



Power Systems Engineering Research Center

Designing CO₂ Trading Markets for the Power Sector: Does It Matter Who Gets the Allowances and Who Must Comply?

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Research Tele-seminar

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2:00-3:00 p.m. Eastern Time (11:00-12:00 Pacific)

Description: Carbon allowance trading has been implemented in the European Union, and will start in several eastern states in June. Meanwhile, several western states and Canadian provinces are negotiating the formation of a trading region for the West, and it appears likely that a federal system will emerge in the next Congress, if not before. Because of the potentially large costs that would result, as well as the large economic rents, from implementation of these systems, there has been intense political discussion of who should be responsible for compliance and how allowances should be distributed. In this seminar, I'll discuss whether the answers to these questions are important from the point of view of overall economic efficiency.

First, concerning the point of compliance, it has been argued that making load-serving entities responsible for compliance (through a requirement to hold a portfolio of energy contracts with a given average carbon emissions rate) will be cheaper for consumers than making generators responsible (as under the present acid rain law); I'll show why this is incorrect under very general assumptions. Some widely discussed alternatives for the West (such as CO2RC and GEAC) that unbundle energy and emissions, and require load-serving entities to buy emissions credits are shown to be equivalent to a generator-based system with some odd (and undesirable) properties. Second, I show how some schemes that award allowances to new investment can affect decisions about generation mix and raise costs to customers and society. It is preferable to allocate allowances by auction or other means that do not tie allocations to on-going decisions in a way that distorts those decisions. Examples involving systems with three types of generators illustrate these points.

Biography

Ben Hobbs is Professor in the Department of Geography and Environmental Engineering at The Johns Hopkins University, Baltimore, MD, a position he has held since 1995. His research and teaching concerns the application of systems analysis and economics to electric utility regulation and environmental and water resources systems. He also holds a joint appointment in the JHU Department of Applied Statistics & Mathematics. Previously, he was Economics Associate at Brookhaven National Laboratory (1977-1979). He later joined the Energy Division of Oak Ridge National Laboratory as a Wigner Fellow from 1982-1984. Between 1984 and

1995, he was on the faculty of the departments of Systems Engineering and Civil Engineering at Case Western Reserve University. Dr. Hobbs is a member of the Market Surveillance Committee of the California Independent System Operator, and of the Public Interest Committee of the Gas Technology Institute. He also serves as Scientific Advisor to ECN, the Dutch Energy National Laboratory. He is a Fellow of the IEEE. His Ph.D. is in Environmental Systems Engineering from Cornell University.

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