Supporting Information

Temporalization of Peak Electric Generation PM Emissions during High Energy Demand Days

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Supporting Information Available: Figures of average monthly stagnation days, hourly AQS $PM_{2.5}$ with DAYZER electricity generation, CMAQ-predicted ambient concentrations and percent differences of $PM_{2.5}$, sulfate, EC, ammonium, nitrate, OC and ozone at the surface and aloft, and NO_x emission sources.

Supplemental Figure 1

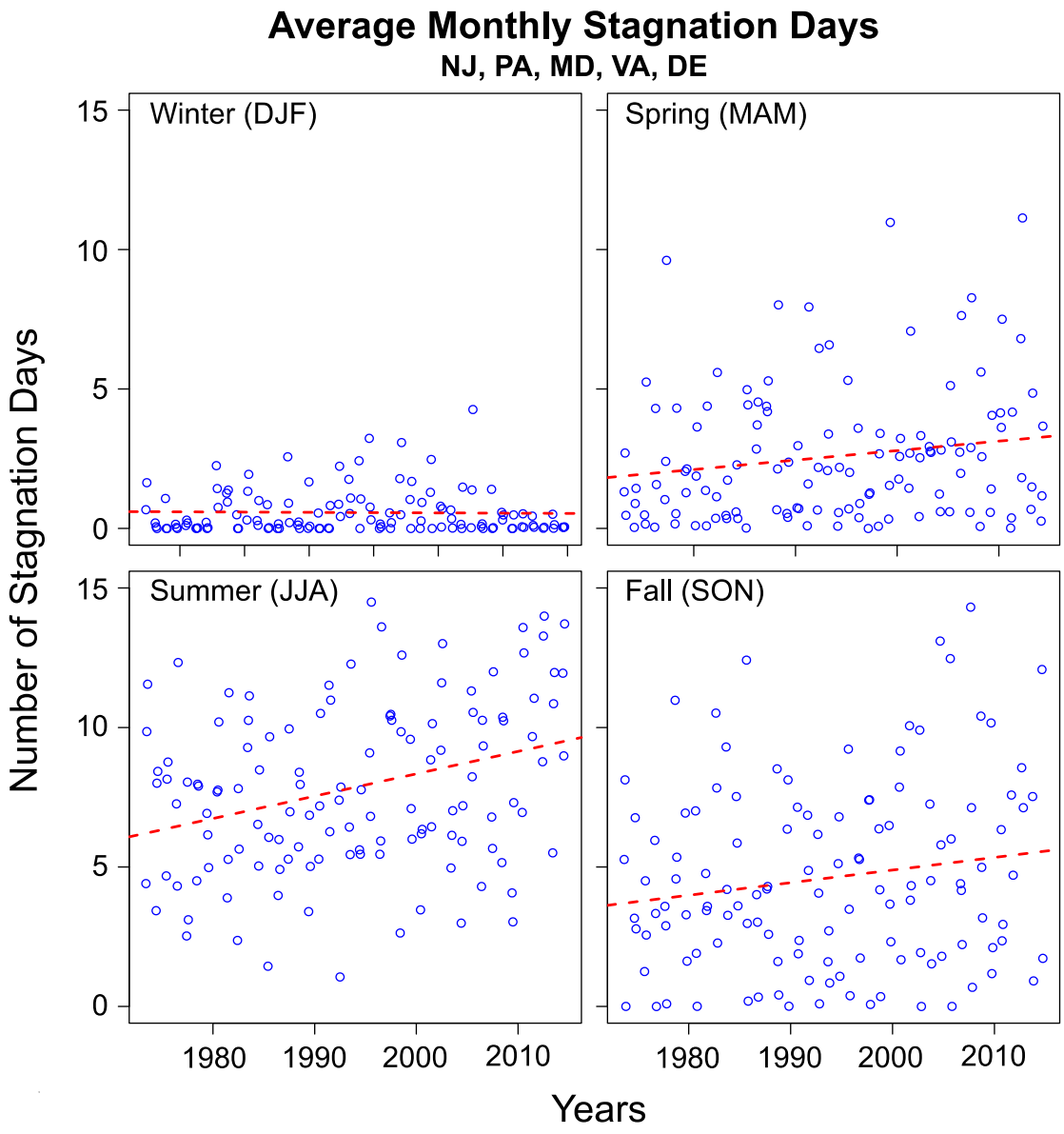

Figure S1: Average monthly stagnation days by season from the National Climatic Data Center (NCDC) for the 5 studied states (Delaware, Maryland, New Jersey, Pennsylvania, Virginia) are represented by blue open circles. The red dashed line is a linear trendline.

