

Implications of Shale Gas Development for Climate Change

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Projections of natural gas production and use in the United States have grown significantly due to advancements enabling gas development from shale formations. This shift has generated a high-profile debate regarding the climate impacts of shale gas. Much of the debate has focused on two issues, the first being the extent to which abundant, low-priced natural gas will displace more carbon-intensive coal in electricity generation. The second being the extent to which this climate benefit is offset by natural gas systems leaking methane, a greenhouse gas with much higher warming potential than carbon dioxide, albeit much shorter-lived. This presentation will seek to broaden the conversation by developing a conceptual framework for assessing the climate impacts of shale gas, and review and assess the evidence on various possible effects. These effects include those mentioned above, along with others, including: the potential for natural gas to replace or delay adoption of low-carbon energy sources; the potential for low natural gas prices to increase domestic and global energy demand; the implications of increased natural gas usage in the transportation, industrial, commercial, and residential sectors; and the effects of low-cost gas on national climate policies and international climate negotiations. The presentation will also seek to assess which factors are likely to determine the net effect of shale gas development on greenhouse gas emissions, the gaps in data, and uncertainties in current estimates..