

Abstract

To cap global warming below 2°C, countries are urged to upscale their climate commitments and develop national deep decarbonization (DD) strategies for the energy system. But, fast and deep transformations will have wideranging economic implications at the macroeconomic level, in energy industries, and also in other sectors. Such impacts need to be understood by policy-makers. This paper develops an original integrated approach based on loading consolidated energy pathways into a multi-sector economy-wide model to assess within a consistent framework the multi-level economic impacts of the DD strategies. The method is applied to Argentina and gives representative insights into the global challenge to move towards a low-carbon economy. Our results show key multi-level impacts of shifting from a 'reference' to a DD pathway by 2050. In energy industries, value-added and employment shift from fossil fuel to low-carbon power industries. Aggregated GDP and welfare impacts are limited but incremental investments are significant at the macroeconomic level, with indirect and induced impacts across the economy. It includes net job creations in upstream industries that supply low-carbon infrastructures, but also risks of job losses in exposed sectors. Eventually, our approach highlights enabling conditions and possible block points to lift to trigger the transition.