

## Taxing Electricity Sector Carbon Emissions at Social Cost

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### Abstract

Concerns about budget deficits, tax reform, and climate change are fueling discussions about taxing carbon emissions to generate revenue and reduce greenhouse gas emissions. Imposing a carbon tax on electricity production based on the social cost of carbon (SCC) could generate between \$21 and \$82 billion in revenues in 2020 and would have important effects on electricity markets. The sources of emissions reductions in the sector depend on the level of the tax. A carbon tax based on lower SCC estimates reduces emissions by reducing demand and substitution of gas for coal while taxes based on higher SCC estimates induce switching to wind and nuclear generation. The slow rate of growth of the SCC estimates means that any SCC-based carbon tax trajectory provides weaker long-run incentives for expanded renewable and nuclear generation than a cap-and-trade program that achieves an equivalent level of cumulative carbon dioxide emissions reductions.