

Electricity Market Economics

Seminar, Summer 2016, Prof. Dr. Sebastian Schwenen

Deliverables: Enrolled students work on selected topics in the economics of electricity markets. Successful participation requires three deliverables: i) a seminar paper, ii) an initial work-in-progress presentation, and iii) a final presentation. The seminar paper constitutes the final grade. The final presentation and the work-in-progress presentation offer the opportunity to improve the grade of the paper. Students may work alone or in teams of two.

Aims: The aim of this seminar is to deepen knowledge of electricity markets and to enhance the ability to conduct sound and independent economic research in the area of power markets. To fulfil these goals, students have to implement a well-structured research agenda and prove their ability to present their findings both in written form and during the final presentation.

Requirements and schedule: The seminar requires prior knowledge in the economics of electricity markets. The number of students in this seminar is limited to 20. Students with a course record in the curriculum of the Center for Energy Markets enjoy priority. The seminar consists of four meetings as summarized in table 1 below. The final paper, written in English language and max. 15 pages, is due on Monday, July 4, 2016 at noon. The timestamp of your e-mail (to be sent to sebastian.schwenen@tum.de) with your final paper attached will count.

Date	Room	Meeting	Agenda
18/04/2016	Z 538	Kick-off (10 - 12 AM)	Allocating topics to research teams Setting expectations for deliverables
27/04/2016 & 28/04/2016	Z 538 Z 536	Work-in-progress (2 days)	Presentation of research question Discussing methodology and data
31/05/2016 & 01/06/2016	3540	Milestone meeting (2 days)	Individual sessions for each research team Adjusting scope and method, fine-tuning
30/06/2016 & 01/07/2016	Z 536	Final presentation (2 days)	Final presentation Groups act as discussants for each other

Table 1: Seminar agenda.

Seminar topics: Below is a list of possible research topics each with selected relevant literature. Within these topics, it is up to the students to choose the detailed research question to be addressed. Students may work on their own research topic (that is topics that are not on the list). Research questions have to be confirmed with the lecturer. Confirmation implies registering for this seminar and receiving a final grade.

1. Renewable support mechanisms (in Germany or selected European countries)

- Batlle, C., Prez-Arriaga, I. J., & Zambrano-Barragn, P. (2012). Regulatory design for RES-E support mechanisms: Learning curves, market structure, and burden-sharing. *Energy Policy*, 41, 212-220.
- Klessmann et al. (2015). Designing renewable energy tenders for Germany - Executive Summary of Recommendations. Study prepared for German Ministry of Economic Affairs and Energy.
- The Economist (2013). The cost del sol. Online edition from July 20, 2013.

2. Capacity mechanisms in the internal European power market

- Newbery, D., & Grubb, M. (2014). The Final Hurdle?: Security of supply, the Capacity Mechanism and the role of interconnectors (No. 1433). Faculty of Economics, University of Cambridge.
- European Commission Decision C(2015)2814 final, initiating an inquiry on capacity mechanisms in the electricity sector.

3. Capacity markets in US power markets

- Cramton, P., Ockenfels, A., & Stoft, S. (2013). Capacity market fundamentals. *Economics of Energy & Environmental Policy*, 2(2), 27-46.
- Wolak, F. (2004). What's wrong with capacity markets? Mimeo, Stanford University.

4. Forward contracting in power markets

- Redl, C., & Bunn, D. W. (2013). Determinants of the premium in forward contracts. *Journal of Regulatory Economics*, 43(1), 90-111.
- Bessembinder, H., & Lemmon, M. L. (2002). Equilibrium pricing and optimal hedging in electricity forward markets. *the Journal of Finance*, 57(3), 1347-1382.

5. Market power in power markets

- Newbery, D.M., (1995). Power markets and market power. *The Energy Journal*, pp.39-66.
- Borenstein, S., Bushnell, J. B., & Wolak, F. A. (2002). Measuring market inefficiencies in California's restructured wholesale electricity market. *American Economic Review*, 1376-1405.
- Borenstein, S., Bushnell, J., & Knittel, C. R. (1999). Market power in electricity markets: beyond concentration measures. *The Energy Journal*, 65-88.

6. Nuclear power in Europe and the US

- Davis, L. W. (2012). Prospects for Nuclear Power. *The Journal of Economic Perspectives*, 26(1), 49.
- von Hirschhausen, C. et al. (2015). German Nuclear Phase-Out Enters the Next Stage: Electricity Supply Remains Secure - Major Challenges and High Costs for Dismantling and Final Waste Disposal. *DIW Economic Bulletin*, 22/23 2015.

7. Demand management

- Allcott, H. (2011). Rethinking real-time electricity pricing. *Resource and Energy Economics*, 33(4), 820-842.
- Carroll, J., Lyons, S., & Denny, E. (2014). Reducing household electricity demand through smart metering: The role of improved information about energy saving. *Energy Economics*, 45, 234-243.

8. Impact of the EU ETS on the electricity market

- Bushnell, J. B., Chong, H., & Mansur, E. T. (2013). Profiting from regulation: Evidence from the European carbon market. *American Economic Journal: Economic Policy*, 5(4), 78-106.
- Ellerman, D., Marcantonini, C., & Zaklan, A. (2016). The European Union Emissions Trading System: Ten Years and Counting. *Review of Environmental Economics and Policy*.
- Fabra, N., & Reguant, M. (2014). Pass-Through of Emissions Costs in Electricity Markets. *The American Economic Review*, 104(9), 2872-2899.

Each topic leaves room for several research questions. Different teams may work on the same topic but have to make sure research questions are unique. All research questions should leave room for drawing from results from economic theory and/or offer scope for empirical work.