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The Economic and Environmental Impacts of Constructing Hydro Power Plants in Turkey: A Dynamic CGE Analysis (2004-2020)

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ABSTRACT

Since Turkey's economy and population is rapidly growing, Turkey mostly meets its energy demand from imported fossil sources due to the very limited indigenous oil and natural gas resources. However, Turkey has abundant renewable resources especially, hydro power potential to be used for generation of electricity. But only one-third of this significant economical potential could be used. This usage seems insufficient when compared with that of European countries. In order to analyze the potential long term impacts of the hydro power expanding shock on some macroeconomic variables of interest such as GDP, real consumption, real investment, exports, imports, trade balance, and carbon emissions, we developed TurGEM-D, a dynamic multisectoral general equilibrium model of the Turkish economy. Using TurGEM-D, we analyzed the impact of hydro power shock under policy scenario doubling hydro power generation. The simulation results show that doubling hydro power have slightly positive effects on macro indicators and carbon emissions for Turkish economy.

KEYWORDS

Hydro Power Generation, Dynamic CGE, Turkey, Carbon Emission

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