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Ms Anne Palmer
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Senate Select Committee on Electric Vehicles
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10 August 2018

Dear Ms Palmer,

Re: Submission- Options for Federal legislation to encourage EV uptake

Please find attached my submission to the Senate Select Committee on Electric Vehicles. I thank you for arranging an extension of the date for submission.

I encourage the Australian Parliament to consider legislative amendments that can support the uptake of electric vehicles (EVs). When viewed in international context, it is evident that Australia has fallen far behind comparable nations in the OECD in terms of legislative and policy mechanisms to encourage the uptake of EVs.

The main group of incentives that are relevant to this Parliament are tax incentives on purchase, operation and use of EVs. I also urge the committee to consider the options for Federal law reform in relation to installation of charging infrastructure, particularly in relation to taxation treatment or Federal grants.

I would also encourage the Committee to consider the application of incentives to vehicles that operate on renewably produced hydrogen fuel.

Yours sincerely

James Prest

Dr. James Prest
Senior Lecturer and Researcher
Energy Change Institute and ANU College of Law

Federal Legislation to encourage Electric Vehicle Uptake

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Introduction

This submission sets out options for legislation that could, in the near future, be enacted by the Federal Parliament, in order to accelerate the uptake of electric vehicles in Australia. Although it draws upon international examples, the analysis is grounded in discussion of the constitutional division of powers between Commonwealth and States in Australia.

Focus

The focus of this submission is on legislative measures to drive uptake of Plug in EVs rather than Plug in Hybrid EVs.

Hydrogen and Fuel Cells

It is important that the policy measures advocated here do not advantage electric vehicles ahead of those powered by renewably produced hydrogen and hydrogen fuel cells. Australia has many important opportunities in the energy sector which involve hydrogen, which have been covered in ANU and ARENA funded research.¹ It is important that policy makers do not inadvertently close off those options.

Moving away from fossil fuelled vehicles and meeting climate change mitigation goals is a national responsibility

1. There are important national security benefits in reducing our reliance upon imported transport fossil fuels. At present there are considerable concerns regarding the national security implications of Australia's reliance upon imported fossil fuels. There are also concerns about Australia's persistent non-compliance with Liquid Fuel Reserve holding obligations to other member countries of the IEA International Energy Agency, which have been noted by the IEA in its most recent country review of Australia published in 2018.² I have spoken about this on national TV and in opinion pieces.³
2. Australian carbon emissions reduction responsibilities under our relatively weak commitments made so far in the form of a Nationally Determined Contribution pursuant to the UN *Framework Convention on Climate Change* and the UN *Paris Agreement*.⁴ National inventory reports from 2017 and 2018 published by the Department of Environment and Energy, show that transport sector emissions have been growing.⁵

¹ Kaveh Rajab Khalilpour, James Prest, Igor Skyrabin, "Scoping the opportunities for an integrated gas-electricity regional network " ANU Energy Change Institute, Final Report, December 2017, ANU.

² IEA, *Energy Policies of IEA Countries: Australia 2018 Review*, IEA, Paris, at 52.

³ <http://energy.anu.edu.au/news-events/australia-running-out-fuel-pm-orders-supply-review>, citing <https://www.bbc.com/news/business-44027042>; see also <https://thenewdaily.com.au/news/national/2018/05/07/fuel-security-government-review/>

⁴ United Nations *Paris Agreement on Climate Change* [2016] ATS 24; 55 ILM 743 (2016); Paris Agreement (Dec. 13, 2015), in UNFCCC, COP Report No. 21, Addendum, at 21, U.N. Doc. FCCC/CP/2015/10/Add 1 (Jan. 29, 2016).

⁵ Australian Government, Department of Environment and Energy, [Quarterly Update of Australia's National Greenhouse Gas Inventory: December 2017](#) (incorporating March 2018 quarter emissions from the National Electricity Market) - revised 18 May 2018

There has been an inadequate response from Federal government to the need to enact laws, measures and policies to reduce transport emissions.

3. There is an additional important role for the Federal Government to provide national leadership in terms of standardisation in the area of standards for the charging infrastructure. This point is covered further below.

Division of responsibility between Commonwealth and other levels of government

The main incentive in the hands of the Federal Parliament is taxation law. Section s 51(ii) of the Constitution gives the Commonwealth Parliament legislative power to enact laws with respect to taxation (if such laws do not discriminate between States or parts of States). The Committee should note Constitutional limitations on the ability of the Senate to propose or amend taxation laws set out in s.53 of the Constitution. This is relevant to some of the proposals set out below in this submission, implying that such proposals would need to originate in the House of Representatives.

The parliament can rely upon a number of Constitutional heads of power in s.51 to enact laws in relation to EVs including the taxation power (51(ii)), corporations power (51(xx)), external affairs power (xxix), to the extent that the latter would be appropriate and adapted to implement international climate change law to which Australia is a Party.

