

Impact on emissions, employment and the balance of trade of the decarbonization of the electricity production and transport in the EU. A MRIO multiplier-accelerator model.

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The EU was the main supporter of the decarbonization proposed in the 2015 Paris Agreement for all the sectors and countries (UN, 2015). The “Energy Roadmap” approved by the European Commission few months later, committed EU countries to reduce GHG emissions by 40% in 2030 and by 80-95% in 2050 (EC, 2016). The European agenda has inspired our paper. More concretely, we aim at exploring the impact all over the world, of the European replacement of fossil-energy before 2050 in two energy intensive industries: electricity generation and transport.

The focus on the paper will be on impacts of decarbonization on emissions, employment and the balance of trade. The hypothesis is that, once fossil energies are replaced by renewable ones, the emissions will fall. Yet, in the meanwhile, a massive investment is needed in wind-farms, in the capital goods industry and in the production of car-batteries. This effort will be negative for emissions and positive for employment. The impact on the balance of trade will differ for each country.

For this purpose, we will apply a multiplier-accelerator model on a multiregional input-output table (MRIO). The paper introduces important novelties in the questions, the data and the methodology.

The main source of data are the MRIO tables provided by WIOD and EXIOBASE. The detailed analysis of the energy and transport relies on the data provided by EUROSTAT and the research institutions dependent on these industries. The main methodological contributions are the use of broad multipliers that capture both intermediate and final consumption and the accelerator of investment. Our model is dynamic in the sense that in the multiplicand we introduce the final demand of the economy that is expanding at a given rate and the investment necessary for the replacement of old capital goods and infrastructure