Mobility Plaza®

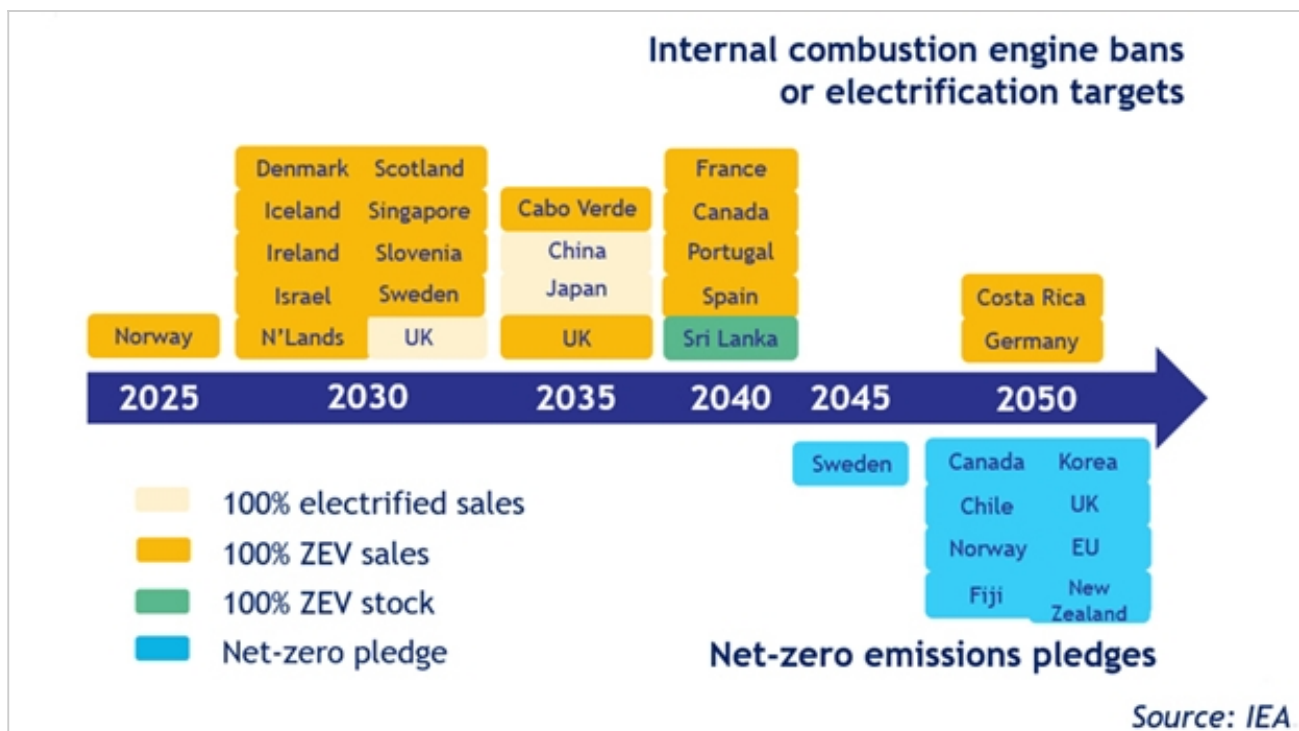# Understanding EV adoption and the impact on fuel demand

Fuel retailers have seen extended period of volatility in demand for a variety of reasons. But the growth of electric vehicle (EV) adoption represents a new market force that will become a constant factor influencing network planning decisions.

Understanding the pace of EV sales and how adoption is distributed within markets is critical when it comes to making strategic decisions for the long term. As 2021 draws to a close, what's the EV market situation globally?

According to BNEF, there are 12 million passenger EVs on the road today, but this is set to rise to over 600 million by 2040, based on markets, technological, legislative, and economic factors.

The road ahead

- Legislation – more than 20 countries have electrification targets or ICE bans for cars either already in law or proposed. Many more are in progress, and eight countries, plus the EU, have announced net-zero pledges

Internal combustion engine bans or electrification targets

	Denmark / Scotland		France		
	Iceland / Singapore	Cabo Verde	Canada		
	Ireland / Slovenia	China	Portugal		
	Israel / Sweden	Japan	Spain		Costa Rica
Norway	N'Lands / UK	UK	Sri Lanka		Germany
2025	**2030**	**2035**	**2040**	**2045**	**2050**

Net-zero emissions pledges: Sweden (2045); Canada, Korea, Chile, UK, Norway, EU, Fiji, New Zealand (2050)

Legend:
- 100% electrified sales
- 100% ZEV sales
- 100% ZEV stock
- Net-zero pledge

