

Electric Vehicle Policy in Norway

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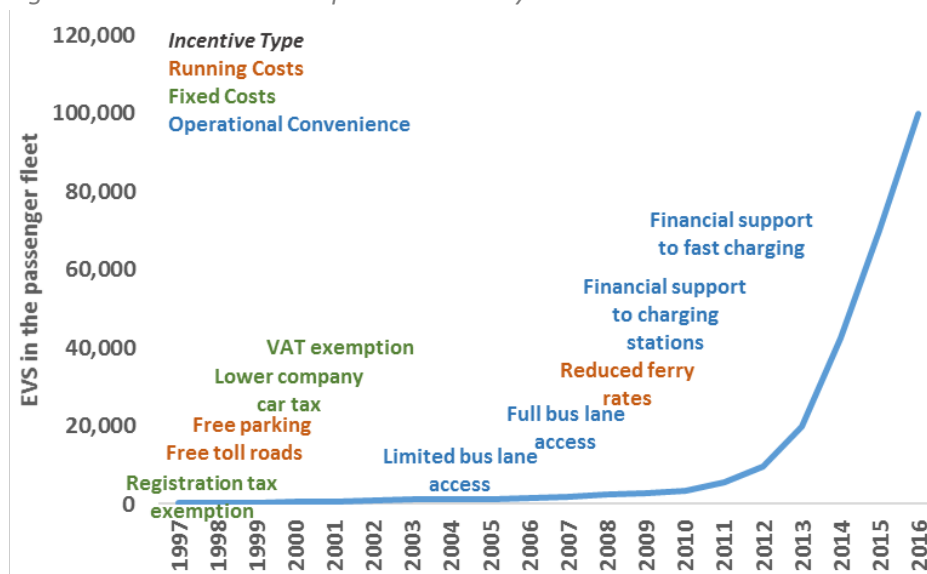
February 2017

Policy description

Norway has one of the most generous and long-running incentive structures for battery electric vehicles (BEVs) in the world. The Norwegian government's efforts in this area have been motivated by a desire to improve air quality, drive up the use of renewable electricity and reduce GHG emissions from the transport sector. Attempts to establish a domestic EV industry also initially furthered the government's national innovation and industrial development priorities.

There is no dedicated electric vehicle strategy or programme, but rather a series of policy interventions and programmes, variously contained in climate policy documents, national transport strategies and budget plans, that are designed to encourage uptake. Figure 1 shows the progressive evolution of incentives.

Fig. 1: BEV incentives and uptake in Norway



Efforts to commercialise Norwegian-made BEVs started in the 1990s, with the state financially and institutionally supporting domestic BEV manufacturing firms. The relatively high level of taxation on conventional petrol vehicles in Norway gave the government substantial leverage to encourage electromobility – through the exemption of BEVs from vehicle registration costs, the 25% VAT charge on new car sales, import duties, and company car levies. Government policy also widened beyond these 'fixed cost' incentives, with vehicles becoming exempt from road tolls and municipal parking charges, and eventually benefitting from reduced ferry prices and progressive access to bus lanes. In later periods of development, the growth of industry associations spurred the state into financially supporting large-scale investment in charging infrastructure. Enova, a public agency set up to support clean transport projects, funded a nation-wide build-out of BEV charging infrastructure, with a non-statutory target of installing at least one charging station every 50 km by the end of 2017.

Despite exponential growth over the past few years, it is important to differentiate the number of EVs in Norway as a percentage of new car sales (~35%) versus the number of EVs as a percentage of the total car fleet (~2.8%). Even with long-running and generous incentives, a significant conversion from petrol/diesel to electric vehicles remains a much longer-term prospect.

Targets

In 2012, the Norwegian government published the Climate Policy Settlement, which contained a non-statutory strategic ambition for the country to be carbon-neutral by 2050.¹ The government's Nationally Determined Contribution to COP21 also pledged to reduce GHG emissions by 40% in 2030, relative to 1990 levels – in line with EU policies. Although the government has not published a concrete quantitative goal with respect to EVs, a wider, non-binding target was set for new passenger vehicles to emit on average no more than 85g CO₂/km by 2020 (which are, in fact, 10% more stringent than EU-wide targets). Levels in 2014 stood at around 110g CO₂/km, down from 183g CO₂/km in 2001.²

The Norwegian government is currently consulting on its fifth National Transport Plan (NTP) covering the period 2018-2029.³ This document contains a goal for all new private cars, city buses and light vans to be zero-emission vehicles by 2025. It has also put forward a target to halve transport emissions by 2030 relative to a 1990 baseline.

