

Scenario-Based Analysis of Electric Vehicle Penetration in Road Transportation in Laos

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Abstract : The penetration of EV (electric vehicle) technology in Lao road transportation, in this study, was analyzed by using the AIM/CGE [Laos] model. The computable general equilibrium (CGE) model was developed by the Asia-Pacific Integrated Model (AIM) team. In line with the increase of the number of road vehicles, the energy demand in the transport sector has been gradually increased which resulted in a large amount of budget spent for importing fossil fuels during the last decade, and a high carbon dioxide emission from the transport sector, hence the aim of this research is to analyze the impact of EVs penetration on economic and CO₂ emission in short-term, middle-term, and long-term. By the year 2050, the expected gross domestic product (GDP) value, due to Laos will spend more budget for importing the EV, will be gradually lost up to one percent. The cumulative CO₂ emission from 2020 to 2050 in BAU case will be 12,000 GgCO₂eq, and those in the EV mitigation case will be 9,300 GgCO₂eq, which accounting for likely 77% cumulative CO₂ emission reduction in the road transport sector by introducing the EV technology.

Keywords : GDP, CO₂ mitigation, CGE model, EV technology, transport

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