E-Bike Subsidy for Australians

Prepared for We Ride Australia

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We Ride! Australia

Institute for Sensible Transport

Prepared for We Ride Australia

Dr Elliot Fishman and Liam Davies

We Ride Australia

PO Box 973
Mawson ACT 2607
www.weride.org.au
1300 WE RIDE (937 433)

Institute for Sensible Transport

ABN 78 504 466 884
102/1 Silver Street, Collingwood
Melbourne, Australia VIC 3066
E: info@sensibletransport.org.au
www.sensibletransport.org.au

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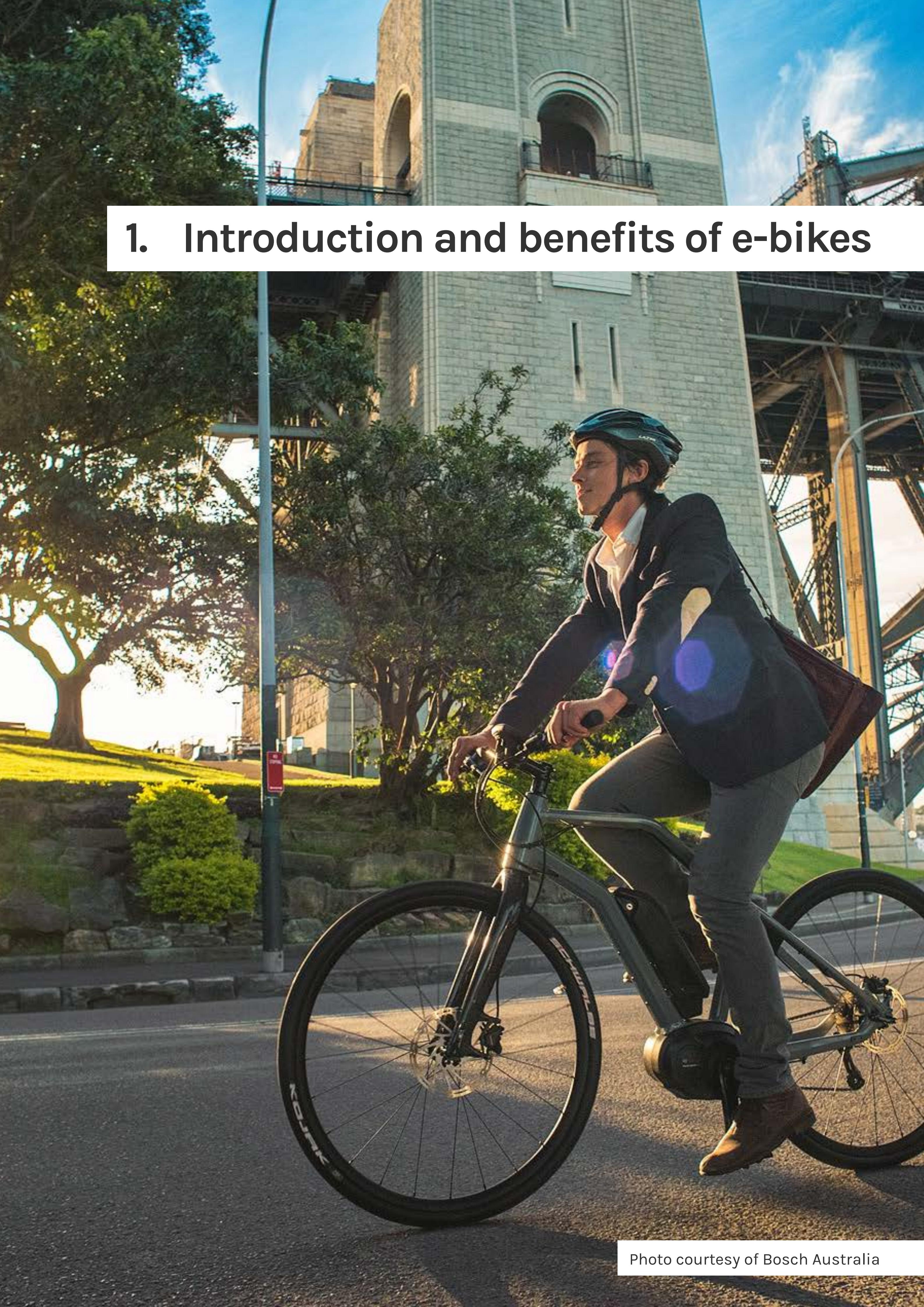


Photo courtesy of Bosch Australia

The global electric bicycle (e-bike) market has grown substantially in the last decade. E-bikes represent the largest, most rapid uptake of alternative fuelled vehicles in the history of motorisation.[1] E-bike owners ride more often, and farther than other cyclists and are able to better maintain speed with less effort.

This paper proposes the creation of an e-bike subsidy program to give more Australians the opportunity to ride an e-bike. This provides an affordable way for people to reduce their emissions, avoid high petrol costs and traffic congestion. With many jurisdictions now providing a $3,000 rebate on electric vehicles, now is the right time to get more Australians on a e-bike, which uses a 6th of the road space and a 40th of the energy of a car.

Australia's harmonisation of e-bike regulation, which broadly equates to European standards, coupled with market interest, has resulted in rising demand for e-bikes. Figure 1 offers a snapshot of e-bike sales in Australia over recent years.

