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# Future of Electric Power Sector: Carbon Constrained

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## Abstract

Scientific evidence points to rapidly rising concentration of greenhouse gases (GHGs) in the atmosphere, which, correlates with anthropogenic emissions mostly due to burning of fossil fuels. While the debate on what course of action may be needed and how the burden of cutting down emissions will be allocated among developed and developing nations, it is clear that the electric power sector – a major GHG contributor – will be materially affected.

The options for the electric power sector include more efficient use of energy, increased reliance on non-carbon fuels such as nuclear power and renewable energy technologies, and resorting to clean coal technology and/or carbon capture and sequestration (CCS).

This presentation focuses on the viability and costs of alternatives in the short, medium and longer term and its impact on the electric power sector. The presentation is based on contributions from a team of expert scholars and academics who are contributing to a volume of collected chapters to a forthcoming book by the same title forthcoming in 2009.

**Biographical sketch of Dr. Sioshansi**

**Fereidoon (Perry) Sioshansi** is President of **Menlo Energy Economics**, a consulting firm based in San Francisco, California serving the energy sector. Dr. Sioshansi's professional experience includes working at **Southern California Edison Company** (SCE), the **Electric Power Research Institute** (EPRI), **National Economic Research Associates** (NERA), and most recently, **Global Energy Decisions** (GED).

Dr Sioshansi provides consulting services to the industry, policy makers and regulators on a range of topics including:

- Market restructuring, privatization & liberalization;
- Economic implications of **climate change** & environmental sustainability;
- Energy efficiency, demand-side management, **demand response**, variable-time pricing & **smart metering** & devices including **prices to devices** applications;
- **Renewable energy** technologies;
- **Scenario analysis**;
- Regulatory policy & **corporate strategy** and
- Demand & price forecasting & integrated resource planning.

His most recent book, ***Electricity Market Reform: An International Perspective***, was published by Elsevier in 2006. A sequel volume, ***Competitive Electricity Markets: Design, Implementation, Performance*** is forthcoming in February 2008. A third book, **Carbon Constrained: Future of Electricity** is scheduled for publication in 2009.

He is the editor and publisher of **EEnergy Informer**, a monthly newsletter with wide international circulation. He is on the Editorial Advisory Board of ***The Electricity Journal*** where he is regularly featured in ***Electricity Currents*** Section. A frequent contributor to ***Energy Policy*** he serves on the editorial board of ***Utilities Policy***. He has degrees in Engineering and Economics, including an MS and Ph.D. in Economics from **Purdue University**.