

# SUBMISSION COVERSHEET

**Submissions may address any key issues related to the Infrastructure Australia agenda and/or in specific response to the topics raised in the discussion papers.**

Please complete and submit this form with your submission. Where possible, *Infrastructure Australia* requests submissions are submitted electronically. Contact us:

<b>Via email</b> Write 'Submission' in subject field of the email and send to:  <a href="mailto:mail@infrastructureaustralia.gov.au">mail@infrastructureaustralia.gov.au</a>	<b>Via post</b> Address your submission to: The Infrastructure Coordinator Infrastructure Australia GPO Box 594 Canberra ACT 2601 AUSTRALIA
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Submission title: Infrastructure support for Electric Assisted Bicycles

Author(s):

No. of pages: 3

Date: 14/10/08

Please indicate if your submission:

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Please indicate which of the following your submission covers:

Issues Paper 1 — Australia's Future Infrastructure Requirements

Issues Paper 2 – Public Private Partnerships

AND/OR

General (Includes information on the following areas)

Water Infrastructure

Transport Infrastructure

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- Authors of submissions are responsible for securing the appropriate right to use any third party material incorporated into their submissions.
- Submissions made by individual community members should not include any personal details other than your name, suburb, state/territory or country. For submissions made by organisations contact details may be included.

**x Please tick to indicate that you have read and agree to the above. Infrastructure support for Electric Assisted Bicycles**

Recent improvements in battery technology and, to a lesser extent, electric motor design has created a new form of transport which could radically change urban transport options.

Electric bicycles with pedal assistance are not just another type of bicycle but a transformational technology that changes many of the rules for short and medium distance personal transport.

Below is a picture of a common brand of Australian electric bicycle with a front hub electric motor and a lithium ion battery on the rack<sup>1</sup>.



The main barriers to greater bicycle use are the degree of exertion required, hilly terrain, the need to shower after many journeys, relatively low average speed for riders who are not super fit, and safety concerns.

The electric assisted bicycles which are now becoming commercially available remove four of these five barriers. Australian cities that are able to remove the safety concerns by providing safe and practical routes for bicycle riders are likely to see a very large increase in bicycle use as electric assisted bicycles become more widely available.

The table below highlights some of the performance differences between conventional and electrically assisted bicycles. While the electric bike does not have a higher top speed (making it still safe on cycleways) it is much easier for an average rider to maintain a considerably higher average speed with minimal exertion and to easily climb significant hills. In practice riding an electrical assisted bike is like riding on the flat with a firm tailwind – the result is that while the rider has some exercise they can arrive cool and sweat free.

	<i>Conventional bike</i>	<i>Electrically assisted bike</i>
Maximum speed on flat	around 35 kmh	around 35 kmh
Average speed	18-20 kmh	30 kmh
Range	depends on rider fitness	30 km minimum
Easily climbable hill	around 30 metres vertical	100 metres vertical

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<sup>1</sup> Photo from EVS Electric Vehicles

The result is that the electrically assisted bicycle is effectively a new form of transport which needs to be taken account of in transport planning. Given that the average journey to work in Sydney is just 16 km each way<sup>2</sup> (or around 30 minutes on an electrically assisted bike) they could be a viable option for most trips.

There are currently at least 40 million electric bicycles in China<sup>3</sup> and last year 60,000 were sold in Germany and 89,000 in the Netherlands with sales figures doubling between 2006 and 2007 in Europe.<sup>4</sup> Sales are also rapidly increasing in Australia.

I have no commercial interest in electric bicycles. I was prompted to write this submission because I believe that widespread adoption of greater conventional and electric bicycle use could make our cities much more liveable, support stronger communities, increase transport equity, improve health and contribute significantly to reductions in greenhouse gas emissions. However none of these benefits will be realised unless cities ensure that safe and practical routes are provided for cycles. This can be done at relatively low cost but it will require transport planners to build such safe routes into all major transport proposals.

To this end I recommend that Infrastructure Australia:

1. directly supports the significant expansion of safe and practical bike routes within all Australian cities as a key part of transport improvement, and
2. ensures that all major non-cycle transport infrastructure that it funds, such as freeways and rail, incorporates safe and practical bicycle routes.

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<sup>2</sup> NSW Ministry of Transport 2006 *Household Travel Survey: Summary Report*

<sup>3</sup> <http://www.livescience.com/environment/071109-bts-electric-bikes.html>

<sup>4</sup> <http://www.aol.com.au/news/story/Europes-latest-craze-electric-bikes/874631/index.html>