

Long-term Trends in Energy and the Need for Their Consideration in Macroeconomic Modeling

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4:00pm
Hill Hall 202

Abstract. Dr. King's research indicates that around the year 2000 the U.S., and the world, has passed the time period of cheapest energy (with food included as energy) in history, and that the passing of this turning point hints at struggles to grow the economy in the same way as recent history (from World War II to 2008). The talk will revolve around discussing how energy resources and technology relate to both the size (e.g., growth) of the economy. Macroeconomic growth models must consider power as a primary input factor for economic activity. Dr. King will summarize the long-term trends of the cost of energy in the contexts of (1) the Industrial Revolution and the transition from a primarily renewable energy economy to one now dominated by fossil fuels, (2) the concept of net energy, and (3) the transition to a future low-carbon or renewable energy economy. He will discuss how we need improved macroeconomic modeling that considers both the magnitude and the rate of transition to a low-carbon economy, but how most modeling neglects these important points

Biography. Dr. Carey W King performs interdisciplinary research related to how energy systems interact within the economy and environment as well as how our policy and social systems can make decisions and tradeoffs among these often competing factors. The past performance of our energy systems is no guarantee of future returns, yet we must understand the development of past energy systems. Carey's research goals center on rigorous interpretations of the past to determine the most probable future energy pathways.



Carey is Research Scientist at The University of Texas at Austin and Assistant Director at its Energy Institute. He also has appointments with the UT Austin's Center for International Energy and Environmental Policy, the Jackson School of Geosciences and the McCombs School of Business. He holds both a B.S. with high honors and Ph.D. in Mechanical Engineering from the University of Texas at Austin. His recent work has been published in *Environmental Science and Technology*, *Environmental Research Letters*, *Nature Geoscience*, and *Energy*.