State, Territory and local laws

There are a number of incentive measures that could be introduced but remain the province of the States and territories or local government in terms of division of responsibility. These can be summarised as those involving:

- (1) EV registration and stamp duty concessions;
- (2) EV charging infrastructure – land use planning law relating to installation of kerbside EV charging infrastructure, and any modification of parking regulations;
- (3) land use planning and development approval law relating to installation of EV charging infrastructure in new suburb developments;
- (4) EV charging infrastructure in the specific context of Unit Titles and Strata title laws relating to housing other than detached housing;
- (5) EV fleet procurement by State, Territory and local governments
- (6) Access to special transit lanes and parking concessions.

Nine Areas for Federal leadership

The following nine areas for Federal leadership on electric vehicles can be identified, and should be pursued:

- i. Setting national EV uptake targets in legislation or policy for 2030, 2040, 2050;

- ii. Phase out of sale of new fossil fuelled vehicles, in line with international trends.
- iii. Provision of tax incentives for EVs and gradual introduction of stricter taxation or regulation of the most polluting conventional vehicles;
- iv. Introduction of a tax incentive for EV and zero emission vehicle related research and development activity (R&D incentive);
- v. Federal grants programme for installation of EV fast charging infrastructure network in rational, appropriate, targeted locations where market failure will tend to undersupply infrastructure due to low predicted volume of use;
- vi. National standardisation of EV plugs and technical requirements for charging infrastructure in public and private buildings with a view to national uniformity, in line with international trends.
- vii. Introduction of CO2 emission targets and pricing of fuel
- viii. EV fleet procurement by Federal government agencies and institutions
- ix. Clarification of operation of charging infrastructure under the National Electricity Rules. In particular, is the commercial provision of EV charging points an activity for which an electricity distribution company (DNSP) must obtain either an exemption or operate through a retail arm? Further how can the 'ring fencing' requirements of the Australian Energy Regulator and the National Electricity Rules be navigated?

Overview of measures

The recent NSW Parliamentary Inquiry into EVs provided a useful overview of policy measures for EV sector development:

“In general terms, Australia’s policy options for promoting EV sales can be categorised as either demand-side or supply-side. Demand -side policies include: reducing or removing taxes on EVs; increasing taxes on conventional vehicles and fossil fuels; and providing EV drivers with privileges, such as road toll exemptions and access to bus lanes and designated parking spaces. Supply-side policies include tightening emissions standards (which in Australia are currently based on Euro 5 standards); subsidies for manufactures of EVs and EV charging stations; and ZEV mandates that require vehicle manufacturers to sell a set number of zero emission vehicles in Australia.”⁶

The emphasis of this submission is on tax measures, given that these are in the hands of the Federal Parliament. It is plainly evident that most European countries are far ahead of Australia in that they have introduced numerous tax and incentive measures to encourage the uptake of EVs (see: Appendices).

The counter argument against tax incentives as opposed to grants, is that tax measures may be more problematic to administer, in the sense that their revenue impact on the budget cannot be as accurately predicted by Treasury at a particular point of time as the cost of a grant or direct payment. This is because government cannot be sure of the number of individuals or companies taking advantage of a tax exemption. On the other hand, the offer of grant based incentives - such as the Swedish offer of approx. \$9000 AUD for EV purchase (see: Appendix) - may also be difficult to predict uptake in terms of the number of car sales that will be motivated by the offer of the grants.

⁶ <https://www.parliament.nsw.gov.au/researchpapers/Documents/electric%20vehicles%20in%20NSW.pdf>

Points of application of Incentives

There are different possible point of application of incentives, as follows:

- Upon Acquisition of Vehicle
- Upon Registration or Transfer (Stamp Duty)
- Recurring incentives (i.e. Annual, for example)
- Infrastructure incentives
- Corporate incentives
- Non-financial incentives such as Parking Privileges or Transit Lane Privileges

Legal and policy instruments by Level of Government

Name of Incentive Provision	Federal level	State level	Local government
Personal income tax incentive	✓		
Corporate income tax incentive	✓		
Tax incentives – registration		✓	
Purchase price subsidy	✓		
Exemption or concession on Stamp duty on transfer of EV or hybrid motor vehicle		✓ Only applied in the ACT ⁷ and Queensland ⁸	
Removal of fossil fuel subsidies on transport fuels	✓		
Carbon pricing of transport fuels	✓		
Planning law – detailed facilitation of EVs in new development		✓	✓
Parking and Transit lane privileges		✓	✓
Mandate for new structures (Class 1-9) to be built pre-wired for PEV charging (where appropriate).	National Construction Code (NCC) via Council of Australian Governments (COAG)		✓

Table 1: Source: Author's own iteration from domestic legal sources.