Supplemental Figure 2

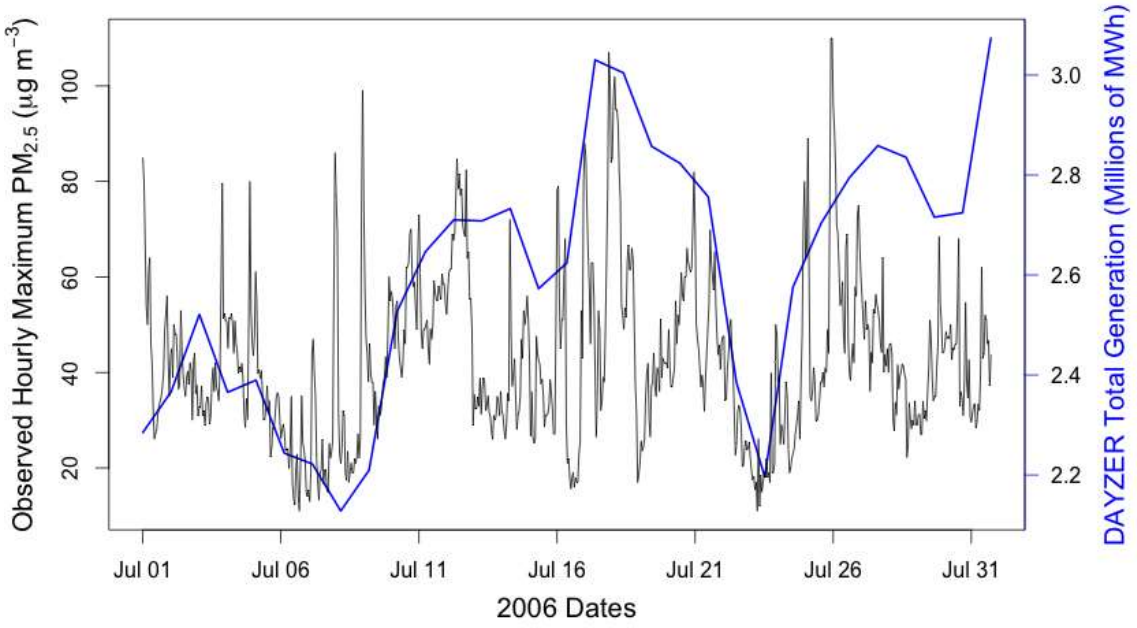

Figure S2: CSN maximum hourly $PM_{2.5}$ observations from July 2006 for the study domain are represented by the thin black line. The daily DAYZER total electricity generation for the entire PJM region during the same time period is in blue.

