# Xiaoxuan Hou

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**ENERGY AND ENVIRONMENTAL ECONOMICS, INC.** San Francisco, CA
*Consultant II*

Ms. Hou joined E3 in 2018. Her work in E3's planning group addresses issues related to market price projections, optimal capacity expansion planning, and long-term greenhouse gas reduction policies, among other areas. She leads AURORA modeling to develop credible price outlooks in the electric power sector in support of asset valuation, policy design, and utilities' long-term compliance planning. She also develops and utilizes E3's RESOLVE model to address long-term challenges associated with decarbonizing the electric power system and the broader energy sector. Prior to E3, Ms. Hou worked at ICF, Lawrence Berkeley National Lab, and the California Public Utilities Commission where she led modeling and research on environmental policies, utility planning, transmission system simulation, and demand side load management.

Ms. Hou received a Master of Public Policy degree from the University of California, Berkeley and bachelor's degrees in Economics and in Energy and Resources Engineering from Peking University in China. Select projects at E3 include:

- **Nationwide Long-Term Power Market Forecasting, Various Clients (2018-ongoing).** Ms. Hou leads E3's fundamentals-based market price forecasting efforts using the AURORA model to develop insight into future trends for day-ahead and real-time energy, capacity, REC, and ancillary services markets. This involves investigating impacts of key market drivers such as state decarbonization policies, uncertainty in technology costs and reliability, retirement of existing fleet, and potential market design changes. Ms. Hou's work has guided more than 10 large developer and utility clients' near- and long-term investment and procurement decisions.

- **California Integrated Resource Plan (IRP), California Public Utilities Commission (CPUC) (2019-ongoing).** E3 has long supported the CPUC in developing California's Integrated Resource Plans (IRPs) in biennial proceedings. As a core E3 modeler for the 2019-2020 IRP cycle, Ms. Hou works with the CPUC's IRP team to update resource costs and runs scenario and sensitivity analyses using E3's RESOLVE model. The proposed statewide reference system plan, recently completed by E3, will inform the planning procedures of California's investor-owned utilities and CCAs.

- **APS Integrated Resource Planning Support, Arizona Public Service (2019-2020).** As part of E3's strategic advising for APS, which has assisted APS in announcing a 45% RPS by 2030 and 100% carbon-free by 2045 goal, Ms. Hou helped develop an Excel-based capacity expansion model representing APS's power system to evaluate the costs and emission benefits of a range of planning targets including an RPS, clean energy goals, to no new gas futures. Ms. Hou's market forecasting support has also informed APS's strategy amid a transforming WECC market.

- **Carbon Emissions Impacts of Improved Renewable Forecasts, Confidential Client (2019).** To support the development of a client's wind production prediction tool, E3 estimated the carbon

emissions impacts of improved wind forecasting in SPP and ERCOT under various commercialization use cases. Ms. Hou helped develop the study's analytical framework, by identifying different tool applications and prospective impacts of better wind forecasting on emissions reductions, and also developed the model used in the study, which quantified prospective impacts on additional wind build, reduced coal commitment, and reduced curtailment.

**ICF** Fairfax, VA

*Associate* March 2018 – September 2018

- Led modeling efforts to analyze U.S. and international power markets using ICF's proprietary Integrated Planning Model (IPM), a linear programming-based cost optimization model
- Defined and ran policy scenarios to analyze potential regulation risks and support client long-term portfolio strategies
- Led modeling and developed tools to evaluate risks and impacts of environmental policies
- Conducted cash flow, NPV, and rate-of-return analysis for alternative projects under various scenarios
- Led transmission modeling efforts to analyze grid capability and reliability using PSLF and PowerWorld
- Developed marketing-oriented white papers
- Presented on internal meetings and client calls, and coordinate with other teams to deliver presentations, project reports, and analysis models to clients

*Analyst* August 2016 – February 2018

- Led modeling efforts for projects worth more than $2M using IPM
- Developed cost assumption databases for different power generation technologies based on capital cost, construction period, debt/equity ratio, tax schedule, rate-of-return target, etc.
- Built financial models to analyze asset pro forma and support transaction-oriented targets
- Developed econometric models to forecast long-term electricity demand

**LAWRENCE BERKELEY NATIONAL LABORATORY** Berkeley, CA

*Research Assistant* October 2015 – May 2016

- Designed an electricity critical peak pricing program for Jiangsu Province in China. Crafted the basic economic pricing model, determined assumptions, defined criteria, identified implementation alternatives, and provided recommendations
- Reviewed more than 100 literature sources on power sector deregulation and demand-side management
- Drafted research fundraising proposals

**U.S. ENVIRONMENTAL PROTECTION AGENCY** San Francisco, CA

*Student Policy Analyst* February 2016 – May 2016

- Provided policy consulting for EPA's sustainable materials management strategies. Developed policy analysis that was distributed across EPA regional offices

**WORLD RESOURCES INSTITUTE** Beijing, CHINA

*Intern* May 2015 – August 2015

- Independently developed an Excel based greenhouse gas inventory reporting tool that was released in November 2015 using VBA

**CALIFORNIA PUBLIC UTILITIES COMMISSION** San Francisco, CA

*Intern* February 2015 – December 2015

- Quantified reliability and cost-effectiveness of 31 demand response (DR) programs run by investor-owned utilities in California based on budget review and load impact analysis

**PEKING UNIVERSITY** Beijing, China

*Research Assistant* August 2013 – April 2014

- Worked with energy and environmental economists and professors at the National School of Development to conduct research on China's energy market, with a focus on clean energy technologies
- Co-authored a report on China's energy sector reform and independently wrote the non-fossil energy market chapter

## Education

University of California, Berkeley Berkeley, CA

*Master of Public Policy* 2016

Peking University Beijing, China

*Bachelor of Engineering, Energy and Resources Engineering* 2014

*Bachelor of Economics*

- Top 2 university in China; graduated in top 5% of class; scholarship recipient (given to 25 of 1000 students)

## Citizenship

China