On old & new Cars

- *Old Technology Cars (Internal Combustion Engines - ICE)*

- ***New Technology Cars (Electric Cars)***

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Combustion Going Bust:

Global Phase-outs of

Gasoline Cars

Ending … the

Internal Combustion Cars

Facing out ICE

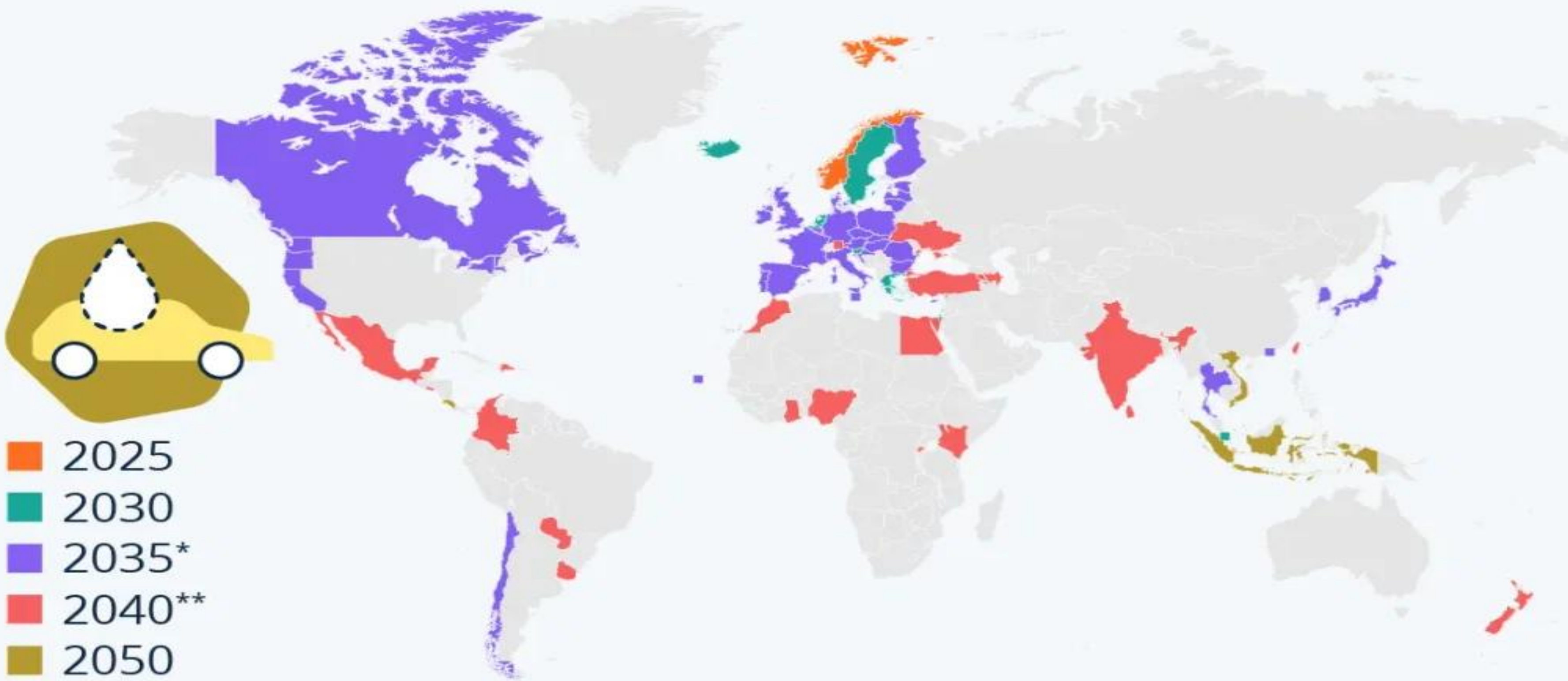
- The European Union is phasing out new gas car sales by 2035, and many other countries and regions - including 12 US states - have announced official targets or similar plans.
- **A gasoline vehicle phaseout** is sometimes called an

Internal Combustion Engine ban, or ICE ban.

- Many countries are planning to ban sales of new diesel vehicles in addition to new gasoline-powered cars.
- The long list of countries planning to ban sales of new fossil fuel vehicles shows a growing trend of countries moving beyond gasoline to cleaner, cheaper alternatives.

