

## 'Gently does it' drives you further in electric vehicles

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Drivers of petrol and diesel cars are usually aware that driving at high speed, harsh acceleration and hard braking all contribute to lowering their fuel economy. Scientists can readily explain in terms of the thermodynamics of the internal combustion engine why driving such a car more smoothly and at gentler speeds will increase significantly the distance that might be travelled on a single tank of fuel. But, what about electric vehicles (EVs)?

A study published this month in the *International Journal of Electric and Hybrid Vehicles* from researchers at the University of Sunderland, UK, might provide an answer to that question. Mike Knowles, Helen Scott and David Baglee of the Institute for Automotive and Manufacturing Advanced Practice (AMAP) asked a number of drivers of different ages to take an EV around a standard route and monitored their driving style and <u>energy consumption</u>.

They found that efficiency could vary from 0.46 km to 1.89 km per percent of <u>battery charge</u> depending on driving style with the greatest efficiency. The team found that there are trends between age and efficiency and that these trends are dependent on the type of driving involved. The research is based on a small sample and the trends that emerge now warrant further investigation, the team says.

The number of EVs on the road is increasing rapidly. If current incentives for switching away from oil-derived fuels are maintained then growth will lead to 200 times the current number on the roads by 2030,



the researchers say. However, for that or even greater growth the current driving range of EVs, which is about 150 km between charges, may need to increase to allow drivers to use such vehicles for long-distance journeys rather than short city-wide driving. The issue of the seven-hour re-charge cycle must also be addressed. In the meantime, education regarding efficiency and driving style is needed. Given an aging population in which the number of male drivers over the age of 70 is expected to double and the number of female drivers treble over the next 20 years

"If the social and economic benefits of EVs are to be fully realised then it is crucial that the reactions of their systems to different driving styles is understood so that driver training can be optimised alongside the ongoing development of the technology," the team concludes.

"The effect of driving style on electric vehicle performance, economy and perception" was published in *Int. J. Electric and* Hybrid Vehicles, 2012, 4, 228-247.

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