

**Submission
No 95**

**INQUIRY INTO IMPACT OF THE WESTERN HARBOUR
TUNNEL AND BEACHES LINK**

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If these projects go ahead it is incumbent upon the NSW government that they:

a) Reduce greenhouse emissions (rather than the current EIS, which sees emissions increase. The NSW has a duty of care to reduce emissions rapidly to avoid catastrophic climate harms to its citizens, applying principles recently established in the Federal Court Judgement for Sharma v Minister for the Environment.

b) Are constructed and operated as exemplars of "net zero" public infrastructure. The attachment contains specific recommendations around how this can be achieved.

Beaches Link Tunnel Net Zero Proposal

We are in a climate emergency. NSW has committed to net zero emissions.

Its emissions reduction 2030 target *should* be 75% of 2005 levels based on Climate Change Authority “fair share” methodology.

Why are we contemplating a \$12 billion investment in 20th century infrastructure with a 100 year design life given the likely impact of climate change on the Northern Beaches, AVs and new mass transit technologies?

The EIS admits it will increase emissions in construction and operation.

If this project has to happen it *cannot* increase NSW GHG emissions.

David McEwen

[REDACTED] Balgowlah, May 2021

Context

- Concrete (direct & energy emissions from cement) is responsible for around 6% of global emissions. About 1 tonne of emissions per tonne of cement.
- Iron & steel: 7% (global)
- Transport emissions in Australia: 18%
- Electricity: 33% (extensively used for construction and tunnel lighting/ventilation)

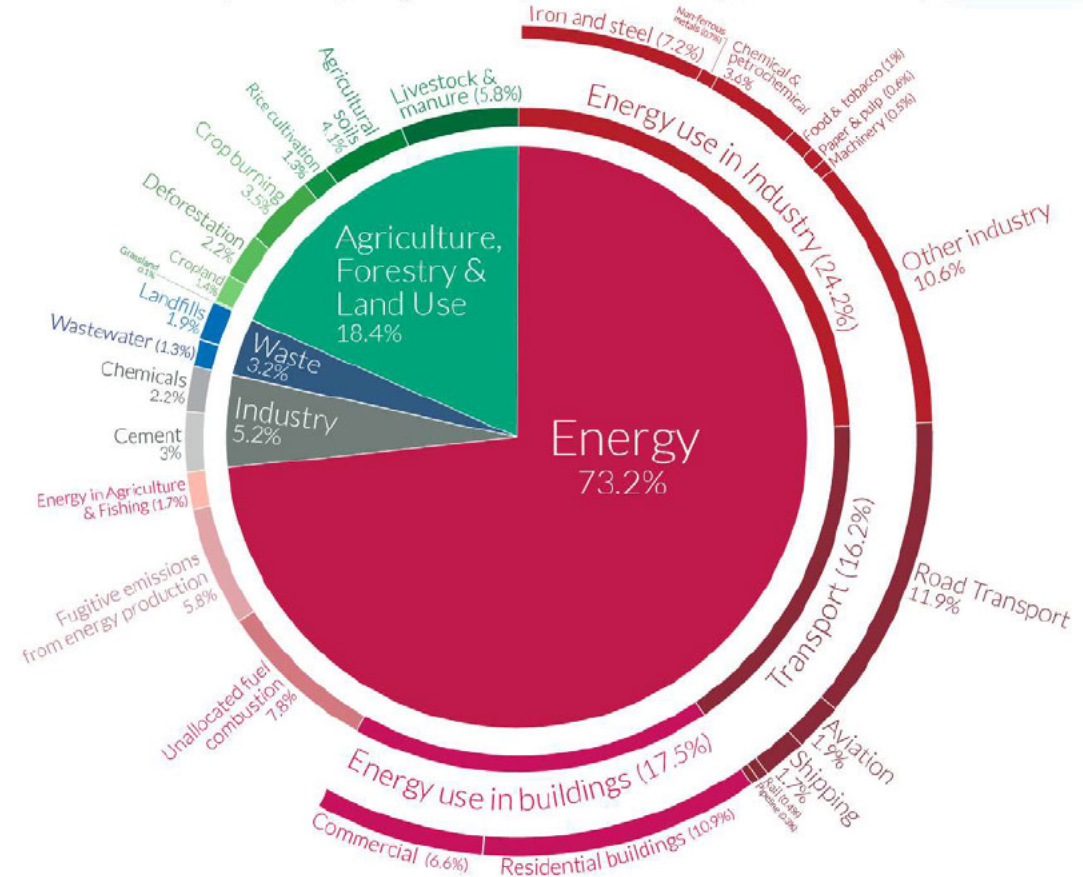
To get to net zero, emissions from all of these sectors must be reduced to zero or close to, with residual emissions offset by drawdown schemes.

Beaches Link, if it proceeds, could be a world leading example of net zero infrastructure, stimulating the nascent low/zero emissions technologies NSW will need to achieve net zero.

Global greenhouse gas emissions by sector

Our World
in Data

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.



OurWorldinData.org – Research and data to make progress against the world's largest problems.
Source: Climate Watch, the World Resources Institute (2020).