Combustion Going Bust: Global Phase-outs of Gasoline Cars

Approximate official targets for the complete phase-out of the sale of new gasoline/diesel-powered cars, by country



Slovenia, Japan, Canada, Singapore and some U.S. states will continue to allow sale of hybrids.
Sri Lanka: combustion road ban
* including EU-wide ban ** Including signatories of COP26 2.A and 2.B pledges

Sources: ICCT, A2Z Coalition, Coltura, Statista research

Facing out ICE

- As of 2024, 60 countries and territories around the world had set targets, signed pledges, or announced plans to phase out gasoline and diesel cars by a concrete date - a move that climate scientists call necessary and that is seen as vital for countries to achieve net-zero carbon emissions.

- The earliest phase-out of this kind is set to happen soon in Norway, which has been an electric mobility pioneer.

- Relevant announcements for the middle of the century followed more recently from the likes of Vietnam and Indonesia.

- The area with the most bans in preparation is Europe, where the European Union approved a law in early 2023 that will outlaw the sale of gasoline engine cars in its member states from 2035.

Facing out ICE in Europe

- Several European Union countries had already embraced the phase-out of gasoline cars previously and have set even tighter deadlines.

- **The Netherlands, Belgium's Flanders region, Sweden, Greece and Slovenia** are all looking to end the sale of gas-powered cars even earlier, between 2029 and 2031.

- The only country in the world beating this is Norway, where around 80 percent of new cars sold are already fully electric and 100 percent are scheduled to be in 2025.

Postponing/ delaying … the Facing out of ICE

- However, a lot of back and forth has since ensued.
- For **Germany** (as well as for **Italy, Romania, Bulgaria, the Czech Republic and Hungary**), the bill set a first deadline for the sale of gasoline-powered cars.
- Germany, the country known for its car industry, spearheaded an initiative pressing for a **loophole for synthetic fuels** before the final adoption of the new rules.

Facing out ICE in the USA

- Similar to the situation in the EU, gasoline car phase-outs caused disagreements among U.S. states when California in 2022 set a phase-out date for new sales of these vehicles, also for 2035.

- While 17 states had previously tied their vehicle standards to California's under the Federal Clean Air Act, only Washington, Oregon, Massachusetts, New York and Vermont have gone along with California’s decision, while Connecticut and Delaware pulled out at the last minute.

- While hybrids were initially expected to be phased out as well, some advanced hybrids with large battery power will now be allowed in participating states.

Facing out ICE in the Rest of the World

- **Other nations treating hybrids** favorably in their phase-outs are Canada, Slovenia, Singapore and Japan.
- Asian nation **Sri Lanka** has been setting the toughest goals of any country, issuing not just a phase-out of new gasoline car sales, but a full road ban for combustion engine cars, tuk-tuks and motorcycles by 2040.
- The country has in the recent past already attracted international attention for issuing sweeping legislation whose implementation proved problematic.
- For some smaller countries without their own carmakers or their subsidiaries, a gas car phase-out can actually be easier to implement in some ways.
- **Cape Verde**, which along with several other nations around the globe signed the COP26 declaration to ban the sale of new combustion engine cars by 2040, internally set the goal to achieve this feat even earlier, by 2035.
- To do so, it would merely have to ban the import of gas-powered cars close to that date.

WORLD GASOLINE PHASEOUTS

1. All 27 European Union (EU) countries have committed to ban the sale of new fossil-fuel cars by 2035. These countries are Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

2. 14 non-EU countries have signed onto A.2 of the COP26 declaration committing to all new cars being zero emissions by 2040. These countries are Azerbaijan, Canada, Cape Verde, Chile, Colombia, El Salvador, Iceland, Israel, Liechtenstein, New Zealand, Norway, the Holy See, the United Kingdom, and Uruguay.

3. China (including Hong Kong and Macao) plans to make all new vehicles sold in 2035 "eco-friendly".

4. Egypt has a plan for no gas-fueled cars by 2040.

5. Ethiopia is the first country to try to ban ICE vehicles now - a decision was made that automobiles cannot enter Ethiopia unless they are electric ones.

6. Indonesia announced plans for all motorcycles sold from 2040 to be electric-powered, while all new cars sold from 2050 will be electric vehicles

7. Japan plans to ban sales of new gas cars (except hybrids) by 2035.

WORLD GASOLINE PHASEOUTS

8. Malaysia has a net-zero emissions target by 2050.

7. Singapore has announced plans to ban registration of internal combustion cars and taxis by 2030 and phase out internal combustion vehicles by 2040.

