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# Confronting mobesity is vital for the global electrification of transport

By Christian Brand



**The proliferation of large electric vehicles risks undermining the environmental and economic benefits of the green transport transition, argues Christian Brand.**

The transition towards electrified road transport is a cornerstone of global efforts to mitigate climate change. Sales figures indicate a remarkable transformation in the global vehicle fleet, with 14% of new cars sold being electric. However, this shift is paradoxically intertwined with an increase in the production, sales and use of large and heavy vehicles, a phenomenon I term 'mobesity'.

While electrification promises reduced lifecycle greenhouse gas emissions, the trend towards larger electric vehicles, particularly electric SUVs (e-SUVs), poses significant challenges. On the positive side, e-SUVs are about three times more energy efficient than their conventional internal combustion engine counterparts. However, larger, heavier and often more powerful electric vehicles not only require more resources to build — thereby increasing their environmental footprint — but also undermine the potential gains from electrification due to their greater energy consumption and associated emissions across the vehicle and fuel lifecycles. Even as the global fleet becomes electrified, the expected reductions in energy consumption and emissions may not materialize at the scale and pace required to reduce emissions in line with global climate targets.

From a market perspective, the shift towards larger EVs is notable when considering that SUVs — and particularly e-SUVs — represent the most profitable models for manufacturers, sold at a premium for proportionally lower manufacturing costs. Perhaps unsurprisingly, car manufacturers have simultaneously released fewer new small models onto the market, which may be slowing the transition to smaller EVs. Together, this artificial scarcity — plus effective and targeted marketing — has shifted consumer preferences. Advertising is largely unregulated and has been shown to drive the demand for e-SUVs. The relationship between SUVs and electrification is also mutually reinforcing: bigger and heavier cars allow for bigger batteries to be used, which extends range and reduces range anxiety. It is therefore not surprising that in 2022, e-SUVs constituted about 35% of all electric passenger car sales worldwide.

However, this leads to increased demand for bigger batteries and more powerful motors, which in turn demand more lithium, cobalt, and other critical raw materials. The extraction and processing of these materials are energy-intensive and environmentally invasive, exacerbating the very problems that electrification aims to solve. Additionally, the increased weight contributes to greater tyre and road wear, leading to more particulate emissions, which are harmful to both human health and the environment.

Clearly, the primary concern is the size of vehicles, and so addressing the challenges posed by mobesity requires a nuanced approach that combines policy intervention, technological innovation, and shifts in consumer behaviour. Policy makers must implement regulations that discourage the production and purchase of larger vehicles and promote the most efficient, low-emission vehicles. This could include weight-, size- or power-based taxation systems where taxes increase with the vehicle's weight and power, combined with $CO_2$-emission graded taxes. Such measures incentivize the adoption of smaller, more energy-efficient EVs. Governments in Sweden and France, as well as in the state of Iowa and New York City in the United States, have explored such policies, which could serve as global models. Taxation at the point of sale ensures equity for those in the second-hand car market.

Stronger incentives for manufacturers to develop and market smaller EVs are also essential. Current subsidies and incentives often do not differentiate based on the size or efficiency of the vehicle. Adjusting these policies to favour smaller and more efficient models could shift market offerings and consumer preferences away from large e-SUVs.

On the technological front, advancements in battery technology that increase energy density and reduce material use are crucial. This would allow smaller EVs to achieve ranges that meet consumer expectations without large, resource-intensive batteries. Supporting R&D in this area, along with stronger recycling mandates, would alleviate raw material demand pressures and ensure that smaller EVs can compete in performance and practicality.

Local governments can play a pivotal role by redesigning urban spaces to discourage large vehicle use. Policies that increase parking fees for larger vehicles (as voted for in a public referendum in Paris, France), restrict their access to city centres, and promote walking, cycling, and public transport can reduce the demand for large EVs. Public awareness campaigns can educate consumers about the environmental and economic impacts of large EVs and promote the benefits of smaller electric models.

Lastly, international cooperation is needed to manage the global demand for critical minerals essential for EV batteries. By promoting a circular economy and enhancing international agreements on mining practices, we can mitigate the environmental impact of resource extraction while supporting the global transition to electrification.

While the rise of EVs marks a significant step forward in reducing the transport sector's carbon footprint, the growing trend of mobesity threatens to offset these gains. Comprehensive policy measures, technological advancements, and shifts in consumer behaviour are urgently required to ensure that the transition to electric mobility contributes effectively to our climate goals. By confronting the challenges of mobesity head-on, we can steer the global transport sector towards a more sustainable and equitable future, ensuring that the shift to EVs delivers on its environmental and economic promise.

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