Source: IEA

- A wider range of electric vehicles – over 200 battery EVs are in the market as of today, with ranges reaching parity with ICE vehicles, and almost 100 new full electric models set to launch within the next two years

**Electric vehicle models available globally and average range**

Source: IEA
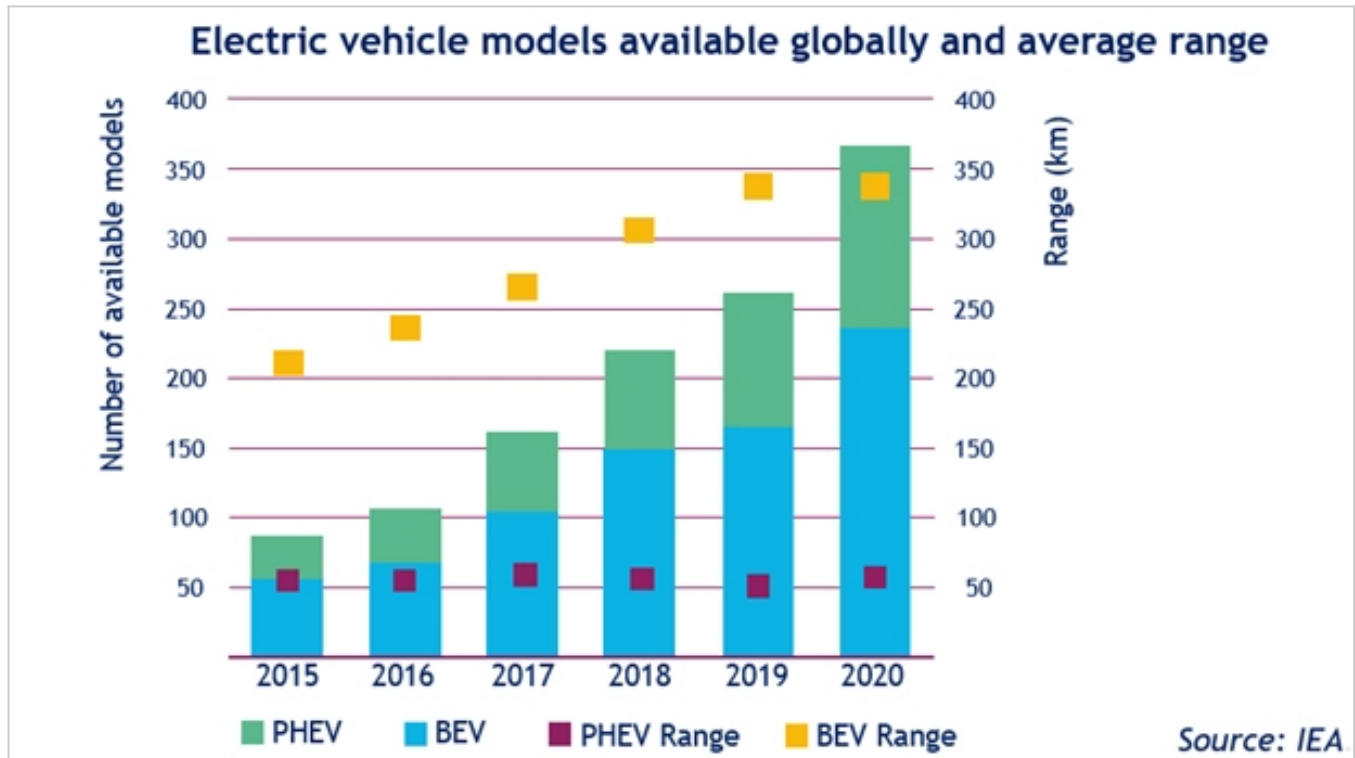
- Infrastructure – Over the last five years, there has been exponential growth in the availability of public chargers, reaching 1.3 million globally by the end of 2020, of which 30% are fast chargers; but there is some way to go to support the speed of growth in EV ownership.

Impact on oil demand

As a result of the increased adoption, Bloomberg estimates that EVs and fuel cells will displace over 21 million b/d of oil demand by 2050, with a net impact of 18.6 million b/d. This could be higher still if additional changes to policies and regulations are enacted.

