



ENERGY AND CLIMATE EXCHANGE

**“Combining Energy Networks:
What happens to Belgian electricity prices when Russia cuts the gas for
East Europe?”**

with

Hannes Weigt
European University Institute

17 November 2010, 12.45-14.00, Bruegel Brussels

Background paper for this event now available [here](#)
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Electricity generators use fuels, such as gas and oil, that rely on network infrastructure. Thus, the flows in electricity and gas networks are interdependent. Furthermore, the markets for gas and electricity are linked via the prices for emission allowances. In the paper to be presented at this event Hannes Weigt and his co-author Jan Abrell develop a combined model of the European natural gas and electricity markets to assess the interaction of the corresponding networks. They show that an initial shock to the system can cause price and quantity effects in far distant markets due to congestion in either network, as well as loop flows in electricity grids. This effect is demonstrated by simulating the impact of a Russian gas export cut on distant electricity markets whose gas supply is not affected. Also, the shift from coal to natural gas due to the introduction of emissions trading results in changes, both in local natural gas demand and power flows. The resulting changes in electricity and gas flows are thereby highly interactive.

These findings are important for the planning the European energy network infrastructure for the coming decades. They indicate that an isolated analysis of networks for any particular energy carrier – as currently practiced – does ignore important interactions and thus potentially lead to suboptimal results.

Hannes Weigt is a Jean Monnet Fellow at the Florence School of Regulation at the Robert Schuman Centre for Advanced Studies, European University Institute. He studied Economics & Engineering at the Dresden University of Technology where he received his PhD in 2009. His research focus is on



modeling electricity markets regarding market power, competition policy, integration of renewable energies, and grid investment issues. He has also gained practical experience in the field while working in many projects with practitioners and researchers in Germany and Europe.

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