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The evolution of the energy and carbon intensities of developing countries

Abstract

The evolution of the energy intensity (TPES/GDP) and the carbon intensity (CO₂/GDP) was investigated in the period 1990–2014. The universal tendency is a steady decline for all groups of countries (low, lower middle, upper middle and high income) with very few exceptions. Economic development as measured by GDP has been “decoupled” from total primary energy supply (TPES) and CO₂ emissions in all regions of the world. The main drivers for such decline are discussed particularly the role of technological “leapfrogging”. Carbon emissions are growing faster than total primary energy supply (TPES) in the world as a whole and in the lower and upper income group of countries but declined in the high and low income groups. The early adoption of adequate policies determines the amount of decoupling, energy efficiency and the increased use of renewable being the dominant options. There are examples of countries which developed without increasing CO₂ emissions and there is no reason to believe it could not be done in many developing countries.