8. South Korea plans to phase out internal combustion vehicles by 2035.

9. Sri Lanka is going a step further with a full road ban for combustion engine cars, tuk-tuks and motorcycles by 2040

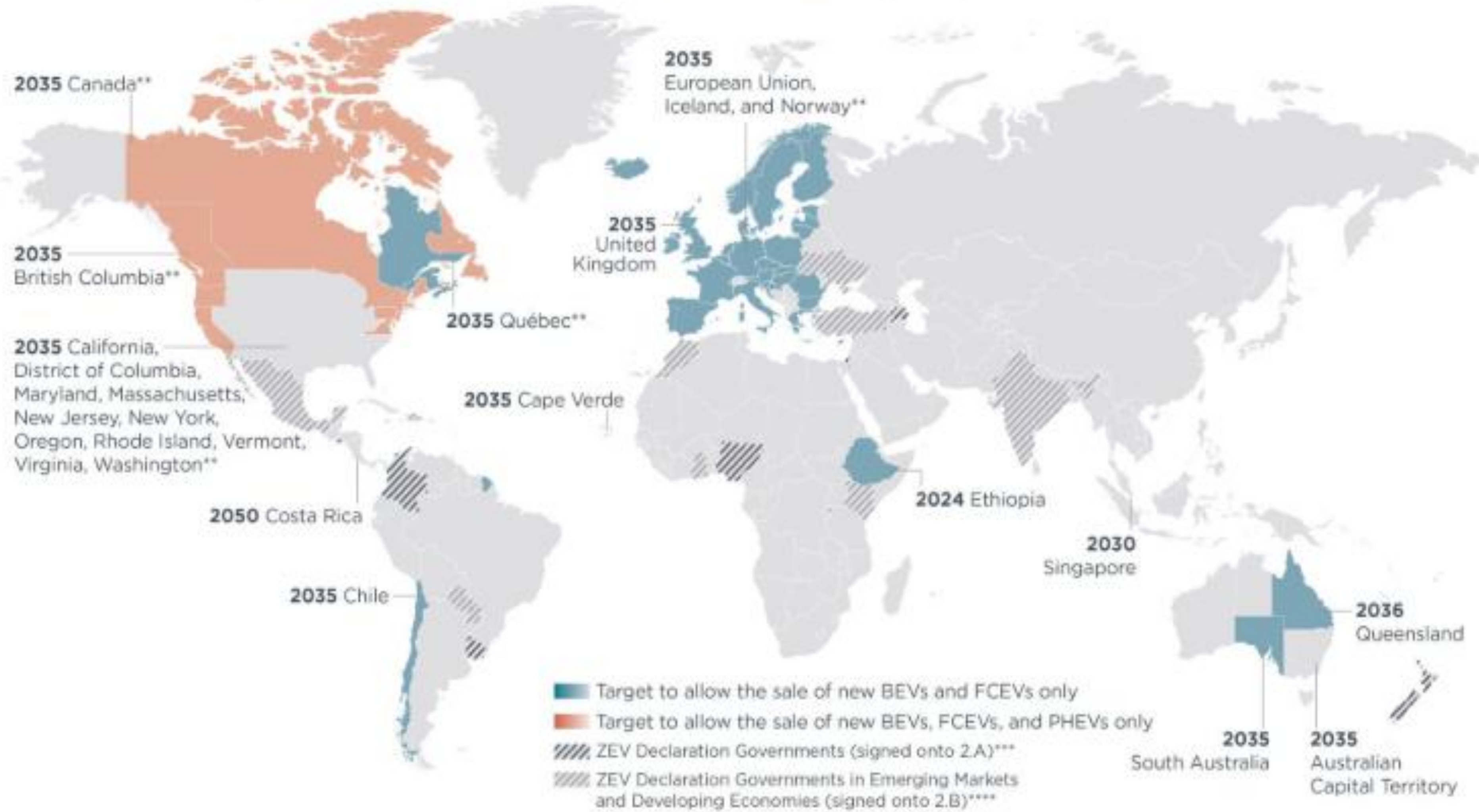
10. Taiwan has announced a plan to phase out internal combustion vehicles by 2040.

11. Thailand has set a target for 2035 to make all new vehicles electric.

12. Vietnam has a target that all means of transportation run on green energy by 2050

These 13 countries have agreed to work intensely towards accelerated proliferation and adoption of zero-emission vehicles: Armenia, Costa Rica, the Dominican Republic, Ghana, India, Kenya, Mexico, Morocco, Nigeria, Paraguay, Rwanda, Türkiye and Ukraine.

