



Master Thesis on the Topic

Determining CO₂ Emissions per capita in Germany taking embodied emissions into account

Emissions statistics that are used for formulating a response to climate change are typically compiled based on the emissions occurring within a country. This is a so-called production-based approach. This approach does not account for the fact, that production chains extend across borders. Emissions from the production of a single good can occur in many countries. Countries that outsource the production of consumption goods can effectively boast a reduction in emissions within their borders. This, however, does not change the issue on a global scale, because the emissions are simply accounted for in another country.

In order to complement the production-based approach a demand-based approach was developed. The demand-based approach allows to account for the embodied CO₂ in final demand.

Although the demand-based approach has gained traction over the years, there is no consensus how to calculate the amount of embodied CO₂ emissions.

A well know study was conducted by Wiebe and Yamano (2016). They show, that the OECD countries are net-importers of embodied CO₂.

The aim of this thesis is to first critically appreciate the findings made by Wiebe and Yamano. The main focus of the thesis should however be on the developments in Germany and the contribution of the energy transition.

Literature

- Wiebe, K. S. and Yamano, N. (2016): “*Estimating CO₂ Emissions Embodied in Final Demand and Trade Using the OECD ICIO 2015: Methodology and Results*”, OECD Science, Technology and Industry Working Papers, 2016/05, OECD Publishing, Paris.
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- He, K., & Hertwich, E. G. (2019): “*The flow of embodied carbon through the economies of China, the European Union, and the United States*”. Resources, Conservation and Recycling, 145, 190-198.
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