⁷ *Duties Act 1999* (ACT), s 208; *Taxation Administration (Amounts Payable – Motor Vehicle Duty) Determination 2010* (No 2) (ACT). A Green Vehicle Rating for a new motor vehicle means a rating of A, B, C, or D corresponding to the vehicle's environmental performance score as determined in the Green Vehicle Guide: see <http://www.greenvehicleguide.gov.au> (viewed 1 August 2018). The environmental performance score for a motor vehicle is the total of the air pollution rating and the corresponding greenhouse rating for the vehicle.

⁸ *Duties Act 2001* (Qld), s 383, Sch 4C.

Discussion of Federal Taxation Law Amendments

Reduction of GST on EVs

GST, or consumption tax of 10% is imposed on new cars sold in Australia, as well as on used cars sold by a dealer.⁹

A simple option to reduce the relative price of EVs compared to ICE cars would be to make them exempt or partially from GST.

Reduction of luxury car tax on EVs

Another simple option to reduce the relative price of EVs compared to ICE cars would be to make them exempt or partially exempt from the luxury car tax.

Luxury car tax is imposed on higher priced new cars in Australia. In particular, it is payable by businesses which sell or import luxury cars, where the value of the car is above AUD\$64,132, or AUD\$75,526 for fuel-efficient cars with a fuel consumption of less than 7L per 100 km.

The policy rationale for removing LCT on EVs is as follows:

- The LCT is a barrier to EV uptake as it makes higher end EVs even more expensive relative to ICE vehicles.
- Was introduced to protect the domestic car manufacturing sector. However with the demise of the domestic industry there is little rationale now for the tax other than income redistribution;
- The volume of EV car sales is at present so low, removing or reducing this tax on EVs will not greatly affect federal revenue.

The EV Council of Australia and the NRMA recently estimated the likely revenue impact of removal of the LCT for EVs, and this information is contained in the table below.¹⁰

Revenue impacts of removing the LCT for EVs

Australian EV Sales Forecast (AEMO)*

Scenario	2018/19	2019/20	2020/21	2021/22
Weak	8,413	15,258	17,761	20,897
Neutral	21,709	37,845	45,527	59,510
Strong	45,228	80,947	100,274	136,725

*www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/NEFR/2016/AEMO-insights_EV_24-Aug.pdf

Luxury Car Tax (\$m)*

Scenario	2018/19	2019/20	2020/21	2021/22
WEAK	4.9	8.8	10.3	12.1
NEUTRAL	12.5	21.9	26.3	34.4
STRONG	26.1	46.8	57.9	79.0

*Based on Australian Budget LCT revenues and AEMO sales forecasts

⁹ A New Tax System (Goods and Services Tax) Act 1999 (Cth), ss 9-5, 78-50, 84-5, 105-5, 195-1 (definition of “taxable supply”).

¹⁰ Electric Vehicle Council and NRMA, *New Policy Proposal: Recharging the Economy – Accelerating Electric Vehicle Adoption*, (2018, EVCA and NRMA, Sydney) at 13.

Amendment of Salary Sacrifice provisions

At present, salary sacrifice provisions indirectly encourage fossil fuel consumption by providing the opportunity to buy transport fuel with pre-tax dollars under novated lease arrangements.

These provisions could be amended to encourage buyer choice of EV or PHEV vehicles ahead of ICE vehicles.

Amendment of Fringe Benefits Tax Regime

Another possible method of incentivising uptake of EVs in Australia is to amend Fringe Benefits Tax provisions so that FBT exemptions or concessions are made for EVs that are available for private use by employees.

ATO explains that a car fringe benefit most commonly arises where an employer makes a car that they 'hold' available for the private use of an employee (or the car is treated as being available). This includes cars owned or leased by the employer.

Falling within the definition of car for the purpose of this tax - the following types of vehicles (including four-wheel drive vehicles) include:

- “motor cars, station wagons, panel vans and utilities (excluding panel vans and utilities designed to carry a load of one tonne or more)
- all other goods-carrying vehicles designed to carry less than one tonne
- all other passenger-carrying vehicles designed to carry fewer than nine occupants.”¹¹

Amending fuel tax credits

Other possible legislative amendments that would indirectly encourage uptake of electric vehicles in a range of contexts would involve removal or reduction or better targeting of existing tax concessions for fossil fuels, for example Fuel Tax Credits available under Federal Tax law. These fuel tax credits give businesses a credit for fuel tax (excise or customs duty) when the fuel is used in heavy vehicles and in light vehicles travelling on private roads and off public roads. Eligible fuels presently include petrol and diesel, liquefied petroleum gas (LPG), liquefied natural gas (LNG) and compressed natural gas (CNG).¹²

(By way of background, excise duty is a tax on fuels such as diesel or petrol produced or manufactured in Australia. Imported fuels are subject to import duty at the same rate as excise duty, and are described as excise equivalent goods.¹³)

¹¹ Australian Taxation Office, *Fringe Benefits Tax – A Guide for Employers*, Chapter 7 – Car Fringe Benefits.

