

More Gas, Less Coal, and Less CO₂? Unilateral CO₂ Reduction Policies with More Than One Carbon Resources

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Abstract:

Natural gas is hoped to effectively help shale gas producing regions meet their carbon emission reduction commitments.

We examine an open economy that produces both gas and another, more carbon intensive fuel like coal. In presence of two carbon energy sources, the analysis sharply contrasts with the standard single-energy case in which leakage is less than 100%: We show that, in general, an economy that relies on domestic gas to meet its emission commitment may contribute to increase global emissions. Indeed, gas production releases coal that is exported instead of being consumed domestically, increasing emissions in the rest of the world. In this new context, we establish testable conditions as to whether a governmental emission-reduction commitment warrants the domestic exploitation of shale gas, and whether this unilateral strategy increases global emissions. We also characterize the extent to which this unilateral strategy makes the rest of the world's emission commitment more difficult to meet. Finally, we show how our results apply to the case of the US.