

**ENERGY AND ENVIRONMENTAL ECONOMICS, INC.**  
*Senior Partner*

San Francisco, CA

Mr. Price joined the firm in 1993 and has been a lead in the Energy and Climate Policy; Energy Efficiency and Demand Response; Distributed Resources; and Renewables and Emerging Technology practice areas at E3. For over 20 years he has participated in dozens of case studies involving economic analysis of energy efficiency, demand response, distributed generation, and energy storage applications. His work in regulatory analysis focuses on evaluation of costs and benefits from all stakeholder perspectives using non-proprietary data and methodology to increase understanding and improve regulatory outcomes. Mr. Price is a co-author on a recently published paper in *Science* exploring pathways for California to meet the deep GHG reductions called for by 2050 of 80% below 1990 levels. His client list includes the California Public Utilities Commission, California Energy Commission, U.S. Environmental Protection Agency, Pacific Gas & Electric, Bonneville Power Administration, Consolidated Edison Company of New York, Orange and Rockland Utilities, Hawaiian Electric Company, Ontario Power Authority, among others.

Energy and Climate Policy:

- Leading the analysis of the effect of California's Assembly Bill 32 (Global Warming Solutions Act) on the electricity sector for the California Public Utility Commission (CPUC) and California Air Resources Board (CARB). This project is evaluating the impact on electricity consumers' rates and bills under different policy scenarios designed to meet the state's climate change goals. In this project, E3 is leading a large stakeholder process and developed the 'GHG Calculator' which is a non-proprietary analysis tool that allows stakeholders to evaluate their own scenarios with publicly available, non-proprietary data.
- Lead investigator for the development of the Time-Dependent Valuation methodology adopted by the California Energy Commission (CEC) for the 2005 and 2008 Title 24 Building Standards. He also managed the day-to-day development of the time-varying avoided costs for energy efficiency for the CPUC in Rulemaking 04-04-025.
- Ongoing manager of regulatory and analytical support of greenhouse gas modeling for the CPUC. This project is investigating the cost and effectiveness of alternative greenhouse gas policy initiatives in the electricity sector that could be implemented to meet California's AB32. He also leads analysis of the Market Price Referent (MPR) used in Renewable Portfolio Standards procurement.

Energy Efficiency and Demand Response:

- Supported the work to develop the U.S. EPA / DOE National Action Plan for Energy Efficiency. Lead the development of materials for the Leadership Group on the following topics: the business case for energy efficiency; decoupling and incentives for utility shareholders; and integrating energy efficiency in resource planning.

- Supported the California ISO on its response to FERC regarding Order 719 and the status of demand response in California.

#### Renewables, Distributed Resources, and Emerging Technology:

- Since 1993, Mr. Price has led dozens of studies and pilots on the economics of distributed resources across a range of technologies including renewables, energy storage, combined heat and power, demand response, and energy efficiency. He has evaluated numerous local integrated resource planning (LIRP) analyses for distribution utilities and developed several economic and reliability screening tools to evaluate distributed resources as an alternative to new T&D investment. This work has encompassed development of a T&D planning process to evaluate DR, issuing RFPs to purchase local capacity, and teaching a 3-day seminar with EPRI titled "Integration of Distributed Resources in Distribution Planning."

### Education

Stanford University Palo Alto, CA  
*M.S., Engineering Economic Systems and Operations Research* 1998

*Awarded a Research Assistantship to study the proposed structure of the California Electric Utility Industry after deregulation*

Swarthmore College Swarthmore, PA  
*B.A., Economics and B.S. in Engineering* 1993