¹² Australian Taxation Office, “Fuel Tax Credits – Business: Eligible Fuels”, viewed 1 August 2018, at <https://www.ato.gov.au/Business/Fuel-schemes/Fuel-tax-credits---business/Eligibility/Eligible-fuels/>

¹³ Australian Taxation Office, Australian Tax Gaps 2015-6, “Petrol and diesel excise and duty”.

Statutory Federal Fund to encourage EVs

Australia could follow the lead of New Zealand and consider enacting provisions similar to those for the NZ **Low Emission Vehicles Contestable Fund**.¹⁴ According to the NZ government: “The fund provides up to \$7 million per year to co-fund up to 50% of project costs with private and public sector partners in areas where commercial returns aren’t yet strong enough to justify full private investment.

These projects will need to contribute to at least one of the following objectives:

- Increasing the variety and supply of electric vehicles (EVs) available
- Improving the availability of servicing or charging infrastructure in areas where demand is not fully developed
- Increasing demand for EVs
- Developing innovative products or systems to take advantage of growing EV usage.”¹⁵

The fifth round of funding will open on 15 August 2018. The specific aims of this funding round are to:

- Support the development of the charging network by identifying and filling the key gaps in the network, and by supporting EV charging stations in priority locations where further facilities are needed
- Facilitate the scale-up of LEV technology, especially in shared fleets and public transport
- Enable the demonstration and uptake of light and heavy LEVs and associated technologies through high visibility projects in sectors of the economy where LEVs remain relatively unproven
- Encourage electric vehicle technology innovation, particularly Vehicle-to-Grid and Smart Charging technologies potentially resulting in reductions to peak electricity demand
- Support the development of electric vehicle maintenance, repair and other support services.”¹⁶

Exemptions from Road User Charges

Some including the Productivity Commission have proposed introduction of road user charges which EVs would have to pay, as opposed to fuel excise in order to fund road building and maintenance.¹⁷

However, in New Zealand, the national Government’s Electric Vehicles Programme includes “Extending the Road User Charges (RUC) exemption on light electric vehicles until they make up

¹⁴ <https://www.eeca.govt.nz/funding-and-support/low-emission-vehicles-contestable-fund/>

¹⁵ <https://www.eeca.govt.nz/funding-and-support/low-emission-vehicles-contestable-fund/low-emission-vehicles-contestable-fund/>

¹⁶ <https://www.eeca.govt.nz/funding-and-support/low-emission-vehicles-contestable-fund/>

¹⁷ Productivity Commission, [Shifting the Dial: 5 Year Productivity Review: Supporting Paper No.9, Funding and Investment for Better Roads](#), (2017, Productivity Commission, Canberra).

two percent of the light vehicles fleet.”¹⁸ NZ also enacted the *Energy Innovation (Electric Vehicles and Other Matters) Amendment Act 2017* which provides for a RUC exemption for heavy electric vehicles (above 3500kg), depending on the type of vehicle and the annual distance travelled.¹⁹ These provisions commenced in September 2017.

International Comparison of EV Incentives

International comparison of legislative and policy measures to encourage uptake of EVs shows clearly that Australian Federal policy lags far behind many similar nations within the OECD and the EU.

Tax incentives in the EU

A review of the Tax Incentives for EVs in the EU shows that all except 3 member nations (out of 28) offer a range of tax exemptions or grants related to EV purchase, registration, road use, or other taxation. (Refer to Appendix).

<https://www.acea.be/publications/article/overview-of-incentives-for-buying-electric-vehicles>

Incentives in Norway

Norway is the leader in terms of extent of uptake of EVs in new car sales. The Appendix shows a wide range of tax and other policy reforms introduced since 1990. Battery electric cars sold in Norway are exempt from value-added tax, traffic insurance tax, and one-off registration tax.²⁰

Federal Tax incentives in the USA

According to the US Federal Department of Energy “The federal Internal Revenue Service (IRS) tax credit is for \$2,500 to \$7,500 per new EV purchased for use in the U.S. The size of the tax credit depends on the size of the vehicle and its battery capacity. “ It continues: “This tax credit will be available until 200,000 qualified EVs have been sold in the United States by each manufacturer, at which point the credit begins to phase out for that manufacturer. Currently, no manufacturers have been phased out yet.”²¹

