

Fuel Switching from Coal to Gas: The Impact of Coal Stockpiling at U.S. Coal-fired Plants

Sul-Ki Lee*

Division of Economics and Business, Colorado School of Mines

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Abstract

Do coal stockpiles of coal-fired plants influence the generation decisions of power plant operators? A theoretical model suggests that the combination of min-take coal contracts and coal storage constraints reduce the sensitivity of firms to changes in relative input prices. This finding indicates that the magnitude of fuel switching between coal and natural gas would be larger if min-take contracts were unwound, and therefore coal plants' storage constraints are less binding. An econometric analysis confirms that firms are less sensitive to price fluctuations when stockpile levels are higher. The magnitude is economically substantial: lifting the effects of coal storage restriction on the fuel price elasticity of coal-fired generation leads to an 18 percent increase in the carbon abatement under a \$20 carbon tax.

Keywords: Coal stockpiling, fuel switching, fuel costs, electricity generation, short run inefficiency.

JEL classification: D8, Q4, Q5

*816 15th Street, Golden, CO, 80401, United States, sulee@mines.edu