

JOSHUA DAVID KNEIFEL

Personal Data

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Areas of Expertise

Primary Fields: Industrial Organization, Environmental Economics, Energy Economics
Secondary Fields: Regulatory Economics, Public Economics

Education

<i>Degree</i>	<i>Field</i>	<i>Institution</i>	<i>Year</i>
PhD	Economics	University of Florida	2008, Expected
M.A.	Economics	University of Florida	2005
B.S.	Economics/Mathematics	Doane College	2003

Dissertation

Title: "Essays in Renewable Energy and Emissions Trading"
Dissertation Advisors: Professor Lawrence Kenny, Dr. Paul Sotkiewicz

Teaching Experience

<i>Semesters</i>	<i>Course</i>	<i>Position</i>
Fall 2006, Spring 2007, Fall 2007	Environmental Economics	Instructor
Fall 2005-Spring 2006	Managerial Economics	Course Administrator
Fall 2003-Summer 2005	Managerial Economics	Teaching Assistant
Fall 2003-Summer 2005	Introduction to Microeconomics	Teaching Assistant

Research Experience

<i>Semester</i>	<i>Professor</i>	<i>Position</i>
Summer 2007	Professor David Sappington	Research Assistant
Summer 2006	Professor Lawrence Kenny	Research Assistant

Working Papers and Abstracts

"Effects of State Government Policies on Electricity Capacity from Non-Hydropower Renewable Sources"

State governments have implemented many different types of policies designed to increase the use of renewable energy. Almost no research has been done on estimating the effects of these policies on the electric power industry. This paper ascertains which state policies are accelerating deployment of non-hydropower renewable electricity generation capacity into a state's electric power industry. A state fixed-effects model is used to simultaneously estimate the effects of multiple state policies in all fifty states. As would be expected, policies that lead to significant increases in actual renewable capacity in that state either set a Renewables Portfolio Standard with a certain level of required renewable capacity or use Clean Energy Funds to directly fund utility-scale renewable capacity construction. A surprising result is that Required Green Power Options, a policy that merely requires all utilities in a state to offer the option for consumers to purchase renewable energy at a premium rate, has a sizable impact on non-hydro renewable capacity in that state.

“The Effects of Coal Contract Constraints on SO₂ Trading Program Compliance Decisions”

Several studies on Phase I of the Title IV SO₂ Trading Program have found that actual compliance costs realized by the electric power industry have far exceeded the hypothetical least-cost outcome in spite of lower than expected allowance prices. Prior work has either conjectured or shown that some of these excess costs could be a result of inefficiencies related to state regulatory constraints, but this does not explain all the additional compliance costs. A possible explanation for these additional compliance costs that has been offered, but neither modeled, simulated, nor estimated, is the presence of fuel contracting constraints or rigidities. This paper models the decisions made by generating units as they meet SO₂ restrictions, and incorporates long-term coal contract constraints. The model analytically shows that coal contracts may increase compliance costs under cap-and-trade SO₂ programs. Under Phase I of Title IV, high sulfur coal contracts may have led the installation of more than the optimal number of scrubbers, which lowers the total emissions generated in the industry. Lower emissions levels decrease excess demand and drives down the allowance price, which was observed under Phase I of Title IV. These results are useful in considering the future emissions reductions required by the recently promulgated Clean Air Interstate Rule (CAIR). Generating units facing low sulfur coal contracts that were agreed upon during Title IV may increase compliance costs by forcing sub-optimal compliance choices, such as purchasing additional allowances or installing a scrubber while using low sulfur coal.

Working Paper in Progress

“How Much Do Coal Contract Constraints Add to SO₂ Compliance Costs?”

This paper expands on the model in “The Effects of Coal Contract Constraints on SO₂ Trading Program Compliance Decisions” by simulating the costs of actual contract constraints observed in the data. A mixed-integer nonlinear programming model is used to simulate decisions made at the plant level instead of the generating unit level because coal delivery data is only available at the plant level. The simulation determines the effects of long-term coal contracts on each unit’s compliance decisions and the compliance costs for the industry with an endogenously determined allowance price.

Presentations

Southern Economic Conference, November 2005

Referee and Review Experience

Referee *Resource and Energy Economics*
Book Review Addison-Wesley Publishing

Honors and Awards

Levi and Hazel Wilson Fellowship, 2003, Doane College
The Lincoln Insurance Group Outstanding Senior in Business and Economics, 2003, Doane College

References

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