¹⁸ <https://www.transport.govt.nz/multi-modal/climatechange/electric-vehicles/>

¹⁹ Road User Charges Act 2012 (NZ), s.37, 37A. <http://legislation.govt.nz/act/public/2017/0027/22.0/DLM7005010.html>

²⁰ Norway, Ministry of Transport and Communications “Germany: Learning e-mobility from Norway”, 31 January 2018, <https://www.regjeringen.no/en/aktuelt/tyskland-larer-om-norsk-elbilpolitikk/id2588058/>

²¹ <https://www.energy.gov/eere/electricvehicles/electric-vehicles-tax-credits-and-other-incentives>

Federal Procurement Requirement

One of the obvious levers in the hands of the Federal Parliament relates to Federal procurement. I would support the recommendation of the EV Council of Australia that “All governments should demonstrate leadership by setting purchasing policies that mandate 10 per cent of light passenger vehicles acquired or leased by government should be electric by FY2020/21, and that 25 per cent should be electric by FY2025/26.”²²

Charging standardisation

There is an important and pressing need for Federal government and Parliament to set and adopt of an official national standard for EV charging.

The Victorian Inquiry into EVs found “the need for EV infrastructure to be nationally consistent, so that EVs can be easily driven across Australia (Finding 11)”.

Specialised industry bodies, namely the NRMA and the EVC have stated their support for charging standards proposed by the Federal Chamber of Automotive Industries:

These include:

- AC Charging – IEC 62196-2 Configuration Type 2 socket, and
- DC Charging – Both IEC 62196-3 Configuration FF (CCS-2) with tethered cable and IEC 62196-3 Configuration AA (CHAdeMO).

Federal contribution to Charging Infrastructure

Most of the research to date on the question of best practice legal and policy frameworks for electric vehicles has emphasised the role of financial and non-financial incentives such as sales and vehicle tax exemptions, toll and parking charge exemptions, etc. However, these incentives are only part of the picture. The problem of how to encourage more investment in charging points is remains very important because it will help to accelerate the date of arrival at the tipping point when EVs will become mainstream.

Many Australians now live in multi-unit dwellings e.g. apartments, townhouses with limited or no access to charging. Rapid infrastructure deployment in these contexts is unlikely to occur without policy intervention. Planning law reform can facilitate EV charging infrastructure by directing the coordination and organisation of EV charging points. It is recognised that this is largely a State and local responsibility.

However on Federal land and in Federal buildings, there remains scope to examine the installation of charging infrastructure, which falls into three categories: home charging, public charging, and rapid charging. The EV Council of Australia has proposed the following reforms in relation to each of these categories. In terms of fast chargers – it has proposed enabling works for fast charging. In terms of public chargers, it has proposed non-proprietary public chargers. It has also proposed a home energy storage incentive which could be targeted and designed to encourage EV adoption.

Further options for a Federal contribution are through the work of Infrastructure Australia, and the Northern Australia Infrastructure Fund.

²² <http://electricvehiclecouncil.com.au/wp-content/uploads/2018/03/New-Policy-Proposal-ELECTRONIC.pdf>

Conclusion

The emphasis of this submission is on tax measures, given that these are in the hands of the Federal Parliament.

It is plainly evident that most European countries are far ahead of Australia in that they have introduced numerous tax and incentive measures to encourage the uptake of EVs. The Appendices provide specific information about Norway, EU and Japanese incentives.

The submission set out nine areas for Federal leadership on electric vehicles, and it is recommended that these be pursued:

- i. Setting national EV uptake targets in legislation or policy;
- ii. Phase out of sale of new fossil fuelled vehicles, in line with international trends.
- iii. Provision of tax incentives for EVs and gradual introduction of stricter taxation or regulation of the most polluting conventional vehicles;
- iv. Introduction of tax incentives for EV and zero emission vehicle related research and development activity (R&D incentive);
- v. Federal grants programme for installation of EV fast charging infrastructure network in rational, appropriate, targeted locations where market failure will tend to undersupply infrastructure due to low predicted volume of use;
- vi. National standardisation of EV plugs and technical requirements for charging infrastructure in public and private buildings with a view to national uniformity, in line with international trends.
- vii. Introduction of CO₂ emission targets and pricing of fuel;
- viii. EV fleet procurement by Federal government agencies and institutions; and
- ix. Clarification of position of commercial charging infrastructure under the National Electricity Rules.

