Carbon Policy and the Emissions Implications of Electric Vehicles*

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Abstract

Will a carbon tax improve the welfare consequences of policies to promote electric vehicles? This paper examines when a complementarity could exist between carbon pricing and high electric vehicle adoption. We analyze electricity generation in recent years to show that in several regions, carbon pricing interacts with electric vehicle adoption. Under moderate carbon prices like those in effect today, additional electric vehicles will be more likely to be charged with coal-fired generation than without carbon pricing. We confirm this finding using a detailed dynamic model that includes the transportation and power sectors. At much higher carbon prices, the effect reverses.

Keywords: electric vehicles, carbon pricing, interacting regulations, air pollution.

JEL classification codes: H23, Q48, Q53, Q54, Q58, R48.

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