Governments with official targets to 100% phase in sales of new zero CO_2 emission cars and vans/light trucks by a certain date* (Status: Through July 2024)



* Includes countries, and states that have set targets to only allow the sale or registration of new battery electric vehicles (BEVs), fuel cell electric vehicles (FCEVs), and plug-in hybrid electric vehicles (PHEVs). Countries such as Japan with pledges that include hybrid electric vehicles (HEVs) and mild hybrid electric vehicles (MHEVs) are excluded as these vehicles are non plug-in hybrids.

** Canada as well as the Canadian provinces of British Columbia and Québec have regulations to enforce their 2035 targets, as do California, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, Vermont, Virginia and Washington for their 2035 targets. The European Union (EU) also has a regulation enforcing its 2035 target; it is applicable to the member states of the European Economic Area (EEA), that is the 27 EU member states and the European Free Trade Association (EFTA) states, Iceland and Norway.

*** Zero-Emission Vehicle (ZEV) Declaration signatories to 2.A committed to phase-in targets by 2035 for leading markets and by 2040 globally. Countries with existing official targets (binding and non-binding) are not separately highlighted, including Austria, Belgium, Canada, Cape Verde, Chile, Croatia, Cyprus, Denmark, Finland, France, Greece, Iceland, Ireland, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Slovenia, Spain, Sweden, and the United Kingdom.

**** Zero-Emission Vehicle (ZEV) Declaration signatories to 2.B committed to work intensely toward accelerated proliferation and adoption of zero-emission vehicles.

The leader of

Electric Cars

TOP COUNTRY IN ELECTRIC MOBILITY: NORWAY

- ✓ Norway, having surpassed an electric vehicle share of 50 percent in 2020, it continued its transition to e-mobility last year.

- ✓ According to the Norwegian Road Federation (OFV), electric cars accounted for **79 percent** of new passenger car registrations in 2022, and 87 percent when including plug-in hybrids.

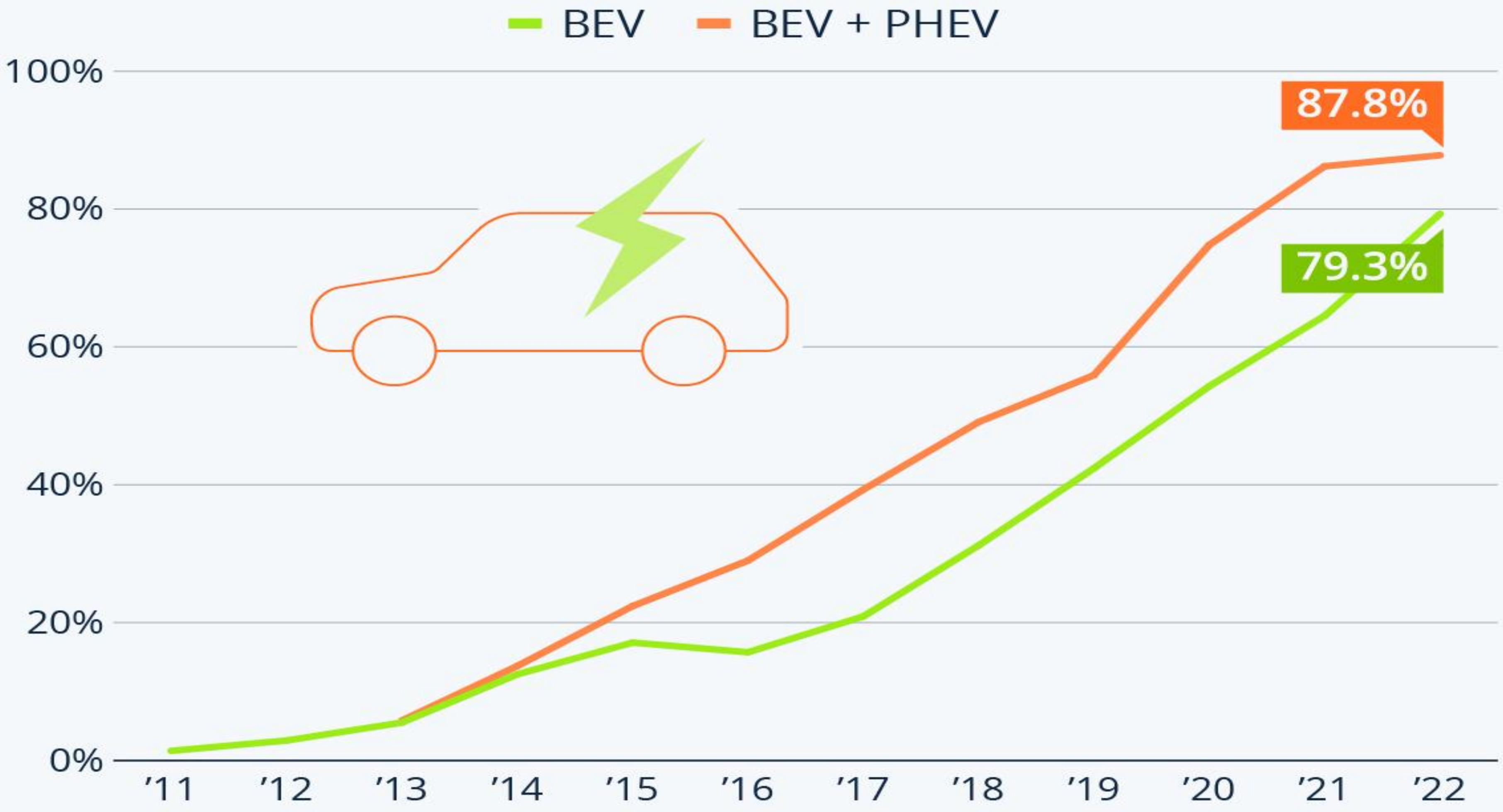
- ✓ In comparison, **in the United States**, electric vehicles excluding hybrids accounted for just **2.6 percent** of passenger car sales in 2021.

