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SINA AHMADZADEH MASHINCHI

University of Auckland, New Zealand

AN ECONOMIC AND ENVIRONMENTAL ASSESSMENT OF NEW ZEALAND'S GHG MITIGATION POLICIES: MODELLING WITH E3ME

Abstract:

This paper analyses the potential environmental and macroeconomic impacts of implementing GHG mitigation policies, notably an Environmental Tax Reform (ETR), in New Zealand using the E3M3 model, a global macroeconometric model that links the world's economies to their energy systems and associated emissions. A number of different scenarios including a baseline are constructed to investigate the performance of the NZ ETS and other complementary mitigation policies over the commitment period (2021-2030). In the light of the model results, it is notable that the higher carbon prices especially in the early years would be necessary to achieve the ambitious GHG emissions target in New Zealand. The results also suggest that a combined NZ ETS and carbon tax approach with revenue recycling could lead to significant economic benefits. Therefore, a double dividend effect could be achievable, if New Zealand's government recycles the revenues from carbon taxes efficiently.

Keywords:

Environmental tax reform, GHG mitigation policies, NZ ETS, Energy–environment–economy modelling, Carbon tax