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Updated Mar 4, 2022 - Energy & Environment

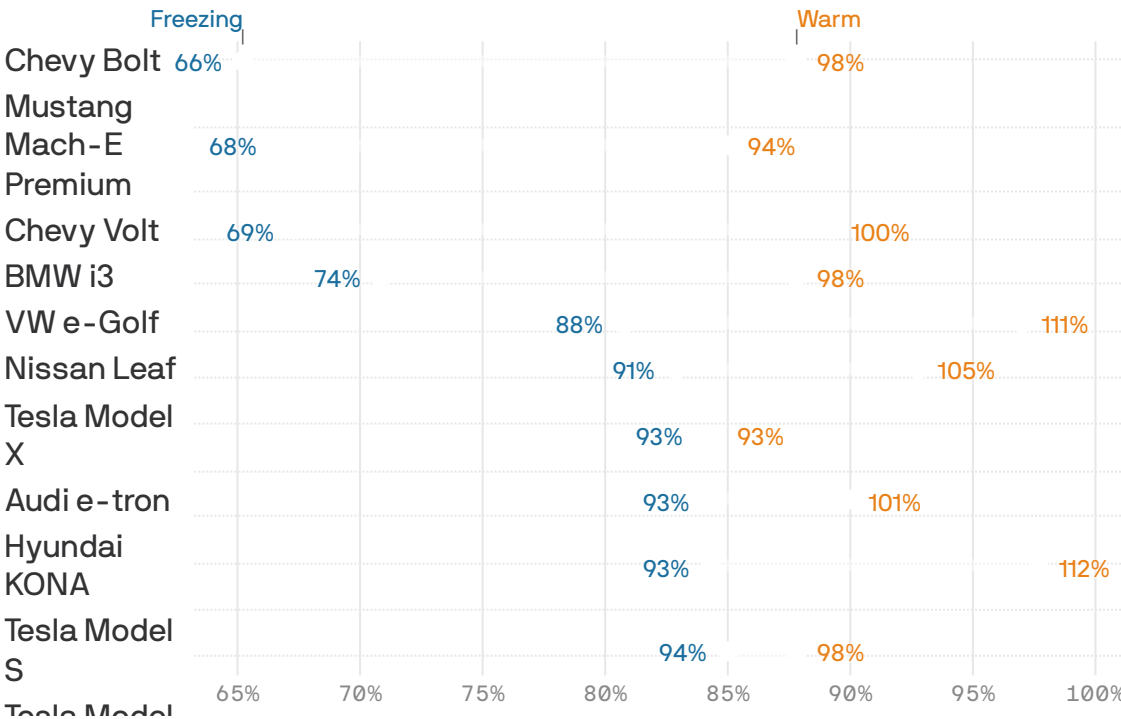
The cold hard truth about electric vehicles in winter

 Joann Muller, Margaret Harding McGill



How weather affects EV battery range

Percentage of EPA range in freezing (20–30°F) and warm (70°F) weather



more Americans are opting to purchase an electric vehicle, but some EV owners are surprised to find out how much their car's driving range is compromised by winter weather.

Why it matters: Getting over the hurdles of buying an EV — the higher sticker price, knowing where to charge it or the fear of getting stranded — is hard enough.

- If your car doesn't live up to the EPA-estimated range that was promised, it could undermine confidence in EVs and even deter potential buyers.

Case in point: In January, Margaret and her husband took their first road trip in their new Mustang Mach-E from Washington, D.C., to a cabin near Wardensville, West Virginia, roughly 110 miles away.

- Their car has an EPA range of 300 miles, but in the chilly weather the estimate before they left home was only about 200 miles, so they had to build in a stop for recharging.

Reality check: Most electric vehicles experience some loss of driving range in cold weather.

- In Norway — where half of all new cars are plug-ins — tests show that [EVs lose about 20% of their driving range](#) and take longer to charge in cold temperatures, according to the Norwegian Automobile Federation.
- AAA found the loss in driving range [could be as high as 41%](#) with the heater on full blast.
- Consumer Reports urges EV buyers to [opt for a larger battery](#) to account for unpredictable weather.

- “They prefer the same sort of temperature range that people do. Anything below 40 or above 115 degrees Fahrenheit and they’re not going to deliver their peak performance,” according to Wired.

Some EVs do better than others in the cold, however, according to battery analysis firm Recurrent, which uses data collected from EV owners to create "battery health reports" on pre-owned EVs.

- The company analyzed the [real-world winter driving range](#) of thousands of electric vehicles and found the Tesla Model Y retained most of its EPA-rated range in winter.
- Tesla has developed more advanced thermodynamic systems, including a heat pump to warm the interior, Recurrent CEO Scott Case tells Axios.

Between the lines: Cold temperatures slow down the chemical reactions in battery cells, which saps range and increases charging times.

- Without heat-producing engines, EVs also have to siphon battery power to warm the cabin.

The intrigue: Your driving also affects your EV's range. If you drive with a lead foot, or you like to crank the heat, your expected range will be less.

- Ironically, driving only a few miles a day will also shorten your range estimate.

There are steps EV owners can take to maximize their cold-weather driving range, Donna Dickson, chief engineer of the Mach-E, tells Axios.

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- “The key is warming that battery up,” Dickson said. “That pre-conditioning helps so much because it gets it to a temperature level that works efficiently.”

What to watch: Ford is considering a software update that would give drivers more insight into how to improve their vehicle’s range.



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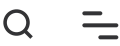
Photo: Anna Moneymaker/Getty Images

President Biden will announce Tuesday that the U.S. will ban all imports of Russian oil, natural gas and coal in response to Vladimir Putin's invasion of Ukraine, according to a source familiar with the decision.

Why it matters: Biden had come under [growing pressure](#) from Congress and Ukraine to sanction Russia's most important industry, but hesitated due to concerns about rising energy prices and opposition by U.S. allies in Europe.

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Asher Price, author of [Axios Austin](#)
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Data: The University of Texas at Austin; Chart: Baidi Wang/Axios

Texas' restrictive abortion law has compelled women to travel out of state for abortions or to seek self-managed abortion medication, per new research out of the University of Texas.

The big picture: Even as in-state abortions have plummeted, the law, known as Senate Bill 8, has not reduced the need for abortion care in Texas.

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