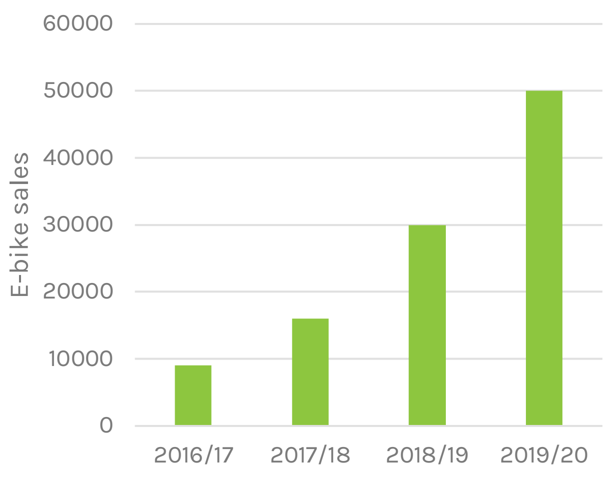


Figure 1 Australian e-bike sales

Source: Bicycle Industries Australia

Research suggests that the main barriers to a greater take up of e-bikes relate to a higher purchase price, and the concerns of riding on inadequate infrastructure.

1.1 Benefits of e-bikes

E-bikes have a number of important benefits, to the individuals who ride them, other transport users and society more generally. Figure 2 provides a snapshot of how e-bike use differs from conventional bikes.

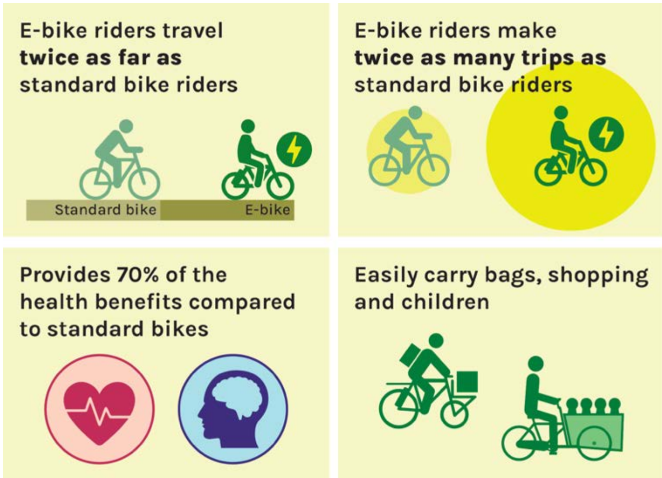


Figure 2 Benefits of e-bikes[2]

A brief summary of the benefits of e-bikes is provided below:

1. Replace car trips. E-bikes have been shown to more readily replace car trips, compared to conventional bicycles. One US study of 1,800 e-bike owners found 76% of e-bike trips would have otherwise been made by car.[3] Reducing car use helps:
    a. Reduce congestion
    b. Reduce transport emissions
    c. Lower car parking demand
    d. Reduce transport costs.
2. Ride further with less effort. Studies have found that people who own an e-bike use them 50%

[1] https://www.tandfonline.com/doi/abs/10.1080/01441647.2015.1069907
[2] https://sensibletransport.org.au/wp-content/uploads/2019/11/E-Bikes-IST-CoM-7.08.18_v2_LR.pdf
[3] http://www.urbantransportgroup.org/system/files/general-docs/UTG%20E-bikes%Report%FINAL.pdf

more often than people with regular bikes,[4] and each trip is on average 50% longer.[5]

3. Physical activity. Physiological studies have found that people riding e-bikes gain about 60 – 70% of the physical activity benefits of those riding regular bikes. This, combined with the extra cycling associated with e-bikes means e-bikes still provide the necessary level of physical activity to protect from sedentary lifestyle disease.[1]
4. Increase female participation: Females are under-represented in cycling participation in Australia and e-bikes have been shown to reduce the gender imbalance.[4]

Figure 3 captures the emissions intensity and space consumption of different modes of transport. The black balloons represent the emissions intensity and the footprints, represent the space each mode of transport consumes. What it demonstrates is that e-bikes, even when charged with standard grid electricity in Victoria (the most carbon intensive in Australia) produces 40 times *less* emissions than an average car, and takes up less than 1/6 the space.