Supplemental Figure 3

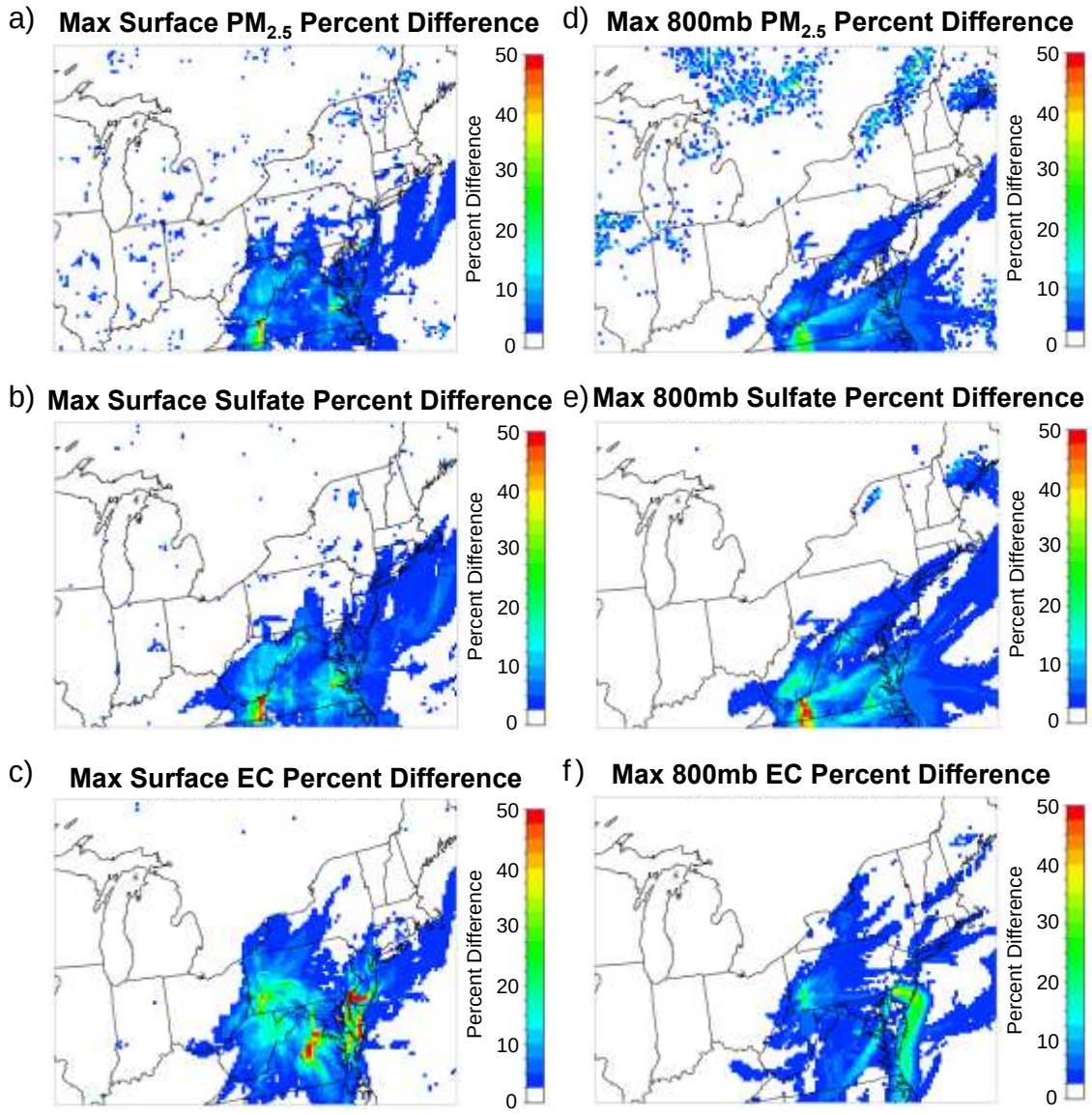

Figure S3: CMAQ-predicted maximum percent differences of the two study simulations at the surface and 800mb between July 1-31, 2006 of ambient concentrations of $PM_{2.5}$ (a and d), sulfate (b and e) and EC (c and f).

