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Evaluating the CLimate and Air Quality ImPacts of Short-livEd Pollutants (ECLIPSE)

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The ECLIPSE (Evaluating the CLimate and Air Quality ImPacts of Short-livEd Pollutants) EU project studied the influence of short-lived climate forcers (SLCFs, e.g., aerosols, methane, ozone) on past, current and future climate and has finished in March 2015.

ECLIPSE has created a consistent emission data set for short- and long-lived climate forcers for the recent past and future scenarios. This inventory also includes new source categories (e.g., gas flaring emissions) and is already in use by many groups worldwide. A small ensemble of models was used to quantify radiative forcing of SLCFs by region and sector. Existing and new metrics for quantifying climate impacts were studied and Global Temperature Change Potential on a 20-year time horizon (GTP20) was selected to rank potential emission mitigation measures. The 20 most effective measures with a non-negative impact on air quality were then used to define a mitigation scenario. For the first time, a small ensemble of coupled climate models performed transient model simulations of the control and the mitigation scenario, to quantify the impact of the SLCF mitigation measures on global and regional temperature and precipitation.

This presentation will summarize the main findings of ECLIPSE and extract the policy-relevant recommendations from the project. Findings will also be discussed in the light of a detailed evaluation of the models against measurements in Europe, the Arctic and Asia.