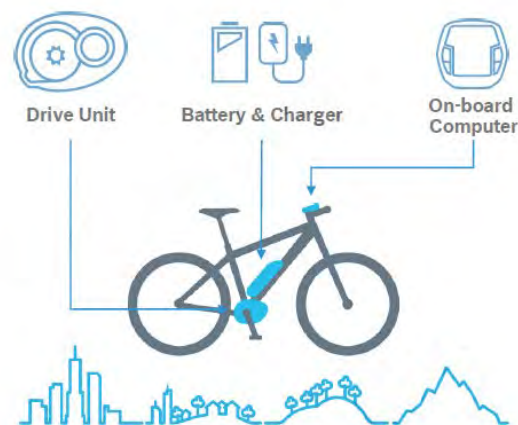


RESPONSE TO MINISTRY OF TRANSPORT CLEAN CAR DISCOUNT CONSULTATION DOCUMENT, PARTS 3A AND 3B

1. Opening Statement

This submission is made on behalf of Robert Bosch GmbH (RB), a 130 year old German company with 410,000 employees. It is one of the world's leading international providers of technology and services.

RB has four business sectors – mobility solutions, industrial technology, energy and building technology and consumer goods. RB eBike Systems provides components (drive units, onboard computers / connected devices, batteries and chargers) to more than 70 leading bike brands in 21 countries.



Currently in the New Zealand market, Robert Bosch New Zealand Ltd (RBNZ) is renowned for its consumer goods including power tools and household appliances.

In 2018, RB launched electronic mobility solutions for eBikes to the New Zealand market. Around 20 brands of bikes in New Zealand are e-powered by Bosch and sold through more than 200 retailers nationwide. This submission represents a large part of the entire eBike sector, rather than seeking to advocate for a particular brand of eBike in New Zealand.

RBNZ intends to be directly involved in any legislative or regulatory process which includes verbal submissions on e-vehicle and eBike policy changes to underline its ability to provide an industry-wide perspective on eBike uptake.

More information: www.bosch-ebike.com

This submission highlights the desire to include eBikes in the proposed light vehicle feebate scheme because of the capacity of eBikes to contribute to New Zealand's emission reductions target. The submission addresses Parts 3A and 3B of the Ministry of Transport's Clean Cars consultation document.

Anecdotal evidence suggests that most eBike kilometers are replacing short car trips.

The rightcar.govt.nz site states cars emit 130 grams of carbon per kilometre travelled. Therefore the transfer of short car trips by just one person doing a 10km commute by bike vs using a car means that person would be reducing their carbon emissions by;

1.3kg per day

6.5kg per week

27.3kg per month

305.5kg per year (based on 47 weeks of riding)

Inclusion of eBikes in the proposed Clean Cars policy assists in the achievement of public policy objectives to reduce carbon emissions and justifies the inclusion of eBikes in the proposed feebate scheme.



2. eBike trends in New Zealand

Bike sales in New Zealand have totaled around 230,000 annually over each of the last 10 years, with eBikes last year accounting for about 10 per cent.

In the year to June 2016, 11,424 eBikes were imported into New Zealand. This statistic has doubled to 27,646 in the year to June 2018.

A key statistic for policy makers to understand is that in New Zealand, **67% of vehicle trips are up to 5km** according to Statistics New Zealand, which makes the point that 5 km is an easy 15 minute eBike trip.



The most popular eBikes in New Zealand sell for between \$2,500 - \$3,500.

These anecdotes are typical of eBike users:

Simon Wilson, 64, Auckland:

“My eBike has changed my life. I didn't use my ordinary bike much, because of the hills. But I ride my e-bike almost every day, to get to work, to get to meetings and events across town, and for recreational use. I never have to worry if the ride will be too difficult, because it never is. I can ride from the city to Newmarket in peak time in 10 minutes – no other mode of transport will get me there that fast.”

Kate Jones, 32, Hamilton:

“We used to have two cars in the family, however, we sold one of them and replaced it with a Cargo eBike for short trips around the city. The Cargo eBike means I can easily transport the groceries, take the kids to daycare and securely take my laptop bag to work without any worries. It saves our family a lot of money each year, with one less car registration, WOF and insurance, while also helping us make a difference to the environment.”

