

Reducing emissions from transportation is a long, difficult road for Maine

A preference for pickups, paltry spending on public transit options and slow adoption of electric vehicles create significant obstacles for the state's ambitious goals.

BY [PETER MCGUIRE](#) | STAFF WRITER | 12.15.2019



A Tesla car charging station near Hannaford in Portland stands at the ready. There are about 556 electric and 22,300 hybrid vehicles registered in the state, accounting for about 2 percent of Maine's 1.3 registered vehicles. A preference for pickups and SUVs, and slow adoption of electric vehicles, creates significant obstacles for Maine's ambitious carbon reduction goals. *Derek Davis/Staff Photographer* [Buy this Photo](#)

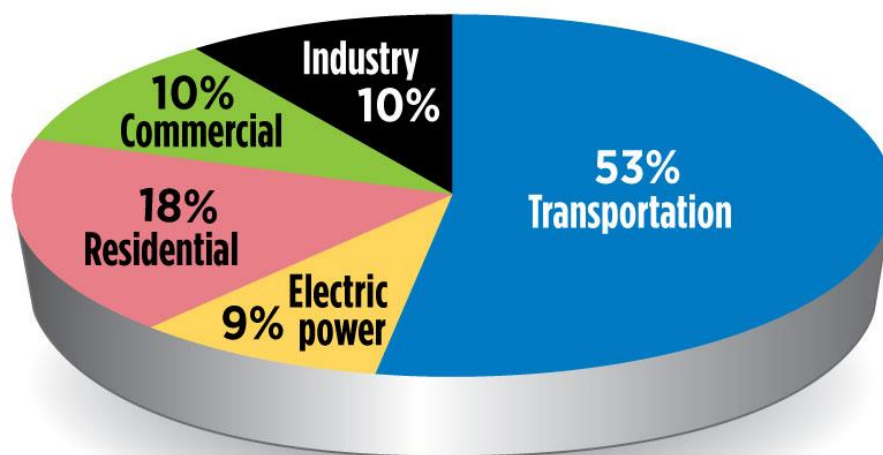
The most daunting obstacle in Maine's struggle to cut greenhouse gases in the next two decades is also the most ubiquitous – pollution from the tailpipes of more than a million personal automobiles on state roads.

Denting vehicle emissions will require dramatic shifts – widespread adoption of electric vehicles, public transit expansion, denser and more efficient towns and cities, and overcoming Mainers' reliance on single-occupancy vehicles to travel everywhere.

But reaching those solutions will be an uphill battle. State public transit spending is just 17 percent of the national median, less than 1 percent of registered vehicles are all-electric, Mainers live in dispersed, rural communities and many do not want or cannot afford new, fuel-efficient vehicles. Many of the policies that could make substantial change will come from the federal government.

Maine CO₂ emissions by sector

Maine's transportation sector is the single largest source of greenhouse gas pollution in the state, accounting for more than half its total emissions. Nationally, transportation accounts for about 29 percent of the total.



SOURCE: Maine Department of Environmental Protection

STAFF GRAPHIC | MICHAEL FISHER

“I think sometimes it is such an overwhelming, depressing topic that people kind of shut down,” said Joyce Taylor, co-chairwoman of the transportation working group for the Maine Climate Council and the state’s chief highway engineer.

In [September](#), Democratic Gov. Janet Mills established the council and tasked it with reducing Maine’s greenhouse gas emissions by 45 percent in 10 years and 80 percent by 2050.

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At its second meeting last month, 30 members of the working group from industry, government and civil society grappled with the scope of the problem and the clearest solution – how to get vehicles to pollute less and people to drive less.

“It’s challenging, but we can’t let the challenge overwhelm us,” Taylor said.

COMPETING INTERESTS

Overall, Maine’s greenhouse gas emissions have declined since a peak in the early 2000s. In 2017, the state produced 15 million metric tons of CO₂, almost 19 percent less than in 1990.

But as emissions from the state’s residential, commercial energy and industrial sectors have fallen, transportation pollution remains stubbornly high, about 8 million tons of CO₂ a year, according to the [U.S. Energy Information Administration](#). Those emissions mostly come from tailpipes of personal vehicles, not air, rail, shipping or marine traffic.

