



# POWER CONFERENCE

On Energy Research and Policy

## ABSTRACT

### ***"Setting with the Sun: The Impacts of Renewable Energy on Wholesale Power Markets"***

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Support for investment in renewable electricity has been a cornerstone of climate policy in many parts of the world. While previous empirical work explores the economic and environmental impacts of renewable production, the focus has exclusively been on the short-run impacts of expanding renewable supply. In this paper, we shed light on the longer run impacts of renewable expansions. Focusing on the California's electricity market, we estimate how wholesale electricity prices have responded to a dramatic increase in utility-scale solar capacity. While a substantial decline in daily average prices can be attributed to the solar capacity expansion, this average price impact masks a substantial decrease in mid-day prices combined with an increase in shoulder hour prices. These results imply that short-term power markets are responding to the renewable expansion in a fashion that could sustain more flexible conventional generation, while seriously undermining the economic viability of traditional baseload generation technologies.