3. **New Zealand Research:**

A key piece of research is the 2018 study *eBikes and the future of cycling in NZ* conducted by Dr Kirsty Wild and Professor Alistair Woodward of the Medical and Health Sciences Faculty of the University of Auckland:

<https://cpb-ap-se2.wpmucdn.com/blogs.auckland.ac.nz/dist/c/520/files/2018/08/Electric-City-Ebikes-and-the-Future-of-Cycling-in-NZ-1rihn5y.pdf>

Using Auckland as a case study, some of the key insights were:

3.1 eBikes are expanding Auckland's 'active transport radius'

The average pedestrian is willing to walk up to 3km, and those on pushbikes to commute up to 5km. A large number of participants in this study were regularly and comfortably commuting 15km each way to work on their eBikes.

eBikes are making this expansion possible by:

- a) making it less tiring to cover longer distances, and
- b) increasing cycling speed so longer distances now fall within expected commuting time-budgets.

This was particularly likely where high-quality cycling 'highways' like the North Western cycleway were available, that enable e-cyclists to safely take advantage of the speed-boosting capabilities of eBikes.

3.2 eBikes are making 'trip-chaining' easier for active transport users

E-bikes are enabling people to make more 'car-like' trips using a form of active transport with multiple stops and purposes (trip-chaining). Pedal-assist makes trips quicker and less tiring, shopping and children can be taken and participants found they could 'fit in' more diverse trips.

3.3 eBikes are increasing commuting efficiency and reducing commuting stress

Cyclists are the most satisfied commuters. A key reason is the higher levels of commuting 'control' and arrival time reliability (especially in congested conditions), improved mood at work, and reduced commuting stress.

3.4 eBikes are making active transport more realistic for women

More females engage in eBiking than traditional cycling (see graph below) because of improved arrival time reliability, greater capacity for trip-chaining, and the ability to carry children and their gear.

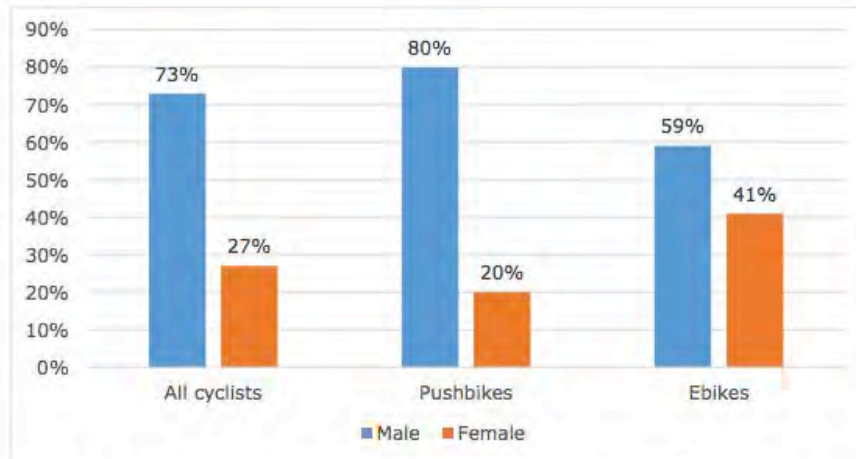


Figure 3. Bicycle type by gender of rider, northwestern cycleway, March 2018

Source: Nicholas Wilson. Counts were conducted from 7.30-9.30am on the 21 March 2018 on Upper Queen Street at the start of the Northwestern cycleway.

3.5 eBikes are not currently an accessible active transport technology for low-income commuters

Consistent with studies overseas, all the eBike users in this study were middle to upper-middle income people. The participants commented on their frustration that cost makes eBikes unaffordable to low-income commuters, who ‘may need eBikes the most’.

3.6 SUMMARY:

The capability of eBikes to expand the reach of traditional and new cyclists means that eBikes are carrying out an important function of replacing short-term carbon-emitting vehicle trips. This is an important justification for including eBikes in the proposed light vehicle feebate scheme.



