

Postdoctoral Associate on Energy System Modeling and Policy Analysis Institute of Transportation Studies, University of California, Davis

California law (AB32) requires statewide greenhouse gas (GHG) emissions to be equal to 1990 levels by 2020 and the state has a goal to achieve an 80% reduction in GHG emissions from 1990 levels by 2050. These goals, especially the 2050 GHG reduction goal, will have significant impacts (including benefits and costs) on California's energy system, economy and infrastructure. Since 2010, California has implemented a series of climate policies to help meet its 2020 target, from the cap-and-trade program, vehicle efficiency standards, low-carbon fuel standard, renewable portfolio standard, and land use policies, to name just a few. All these policies are designed to be complementary to each other, though there can also be unintended consequences. Moving beyond 2020, our energy system will need to make a significant transformation to meet the very low-carbon emission goal, yet there are large uncertainties on which technology mixes, fuel and energy resource options, and policy tools will be used to help meet the deep reduction target.

CA-TIMES (<http://steps.ucdavis.edu/research/projects/ca-times/>) is a technology-rich partial-equilibrium model being developed by the Institute of Transportation Studies (ITS), University of California, Davis (partially funded by California Air Resources Board) that can provide guidance as to the least-cost and most appropriate options to achieve our climate goals. It represents all the sectors of California energy system. The model provides a useful tool to understand the least-cost technology mix assuming perfect decision-making and perfect markets and to derive policy lessons, under different technology, resource and policy assumptions. CA-TIMES is also one of the key models that we use to cross-compare other models to provide policy insights to decision makers (<http://policyinstitute.ucdavis.edu/initiatives/ccpm/>).

In collaboration with the Pacific Gas and Electric (PG&E) company to continue supporting the development of integrated energy system modeling tool for California, we seek a highly qualified candidate with a strong quantitative background for a one-year appointment. Reappointment is possible contingent on available funding and performance. The Ph.D. should be in operations research, industrial engineering, systems engineering, economics, public policy, or planning with a dissertation related to modeling energy or environmental issues. A background in optimization including GAMS and energy systems is necessary. In addition, experience in the area of climate policies, electricity markets, GIS modeling, transportation, supply chain optimization, climate science and economic modeling is desired.

Contact information

Sonia Yeh

Research Scientist

Institute of Transportation Studies

1605 Tilia Street, Suite 100

University of California, Davis CA 95616

Phone: (530) 830-2544

Fax: (530) 752-6572

Email: slyeh@ucdavis.edu

<http://steps.ucdavis.edu/People/slyeh>