Appendix : Overview of Tax Incentives for Electric Vehicles in the EU by Country (ACEA, European Automobile Manufacturers Association)

OVERVIEW ON TAX INCENTIVES FOR ELECTRIC VEHICLES IN THE EU

AUSTRIA	<p>Electric vehicles are exempt from fuel consumption/pollution tax, ownership tax and company car tax. In addition, a deduction of VAT is applicable for zero-CO₂ emission cars (e.g. electric and hydrogen-powered cars).</p> <p>The Austrian automobile club ÖAMTC publishes the incentives granted by local authorities on its website (www.oeamtc.at/elektrofahrzeuge).</p>
BELGIUM	<p>Electric vehicles pay the lowest rate of tax under the annual circulation tax in all three regions.</p> <p>In the Brussels-Capital region, financial incentives apply to companies electric, hybrid or fuel-cell vehicles.</p> <p>Electric and plug-in hybrid (until 31 December 2020) vehicles are exempt from registration tax in Flanders. Incentives ("Zero Emission Bonus") for the purchase of battery electric and hydrogen-powered cars and vans are granted.</p> <p>The deductibility rate from corporate income of expenses related to the use of company cars is 120% for zero-emissions vehicles.</p>
BULGARIA	Electric vehicles are exempt from ownership tax.
CROATIA	None
CYPRUS	Vehicles emitting less than 120g CO ₂ /km are exempt from registration tax and pay the lowest rate of tax under the annual road tax.
CZECH REPUBLIC	Electric, hybrid and other alternative fuel vehicles are exempt from the road tax.
DENMARK	Electric vehicles (BEVs) pay only 40% of the registration tax (in 2017). This percentage will be gradually increased at 65% in 2018, 90% in 2019 and 100% in 2020. Hydrogen and fuel cell-powered vehicles are exempt from registration tax until the end of 2020.
ESTONIA	None

FINLAND	Pure electric vehicles always pay the minimum level of the CO ₂ based registration tax.
FRANCE	Regions have the option to provide an exemption from the registration tax (either total or 50%) for alternative fuel vehicles (i.e. electric, hybrids, CNG, LPG, and E85). Electric vehicles and vehicles emitting less than 60g CO ₂ /km are not subject to the tax on company cars. Electric and hybrid electric vehicles emitting 20 g/km or less of CO ₂ benefit from a premium of €6,000 under a bonusmalus scheme. An incentive scheme grants an extra €4,000 for switching an eleven year or more diesel vehicle for a new BEV (or €2,500 in case it's a PHEV).
GERMANY	Electric vehicles are exempt from the annual circulation tax for a period of ten years from the date of their first registration. From July 2016, the government granted an environmental bonus of €4,000 for pure electric and fuel-cell vehicles and €3,000 for plug-in hybrid and range-extended electric vehicles.
GREECE	Electric and hybrid vehicles are exempt from registration tax, luxury tax and luxury living tax. Electric and hybrid cars (with an engine capacity of up to 1,549cc and first registration date before 31 October 2010) are exempt from circulation tax.
HUNGARY	Electric cars and plug-in hybrids are exempt from registration tax, annual circulation tax and company car tax.
IRELAND	Electric vehicles qualify for VRT (purchase tax) reliefs of €5,000 until 31 December 2021 (€2,500 for plug-in hybrids until 31 December 2018). In addition, electric vehicles and plug-in electric hybrids entitle the buyer to a grant of up to €5,000 on purchase until 31 December 2021 for electric vehicles and December 2018 for plug-in hybrid electric vehicles. Electric vehicles pay the minimum rate of the road tax (€120).
ITALY	Electric vehicles are exempt from the annual circulation tax (ownership tax) for a period of five years from the date of the first registration. After this five-year period, they benefit from a 75% reduction of the tax rate applied to the equivalent petrol vehicles.

LATVIA	Pure electric vehicles pay the lowest fee for technical annual inspections and the lowest amount for the company car tax (€10).
LITHUANIA	None

LUXEMBOURG	<p>Electric and fuel cell vehicles benefit from a tax allowance on the registration fees of €5,000. Electric vehicles also pay the minimum rate of the annual circulation tax.</p> <p>Pure electric and hydrogen cars pay the lowest tax on benefit in kind for private use of a company car.</p>
MALTA	Registration tax is based on length of vehicles, emissions and age. For pure electric vehicles the emission tax is zero.
NETHERLANDS	<p>Zero emission cars are exempt from paying registration tax. Passenger cars with zero CO₂ emissions are exempt from motor vehicle tax up to and including 2020.</p> <p>Zero emission cars pay the lowest percentage (4%) of the income tax on the private use of a company car.</p>
POLAND	Electric and plug-in electric vehicles exempt from registration tax ²³ .
PORTUGAL	<p>VAT is deductible for electric vehicles (with acquisition cost <€62,000) and plug-in hybrids (with an acquisition cost <€50,000).</p> <p>Pure electric cars are exempt from the registration tax (<i>Imposto Sobre Vehículos</i> or <i>ISV</i>). Plug-in hybrid cars with all-electric mode up to 25km benefit from a 75% reduction of the tax.</p>
ROMANIA	<p>An incentive scheme grants €10,000 for the purchase of a new pure electric vehicle (plus €1,500 for scrapping a vehicle older than eight years) and €4,500 for the purchase of a new hybrid vehicle.</p> <p>Electric vehicles are exempt from the ownership tax.</p>
SLOVAKIA	Pure electric vehicles pay the lowest amount for the registration tax (€33) and are exempt from motor vehicle tax. Hybrids and natural gas (CNG) vehicles benefit from a 50% reduction of the tax.

