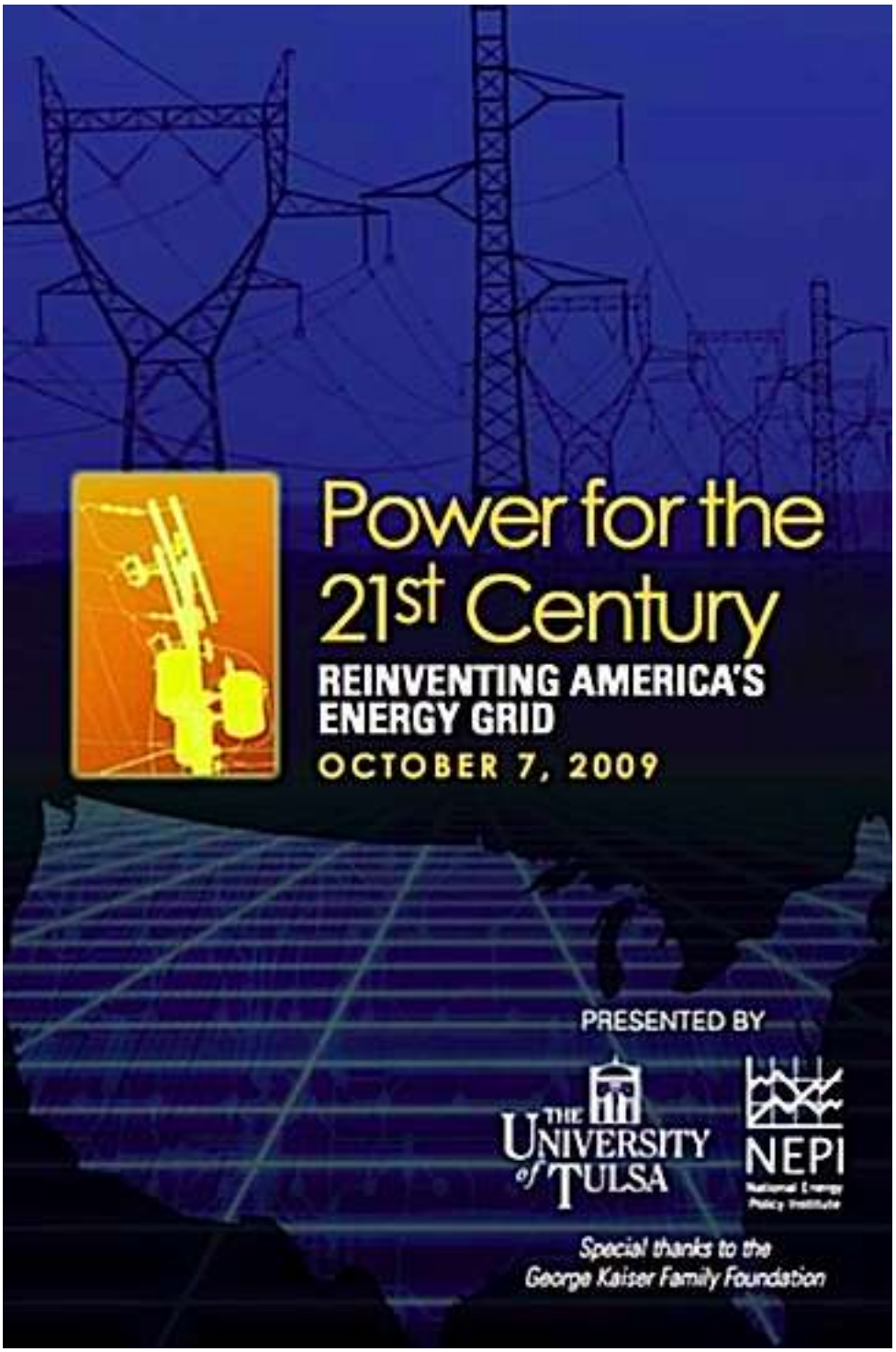
KEYNOTE SPEAKER



Keynote Presentation by William Hogan

Dr. Steadman Upham, Tulsa University President

The energy model for the 21st Century has to include key elements: reduced emissions, diversified sources of energy and of course efficient transmission. If we are to succeed both our technologies and our markets have to support these priorities. This is a big challenge, which may require re-ordering our priorities.

William W. Hogan, Electricity Market Design: Smarter Pricing for Smart Grids

The move to a lower carbon future and the introduction of greater emphasis on efficiency and renewables calls for better pricing models to support a planned smart grid. Toward that goal, Professor Hogan discussed how organized wholesale electricity markets provide a foundation for open, nondiscriminatory transmission access. He also addressed how those operating and investment decisions depend on the price signals from that market. Professor William W. Hogan is research director of the Harvard Electricity Policy Group (HEPG), which is exploring the issues involved in the transition to a more competitive electricity market.

WILLIAM W. HOGAN, Research Director, Harvard Electricity Policy Group

Professor William W. Hogan is research director of the Harvard Electricity Policy Group (HEPG), which is exploring the issues involved in the transition to a more competitive electricity market. Professor Hogan has been actively engaged in the design and improvement of competitive electricity markets in many regions of the United States, as well as around the world, from England to Australia. His activities include designing the market structures and market rules by which regional transmission organizations, in various forms, coordinate bid-based markets for energy, ancillary services, and financial transmission rights. This research is also part of the larger activities on the future of energy and energy policy research at Harvard University through the Environment and Natural Resources Policy Program, Environmental Economics Program, Harvard University Center for the Environment, and the Mossavar-Rahmani Center for Business and Government.

