

## 470 kWh energy saving and emission reduction

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Dr. Bernstein reports he serves pro bono on the Board of Directors of the U.S. Green Building Council. The remaining authors declare that they have no conflict of interest.

Today, there are already substantial emissions benefits to switching to EVs when emissions are considered on a lifecycle basis, which includes the emissions associated with the production of the vehicle as well as the well-to-wheel emissions (i.e.well-to-tank and tank-to-wheel emissions). In both the STEPS and APS these benefits increase over time as the electricity mix is decarbonised further.

PHEVs purchased in 2023 produce around 30% less emissions than ICEVs over the course of their lifetime in the STEPS, while this gap reaches 35% for vehicles purchased in 2035 in the APS, thanks to further decarbonisation of electricity generation. This analysis assumes that the utility factor (share of kilometres travelled on electricity) of PHEVs is 40%.2 Greater lifecycle emissions savings can be achieved if the utility factor is higher. Misaligned incentives In fact, the rated utility factor for PHEVs with range of 60km is around 65%.



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