

Disaggregating the Electricity Sector of China's Input Out table: Application to Environmental-Economic Life Cycle Analysis

Topic:

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Missing process detail of sectors in Input-Output tables has been pointed out to be a limitation to using Input-Output Analysis (IOA) as an environmental-economic Life Cycle Analysis (EE-LCA) tool as it increases uncertainty of results. Often, economic sectors are compiled in a more aggregated form than environmental satellite accounts, and as Lenzen (2011) has pointed out it is superior for determining environmental multipliers to disaggregate economic data as opposed to aggregating the environmental datasets. In this paper we present data and methodology to disaggregate the electricity sector of China's national IO table, using as much external information as possible, into a transmission and distribution sector as well as 8 sub-sectors representing power plants. We determine sector specific electricity consumption mixes based on regional industry clusters and local electricity generation mixes. By multiplication with a CO₂ emissions satellite account we show the total embodied emissions in sectors' final demand in the disaggregated table. These results are compared with emissions intensity from a second disaggregation run in which the disaggregation criterion based on the national average electricity generation mix.