²³ To be introduced after EC positive decision for public aid

SLOVENIA	<p>An incentive scheme grants:</p> <ul style="list-style-type: none"> • €7,500 for a new electric vehicle with zero emissions or a BEV (M1) • €4,500 for a new electric vehicle with zero emissions or a power-driven vehicle (N1 or L7e) • €4,500 for a new plug-in hybrid or a new electric vehicle with a range extender, with emissions < 50g CO₂/km (M1 or N1) □ • €3,000 for a new electric vehicle with zero emissions or a power-driven vehicle (L6e) • €1,000 for a new electric vehicle with zero emissions (L3e, L4e or L5e) • €500 for a new electric vehicle with zero emissions (L1e-B or L2e) • €200 for a new electric vehicle with zero emissions (L1e-A) <p>BEV's pay the lowest (0,5%) rate of tax on motor vehicle.</p>
SPAIN	<p>Main city councils (e.g. Madrid, Barcelona, Zaragoza, Valencia etc.) are reducing the annual circulation tax (ownership tax) for electric and fuel-efficient vehicles by 75%. Reductions are applied on company car taxation for pure electric and plug-in hybrid vehicles (30%), and for hybrids, LPG and CNG vehicles (20%).</p>
SWEDEN	<p>'Climate bonus' (Klimatbonus) is available for the purchase of new vehicles with CO₂ emissions of maximum 60g/km. It ranges from SEK 60,000 for electric vehicles (BEV) with zero emission to plug-in hybrids (PHEV) with emission of 60g/km. Electric cars and plug-in hybrids are exempted from paying annual circulation tax for five years. 40% reduction is applied on company car taxation for electric cars and plug-in hybrids.</p>
UNITED KINGDOM	<p>From April 2018 until March 2021, cars that emit less than 50g/km qualify for 100% first year writing down allowances (FYAs). Zero emission vehicles attract a zero rate of vehicle excise duty (VED)</p> <p>Ultra-low emissions and electric vehicles pay reduced company car tax rates. For more details see: www.gov.uk/government/publications/finance-bill-2017-draft-legislation-overview-documents/overview-of-legislation-indraft</p>

Appendix: Summary of the presence/absence and the number of taxes and incentives available by country to encourage purchase of cars with lower CO2 emissions in 2016 (European Environment Agency, [Page](#))

Country	CO ₂ and proxy based incentives				Incentives for zero- and low-emission vehicles				
	Acquisition	Recurring	Company	Total number*	Acquisition	Recurring	Infrastructure	Company	Total number*
Austria	✓	✓	✓	3	✓	✓	✓	✓	8
Belgium	✓	✓	✓	4	✓	✓		✓	4
Bulgaria		✓		1		✓			1
Croatia	✓	✓		2			✓		1
Cyprus	✓	✓		2		✓			2
Czech Republic		✓		1		✓			1
Denmark	✓	✓	✓	3	✓	✓	✓		6
Estonia				0		✓			2
Finland	✓	✓		3	✓				1
France	✓	✓	✓	8	✓		✓	✓	5
Germany		✓		1	✓	✓		✓	5
Greece	✓	✓		3	✓	✓			4
Hungary	✓	✓	✓	4	✓	✓		✓	7
Iceland	✓	✓		2	✓	✓	✓		5
Ireland	✓	✓	✓	3	✓	✓	✓		6
Italy	✓	✓		2	✓	✓			3
Latvia	✓	✓	✓	3	✓	✓		✓	5
Liechtenstein		✓		1	✓	✓			2
Lithuania				0		✓			2
Luxembourg		✓		1		✓		✓	2
Malta	✓	✓		2	✓	✓			5
Netherlands	✓	✓	✓	3	✓	✓	✓	✓	6
Norway	✓			1	✓	✓	✓	✓	10
Poland	✓			1					0
Portugal	✓	✓		2	✓	✓		✓	6
Romania	✓	✓		2	✓	✓	✓		4
Slovakia	✓	✓		2		✓			2
Slovenia	✓	✓		2	✓	✓			2
Spain	✓	✓	✓	3		✓	✓	✓	8
Sweden		✓		1	✓	✓	✓	✓	7
Switzerland		✓		1	✓	✓			2
United Kingdom	✓	✓	✓	7	✓	✓	✓	✓	5
Total	23	28	10	30	22	28	12	13	32