Analysis has found a high degree of support and acceptance of electromobility from both the political establishment and the general public and industry.⁴ Norway's broader emissions targets were met with cross-party political consensus as early as 2008.⁵ Parliament approved the government's draft Climate Policy Settlement with only minor points of disagreement – for example, the extent to which jurisdiction over incentives such as free parking and access to bus lanes should rest with local authorities.⁶ Industry stakeholders have also been broadly supportive, with electric utilities such as Fortum receiving government-sponsored grants that have helped the company become the largest operator of charging infrastructure in Norway.⁷ The state utility Statkraft also recently acquired a controlling stake in Grønn Kontakt, the second largest charging operator.

Timescales

The government's target of having only zero-emission new vehicles by 2025 has been interpreted in the popular press as an effective ban on sales of petrol and diesel vehicles from this date. Government spokespeople have denied this, stating that the intention is rather to make zero-carbon vehicles the most attractive option through 'carrots' rather than 'sticks'.

In the Climate Policy Settlement of 2012, it was stated that fiscal incentives for zero-emissions vehicles would be upheld until the end of the parliamentary session in December 2017, or until 50,000 such vehicles had been registered.⁸ In fact, this milestone was reached much earlier, in April 2015. In response, the government decided in its Revised National Budget to extend the zero rate of VAT for electric vehicles until 2020, thus continuing a key driver of growth in electromobility.⁹

However, it remains uncertain how much longer Norway's BEV incentives will last. The latest period of exponential growth has begun to weigh on public finances and transport infrastructure. The 2017 National Budget has calculated that the zero VAT rate for low-emission vehicles has reduced the average per-vehicle tax take by around NOK 15,000 (£1,400). This amounted to around NOK 2.75 billion (£260 million) of foregone tax receipts in 2016.¹⁰ There is also a growing perception that incentives are benefitting wealthier parts of society, particularly as luxury models offered by manufacturers such as Tesla or BMW become ever more popular. Pressure has therefore been mounting to gradually raise tax receipts from BEV sales. In response, the Conservative government in 2016 put forward proposals to raise the annual motor tax on electric vehicles from NOK 445 (£42) to NOK 1,200 (£115).¹¹

There are also concerns about BEV's preferential use of transport infrastructure. Municipalities are complaining of revenue shortfalls from 'free-riding' BEVs which do not pay for road or ferry tolls. In response, the National Transportation Plan 2018-2029 contains proposals to progressively reinstate charges on ferries and introduce a reduced, rather than complementary, rate on highway toll booths. There are also suggestions that EV access to bus lanes become conditional on local traffic developments.

It is not yet clear as to when these restrictions will be put in place. The government's coalition partner, the liberal/green Venstre party, is a steadfast supporter of BEVs. Stakeholders such as Enova, the Norwegian EV

Association (NEVA) as well as an ever-expanding number of BEV owners constitute a powerful lobby against any 'premature' rollback in state support. NEVA argues that, despite recent growth rates, benefits should remain in place given that less than 3% of the overall car fleet in Norway is electric.¹² Nevertheless, as their numbers grow, electric vehicle incentives may find themselves at odds with the wider goal – also stated in the 2012 Climate Policy Settlement – that future growth in travel demand should be absorbed by public transport, bicycling or walking, rather than through private vehicle ownership. Indeed, there is a growing awareness that the penetration of EVs should not be viewed as an end in itself, but rather as one of many means to decarbonise the transport sector.

Communication

Norway was the first country in the world to implement a CO₂ tax on petroleum production, in 1991. Successive policy interventions to impose greater costs on the environmental 'externalities' of economic activity were framed as a means to neutralise the country's carbon footprint, which was particularly effective given the population's awareness of Norway's substantial exports of fossil fuels.¹³ Moreover, environmental policies were presented to the public as not inherently conflicting with economic growth, which ensured that they were met with broad approval (despite scepticism from energy-intensive industries).¹⁴ When a progressive CO₂ tax component on vehicle purchases was introduced in 2007, it was justified by the government not only as a means to further reduce GHG emissions, but also as a trade-off in exchange for increased investment in public transport.¹⁵

To encourage public acceptance of BEVs, the government-funded agency Enova sponsored communication campaigns, such as a website called Grønn Bil (Green Car), which published statistics on electric vehicle registrations and information on charging points.¹⁶ This has recently been taken offline; incentives are now well known and an industry has grown around BEV sales offering such services. The main channels of public information diffusion are now bottom-up factors such as the 'neighbour effect' as well as municipal marketing campaigns, such as in Oslo which has been crowned 'EV capital of the world.'¹⁷