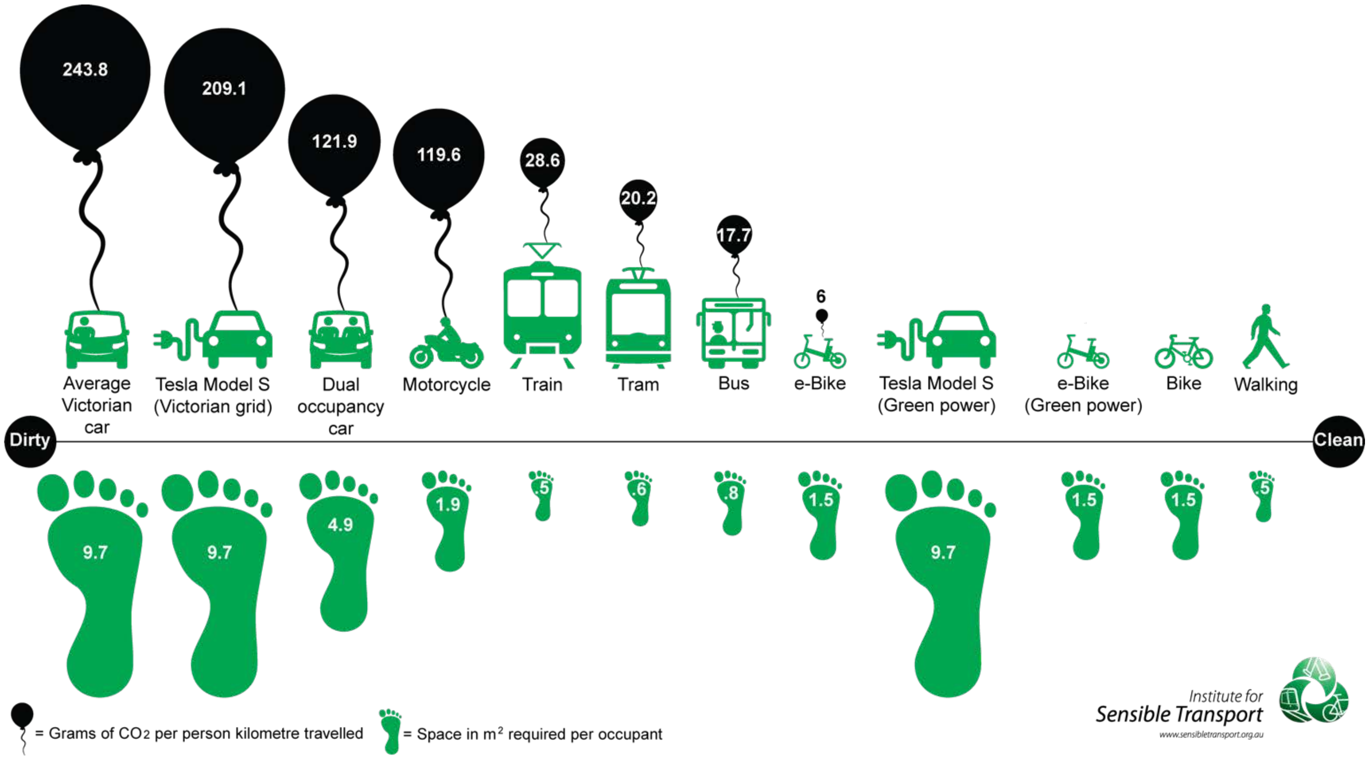


Figure 3 Emissions intensity and space consumption, different transport modes
Source: https://sensibletransport.org.au/project/transport-and-climate-change/

E-bikes use 40 times less energy per kilometre than the average car, and just a 6th of the road space.

As our cities and towns move towards a low emissions, healthier and more liveable future, e-bikes present an important opportunity to help Australians make affordable, sustainable transport choices.

[4] https://ppms.trec.pdx.edu/media/project_files/NITC_RR_1041_North_American_Survey_Electric_Bicycle_Owners.pdf
[5] https://www.sciencedirect.com/science/article/pii/S0965856415301865

2. What have other countries done to promote e-bikes

Photo courtesy of Lug and Carrie

Infrastructure and incentives are the two primary factors influencing the uptake of e-bikes. Most importantly, creating streets and paths that make people feel as safe as possible is critical. Secondly, financial incentives have become an effective option to further encourage e-bike use. In the last decade a number of OECD countries have introduced financial incentives to encourage the uptake of e-bikes.

2.1 United States E-bike Act

A bill has been introduced to the US Senate for a refundable tax credit on the purchase of a new e-bike called the *Electric Bicycle Incentive Kickstart for the Environment* (or E-Bike Act). Under the proposed Act, a refundable tax credit worth 30% of a new e-bike's price would be available, to a maximum of $US1,500 ($A2,040). An e-bike costing more than this amount can still be eligible for the scheme, but the rebate is limited to the maximum amount.

"the electrification of transportation is not just about cars, it's about every way to get around."

US Senator Schatz

The E-Bike Act is means tested. More detail can be found in the Appendices.

Find out more?

https://www.theverge.com/2021/7/24/22590792/ebike-act-senate-brian-schatz-tax-credit-infrastructure

https://www.peopleforbikes.org/policy/e-bike-act

2.2 UK Scheme

Over the last two decades, the UK has funded a *Cycle to Work* scheme in which employees receive discounted bikes and equipment through their employer, as a lease-to-own model.

More recently, the UK Government has been developing a program designed to make it easier for people to give e-bikes a try. The planned program would work by enabling local councils to purchase e-bikes, which are then offered on a low-cost loan basis to residents.

The proposed program to fund e-bikes comes after a £2 billion funding initiative was announced to construct walking and cycling infrastructure.

The UK government has committed £2 billion for walking and cycling projects.

Find out more?

https://www.theguardian.com/lifeandstyle/2021/may/29/get-on-your-e-bike-scheme-may-let-people-try-england

2.3 Sweden

In 2018, the Swedish government launched a subsidy for e-bikes, providing a 25% rebate, up to a maximum sales price of SEK 10,000 (~$A1555.50). Given that all high-quality e-bikes meet the maximum subsidy rate, what this means in effect is that the Swedish government provide its citizens with a rebate of $A390 for the purchase of an e-bike. This subsidy has been found to significantly increase the number of people in Sweden who purchased an e-bike. [6] When the Swedish subsidy period closed, the following year, the proportion of e-bikes sold (as compared or conventional bikes) went down 4%, from 20% to 16%.[3]

2.4 Oslo, Norway

Norway is well known as the leader in electric car adoption, with almost 8 in 10 new cars sold in 2020

[6] https://www.sciencedirect.com/science/article/pii/S1361920920308336

being battery electric. What is less well known is that the Norwegian capital, Oslo, has had an e-bike subsidy program operating since 2016.[7] Residents of Oslo were able to apply for a 25% rebate on the cost of an e-bike, up to a maximum rebate of €500 ($A781). For example, an Oslo resident could purchase an e-bike costing $3,000 and they would be eligible to receive a rebate of $750, meaning the out of pocket cost of the bike is $2,250. More recently, Oslo provided a special subsidy program to encourage the uptake of e-cargo bikes.

2.5 Netherlands

The Netherlands is well-known as having the highest levels of cycling globally, with ~27% of all trips taking place on two wheels. In addition to spending ~€30 ($A45) per head of population annually on bicycle infrastructure, the Dutch also have a financial incentive for those riding for work. Under the scheme, people riding to work can claim €0.19 from their employer for each kilometre they ride to/from the office.

The Dutch government, in addition to spending around $A45 per resident on cycling infrastructure, also pays people to ride to work.

