill the average 15–30 minutes of charging? How about combining your loyalty program and sustainability strategy to attract eco-conscious consumers?

Let's Innovate Together

Visit the PDI EV Hub at pditechnologies.com/ev.

With 40 years of industry leadership, PDI Technologies, Inc. resides at the intersection of productivity and sales growth, delivering powerful solutions that serve as the backbone of the convenience retail and petroleum wholesale ecosystem. By "Connecting Convenience" across the globe, we empower businesses to increase productivity, make informed decisions, and engage faster with their customers. From large-scale ERP and logistics operations to loyalty programs and cybersecurity, we're simplifying the industry supply chain for whatever comes next.

pditechnologies.com

