

How can Switzerland tax electric cars without slowing down the electromobility transition?

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Anyone driving an electric car on Swiss roads today is traveling cheaply. Whether they are driving a minimobility vehicle, limousine or SUV—their fully electric cars run on electricity and are not subject to

mineral oil tax. In contrast, petrol and diesel car drivers pay a tax of just under 80 cents per liter when filling up their tanks. Mineral oil tax generates over four billion Swiss francs a year, most of which goes towards constructing and maintaining the country's roads.

The electrification of road transportation is a key element of the Swiss government's climate policy. However, the increasing number of electric cars is leading to a shortfall in revenue from mineral oil tax. To plug the looming funding gap in [road infrastructure](#), the Federal Council plans to introduce a replacement levy for electric cars and other alternative drive systems from 2030.

Financing roads versus promoting electromobility

This presents the federal government with the dilemma of having to tax electromobility in order to plug the funding gap in transport infrastructure. However, this could reduce people's incentive to buy electric cars and slow down the electromobility transition. If the electrification of road transportation slows too much, it could jeopardize the Swiss government's attainment of its net-zero target.

In a nutshell, the issue is to figure out the best way to tax electric cars without putting a brake on the electromobility transition. Given the expected referendum on this issue, it is valuable to know how the Swiss population stands on the dilemma outlined above.

As part of the Swiss Mobility Panel, we analyzed the political acceptance of a replacement levy on electric cars in a representative sample of the Swiss resident population carried out using survey experiments. Our short report entitled [New levy on electric cars](#) (in German) summarizes the findings.

What would the new levy amount to?

We don't yet know the precise contents of the proposed legislation. The Federal Council is expected to submit a draft law to Parliament for debate before the end of this year. The Swiss people will vote on it in a referendum in around three to four years.

Some key figures are already known: For example, the replacement levy is to be around the same amount as the mineral oil tax. According to initial estimates by the Federal Roads Office (FEDRO), the levy could amount to around 5.6 cents per kilometer. This means that a person driving 15,000 kilometers per year would incur an additional burden of 8,400 Swiss francs in ten years.

The preparation of the draft legislation raises some key questions that will have a major influence on the extent of its acceptance. For example, in terms of a tariff model: should electric cars be taxed at a flat rate or according to weight and performance to ensure that larger and more powerful cars are taxed more heavily—as is already the case today with internal combustion engine vehicles (ICEVs)?

Or according to a measurement model: how can the kilometers driven be recorded without violating an individual's privacy? This information is not collected for ICEVs.

The majority are in favor of a replacement levy

Our findings indicate that the Swiss population is in favor of a replacement levy for electric cars: Specifically, 54% of respondents are in favor of a levy calculated according to a car's weight and performance, and distance driven measured by a GPS device.

Further analyses show that most people are currently in favor of a tariff model. A mere 37% are in favor of methods that fail to take a car's weight or performance into account and would tax all electric cars equally. This sends a clear signal to policymakers.

Things are not so clear when it comes to measuring the distance driven. Although the majority are in favor of models involving GPS measurement, almost two-thirds of respondents are concerned about violations of their privacy. It is therefore to be expected that the exact measurement method will play a key role in determining the political feasibility of a replacement levy in future. Specifically, it must be clarified whether only the distance traveled in kilometers or also other data such as location and time needs to be transmitted.

Is there a threat of a slump in electric car sales?

From today's perspective, it is difficult to judge how a replacement levy would affect a person's decision to buy an electric car. Although around 25% of respondents believe that a replacement levy in Switzerland would result in the sale of fewer electric cars, the majority of respondents do not share this view.

At this point, I would like to emphasize that we can only use surveys to a limited extent to measure specific effects on purchasing decisions in five to six years from now. Whether [additional costs](#) would actually slow down the advance of electric cars depends on various elements that are difficult to predict, partly because they will be based on political decisions.

An additional levy would inevitably increase the operating costs of an electric car. At the same time, the ban on new petrol or diesel cars in the EU from 2035, in combination with the decision by many car manufacturers to offer more electric cars and fewer ICEVs, could make

electric cars largely irrelevant as an alternative for new cars. Increased taxes would then be a secondary consideration when buying a car.

Utilizing the room for maneuver

In 2023, electric cars accounted for only 3.3% (approx. 155,000) of the total passenger car fleet (approx. 4.8 million). However, the number of new electric car registrations is rising sharply, with around one in five new cars currently being fully electric. Whether and how the more than 4.5 million ICEVs will disappear from our roads in the next 25 years is unclear.

The time factor also plays an important role. While a small majority of the population is currently in favor of taxation, the pressure on the federal government is set to increase. Not only will the funding gap and the need for a solution grow in the coming years, but also the proportion of people owning an electric car—and they will be less likely to want the replacement levy.

As our study data shows, there is no majority of the existing (few) owners of [electric cars](#) who would be liable to pay the new tax in favor of any of the proposals under discussion. If the proportion of electric car owners increases, the federal government will find itself running out of time to find a politically feasible solution.

More information: Levis et al, Neue Abgabe auf Elektroautos: Wie sollte diese aus Sicht der Schweizer Wohnbevölkerung aussehen?, *ETH Zurich* (2024). [DOI: 10.3929/ethz-b-000677077](https://doi.org/10.3929/ethz-b-000677077)

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