[7] https://www.toi.no/publications/effect-of-subvention-program-for-electric-bicycle-in-oslo-on-bicycle-use-transport-distribution-and-co2-emissions-article33886-29.html

3. The impact of e-bike subsidies

Photo courtesy of Lug and Carrie

The introduction of e-bike subsidy programs is relatively new, and there are currently only a handful of countries that have implemented subsidy programs. This has meant that there are few completed evaluations of the impact of these subsidy programs. What the data does tell us however is that these programs are effective in increasing the number of e-bikes purchased, and that these e-bikes are used more often than conventional bikes. Moreover, they are more likely to be used as a replacement to car trips than regular bikes.

A consistent theme to arise from these programs is that they are popular, and they are usually over-subscribed.

3.1 Do subsidy schemes increase e-bike purchases?

Oslo's e-bike subsidy program was examined for its impact on e-bike purchase and found it to have a strong influence on people's willingness to buy an e-bike.[8] The Norwegian researchers used both the questionnaire data, and actual travel behaviour data recorded through the use of an App (Sense.DAT). Figure 4 provides an indication of the influence of different factors in the purchasing of an e-bike, using the responses from 830 people who had recently become e-bike owners. It shows that overwhelmingly it was the subsidy from the City of Oslo that influenced the purchasing decision. Media and peer recommendation was also found to be an important factor – both of which may have been influenced to some degree by the subsidy program itself which attracted a lot of media attention when it was announced.

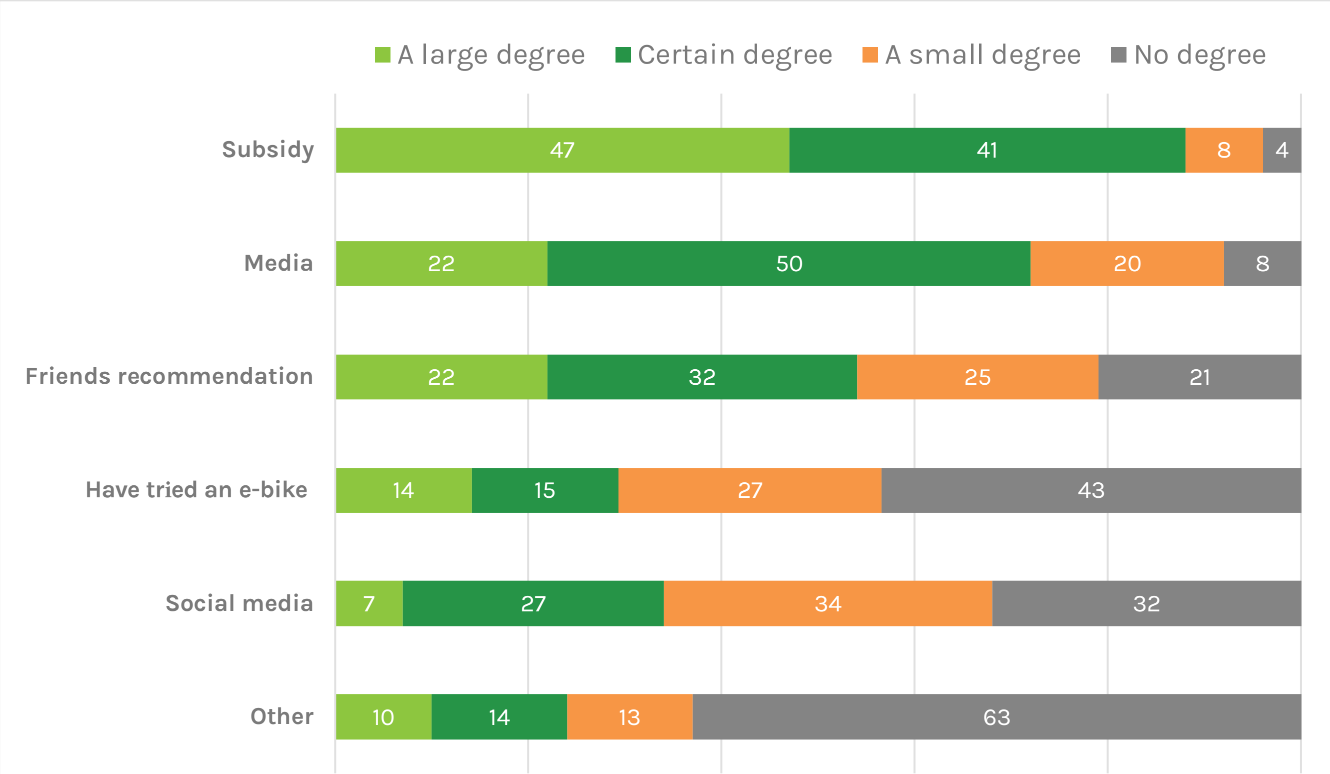


Figure 4 Factors influencing decision to purchase an e-bike (%)

[8] https://www.toi.no/publications/effect-of-subvention-program-for-electric-bicycle-in-oslo-on-bicycle-use-transport-distribution-and-co2-emissions-article33886-29.html

3.2 Do e-bikes reduce car use?

Many local and state governments have established policies and programs designed to reduce car use, particularly in cities and towns. It is now well established that a majority of car trips in large Australian cities are less than 5km, which is well within a comfortable riding distance.

Any future Australian investment in an e-bike subsidy program should consider the degree to which the program reduces car use. The available evidence, from Europe and North America suggests that e-bikes are an effective, relatively low cost method of lowering car use.

A significant number of European studies have found e-bikes to have a strong impact on reducing car use. In general, most studies find that between 40% - 50% of e-bike trips replace a journey that would have otherwise been completed by car.[9] The degree to which e-bikes replace car trips can increase for the commute trip.

In Australian research, 60% of respondents to an online survey cited replacing some car trips as a main motivation for e-bike purchase.[10]

A large US study looked at the modes of transport e-bikes replaced, disaggregated by trip type. The results of this study found that the commute trip offers the strongest pull towards e-bike, with over 45% of e-bike users saying that they replaced their car trip to work with an e-bike. The researchers have illustrated the modes replaced by an e-bike in Figure 5.