Presentation Summary

Harvard Professor William Hogan discussed how to approach the greening of the energy system. He pointed out past mistakes in the alternative energy endeavor as a warning that choices must be well thought out or they can produce unexpected, unwanted results. "I'm concerned about all the fads that have gone before us that had bad outcomes, such as coal-to-liquids technology and the Energy Independence and Security Act. It imposed stricter fuel standards for cars but it simply drove people to buy more trucks. We didn't think through the unintended consequences."

He asserted that our energy system is going to go through fundamental and sometimes dramatic changes with the greater use of renewable technology, the improvement of energy efficiency, the testing and deployment of carbon capture and storage technology, and the electrification of the transportation system. Changes in our electricity system will be particularly important. Electricity is important because of its scale, but it also has the importance of being a target for what has to be done and what has to be developed.

Hogan noted an op-ed piece in the October 6th, 2009, New York Times by David Brooks, called 'Bentham vs Hume' referring to the 18th and 19th century philosophers and how they would attack these energy problems. Bentham would likely advocate that the government proceed with confidence using the smartest people around to tackle all of the issues. Hume on the other hand would say, I don't know how to generate the most efficient energy and I don't know how technology will advance in the next 20 years, thus I suggest we just raise the price of carbon and let everyone else figure out the solution. Hogan felt this article captured today's debate and that the Hume approach is the better answer.

Hogan said the current problems are tied to climate change and are of a long duration. Actions cannot just be marginal solutions. We will have to turn to new technologies such as wind and solar, which are expensive. We might have more breakthroughs if we do enough research and development. We have already had surprises such as the development of turbines in the electricity sector out of the aircraft industry. Shale and natural gas has also become a new development.

Hogan doesn't feel that the low carbon electricity system falls into the Hume-like framework of a distributed system. It is his opinion that the solution to the carbon problem is going to be a collection of things, some currently unknown. He said that we should focus on learning the characteristics of a large scale, long term solution and match it with subsidies and research and development. However, the first order is putting a price on carbon. How we do it is secondary, it's that we do it that it is important.

It was noted that renewable portfolio standards are fundamentally inconsistent with the policy under cap and trade. He said that it could result in making expensive investments to make the cap. He proposed that the carbon cap might provide enough incentive alone.

Hogan said that he thinks it is critical to deal with the institutional designs of electricity markets. He said we now have the Southwest Power Pool and that it is a system that actually works. It is the kind of system needed for a world with global warming, low carbon, the wind and other renewables we want. The smart grid technology is enabling end users have the information flow so that they can make sensible decisions and tradeoffs.

"Scarcity pricing requires incentives rather than invent another regulatory problem," Hogan said. "I believe it is not politically impossible, it is something to fix." Tight conditions during peak hours is a first order problem which could be addressed by better scarcity pricing. Energy prices have to be realistic and reflect what is happening in the system. Transmission expansion is also a pricing issue. It is a matter of cost allocation, but we don't really know what kind of expansion we should do. We need to change some of the rules about how we decide about transmission expansion and change the rules about cost allocation. There must be an adherence to a beneficiary pay system. In New York they package private and public investment choices in such a way so you can support both without causing the rest of the system to unravel. Hogan feels we need the incentives now.

In his final statement Hogan said, "Go to the RTOs, take that model with all the things that are being done, fix the scarcity pricing, do a better job of dealing with the uplift, modify the transmission expansion protocols so that you can support a beneficiary pay system."

Q&A

Q. How can we identify who the beneficiaries of transmission are and how can we address the problem of hold up?
A. The way the NY system works is by super majority, which means you have to get a super majority of the beneficiaries to vote in favor of going forward. The votes of beneficiaries and cost allocations are in proportion to their benefits. I think it's a quite workable compromise.

Q. Why don't we have the transmission system treated like the highway system by putting it under the national security umbrella?
A. Two concerns are that first it's dishonest. Secondly, I don't think you can have the government building the infrastructure and not doing all the other things that come along with it. I don't think a centrally planned, government system promotes competition and innovation that can solve problems and it is not sustainable over a long period of time.

Q. Is there a role for resource planners in a market-based system?
A. We would be much better off letting people make their own judgments about what's going to work well and what's profitable. I'm working very hard to get the pricing done right because I think the demand side will have a huge impact. I'm very nervous that some plan a mandate by using the force of government to compel people to do something they don't want to do.

Q. Is there a better bill that that's got cap and trade that can get through?
A. The essential thing we have to get done is to get a price on carbon. We have to make it credible; it has to be a system that people can anticipate will get tighter and tighter. We've got to get started.

Q. How do you deal with transmission deals that cross state boundaries, such as is being done in Oklahoma and Kansas?
A. I think that crossing state boundaries is a serious problem and it's going to have to be dealt with on a national level by FERC using regulations and legislation. I don't think our political system is going to sustain a process where we constantly socialize only transmission while keeping them out of technology decisions for everything else. We must offer incentives or we will miss a lot of opportunities.