

Has electricity turned green or black in Chile? A structural decomposition analysis of energy consumption

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Since 2010, the Chilean government has backed a progressive increase of non-conventional renewable energies sources (NCRES) to put forward the country's energy independence from fossil fuels, and therefore from imports, and to reduce its CO₂ emissions. The analysis of the final energy consumption changes via a structural decomposition analysis, based on the Input-Output Tables for Chile in the period 2008-2013, enables us to identify the key effects as well as the sectors and energy sources in this process. The results show that the scale and the intensity effects are the main drivers of the final energy consumption change. There is a significant increase of the final energy sources derived from natural gas (273%), electricity (23%) and oil (8%). The increase of the electricity consumption due to the scale, intensity and demand structure effects reveals a coupling with economic growth, lower energy efficiency and larger end-use exporter sectors (e.g., mining). Concretely, the use of coal for electricity generation increased in absolute (23,648 Tcal) and relative terms of total fossil fuels (34%). Despite the rapid deployment of NCRES, a short-term analysis suggests that more aggressive policy efforts are needed to effectively drive the transition towards a low-carbon energy system. © 2018 Elsevier Ltd

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