Overall, Norway enjoys popular public support for electromobility. However, there are some analysts who have questioned whether these vehicles are as environmentally beneficial as presented by government.¹⁸ They have pointed out that EV incentives encourage households to drive more frequently than they might otherwise, foregoing other means of transport such as cycling or walking. Taking into account lifecycle emissions, such studies argue that subsidising BEVs may not be the most effective path to decarbonising transport. In socioeconomic terms it has been noted that many BEVs in Norway are purchased as second cars, and that the incentives tend to benefit wealthier parts of society who, among other things, have the means to charge them from home. Despite these concerns, the ruling parties in government have maintained their supportive position towards BEVs, continuing to argue that they contribute to the country's decarbonisation goals and reduce local air pollution.

Overall, a combination of progressivity and policy incrementalism in imposing tax burdens on fossil fuel use in transport, along with robust communication of incentives to adopt lower-emission vehicles, have ensured minimal levels of public resistance to electromobility.¹⁹ Notwithstanding a natural resistance to higher taxes, the majority of Norwegians remain of the opinion that carbon taxes are an effective means of combating climate change.²⁰

Context-specific factors

Norway has a sizeable budget surplus as well as the world's largest sovereign wealth fund, and can thus afford to forego tax receipts to support zero emission transport. 98 per cent of its electricity comes from renewables, meaning that the fuel source for BEV is carbon-free. Petrol prices are among the highest in Europe, whereas electricity is comparatively cheap.

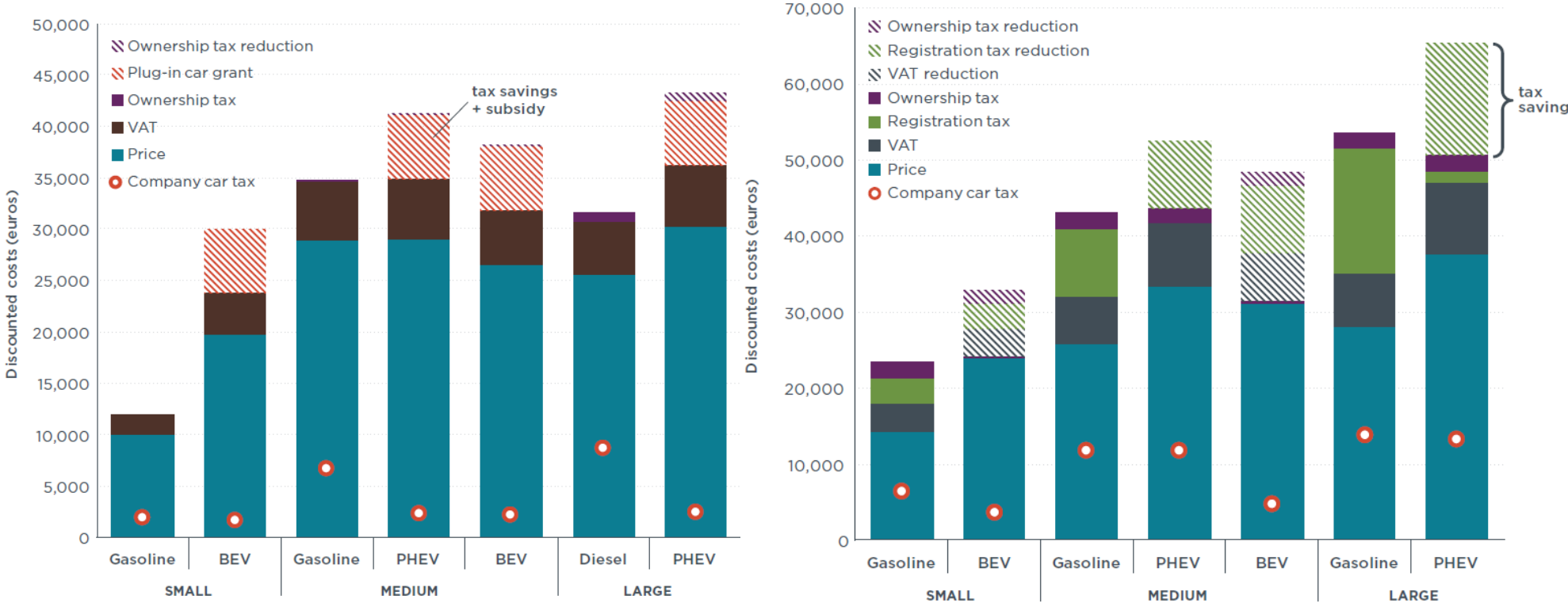
However, despite fiscal leverage and generous incentives, technological and supply-side barriers in Norway prevented any significant level of BEV uptake, as the domestically-produced models of the late 1990s and early 2000s were unable to deliver a mass-market combination of availability, affordability, and quality. Significant growth in BEV sales began only after 2010, when advances in battery storage technology and a renewed global focus on decarbonising transport increased the supply of BEVs. A new generation of models designed by big auto manufacturers led to heightened competition and rapidly falling prices. With demand-side incentives already in place, BEVs were able to compete with higher-taxed internal combustion engine vehicles (ICEs), both in economic terms as well as for day-to-day convenience. The result was dramatic growth, with Norway quickly becoming the largest per-capita EV market in the world. Today, every third vehicle sold in Norway is electric.

