

Table S1 Negative externalities arising from fossil fuelled transportation

Externality	Negative impacts
Greenhouse gas emissions (GHG)	EVs emit fewer GHG than ICVs overall. These emissions contribute to global warming and hence climate change, which is a significant global environmental problem, the impacts of which are already being felt (Australian Academy of Science, 2015).
Toxic air pollution	Production of air pollution especially particulate matter. Diesel emits Class 1 carcinogens (IARC 2012). Even low level air pollution results in health impacts (Kjellstrom <i>et al.</i> 2002; Nawrot <i>et al.</i> 2011).
Noise pollution	Noise pollution results in significant but often unrecognised health impacts (DenBoer & Schroten 2007; Passchier-Vermeer & Passchier 2000).
Fuel security	Many countries are almost entirely dependent on imported oil for road transport; if stockpiles are low, fuel security is very low (e.g. Blackburn 2014).
Balance of trade	Oil can be among the highest cost imports contributing to a country's balance of trade deficit (e.g. DFAT, 2016).
Loss of jobs	Transport energy sourced from overseas means employment is outsourced; generating renewable energy for transport would create local jobs.
Waste heat	Waste heat from EVs is less than 20% of that from ICVs; using ICVs significantly contributes to the urban heat island effect thus increasing building air conditioning (AC) use in warm weather (Li <i>et al.</i> , 2015). A related issue for buildings located near heavily trafficked roads is high local air and noise pollution levels, this reduces use of building windows for natural ventilation at any time of the year and increases the electricity demand of building AC.
Financial leakage	Due to repatriation of funds by foreign owned oil and electricity providers, financial leakage will be reduced if individuals use home generated renewable electricity to charge their EVs.

References for Table S1

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