> **"I use my e-bike to commute because I don't need special clothing or showers and I don't get as sweaty on hills or as tired from the ride"**
>
> **E-bike owner**

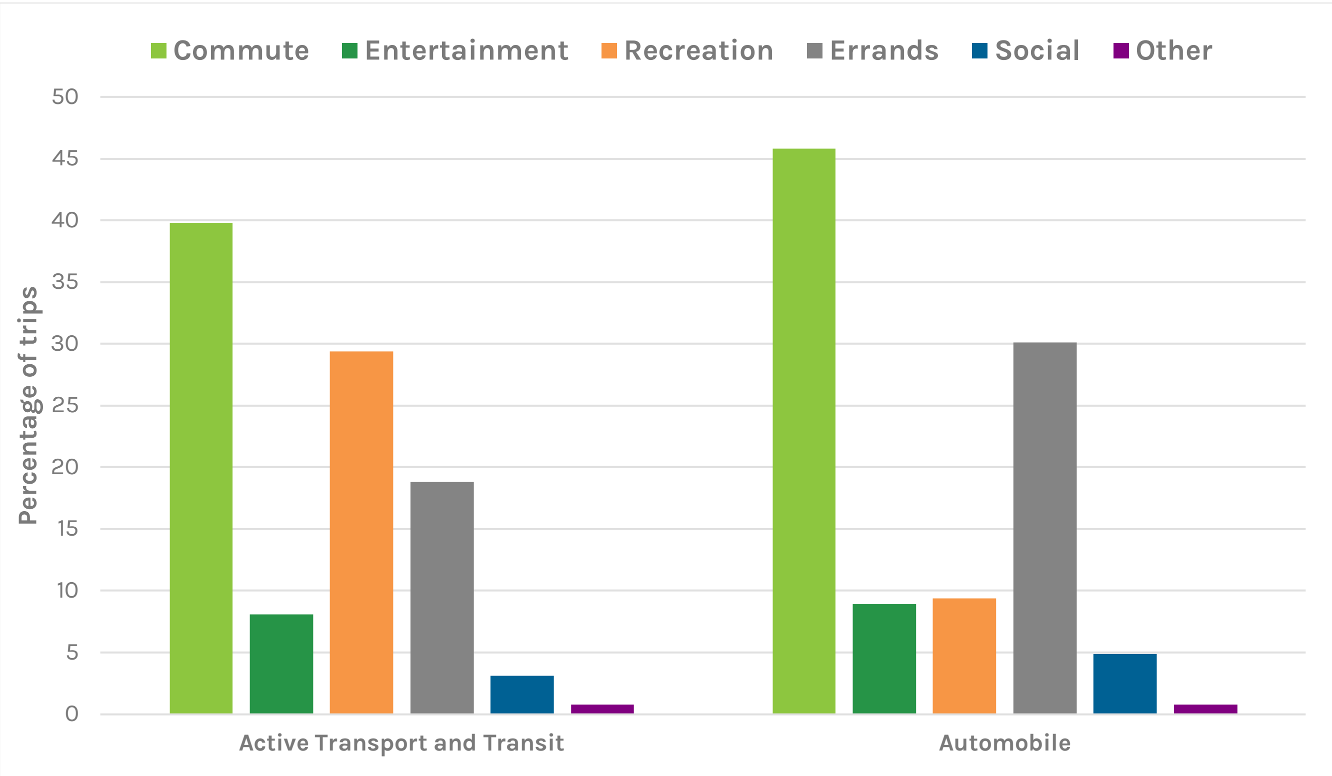


Figure 5 Modes replaced by e-bikes[11]

[9] https://www.sciencedirect.com/science/article/pii/S0965856415301865?via%3Dihub
[10] https://www.australasiantransportresearchforum.org.au/sites/default/files/2013_johnson_rose.pdf
[11] https://ppms.trec.pdx.edu/media/project_files/NITC_RR_1041_North_American_Survey_Electric_Bicycle_Owner s.pdf

A US study found 'e-bikes make longer trips more feasible…e-bikes could potentially serve as a practical means of transport for people who live in the suburbs and have a longer commute.'[12]

3.3 Emissions

For each e-bike provided as part of the Oslo subsidy program, annual emissions were estimated to reduce by between 87kg – 144kg, in terms of CO_2 avoided. This estimate does account for the fact that riding levels reduce considerably in the Norwegian winter. With milder winters, Australia could expect to have relatively smaller reductions in winter cycling, and thereby potentially larger reductions in CO_2 emissions.

3.4 Congestion

As highlighted earlier, e-bikes have been found to be very effective alternatives to the car, with e-bike users reporting much higher levels of substitution from car travel compared to those with conventional bikes.

Reductions in motor vehicle volume can have a non-linear impact on congestion.[13] For instance, a 5% reduction in traffic volume can have an up to 40% reduction in motor vehicle travel delay (congestion). The introduction of an e-bike subsidy could therefore have a significant impact on congestion levels, helping those that must drive to have a more reliable journey.

3.5 Health and wellbeing

Several studies have been conducted on the physical activity impact of e-bikes. Most of these use physiological apparatus to measure the respiratory and metabolic rate of study participants, using an e-bike, and compares this to the same participants using a conventional bike, across a fixed circuit. The consistent finding from these studies is that e-bike riders receive around 60 – 70% of the physical activity benefit of conventional bike riding, over the same distance. Given that e-bike riders ride more often, and for longer trips, there is very little overall difference in the physical activity benefit between those riding e-bikes and conventional bikes.[14]

3.6 Reduced transport costs

With petrol and second hand car costs rising significantly, there is significant household financial benefit when an e-bike can serve to replace car use and car ownership. Many e-bike owners report using an e-bike to avoid the purchase of a second household car, or to sell a seldom used motor vehicle.

