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Tracking Energy Transition in the Road Transport Sector in Canada

This paper examines the energy transition that has been taking place in the road transport sector of Canada. Using the Breusch-Pagan LM, Wooldridge test, and pooled OLS, we find out that increasing fuel prices and renewable electricity generation reduced GHG emission at the pan-Canadian level, given that electricity demand influences an increase in emission levels. Using the same techniques, running another set of equations over EV demand, we find that fuel price increases and average quarterly income influence the demand to adopt electronic vehicles. When the share for regular gasoline vehicles and luxury cars increases, EV demand increases by 165.1 and 7.3 units, demonstrating the willingness of the drivers to substitute gasoline personal vehicles to an increase in fuel prices and their individual incomes. On the contrary, the inverse relationship with a share of diesel trucks with electronic vehicles shows the dominance of diesel freight trucks in the transportation sector. Furthermore, robust regressions using Newey-West corrections have been regressed for each province to validate our results. The results can be used to advocate green transition province-specific policies such as augmenting carbon tax, boosting renewable capacity generations, and introducing targeted subsidies to middle-income households to accelerate EV adoption and reduce GHG emissions. Policies such as transit electrification and the development of rural charging infrastructure in remote provinces could also facilitate reducing fossil fuel dependency.

Date: Monday, December 16
Time: 11:00 am
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