

## Self-consumption: An input-output analysis

Topic: (1.1) Energy Input-Output Modeling (1)

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The Spanish electricity system is characterized by a low competition and other managerial problems. One of these is the challenge of the implementation of the self-consumption, which supposes to approach the costs of the network use, the prices of repurchase and the structure of the network by itself. This will be the issue analysed here.

In a first step, from the supply and use tables for Spain for 2010, we have constructed a symmetric input-output (IO) table and a social accounting matrix (SAM). Moreover, taking into account the legal unbundling of the electricity sector (Spanish Electricity Industry Act 1997) and the existence of different technologies, we have disaggregated the energy sector of these tables into 10 sectors, named: Generation from wind, From nuclear, From conventional thermal, From hydropower, From solar and other types, Transmission, Distribution, Commercialization, Related activities to the electricity sector, and Gas.

Then, we want to address this question: is the promotion of self-consumption a good solution for improving sustainability? We study the scenario in which all sectors self-produce a part of their electricity consumption and the transmission and distribution costs are reduced.

To advance in this way, based on the information previously obtained, we modify the data of the different sectors to include a new scenario of self-consumption. We are mainly interested in the effect on both the electricity generation sectors and commercialization sector. We also want to investigate the possible alternatives for defining possible use and supply tables compatible with a symmetric IO table given.