E-bikes are also cheap to run, as they do not require:

- Petrol/diesel
- Registration
- 3rd party insurance.

The electricity costs of running an e-bike are minimal. For instance, a standard e-bike costs around 15 cents to fill a 500w battery with electricity and can cover ~80km per charge, depending on hills etc.

On average, it costs $8 per year in electricity to charge an e-bike that does 80km per week.

[12] https://ppms.trec.pdx.edu/media/project_files/NITC_RR_1041_North_American_Survey_Electric_Bicycle_Owners.pdf

[13] https://www.vtpi.org/tca/tca0505.pdf

[14] https://www.tandfonline.com/doi/abs/10.1080/01441647.2015.1069907?journalCode=ttrv20

Table 1 Annual estimated operating cost difference

	Car (Toyota Camry Ascent)	E-bike
Servicing + tyres	$416	$220
Fines	$114	$0
Fuel	$1,345	$7.80
Insurance and Registration	$1,878	$0
Total	**$3,753**	**$228**

Car Source: RACQ https://tinyurl.com/3hehxfw6

NB: The fuel costs are based on 15,000km for the Camry and 4,160km for the e-bike. If both are calculated on the same distance travelled, of 15,000, the electricity for the e-bike rises to $29 (per annum)

4. An e-bike subsidy scheme in Australia

Photo courtesy of Lug and Carrie

This section offers a proposed design of an e-bike subsidy program for Australia, based on successful programs overseas and Australia's current subsidy scheme for other electric vehicles.

At its core, the e-bike subsidy program includes a 25% rebate, up to $500 per e-bike. The maximum subsidy would be reached at a purchase price of $2,000, although more expensive e-bikes will still qualify. The rebate is proposed to be processed at the retailer, and then the retailer receives a transfer from the government (as with state -based electric car rebates). Any Australian adult is eligible, capped at one e-bike per person.

4.1 Assumptions

The estimates included in Table 4 – 6 assume that all purchases are over $2,000, and receive a full subsidy of $500 per bike. Demand assumptions are based on studies into similar schemes in Canada and Sweden. Benefits of the scheme are measured as environmental, shown in Table 2 and broader economic benefits are shown in Table 3. It is assumed that 50% of all cycling activity replaces private motor vehicle trips. As such, environmental benefits apply to only 50% of all cycling kilometres travelled. Social benefits apply to all cycling kilometres travelled.

Five different scenarios were modelled, to evaluate the impact of an e-bike subsidy in Australia. Three usage scenarios were modelled, with low, medium and high use rates, as outlined in Table 4. The annual kilometres ridden in all scenarios is consistent with lower level of use found in EU studies, ranging from 15 km per week (780 km annually) to 71 km per week (3,692 km annually)[15]. All use scenarios are therefore conservative.

A further scenario whereby the subsidy was increased to $1,000 was included. A scenario where the subsidy is 50% more effective in stimulating sales, due to increased interest in cycling as a result of transport changes associated with the COVID-19 pandemic was also considered. In all scenarios a base sales rate of 50,000 e-bikes was assumed. It is important to recognise that the modelled benefits are only for those e-bikes that are purchased as a consequence of the rebate, not the majority of e-bikes that would have been purchased even without the subsidy.

Table 2 Energy and emissions assumptions

Average e-bike watt-hour (Wh) per km	5
Emissions from electricity (g CO^2-e/Wh)	0.77
Average emissions per car km (g CO^2-e/km)	243.8
Cost per tonne of CO^2-e	$90.00

Table 3 Economic benefit assumptions

Benefit	Benefit per km
Health	$0.44
Decongestion	$0.27
Savings in car user costs	$0.25
Journey ambience (non separated infrastructure)	$0.11
Infrastructure provision	$0.04
Air pollution reduction	$0.02
Parking cost savings	$0.02
Noise reduction	$0.01
Bicycle injury costs	-$0.44
Economic benefit per km of bike travel	**$0.72**

Source: Queensland TMR[16]

Note: Health benefits have been scaled down to reflect lower activity levels of e-bike use.