Policies to change that dynamic are challenging because it means managing at least three parties with divergent aims – vehicle consumers, auto companies and fuel suppliers, said Jonathan Rubin, an economist at the University of Maine and chairman of the environment and energy section of the U.S. Transportation Research Board for the National Academies of Sciences, Engineering and Medicine.

“You have three different significant players all trying to make themselves happy through enjoyment of the vehicle or by making money. You have to coordinate three sectors,” Rubin said.

Federal auto fuel-efficiency standards are the most effective way to curb emissions, but the Trump administration appears opposed to stricter fuel economy. Last year it rolled back an [Obama-era policy](#) that automakers had to reach an average 51 miles per gallon for new vehicles by 2026, and in September [revoked](#) California’s ability to set its own fuel standards. Maine has joined other states [challenging](#) those policies in court.

Absent federal rules, Maine can pursue its own solutions, with less impact.

MAINERS KEEP ON TRUCKIN’

Replacing fossil-fuel engines with all-electric versions tops the list of policy options. Three-quarters of Maine’s electricity comes from renewable sources, so all-electric vehicles have greater emissions impact here than states reliant on dirtier power.

But convincing consumers to switch from roomy trucks and SUVs to smaller, efficient cars or all-electric vehicles is a tough ask. A U.S. Department of Energy analysis of 2017 data showed that ownership of plug-in electric vehicles nationally averaged 2.21 per 1,000 residents. In Maine, it was 1.31 per 1,000 residents.

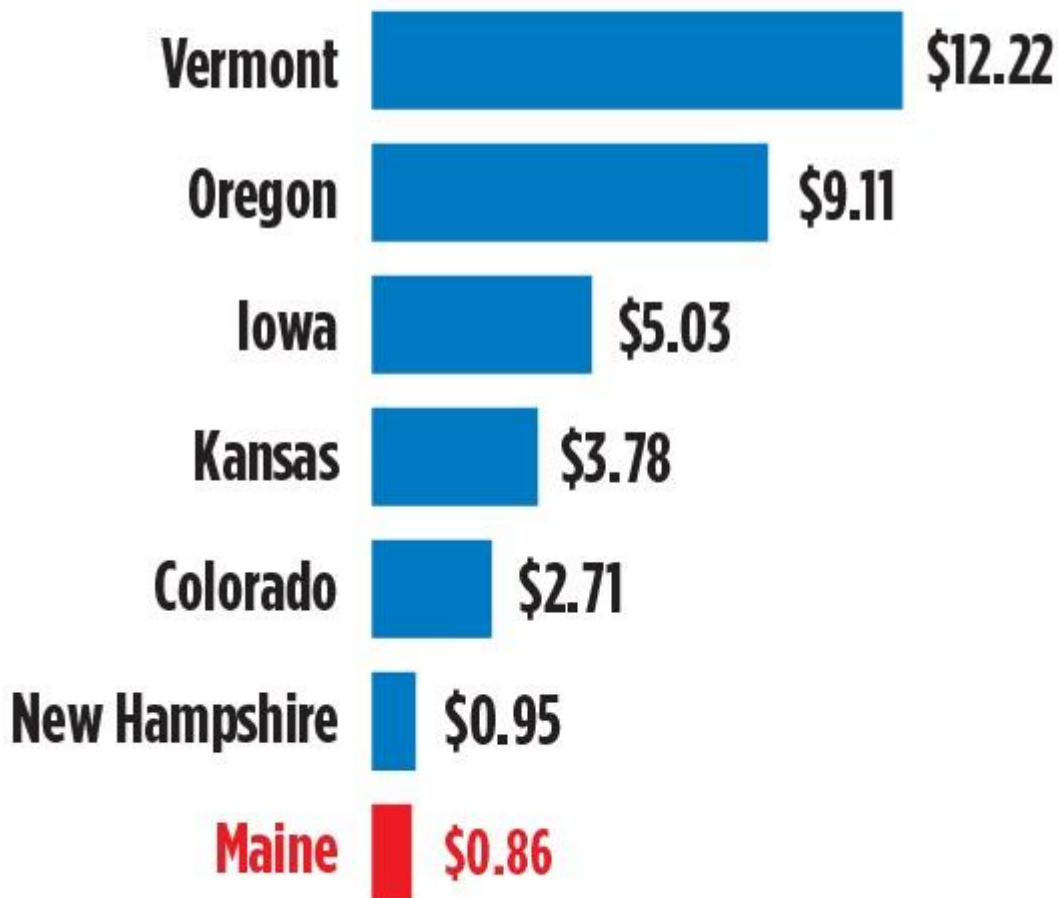
“It is a huge challenge. I think it is cultural,” Rubin said. “A discussion about values and people and communities and having people understand that their choices really matter.”