Why is Norway so far ahead in terms of electric vehicle adoption?

- ✓ It’s a combination of policy measures and the country’s wealth (ironically obtained from its vast oil reserves).
- ✓ Norway imposes hefty vehicle import duties and car registration taxes, making cars significantly more expensive than in most other countries.
- ✓ By waiving these duties for electric vehicles, Norway is effectively subsidizing EV purchases at a level that other countries couldn’t afford.
- ✓ Add free parking to the mix and going electric suddenly looks like a tempting proposition.
- ✓ What makes Norway’s electric vehicle boom even more notable, is the fact that the country’s electricity comes almost exclusively from hydropower.
- ✓ That way driving an electric car in Norway is even cleaner than it is in countries heavily reliant on coal.

E-Mobility: Norway Races Ahead

Share of battery electric vehicles and plug-in hybrids in total new passenger car registrations in Norway



Source: Norwegian Road Federation (OFV)

Germany and partly the USA

React to the death of the

Internal Combustion Cars

UNITED STATES GASOLINE PHASEOUT ADVANCES

- **The United States does not have a nationwide gas car phaseout date.**
- However, in 2021, President Biden set a goal for 50% of new car sales to be electric by 2030.
- New, more stringent fuel economy standards for model year 2027 to 2032 US vehicles proposed by the EPA in April 2023 would essentially require 67% of new vehicles to be electric by 2032.
- For US government vehicles, there is also an executive order for all new light-duty vehicles added to the government fleet to be 100% zero emissions by 2027 and all government-owned vehicles will be replaced with all-electric cars by 2035-2040.
- **While the US has not yet joined the many countries setting phaseout date, multiple states have committed to follow California's Advanced Clean Cars II ("ACC II") regulation to end sales of new gas cars by 2035.**

12 US STATES WITH PLANS TO BAN GAS-POWERED CARS BY 2035

- Following California's lead, Colorado, Delaware, Maryland, Massachusetts, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, Washington and the District of Columbia have adopted all or part of the ACC II regulations to phase out the sale of new gasoline-powered vehicles.
- Vermont, New York, Washington and Oregon adopted a program called Advanced Clean Cars II ("ACC II") in 2022. ACC II requires automakers to sell a rising percentage of EVs, going to 100% by 2035, or pay penalties.
- In March 2023, Maryland Governor Wes Moore announced Maryland's plan to phase out sales of new gas-powered cars by 2035, stating, "It's a major step in the state's acceleration to improve air quality and combat the effects of climate change."
- Massachusetts adopted ACC II in 2023.
- On May 10th, 2023, Governor Dan McKee announced plans for Rhode Island to adopt ACC II.
- In October 2023, Colorado adopted the Colorado Clean Cars Standard, but this only requires 82% of new cars to be zero-emissions vehicles by 2032 – it does not go all the way to the 100% zero emissions requirement by 2035.