Table 4 E-bike use assumptions

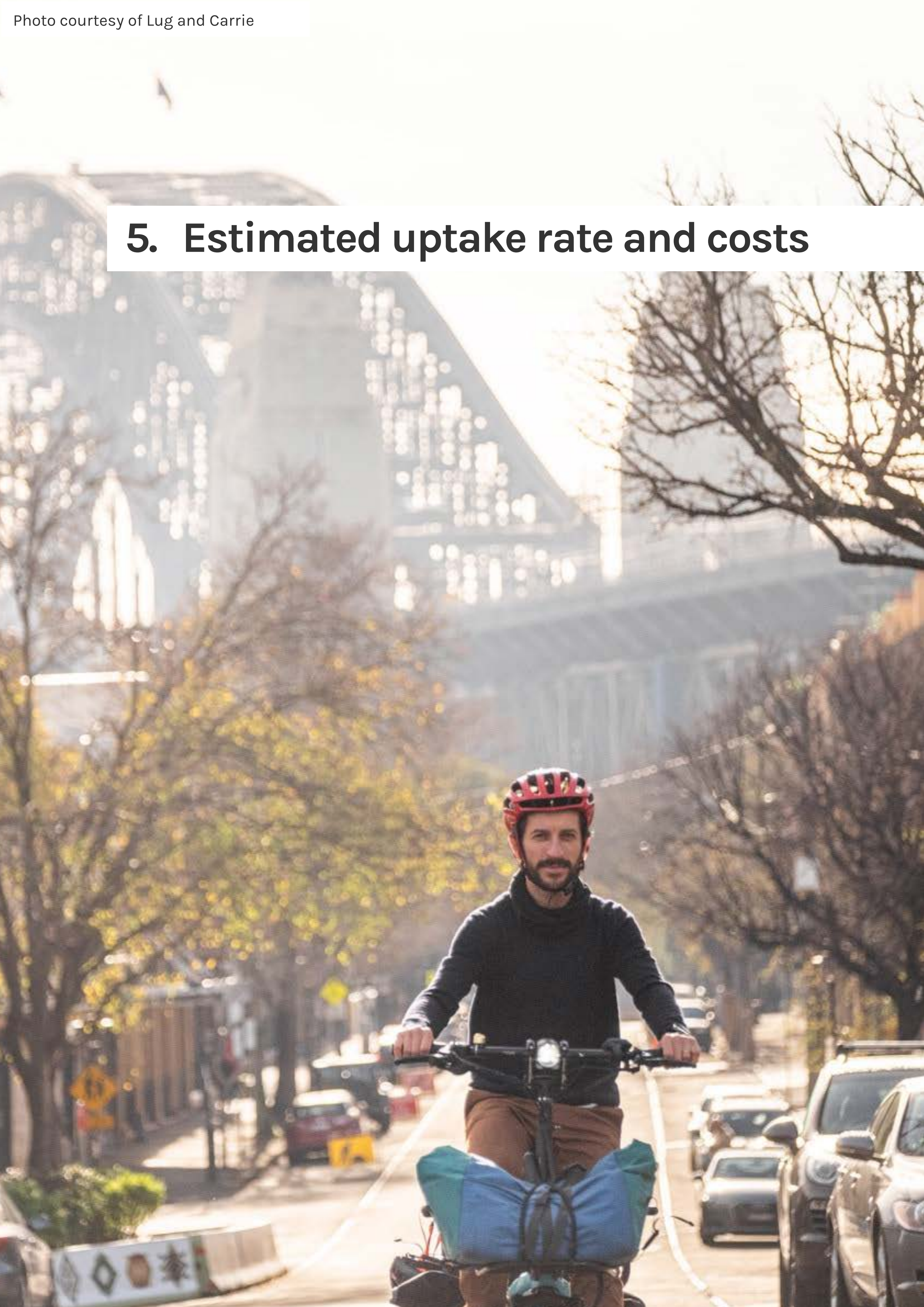
	Low	Medium	High
Average km travelled per day of use	5	7	9
Average days of use per week	3	3	3
Annual kilometres ridden	782	1,095	1,408
Average years of useful life	5	5	5

[15] https://www.sciencedirect.com/science/article/pii/S0965856415301865

[16] https://www.tmr.qld.gov.au/Travel-and-transport/Cycling/Cycling-investment-in-Queensland/Economic-value-of-benefits-per-kilometre-cycled

Photo courtesy of Lug and Carrie

5. Estimated uptake rate and costs



This section provides an assessment of the likely take up rate for an e-bike subsidy program, based on a combination of similar programs overseas, and adjustments for the Australian transport context.

Three scenarios were considered, all with a $500 subsidy, but different use levels. The results of these scenarios are shown in Table 5. It is estimated that under all scenarios a $500 subsidy per e-bike would stimulate the sales of 11,973 additional e-bikes per year.

All scenarios have a positive cost-benefit ratio

All scenarios provide a positive cost-benefit ratio ranging from $1.10 to $1.98 per $1 invested. Total benefits range from $34 million to $61 million over the five year lifespan of the e-bikes. In cases where the e-bikes last longer, the benefits will continue to accrue.

Up to 8.4 million kilometres of car travel would be avoided through the e-bike subsidy

Between 4.6 and 8.4 million kilometres of car travel would be shifted to e-bikes. This has the potential to avoid 10,112 tonnes of GHG over five years.

The scheme is estimated to cost government a total of $31 million for one year. The total program cost accounts for those who may otherwise purchase an e-bike, but would still receive the subsidy, a feature of all subsidy schemes. The cost to government equates to $2,588 per e-bike purchase induced.

Each e-bike could generate $1,007 in benefits every year

Scenario results on a per e-bike purchased due to the subsidy are shown in Table 6. Net lifetime benefits per e-bike purchased as a result of the scheme are up to $2,525. A highly used e-bike would generate $1,007 in benefits every year, while avoiding 169 kg of GHG emissions.

Table 5 Scenario results for the scheme

	Low use	Medium use	High use
Induced e-bike purchases	11,973	11,973	11,973
Maximum subsidy cost	$30,986,500	$30,986,500	$30,986,500
Avoided GHG emissions of life of e-bikes	5,618 tonnes	7,865 tonnes	10,112 tonnes
Total lifetime benefits	$34,007,425	$46,902,581	$61,213,369
Cost-benefit per $1 spent	$1.10	$1.54	$1.98

Table 6 Scenario results *per e-bike*

	Low use	Medium use	High use
Annual usage	782 km	1,095 km	1,408 km
Annual GHG emissions avoided	94 kg	131 kg	169 kg
Annual economic benefits	$560	$783	$1,007
Total lifetime benefit	$2,840	$3,976	$5,113
Subsidy per bike of induced demand	$2,588	$2,588	$2,588
Net lifetime benefit	$252	$1,388	$2,525

5.1 A more generous subsidy

A more generous subsidy of up to $1,000 per bike was also considered. This assumes the cap is lifted to $4,000. The results of this scenario, compared with a $500 subsidy, is shown in Table 7.

The purchase of 23,946 e-bikes could be stimulated by a $1,000 subsidy

It is estimated that the purchase of 23,946 e-bikes could be stimulated by a more generous subsidy. This is a substantial increase from the medium use case.

Although the overall scheme cost could rise to $73.9 million for one year, total lifetime benefits would rise to $93.8 million. The cost-benefit ratio of the subsidy could be $1.29 per $1 invested.

Up to 13.1 million km of car travel could be avoided annually

Up to 13.1 million km of car travel could be avoided every year, with 15,729 tonnes of GHG emissions avoided over the five-year life of the e-bikes. These results could be even higher if a higher use per bike was realised.