In 2015, the most popular new vehicle in Maine wasn’t an electric or hybrid vehicle, or even a fuel-efficient sedan – it was a [pickup truck](#).

Persistently low pump prices mean Americans have selected big cars and trucks over smaller vehicles. Small and large SUVs accounted for 43 percent of the U.S. market in 2017, the biggest share of any vehicle class, according to the most recent Environmental Protection Agency automotive trends [report](#).

Public transit spending

Maine ranks 38th in the nation for per-capita spending on public transportation such as bus and rail lines. The national average is \$5 per capita, while Maine spends 86 cents per capita per year.



SOURCE: Maine Department of Transportation

STAFF GRAPHIC | MICHAEL FISHER

Trucks and big SUVs get better gas mileage and emit less CO₂ than 20 years ago, but not as much as smaller vehicles. Last year, the average pickup truck got 19.3 mpg and a large SUV got 23 mpg. Sedans and wagons, on the other hand, got almost 31 mpg on average.

Just 556 electric vehicles are registered in Maine, less than one-tenth of a percent of the 1.3 million total registrations. There are just under 22,600 hybrid-electric vehicles, roughly 2 percent of the total.

To boost electric vehicle sales, the state offers [rebates](#) up to \$2,000 for qualifying vehicles and added public [charging stations](#) across the state. The program has issued 145 rebates since it started this summer, according to Efficiency Maine Trust, the quasi-governmental agency that operates it.

SLOW ADOPTION

The rate at which electric vehicles are being purchased is now too slow to make any real impact, said Adam Lee, president of Lee Auto Malls, one of the state's biggest car dealers. His dealerships sell about 30 Nissan Leafs, a common all-electric model, a year, less than half a percent of annual vehicle sales. Those low sales are after the company makes every effort to market electric vehicles, Lee added.

"It may be the solution, but at this rate we are not selling enough to make it the solution," he said. Without federal rebates and tax incentives, state-level incentives can do only so much to stimulate more sales, Lee added. He doesn't believe a federal program is realistic under the Trump presidency.

Electric vehicles get cheaper every year and manufacturers plan to release mass-market electric trucks, sports cars and SUVs in the future. But now most options are still more expensive than a fossil-fuel counterpart and may not be perceived to have the same performance or reliability. Many people regard electric cars as a luxury product, said Barry Woods, who promotes electric vehicles for solar panel installer ReVision Energy. Advertising that promotes profitable, but inefficient, trucks and SUVs also doesn't help, Woods said.

"There is a perception issue, which is too bad, and I think it is why we need more consumer education in the space so people can see what choice they have," he said.

Even if everyone went out and bought an electric vehicle tomorrow, they'd contend with an insufficient public charging infrastructure. There are just 187 public charging stations across Maine and only 24 are fast-charging, Woods said. If Maine had 30,000 electric vehicles on the road – a benchmark to reach a zero-emissions vehicle mandate

set by California law – it would need almost 800 public charging stations and the same number at places of work.

“If we are going to do this, we have a ways to go,” Woods said.

LOW PRIORITY, LITTLE COORDINATION

Realistically, rapid adoption of electric vehicles doesn't appear on Maine's horizon. That leaves a narrower set of policy prescriptions to cut back transportation emissions.

“Some of the transportation options other states will rely on don't work as well in Maine,” said Hannah Pingree, head of the state's Office of Policy Innovations and the Future. “Transportation emissions are among the most important areas of focus in our climate work,” which “has a lot of challenges in a state like Maine.”