### Citizenship

United States

### Selected Professional Reports and Publications

1. *Sreedharan, P., D. Miller, S. Price and C.K. Woo (2012) "Avoided cost estimation and cost-effectiveness of permanent load shifting in California," Applied Energy, 96, 115-121.*
2. *Moore, J., C.K. Woo, B. Horii, S. Price and A. Olson (2010) "Estimating the Option Value of a Non-firm Electricity Tariff," Energy, 35, 1609-1614.*
3. *DeBenedictis, A., T. E. Hoff, S. Price and C.K. Woo (2010) "Statistically Adjusted Engineering (SAE) Modeling of Metered Roof-Top Photovoltaic (PV) Output: California Evidence," Energy, 35, 4178-4183.*
4. *California Greenhouse Gas Modeling of the Electricity Sector, Commissioned by the California Public Utilities Commission, and the California Air Resources Board*

5. Woo, C.K., E. Kollman, R. Orans, S. Price and B. Horii (2008) "Now that California Has AMI, What Can the State Do with It?" *Energy Policy*, 36, 1366-74.  
[http://www.ethree.com/CPUC\\_GHG\\_Model.html](http://www.ethree.com/CPUC_GHG_Model.html)
6. Orans, R., S. Price, J. Williams, C.K. Woo and J. Moore (2007) "A Northern California - British Columbia Partnership for Renewable Energy" *Energy Policy*, 35:8, 3979-3983 (Lead article).
7. *National Action Plan for Energy Efficiency*, U.S. Environmental Protection Agency, Washington D.C., 2006, Authors not cited – S. Price was a contributing author.  
[http://www.epa.gov/cleanrgy/pdf/napee/napee\\_report.pdf](http://www.epa.gov/cleanrgy/pdf/napee/napee_report.pdf)
8. *Methodology and Forecast of Long Term Avoided Costs for the Evaluation of California Energy Efficiency Programs*, California Public Utilities Commission, San Francisco, CA 2004. Authors; R. Orans, C.K. Woo, B. Horii, S. Price, A. Olson, C. Baskette, Joel Swisher.  
[http://www.ethree.com/CPUC/E3\\_Avoided\\_Costs\\_Final.pdf](http://www.ethree.com/CPUC/E3_Avoided_Costs_Final.pdf)
9. *Phase 1 Results: Establish the Value of Demand Response*, Orans, Ren et al. *Energy and Environmental Economics*. DRRC Report. LBNL-60128 Collaborative Report. April 2006.  
<http://drcc.lbl.gov/pubs/60128.pdf>
10. *Phase 1 Results: Incentives and Rate Design for Energy Efficiency and Demand Response*, Orans, Ren et al. *Energy and Environmental Economics*. DRRC Report. LBNL-60133 Collaborative Report. April 2006  
<http://drcc.lbl.gov/pubs/60133.pdf>
11. *Assessment of California CHP market and Policy Options for Incremental Penetration*, EPRI, Palo Alto, CA California Energy Commission, Sacramento, CA 2005. Senior Principle Investigators; K. Darrow, S. McNulty, S. Price.  
<http://www.energy.ca.gov/2005publications/CEC-500-2005-060/CEC-500-2005-060-D.PDF>
12. *Renewable Distributed Generation Assessment*, California Energy Commission, 2004 Series of 4 case studies on Renewable Distributed Generation Assessment, see for example.  
<http://www.energy.ca.gov/2005publications/CEC-500-2005-028/CEC-500-2005-028.PDF>
13. *DER Stakeholder Collaboration at Work: Shaping a California DER Procurement*, J. Nimmons, J. Torpey, S. Price Principle Investigators, available at  
[http://masstech.org/dg/benefits/2006-06\\_EPRI\\_DER-Partnership\\_SCE-Procurement.pdf](http://masstech.org/dg/benefits/2006-06_EPRI_DER-Partnership_SCE-Procurement.pdf)
14. *Methodology and Results for 2008 Title 24 TDV Analysis*,  
<http://www.energy.ca.gov/title24/2008standards/documents/E3/index.html>
15. Hartway, R., S. Price and C.K. Woo (1999) "Smart Meters, Customer Choice and Profitable Time of Use Rate Option," *Energy*, 24, 895-903.