**Technical Appendix**

Calculation Assumptions

The EPA Avert Tool calculated 6,990 megawatt hours of avoided fossil fuel generation from 2.1 mw of Utility Scale and 1.5 mw of residential (3.6 mw total) of solar in Minnesota. EPA’s Emissions and Generation Resource Integrated Database (eGRID), released in 2018 with 2016 data, shows that at the national level, natural gas units have an average emission rate of 898 pounds CO2 per megawatt-hour (MWh), while coal units have an emissions rate of 2,180 pounds CO2 per MWh. Utilizing MPCA data we found that Minnesota's remaining fossil fuel electricity generation is 60% coal and 40% natural gas. From this and the avoided MWh of emissions we calculated that starting in 2025 we would avoid 4,571.46 metric tons of CO2 from coal emissions and 1,609.21 CO2 equivalent metric tons from natural gas electricity generation. Thus, we would start at 6180.67 metric tons in the year 2025 and decrease by .5% annually based on diminishing solar production.

References:

Global Warming Potential of Natural Gas: <https://www.epa.gov/system/files/documents/2024-02/ghg-emission-factors-hub-2024.pdf>

EPA Emission Profile of Generation Resources: <https://www.epa.gov/sites/default/files/2020-12/documents/power_plants_2017_industrial_profile_updated_2020.pdf>

Energy Data: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results>

<https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>