Expanding and improving the state's sparse public transit network is likely a top priority in a way it has not been for decades.

The Maine Department of Transportation's spending on public transit is among the lowest in the country – just \$1.2 million a year, or about 86 cents per person. The national transit spending average is about \$5 per person, and Vermont, another rural New England state, spends \$12 per person. The bulk of Maine DOT funds are spent to [shore up](#) the state's sprawling network of roads and bridges.

“It's anemic,” said Greg Jordan, general manager of Greater Portland Metro, the biggest public transit system in the state. “The funding from local jurisdictions is fair, but not enough to support a really robust transportation system.”

Portland Metro has steadily increased ridership in the past five years, reaching [almost 2 million](#) boardings in 2018. Booming housing and business development, population growth and increasing congestion makes southern Maine an obvious place where boosting transit ridership could help curb emissions. Emissions in the Portland region have increased 40 percent since 1990, according to a New York Times analysis.

But the region's fractured transit system, shared between six agencies with no shared schedules, ticketing or management, creates inefficiencies and discourages riders. “It seems to us that our No. 1 goal is to make this system easy for the customer,” Jordan

said. “If they are disconnected brands all over the place, people who have a choice are just not going to do it.”

THE IMPACT OF SPRAWL

Reducing commuter pollution may also require a reconsideration of where people live and work. Over the long term, some planners want communities designed around dense urban cores where people do not need an automobile for every trip to the office, store or school.

“Transit is only going to work to the extent land use supports it,” Jordan said.

Transportation is one of the biggest contributors to household carbon footprint, but is disproportionately higher in suburban communities, according to data from [Cool Climate Network](#) at the University of California, Berkeley. In Maine, the carbon emissions from bedroom towns such as Falmouth, Cumberland, North Yarmouth, Pownal, Gorham, Hollis and Buxton are about twice those on the Portland peninsula.

Those figures aren’t a surprise considering decades of land-use policy that encouraged sprawl and emphasized large home lots, dispersed business and shopping districts and lots and lots of free parking, said Kristina Egan, director of the Greater Portland Council of Governments, a regional planning group.

State incentives could help towns and cities come up with new zoning and housing policies that encourage downtown cores with services and amenities accessible by foot, bicycle and public transit. Changing our built environment is the overall long-term fix to emissions and an affordable housing crisis, Egan said.

“It is both a climate strategy and a workforce strategy; municipalities can take action about this immediately,” Egan said. “There is a demand for housing, and we don’t have the zoning rules that allow for it in places where people are living and working.”

PAYING THE PRICE

As the state develops a long-term plan to reduce emissions, it is also pursuing short-term fixes. The Maine Department of Transportation intends to use less-polluting biodiesel in some of its heavy trucks in southern Maine and government agencies are switching to electric vehicles. Mills has [directed state agencies](#) to develop plans to

meet the state's carbon reduction goals and said the Department of Administrative and Financial Services would purchase five electric vehicles for office use as an example.

Maine may make headway against its overall emissions reduction goals by improving [building efficiency](#), producing more electricity from [renewable sources](#), installing cleaner [home heating](#), and storing more carbon in the state's expansive [forestland](#).

Eventually, Mainers are going to have to confront the impact their everyday vehicle use is having on the environment, said Dylan Voorhees, energy director at the Natural Resources Council of Maine.

A multistate alliance called the [Transportation Carbon Initiative](#) could provide future relief. The initiative, a collection of 12 Northeast and mid-Atlantic states and Washington, D.C., intends to put a limit on the amount of carbon produced by vehicles and put a price on that pollution. It is modeled on a similar program that reduced greenhouse gases from power plants in New England starting in 2007.

"I'm a fairly big believer in markets to get the right outcome – people understand the economic implications of their actions," Voorhees said.

"We need to account for the fact that our cars and trucks are polluting our atmosphere, are changing our oceans, are changing our forests, are making us sick; that is the cost of our polluting out of our tailpipes for free," he added. "We are not really paying the full cost of driving any of our cars, much less our trucks."

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