Supplemental Figure 4

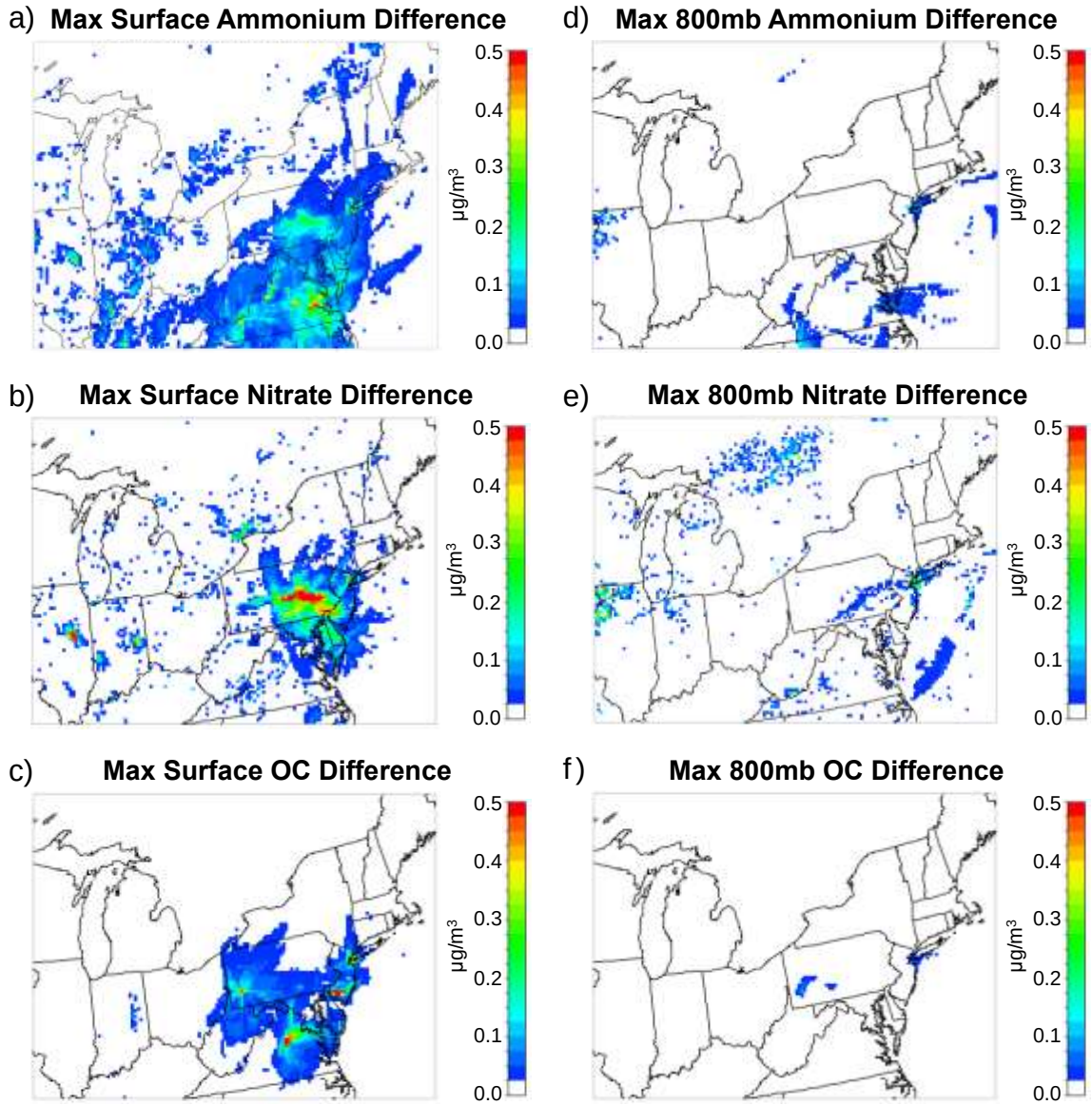

Figure S4: CMAQ-predicted maximum hourly ambient concentration differences of the two study simulations at the surface and the 800mb level between July 1-31, 2006 of ambient concentrations of ammonium (a and d), nitrate (b and e) and OC (c and f).