Evolution of oil demand from road transport: Economic transition scenario
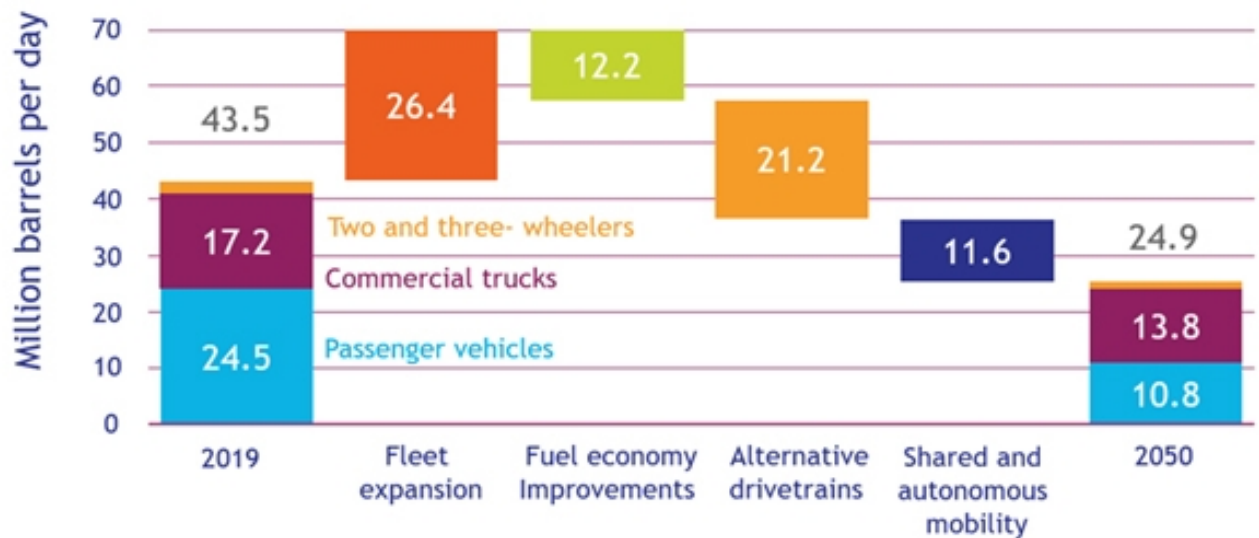
Source: IEA, BNEF

How does this impact fuel retailers?

The impact of the changes in oil demand will vary from country to country, market to market, and even site to site within trade areas. There will be no 'one size fits all' approach to site redevelopment or network planning. To establish the true effect, macro and micro-level impact analysis of legislative interventions and changing fuel and EV demand is needed.

Know the key drivers behind gasoline demand and sales, and account for the unpredictable

It's crucial to understand how EV sales will impact gasoline volumes at a macro level and on individual gas stations over time – and the reaction of competitors can complicate this further.

For robust, accurate demand forecasting we need to consider the following:

- EV adoption curves: How will the EV adoption curve influence future gas demand?
- Variable selection and impact: Which variables are central to forecasting gasoline demand? Consider demographic characteristics, vehicle ownership rates, customer segmentation
- Mobility, and other behavioral impacts
- Future uncertainties: How do uncertainties surrounding income, employment, behavioral patterns, and resource constraints simultaneously influence gasoline demand?
- Dynamic outcomes: What is the potential range of future outcomes (base, high, and low ranges) and the confidence in each scenario?
- Macro and micro forecasting: How do you translate market-level forecasts to site-level forecasts?
- Competitive environment: What is the impact of the competitive environment and its response

to EV adoption, on micro level gasoline demand?

Data empowers your decision making

Fuel retailers have been using data to predict gasoline demand impacts for decades — with a high degree of accuracy. AI and modeling methodology can provide an understanding of the macro shift away from ICE towards EVs and its subsequent impact on gasoline demand by region. It's critical to establish the empirical relationship between the variables impacting demand and EV adoption rates, for a range of future outcomes resulting from differing policy and behavior changes.

Using the empirical understanding of demand shift at a macro level, fuel retailers can predict how a shift towards EVs is expected to impact gasoline demand at an individual site level by accounting for certain demographic variables such as population, income levels, urbanity, and the competitive environment.

Simulating the competitive environment and how it may shift over time requires an understanding of micro level market share, and the threshold at which operating a fueling station is no longer viable, enabling a redistribution of demand to be calculated.

Once you know all of this, you can take decisive action on each individual site to maximize total site profitability.

Take action now

So, let's say you have gas stations in cities with ICE bans that are about to come into effect, or where increased adoption is likely, how do you compensate for the loss in fuel sales as a result?

One strategy would be to use site level analysis to determine the right action to maximize return. The range of actions could include;

- Add EV chargers
- Add hydrogen units
- Expand food offer
- Expand convenience offer
- Combination of the above
- Close the site

Whether your actions are focused around creating an alternative fuels proposition, enhancing or creating new revenue streams through food or convenience, or consolidating sites, making decisions backed by insight is key to strategic success.

Want to get a head start on your EV strategy in 2022? **Discover the essential considerations here.**

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