15,729 tonnes of GHG emissions avoided over five years

Scenario results on a per e-bike purchased due to a $1,000 subsidy are shown in Table 8. Under this scenario the cost to government increases to $3,088 per bike. Part of the increase cost of the scheme flows to more generous subsidies for purchase which would otherwise occur, but far more sales are also stimulated.

Table 7 Scenario results for a $1,000 scheme

	Medium use – $500	Medium use – $1,000
Induced e-bike purchases	11,973	23,946
Maximum subsidy cost	$30,986,500	$73,946,500
Avoided GHG emissions of life of e-bikes	7,865 tonnes	15,729 tonnes
Total lifetime benefits	$46,902,581	$93,805,162
Cost-benefit per $1 spent	$1.54	$1.29

Table 8 Scenario results *per e-bike* for a $1,000 scheme

	Medium use – $500	Medium use – $1,000
Annual usage	1,095 km	
Annual GHG emissions avoided	131 kg	
Annual economic benefits	$783	
Total lifetime benefit	$3,976	$3,976
Subsidy per bike of induced demand	$2,588	$3,088
Net lifetime benefit	$1,388	$888

5.2 Effects of COVID-19

Cycling participation has increased during the COVID-19 pandemic. Count data across Australia has shown a substantial increase in cycling activity, indicating a greater willingness to cycle for transport and pleasure. Additionally, cycling infrastructure has been built more rapidly during COVID-19, which has encouraged people to try cycling.

An *increased uptake* scenario has been considered, which assumes that this increased cycling activity results in increased interest in e-bikes. It is assumed that the cost of an e-bike remains a barrier, and that a subsidy would tap into more latent demand, increasing the effectiveness of the subsidy by 50%. Results of this scenario are shown in Table 9 for the scheme and Table 10 per e-bike.

17,960 e-bikes purchases could be stimulated

It is estimated that the purchase of 17,960 e-bikes could be stimulated by the subsidy. This is a substantial increase from the medium use case.

The cost-benefit ratio could rise to $2.10 per $1

If demand for e-bikes is increased by COVID-19, the cost-benefit ratio of the subsidy could rise to $2.10 per $1 invested. Total lifetime benefits could rise to $71 million.

Up to 9.8 million km of car travel could be avoided every year, and 11,797 tonnes of GHG emissions would be avoided over the five-year life of the e-bikes. These results could be even higher if a higher use per bike was realised.

Under this scenario the cost to government reduces to $1,892 per bike, while the overall cost rises by $3 million to $34 million for one year. This is because all of the increased cost to the scheme overall is attributed to the purchase of bikes which would not otherwise be purchased.

Table 9 Scenario results for the scheme if COVID-19 increases effectiveness

	Medium use	Medium use plus increased demand due to COVID-19
Induced e-bike purchases	11,973	17,960
Maximum subsidy cost	$30,986,500	$33,980,000
Avoided GHG emissions of life of bike	7,865 tonnes	11,797 tonnes
Total lifetime benefits	$46,902,581	$71,417,584
Cost-benefit per $1 spent	$1.54	$2.10

Table 10 Scenario results *per e-bike* if COVID-19 increases effectiveness

	Medium use	Medium use plus increased demand due to COVID-19
Annual usage	1,095 km	
Annual co2-e emissions saved	131 kg	
Annual economic benefits	$783	
Total lifetime benefit	$3,976	
Subsidy per bike of induced demand	$2,588	$1,892
Net lifetime benefit	$1,388	$2,084

6. Appendices

6.1 Appendix 1 – US E-Bike Act

The following is an extract from the Ways and Means regarding the details of the US E-Bike Act.

> **Sec. 136407. Credit for certain new electric bicycles.**
> This provision provides for a 15% refundable tax credit for qualified electric bicycles placed into service before January 1, 2032.
>
> Beginning in 2022, taxpayers may claim a credit of up to $1,500 for electric bicycles placed into service by the taxpayer for use within the United States. A taxpayer may claim the credit for one electric bicycle per taxable year (two for joint filers). The credit phases out starting at $75,000 of modified adjusted gross income ($112,500 for heads of household and $150,000 for married filing jointly) at a rate of $200 per $1,000 of additional income. For a given taxable year, the taxpayer may use modified adjusted gross income for that year or the immediately preceding year, whichever is lower.
>
> Qualified electric bicycles is defined as a bicycle which is equipped with fully operable pedals, a saddle or seat for the rider, an electric motor of less than 750 watts which is designed to provide assistance in propelling the bicycle, and does not provide assistance if the bicycle is moving in excess of 20 miles per hour or only provides assistance when the rider is pedaling and does not provide assistance if the bicycle is moving in excess of 28 miles per hour.
>
> In order to be eligible for the credit, the aggregate amount paid for the acquisition of such bicycle must not exceed $8,000.
>
> In order for an electric bicycle to be eligible for the credit, the manufacturer must assign each bicycle a unique vehicle identification number and report such information to the Treasury in a manner prescribed by the Secretary. Taxpayers must then provide the proper vehicle identification number assigned to the electric bicycle by the manufacturer in order to claim the credit.
>
> The Secretary shall make payments to mirror code territories for the amount of revenue lost with respect to this provision. The Secretary shall make payments to non-mirror code territories for the amount of revenue lost with respect to operating a similar credit for electric bicycles.

Source: https://waysandmeans.house.gov/sites/democrats.waysandmeans.house.gov/files/documents/Section%20by%20Section%20Subtitle%20F%2C%20G%2C%20H%2C%20%26%20J.pdf

Institute for Sensible Transport
102/1 Silver Street, Collingwood
Melbourne, Australia VIC
E: info@sensibletransport.org.au
www.sensibletransport.org.au

We Ride Australia
PO Box 973
Mawson ACT 2607
www.weride.org.au
1300 WE RIDE (937 433)