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SCOTLAND

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## International Case Studies for Scotland's Climate Plan

# Supporting electric vehicles, Norway

### Facts & Figures

22% of all new cars sold in Norway are electric vehicles

Norway's transport emissions will be cut by 50% by 2030

41,000 electric vehicles were sold in 2014, up from 19,600 the previous year

81% of EV buyers said low operating costs were a significant draw

66% of EV buyers were attracted by free access to toll roads

55% of EV buyers bought their car because of its competitive price

A 29% reduction in CO2 emissions from new cars has occurred between 2010-2015

### Overview

The Scottish Government's Climate Change Delivery Plan states that we require: "Almost complete decarbonisation of road transport by 2050 with significant progress by 2030 through wholesale adoption of electric cars and vans." The EU White Paper on Transport from 2011 estimates that emissions reductions from transport will need to be in the region of 60% down from 1990 levels, despite an increase in transport demand. This poses significant challenges for nations across Europe.

However, several countries including the Netherlands, Germany, Belgium, Switzerland, Norway and Sweden are considering phasing out fossil fuelled cars within the next ten to fifteen years. This case study examines Norway's approach and progress in this area.

### Aims

Norway's National Transport Plan for 2018-29 aims to cut carbon emissions from transport by 50% by 2030. One of the top level objectives contained in the plan is for zero growth in emissions from private cars in cities. In addition, the plan states that "after 2025, new private cars, city buses and light vans are to be zero-emission vehicles". The coalition Government in Norway is still discussing whether that statement means that all petrol and diesel cars will be banned after 2025 or if it should only refer to new purchases.

### How it works

Norway operates a number of incentives and regulations to encourage people to switch from petrol or diesel powered (internal combustion engine or "ICE") cars to electric vehicles (EVs). The nation is already leading the world with EVs constituting 22% of all new cars sold.

Amongst the incentives in place in Norway are;

- No purchase tax or VAT on zero emission vehicles
- Free public parking
- Free use of public transport lanes
- Reduced annual taxes
- Free use of state ferries and toll roads

Attitudinal research in Norway shows which of these incentives have the biggest pull factor for consumers. Amongst ICE owners, vehicle safety, low operating costs and competitive prices are the biggest draws. Amongst all new EV owners, the most significant factors in purchasing an EV were low operating costs (47% said this held a “very large significance”) and free toll roads (39% said this had “very large significance”). Similarly, 53% said that low taxation had either a large significance (27%) or a very large significance (26%) in their decision to purchase an electric vehicle.

The price of electric vehicles has also fallen dramatically since 2008 from around €38,000 to less than €16,700 in 2015.

An additional factor has seen the number of EV purchases rise significantly in the last few years, with the number of new EVs sold doubling each year since 2012. As a sparsely populated and largely rural nation with severe winters, Norwegians require cars which are capable of travelling significant distances and withstanding very cold weather. The introduction of new EVs which can travel between 220 and 300 miles in the winter has seen uptake increase rapidly.

Finally, there has been significant investment in charging points, including super fast charging points. Norway is now home to over 6600 public charging points across the country.

## Benefits

The range of incentives introduced in Norway since the early 1990s has led to EVs making up 22% of all new cars bought in the country. As a consequence, CO2 emissions from new cars fell by 29% from 2010-2015. Despite the geographic and demographic challenges which Norway faces, with a large and sparsely populated rural area and very cold winters, the country has built the necessary infrastructure and incentive system to support a switch to EV. The rapid rise in the number of sales shows that this approach is working, with the majority of EV owners using their car every day and rating it highly.

### Economic

Norway's EV incentives have helped to make EVs a more attractive prospect for consumers, contributing to a price drop of nearly 60% since 2008.

### Environmental

29% reduction in CO2 from new cars from 2010-2015. Over 85% of EV owners said that if they hadn't bought an EV, they would be travelling by petrol or diesel car, showing that EVs are replacing ICE cars rather than public transport.

### Social

Extensive research shows that EV owners give their cars a 90% satisfaction rating. In addition, 62% of EV owners say they became more energy conscious after buying their car.

*“The tax incentives make the purchase price of electric cars competitive in the Norwegian market. Other incentives, such as free toll roads, free parking and access to bus lines are compensating for the lower range and uncertain second hand value of electric cars. The incentives package is the foundation of the successful EV market in Norway.”*

Petter Haugneland, Christina Bu, Espen Hauge, Norwegian Electric Vehicle Association

## Further information:

<http://gammel.elbil.no/elbilforeningen/dokumentarkiv/finish/10-dokumenter/458-evs29-symposium-montreal-the-norwegian-ev-success-continues-paper>

[https://www.iea.org/media/workshops/2016/behaviour/Session\\_6\\_Pütz.pdf](https://www.iea.org/media/workshops/2016/behaviour/Session_6_Pütz.pdf)

[http://www.ntp.dep.no/English/\\_attachment/1361769/binary/1109453?\\_ts=154c39bc008](http://www.ntp.dep.no/English/_attachment/1361769/binary/1109453?_ts=154c39bc008)

<http://climateanalytics.org/latest/zero-emission-vehicles-need-to-take-over-car-market-to-reach-15c-limit-climate-action-tracker>