The high growth in BEV penetration can also be explained by Norway's long-running policy commitments, which have made BEVs less of a novelty for citizens, thereby reducing perceived risk. As the technology matured and improved over time, the burdens of owning a BEV, such as high upfront costs, greater discomfort, less safety and a lack of charging infrastructure, were progressively removed. Early 'trial-and-error' experiences became a reference point for citizens who were now observing dramatic improvements in range and reliability, as well as availability and cost.

While the reasons for purchasing BEVs may differ among individual purchasers, the key incentives are ultimately practical/economic, rather than ethical/environmental. One of the most prominent analysts of electromobility in Norway has concluded that "in general, VAT exemption and access to bus lanes are the two most important incentives for BEV sales in Norway."²¹ This implies that generous economic incentives can overcome other diffusion barriers – such as anxieties related to vehicle range, charger availability and overall convenience – at least in the early period of technological uptake. With this in mind, Figure 2 below shows that while the upfront costs of a BEV in the UK are competitive with conventional gasoline vehicles, the cost advantage in Norway is of an order of magnitude higher.

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Figure 2: Direct Incentives for EVs in the UK (left) and Norway (right)²²



Conclusions

- Norway has one of the most generous and long-running incentive structures for battery electric vehicles (BEVs) in the world. This has enabled dramatic growth in electromobility, particularly over the past few years as technological and supply-side barriers have been removed. Despite the recent surge in growth, less than 3% of the total car fleet is electric; the remainder is a roughly even split between petrol and diesel vehicles.
- EV incentives have evolved in a piecemeal fashion over a long period of time. The removal of VAT rates, registration fees and annual motor taxes has progressively encouraged uptake. Other incentives to purchase BEVs have been implemented, such as access to bus lanes, free parking and tolls, and reduced ferry charges. Norway's high taxes on conventional vehicle ownership has made low emissions alternatives more attractive.
- Concerns have been raised that the success of EV policies have raised the cost of state support and the burden on public transport infrastructure. Despite earlier policies that extended the zero rate of VAT for EVs from 2017 to 2020, the government's latest policies propose a gradual phasing out of other incentives, such as low registration taxes and ferry rates or unconditional access to bus lanes.

Appendix: Key indicators for electromobility in Scotland and Norway

	Scotland	Norway
Population	5.3m	5.2m
Area (km ²)	79,000	385,000
Public roads (km)	59,000	93,000
Annual vehicle Km (millions)	44,800	44,250
Registered Vehicles (m)	2.9	2.6
<i>of which Electric Vehicles</i>	0.8%	2.6%
Standard Charging Points	600	2000
Rapid Charge Points	150	280
Direct consumer incentives	<ul style="list-style-type: none"> • Plug in Car Grant • Interest-free loan* • Lower ownership tax • Lower company car tax 	<ul style="list-style-type: none"> • Reg. tax exempt • VAT tax exempt • Lower company car tax
Indirect incentives	<ul style="list-style-type: none"> • Go Ultra Low City Schemes • Free public charging • Municipal incentives (free parking/charging points) 	<ul style="list-style-type: none"> • Free access to toll roads for BEVs • Reduced ferry rates for BEVs • Free parking in municipal parking lots • Free charging at public chargers • Access to bus lanes
Charging Infrastructure	<ul style="list-style-type: none"> • Electric Vehicle Homecharge Scheme: up to 75% of total cost • 40 million euros for 2015 to 2020 • funding for companies to install charging equipment* 	<ul style="list-style-type: none"> • Funding for charging stations 2009-2010: ~12 million euros • Funding for fast chargers 2013: ~0.7 million euros • Ongoing funding for fast chargers

Nb. Incentives are UK wide unless denoted by an asterisk

Sources: ICCT 2016, Transport Scotland, Norwegian Statistics Office, ChargeMap Norway

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