3.047 "Smart" control of emissions from power generation in China and policy implications.

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Abstract:

The power sector is the largest source of CO_2 and many air pollutants. China's policies of controlling emissions from this sector have been formulated around the goal of reducing total emissions of SO_2 and NOx at the national level by a certain target every five years. Implementation plans for such policies are often vague or lacking, and their effectiveness has been questioned as China faces frequent occurrences of extreme pollution events in recent years. In this presentation, we present a modeling analysis illustrating that large gains in environmental benefits can be achieved by 'smart' design of when and where emission reductions of SO_2 and NO_x should be prioritized, based on atmospheric chemistry and transport fundamentals. Different impact metrics will be considered with a focus on secondary $PM_{2.5}$ and ozone. The model-derived priority regions and periods will be compared with actual emission changes from bottom-up inventory and satellite data, and policy implications will be provided as well.