Supplemental Figure 5

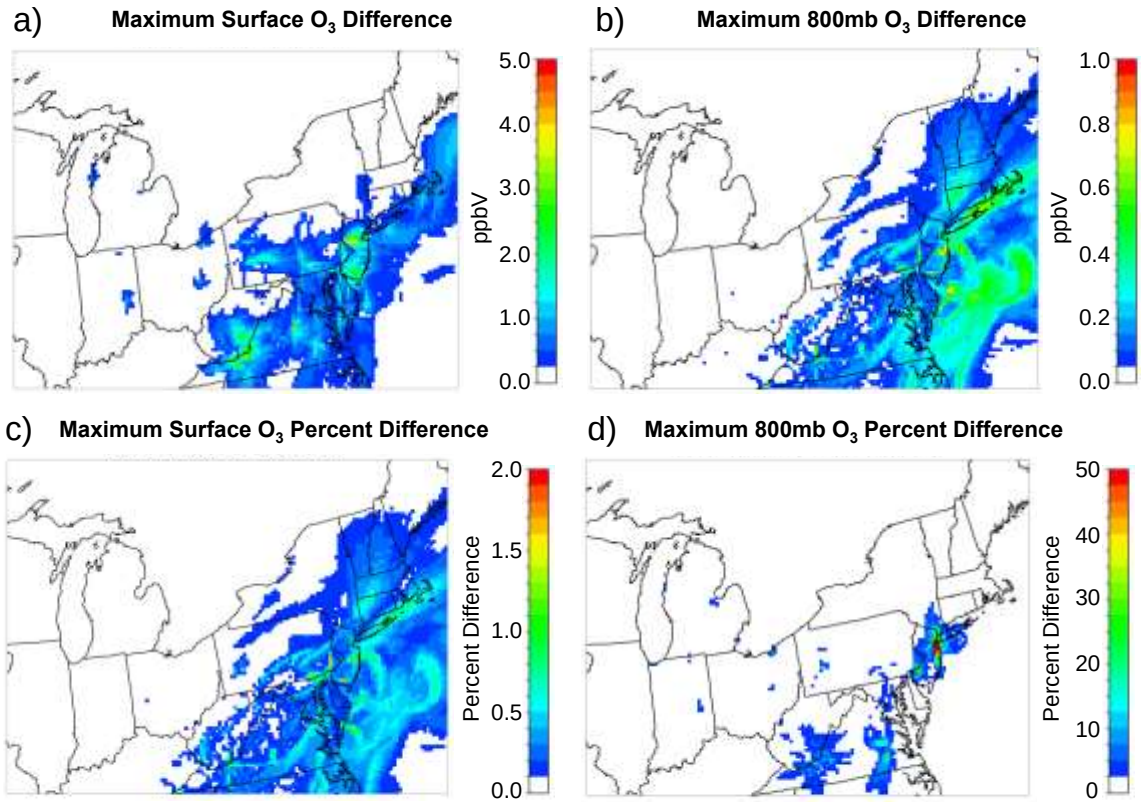

Figure S5: CMAQ-predicted ppb_V maximum differences and maximum percent differences of the two study simulations at the surface (a,c) and 800mb (b,d) between July 1-31, 2006 of ambient mixing ratios of ozone.

Supplemental Figure 6

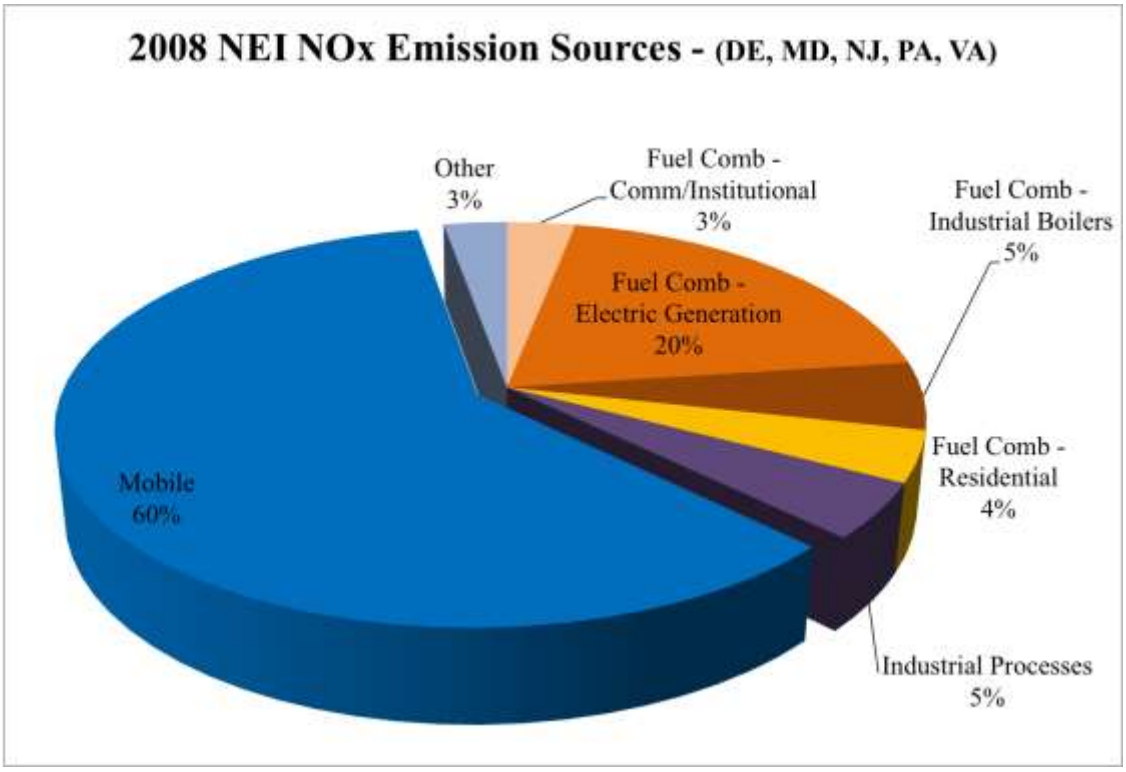

Figure S6: Percentage of NO_x emissions emitted from each category of sources from the 2008 NEI for Delaware, Maryland, New Jersey, Pennsylvania, and Virginia.