

Key CO2 emission clusters accelerates world CO2 emissions

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Abstract (100-150 words)

Global warming is not only one of the most important challenges that mankind is facing but also a complex one.. Greenhouse gases (GHGs) emitted from one country might have been induced by demands on its products from other countries, and understanding the structure of GHG emission inducement along the supply-chain becomes increasingly challenging as our economy is globalized supply-chain. This is a major point of debate in climate change policy and international climate negotiations. We developed a global model for supply-chain network and identified CO2 emission clusters within global supply-chain networks including more than 400 million supply-chains. We found that in 2009, U.S. construction demand has a crucial responsibility of forming huge CO2 clusters in China amounting to 200 (million tons-CO2 eq.). Our results also reveal that U.S. textile products demand induces bi-national China-India CO2 emission clusters. We suggest that a coalition between the Chinese and Indian governments would play an important role in debate in assigning emissions from production to consumption.