4. The Overseas eBike experience – policy responses

Europe is the global leader in the uptake of eBike usage with governments implementing a wide range of policy responses to encourage the uptake of electric bikes, seeking to replace car trips.

The latest data available for Europe is contained in a report called *Financial Incentives for e-Cycling* produced in December 2016 by the European Cyclists Federation:









https://ecf.com/sites/ecf.com/files/FINAL%20for%20web%20170216%20ECF%20Report_E%20FOR%20ALL-%20FINANCIAL%20INCENTIVES%20FOR%20E-CYCLING.pdf

Generally the policy responses have been by way of purchase subsidies, with the most common being around 500 Euros (\$867 NZD). These policy options highlight the wide range of approaches European countries have taken to encourage the uptake of eBike usage.

Please see a table on the next page with the countries featured in the report:



**BOSCH**

COUNTRY	INCENTIVE SCHEMES AT			E-BIKES SOLD IN 2015 (TOTAL)	E-BIKES SOLD IN 2015 (PER 1000 INHABITANTS)
	National level	Regional level	Local level		
 Austria	Yes	Yes (most schemes discontinued)	Yes (most schemes discontinued)	77'000	9.0
 Belgium	Introduction under discussion	Yes	Yes	141'000	12.5
 France	No	One (Corsica)	Yes	102'000	1.5
 Germany	No, propositions rejected	Only pilot projects	Very few	535'000	6.6
 Italy	Discontinued	One (Friuli-Venezia Giulia)	Yes	56'000	6.9
 The Netherlands	Discontinued	Yes (discontinued)	One (Utrecht)	276'000	16.1
 Spain	Yes	One (Basque country)	One (Barcelona)	25'000	0.5
 United Kingdom	No	No	One (Jersey)	40'000	0.6

Specific policy responses by country have been:

Germany

Currently, approximately 2.5 million electric bikes are in use in Germany. Some cities offer up to 25% discount on eBikes with a maximum contribution of 500 Euro (\$867 NZD) for eBikes and up to 1,000 Euro for cargo eBikes.

Austria

Since 2010, around a quarter of eBikes sold have included subsidies from 300- Euros to 500 Euros for cargo eBikes.

Belgium

Belgium has tax deductibility and tax-free kilometric reimbursement for cycling to work plus grants for up to 1,000 Euros for cancelling car registrations.

France

Tax breaks include kilometric reimbursement for cycling to work, tax write-offs for corporates who include eBikes in their fleets and regional subsidy schemes of between 25% and 33%.

Italy

A large number of Italian cities offer subsidies for eBike purchase ranging from 200 Euros – 500 Euros for eBikes and up to 600 Euros for cargo eBikes.

The Netherlands

After subsidies were provided for the purchase of eBikes for commuters, an evaluation of the project showed of the commuters who used the car for commuting before the project, only 6 % did so after it finished, with 84% choosing their new electric bike instead.

Spain

In Spain, the national government subsidised cycling up to a total amount of 200,000 € was granted, with a subsidy of 200 € per electric bike.