12 US STATES WITH PLANS TO BAN GAS-POWERED CARS BY 2035

- In November 2023, Delaware similarly finalized rules that would require 82% of new cars to be zero-emissions vehicles in 2032, but officials have not adopted a 100% by 2035 requirement.
- New Jersey and New Mexico became the latest US states to pledge to phase out the sale of new gasoline-powered cars.
- New Mexico Gov. Michelle Lujan Grisham announced that the state will set annual targets for the sale of new zero-emission vehicles, and New Mexico may adopt parts of Advanced Clean Cars II. However, New Mexico has not adopted the 2035 100% Zero Emission Vehicles requirement. Rather, the rules "do not prohibit the sale or ownership of new or used gasoline-powered vehicles," according to a spokesperson for Lujan Grisham.
- The District of Columbia also adopted the California Vehicle Emission Standards in December 2023.
- Washington State not only joined ACC II, but has gone a step further. It has enacted a law (see page 88) setting a target of 2030 for all new cars to be electric, with a plan for all-of-government planning to meet the target. 2030 is the earliest date in the nation for a state to phase out sales of new gas cars.
- Gasoline phaseout policy discussions are ongoing or have partially passed in Minnesota, Nevada and Pennsylvania.

EU was set to ban internal combustion engine cars. Then Germany suddenly changed its mind

- When EU lawmakers voted to ban the sale of new combustion engine cars in the bloc by 2035, it was a landmark victory for climate.
- In February 2024, the European Parliament approved the law.
- All that was needed was a rubber stamp from the bloc’s political leaders.
- **Then Germany changed its mind.**

- In a reversal that stunned many EU insiders, the German government decided to push for a loophole that would allow the sale of combustion engine cars beyond the 2035 deadline — as long as they run on synthetic fuels.
- It’s an exception that could put the European Union’s green credentials at risk.
- The bloc is legally obligated to become carbon-neutral by 2050.
- With cars and vans responsible for around 15% of its total greenhouse gas emissions, a phase-out of polluting vehicles is a key part of EU climate policy.

What is happening?

- The ban on internal combustion engine cars is intended to be one of the centerpieces of the European Union's ambitious plan to cut its emissions to net zero by 2050 — which means removing from the air at least as much planet-heating pollution as the bloc emits.

- The law envisions a total ban on the sale of new diesel and gasoline cars by 2035. The European Union argues that the deadline is necessary because the average car's lifespan is around 15 years — so to get a fleet that produces no carbon pollution by 2050, sales of combustion engine cars must end by 2035.

- But earlier this month, just before the final vote, Germany pushed back on the idea that all internal combustion engines must be banned. Instead, it argued for engines powered by "green" fuels to be allowed.

- Other European countries, including Italy, Poland and the Czech Republic, joined Germany in demanding the exception and after intense negotiations, the EU's Climate Chief Frans Timmermans announced on Saturday that "an agreement with Germany on the future use of e-fuels in cars" had been reached.

- While the text of the law remains unchanged, Germany says it now has the assurances it was seeking from the EU on e-fuels.

- "Vehicles with combustion engines can still be newly registered after 2035 if they use only CO2-neutral fuels," German transport minister Volker Wissing said.

- Timmermans said the EU will work now on drafting specific rules to implement the agreement.

What is behind Germany's last-minute objections?

- Germany is governed by a coalition, and it is one of the parties, the liberal FDP, that called for the changes.
- "The internal combustion engine is not the problem. The fossil fuels that run it are," Wissing, who is a member of the FDP, said earlier this month. "The goal is climate neutrality, which is also an opportunity for new technologies. We need to be open to different solutions," he added.
- **Germany is home to some of the world's largest automakers, including BMW, Mercedes-Benz, Audi and Volkswagen**, **and the government has to walk a tightrope between ambitious climate policies and the interests of a powerful industry that keeps the economy humming.**
- Manufacturers of car components and engines, fossil fuel producers and fuel transportation companies have lobbied for the exception because it would allow them to continue using their existing infrastructure and products.
- The Federation of German Industries, a lobby group, said e-fuels could make "a major contribution to achieving the adopted climate targets."
- "Since they can be used immediately without having to build a new infrastructure, they can also be implemented in economically less developed countries," according to a statement on the group's website.

Thank You

Sources

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2) Wikipedia

3) References at Slides