

# Norway's Promotion of Electric Vehicles

May, 2020

## Tools of Change Illustrated

- Incentives

## Results

- Achieved the highest market penetration of electric vehicles per capita in the world

## Initiated by

- Norwegian Government

## Location

- Norway

## Introduction

Several policies / incentives, in place over an extended period, have made Norwegians more likely to purchase electric vehicles (EVs) than people in any other country. These incentives have included: exemption from vehicle registration and high purchase taxes, reduced road tolls, free parking, and access to some bus lanes. A similar long-term approach could be adapted for other big-ticket purchasing behaviors where the impact justifies the expense – for example energy-efficient home / building retrofits and appliances.

## Background

*Note: To minimize site maintenance costs, all case studies on this site are written in the past tense, even if they are ongoing as is the case with this particular program.*

Norway actively supported the adoption of zero emission vehicles since the 1990's. Its electric cars were close to zero-emission as 98% of its electricity came from hydropower. Switching to vehicles powered by electricity rather than fossil fuels was therefore a practical option for reducing air pollution, including greenhouse gas emissions.

## Targeting the Audience

This program focused on people who bought new cars.

## Delivering the Program

Norway provided the following incentives for battery-powered vehicles.

- Exemption from vehicle registration and high purchase taxes (including a 25% VAT tax)
- Reduced road tolls
- Free parking
- Access to bus lanes

In addition, gas taxes and gas prices were relatively high in Norway, making it relatively costly to drive a gas-fuelled car.

Key milestones are outlined below (based largely on Wikipedia).

1990	<ul style="list-style-type: none"><li>• Temporary (trial) exemption from import tax</li></ul>
1996	<ul style="list-style-type: none"><li>• Import tax exemption made permanent</li><li>• Annual registration tax reduction introduced</li></ul>
1997	<ul style="list-style-type: none"><li>• Exemption from road tolls introduced</li></ul>
1999	<ul style="list-style-type: none"><li>• Identifying letters ("EL", "EK" and</li></ul>

	<p>"EV") introduced on license plates of electric vehicles to facilitate the enforcement of EV incentives and perks. It had the added benefit of raising the visibility of these vehicles (norm appeal, word of mouth))</p> <ul style="list-style-type: none"> <li>• Free parking in public places introduced</li> <li>• Free passage through toll booths introduced</li> </ul>
2000	<ul style="list-style-type: none"> <li>• Reduced company car tax introduced</li> </ul>
2001	<ul style="list-style-type: none"> <li>• VAT tax reduced from 25% to 0</li> </ul>
2003	<ul style="list-style-type: none"> <li>• Access to bus lanes tested in Oslo</li> </ul>
2005	<ul style="list-style-type: none"> <li>• Access to bus lanes launched nation-wide</li> </ul>
2009	<ul style="list-style-type: none"> <li>• Free access to road ferries introduced</li> </ul>
2012	<ul style="list-style-type: none"> <li>• Incentives extended until 2018, or when the 50,000 EV target is achieved</li> </ul>
2015	<ul style="list-style-type: none"> <li>• Incentives extended through 2017 after achieving 50,000 EV target, with a gradual reduction of incentives gradually starting in 2018</li> <li>• Local authorities got the right to decide for their own regions if EVs could use bus lanes and get free parking</li> </ul>

This combination of incentives enabled Norway to meet its target (50,000 EV), in the process becoming the world's greatest per-capita purchaser of EVs.

Criticisms of the approach have included the following.

- High public subsidy compared to the value of the reduced carbon footprint of electric vehicles
- Traffic congestion in some bus lanes due to the increased number of electric cars
- Some people bought an electric vehicle as a second car instead of taking buses and trains
- Loss of revenue for some ferry operators due to the large number of electric cars exempted from payment

- Shortage of parking spaces for owners of conventional cars

## Overcoming Barriers

The following table lists the key barriers to action and how they were addressed.

Barriers	How they were addressed
Higher cost of electric cars compares to conventional ones	<ul style="list-style-type: none"> <li>• Reduced the up-front cost of purchasing a new vehicle by exempting new electric vehicles from vehicle registration and high purchase taxes</li> </ul>
Entrenched car purchasing habits	<ul style="list-style-type: none"> <li>• Reduced relative operating costs by keeping taxes high on gasoline, and by providing some free parking and lowering road tolls for electric vehicles</li> <li>• Provided time savings by allowing these vehicles access to some bus lanes</li> </ul>

## Measuring Achievements

Two measures were used.

1. EV share of new car sales
2. EV share of cars on the road

## Results

### Impacts – Individual participants

- In 2018 and 2019, Norwegians were much more likely to buy an electric car than people in other countries (see details below).
- In March 2019, Norwegians were more likely to buy an electric car than a gasoline-powered one. This is the first time it has happened in any country

world-wide.

## Impacts – Overall

- In March 2014, Norway became the first country with at least 1 in every 100 passenger cars on the road that were battery-powered.
- In 2015, Norway achieved its target of selling 50,000 EVs
- By December 2016, 5 in every 100 passenger cars on the road in Norway were battery-powered.
- By December 2018, 10.7 in every 100 passenger cars on the road in Norway were battery-powered. In comparison, the USA had 0.45 cars (California had 2.1), Sweden had 0.6 cars, and Europe on average had 0.5 cars per 100 passengers.
- In March 2018, Norway had the world's largest plug-in segment market share of new car sales at 49.1%. The next highest share for new cars was Iceland at 19%. Canada had 2.1% B.C. was third in North American jurisdictions at 4.0%, behind California at 7.8%, and Washington state at about 4%).
- In March 2019, Norway recorded the first ever month where electric vehicle sales had a majority market share (58%) over traditional petrol and diesel vehicles. Norway had the highest market penetration of electric vehicles per capita in the world (10% of all passenger cars on the road).

## Notes

This approach can be used elsewhere to promote electric vehicles. That said, Norway has had the added advantage that Norwegians drive relatively short distances, so relatively inexpensive electric cars with relatively short ranges have been more practical than in countries like Canada and the USA. However, this difference is becoming less important as technologies evolve (e.g.

affordable new batteries that allow for greater ranges.)

## Further Reading

[https://en.wikipedia.org/wiki/Plug-in\\_electric\\_vehicles\\_in\\_Norway](https://en.wikipedia.org/wiki/Plug-in_electric_vehicles_in_Norway)

<https://www.nsenergybusiness.com/news/electric-vehicle-registrations-europe-norway/>

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This case study is also available online at <http://www.toolsofchange.com/en/case-studies/detail/729>

It was compiled in 2020 by Jay Kassirer based on information provided in the references cited above.

The Tools of Change planning resources are published by  
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