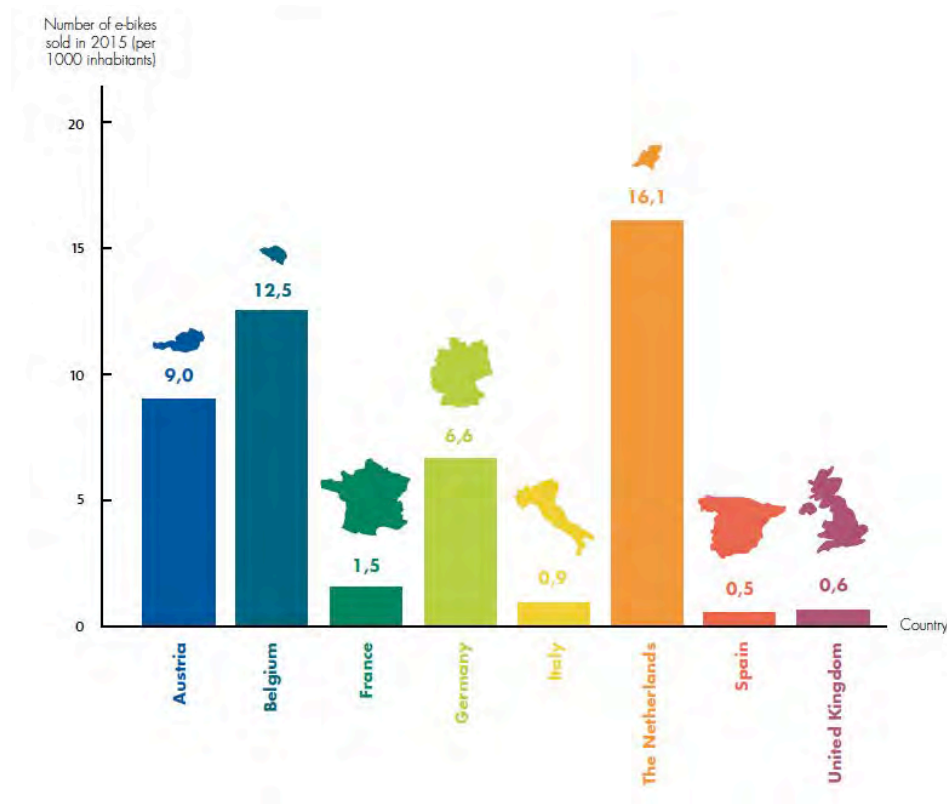
United Kingdom

The cycle-to-work scheme allows employers to lease eBikes free of tax to their employees.

**BOSCH**

COUNTRY OVERVIEW

NUMBER OF eBIKES SOLD



International evidence of switch to two-wheel electric vehicles:

A key indicator of change from emission-producing vehicles to e-vehicles is how the two-wheel vehicle market, including international motorbike brands, are switching to electric technology. Yamaha has launched an e-scooter into the Taiwan market this month in collaboration with e-scooter brand Gogoro. Yamaha has publicized its commitment to reduce carbon emissions from their fleet by 50% by 2050. Gogoro itself claims to have removed over 74 million tonnes of CO₂ from the atmosphere through the use of their e-scooter technology.

More information: <https://global.yamaha-motor.com/news/2019/0627/ec-05.html>

5. Implementation of Feebate for eBikes - options

eBikes deserve to be part of the policy toolkit to contribute to emission reduction, health and lifestyle choices and reduction of congestion. Currently 26% of people not considering riding/buying an eBike cite the reason to be: it's too expensive to buy one (source: Ipsos eBike NZ market research, 2019).

Despite the proposed Clean Car discounts, an electric vehicle is still out of reach for many New Zealand households, with the cheapest electric car on the market, the Hyundai Ioniq EV, costing - \$59,990 brand new. However, the scope for eBikes to replace short car journeys in New Zealand cities and provinces is considerable.

Here are some examples of the sorts of journeys we refer to:

- Hone aged 61 lives in Rotorua and travels 7.5km each way to his job at an industrial plant. Hone and his wife have two Mokopuna (grandchildren) living with them. His wife drops him off each morning at 7.30 am because she needs the car (worth \$7,000) to run the Mokopuna around. Therefore, four round trips from Hone's home to his work are made every day in the car. Using an eBike for his commute to work means Hone could reduce his carbon footprint by 446kg a year.
- Sally, 22 drives to Auckland University from her flat in Mt Eden each day, a round trip of 16km all up. If she did this for the 30 weeks of the year that she attended lectures she would save 312kg of carbon.

Options for funding the Feebate scheme, especially for lower income households, could be:

- A no interest loan on an eBike costing \$2,500 would involve repayments of only \$24/week over two years – considerably less than is being spent on petrol or even public transport for short car journeys.
- Government guarantee of Afterpay funding for a \$2,500 eBike over one year – repayments of \$48/week.
- Inclusion of eBikes in the Feebate scheme based on the likelihood of eBike kilometers replacing short car journeys producing emissions of 305kg of carbon each year for someone with a 10km round trip commute 47 weeks of the year.

6. Summary

The capability of eBikes to expand the reach of traditional and new cyclists means that eBikes are carrying out the important function of replacing short carbon-emitting vehicle trips. This is sufficient justification for including eBikes in the proposed Clean Car Feebate scheme.



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