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Construction



Low emissions concrete (e.g. products available at 5-17% cost premium depending on MPA rating, that may deliver 67% emissions saving)



Low emissions steel (e.g. via green hydrogen manufacturing)



Lifecycle assessment as part of procurement process, with selection weighting favouring lowest lifecycle emissions



Review all opportunities to reduce, reuse and recycle tunnel spoil and construction waste



Emphasis on local sourcing and developing nascent low emissions industries



All construction vehicles zero emissions (battery electric or hydrogen fuel cell) except where no alternatives



All energy from electricity (grid supply) with renewable-backed PPA



No diesel generators to be used on construction sites (green hydrogen acceptable if no grid alternative available)



High quality carbon offsets purchased for all residual construction emissions

Operation



All energy from renewable PPA-backed electricity



Zero emissions service vehicles



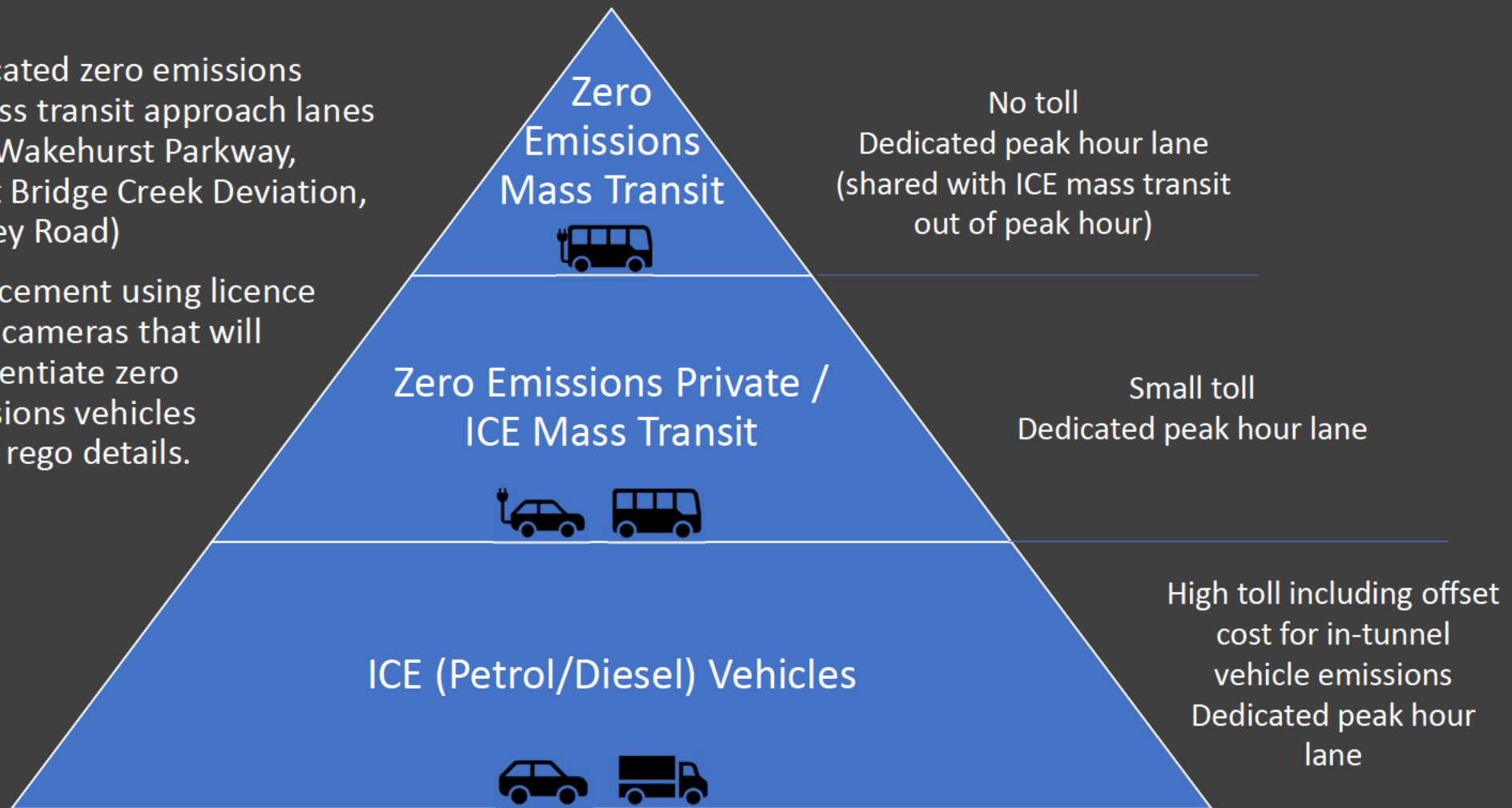
All residual emissions covered by high quality carbon offsets, including emissions associated with ICE vehicles while using the tunnel



Lane priority and toll pricing favouring
1. zero emissions mass transit and
2. zero emissions private vehicles

Lane and Toll Prioritisation

- Dedicated zero emissions & mass transit approach lanes (e.g. Wakehurst Parkway, Burnt Bridge Creek Deviation, Sydney Road)
- Enforcement using licence plate cameras that will differentiate zero emissions vehicles using rego details.



Next Steps

Feasibility study

- Alignment with NSW Net Zero plan & interim target
- Cost/benefits to achieve net zero; implications for business case
- Other opportunities to reduce emissions or improve climate resilience (e.g. external paving should use light coloured concrete to reduce urban heat island effect)

Build net zero into construction and operator procurement specifications / contracts

- Provision of Net Zero Specialist from head contractor for each stage
- Engagement with Ausgrid (re grid connections for all sites); development of project and operational PPAs
- Life cycle assessment
- Net zero reporting & independent monitoring
- Specification of acceptable offset standards