Appendix: Summary of Norwegian EV policy measures

Source: Norsk Elbilforening (Norwegian EV Association)

“The zero-emissions incentives include:

- No purchase/import taxes (1990)
- Exemption from 25% VAT on purchase (2001)
- Low annual road tax (1996)
- No charges on toll roads or ferries (1997 and 2009)
- Free municipal parking (1999)
- Access to bus lanes (2005)
- 50% reduced company car tax (2000)
- Exemption from 25% VAT on leasing (2015)

Recent updates on Norwegian EV policy:

- Access for BEVs in bus lanes in Oslo require carpooling with at least one passenger during rush hours (2015)
- Free municipal parking up to cities to decide (2017)
- Zero annual road tax (2018)
- 40% reduced company car tax (2018)
- 50% price reduction on ferries (2018)
- Zero re-registration tax for used zero-emission cars (2018)

The Government has decided to keep the purchase incentives for zero-emission cars until the end of 2021. The VAT exemption for zero-emission cars in Norway has been approved by the EFTA Surveillance Authority (ESA) until the end of 2020. After 2021 the incentives shall be revised and adjusted parallel with the market development. As of January 2017, it has been up to the local governments to decide the incentives regarding access to bus lanes and free municipal parking.

The overall signal from the majority of political parties is that it should always be economically beneficial to choose zero and low emission cars over high emission cars. This is obtained with the “polluter pays principle” in the car tax system, which implies high taxes for high emission cars and lower taxes for low and zero-emission cars. Introducing taxes on polluting cars can finance incentives for zero emission cars without any loss in revenues.

The Norwegian Parliament has decided on a goal that all new cars sold by 2025 should be zero emission (electric or hydrogen).

Charging infrastructure

The Norwegian Government has launched a program to finance the establishment of at least two multi-standard fast charging stations every 50 km on all main roads in Norway by 2017. The fast-charging stations have been successfully established on all main roads with the exceptions of Finnmark and Lofoten.”²⁴

²⁴ <https://elbil.no/english/norwegian-ev-policy/>

Appendix: Summary of Auto-Related Tax Measures in Japan

“In FY 1975, the automobile acquisition tax on electric vehicles was lowered. Since then, the national government has taken a number of special taxation measures including expansion of types of vehicles subject to tax cuts and reduction of tax rates. Such measures were intended to promote environmental conservation in relation to automobiles. Some of the special measures concerning taxation adopted in FY 1999 are as follows:

(1) Incentive for Introduction of Low-Emission Vehicles

When a low-emission vehicle is purchased, the rate of automobile acquisition tax is reduced by 2.7% (in case of hybrid cars, the rate is lowered by 2.2%).

In addition, when a low-emission vehicle is purchased, the owner can benefit from either one of the following tax reductions in income and corporate taxes: either extra depreciation of 30% during the initial year, or a 7% tax deduction. (However, corporate bodies with capitalization of 100 million yen or more cannot select the latter).

(2) Incentive for Introduction of Fuel-Efficient Vehicles

Upon the purchase of a fuel-efficient vehicle meeting the requirements of the fuel-efficiency standards set forth in the Energy Conservation Law, automobile acquisition tax is computed after deducting 300 thousand yen from the actual purchase price. This measure came into effect in FY 1999.

(3) Incentive for Introduction of Automobiles Conforming to 2000 Emissions Controls

Upon the purchase of an automobile conforming to the more stringent standards of the automobile emission control measures to come into force starting in October 2000, the rate of the automobile acquisition tax is reduced by 1.0% if purchased before the new regulations come into effect and by 0.1% for purchases made during the transition period from the day this regulation first comes into effect until its full enforcement at the end of February 2001.

(4) Incentive for Introduction of Vehicles Conforming to the Automobile NOx Law

When vehicles such as trucks and buses in specified areas that do not conform to the standards stipulated in the Automobile NOx Law are replaced with new vehicles that do meet the requirements of those standards and the latest vehicle emission regulations, the automobile acquisition tax rate are reduced by 1.2%.

For the automobile tax, the Local Tax Law authorizes local governments to set up subdivided tax rates depending on vehicle specifications based on the standard tax rates, provided that the variance does not exceed 20% of the standard rates. Utilizing this provision, the Tokyo Metropolitan Government enacted an ordinance on the automobile tax in March 1999, which subjects vehicles used more than 10 years to tax rates higher than the standard rates, while the rates for environmentally friendly vehicles are lower than the standard rates. This variable taxation in Tokyo will be in effect for the period from FY 2001 to FY 2004.”

Source: Environment Ministry, Government of Japan.

<https://www.env.go.jp/en/policy/tax/auto/ch3.html>