

Publication

Combining Energy Networks

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Electricity markets depend on upstream energy markets to supply the fuels needed for generation. Since these markets rely on networks, congestion in one can quickly produce changes in another. In this paper we develop a combined partial equilibrium market model which includes the interactions of natural gas and electricity networks. We apply the model to a stylized representation of Europe's electricity and natural gas markets to illustrate the upstream and downstream feedback effects which are not obvious on first sight. We find that both congestion and loop-flow effects in electricity markets impact prices and quantities in markets located far from the initial cause of the market changes.

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