

Summary/Abstract for Public Release

Minnesota Department of Commerce State Energy Office, under the direction of SEO Director Michelle Gransee, has applied to Topic Area 3 of the WAP Enhancement and Innovation grant: *Single Family and Manufactured Homes*. Minnesota is seeking funding to apply an equity lens to develop and implement the ***Weatherization Innovation through Roofing and Electrification (WIRE) Access Project*** to address deferral conditions, specifically major roofing and electrical challenges, which prevent WAP households from either being weatherized or from receiving solar PV system installations as part of weatherization.

The WIRE Access Project will provide equitable access to roof and electrical-system upgrades, both necessary precursors to delivering deep energy retrofits through solar energy and electrification. The pathway to full electrification of a household includes the following steps: 1) Mitigate conditions causing roofing/electrical deferrals or which prevent solar PV from being installed, while making households PV- and EV-ready; 2) Weatherize; 3) Electrify, via installation of solar PV, Cold-climate Air Source Heat Pumps and other electric technologies.

Weatherization is delivered in Minnesota through a network of 23 expert service providers, relying on either in-house crews or on ~300 trade-contractors. In Program Year 2022, Minnesota anticipates servicing ~5000 income-qualified Minnesotans with weatherization services, with an additional 300 residents positively impacted when the ***WIRE Access Project*** is implemented via this same network of experts. The ***WIRE Access Project*** work will serve clients on tribal lands, in historically red-lined neighborhoods (four Minnesota cities), and statewide in census tracts with a high Socially Vulnerability Index. Pilot project work and the subsequent weatherization, solar energy and electrification work will improve residents' quality of life, reduce household energy usage and energy burden, allow household funds to go to other critical needs, improve the health, safety and comfort of residents, and reduce greenhouse gas (GHG) emissions.

Current decarbonization work underway in Minnesota has not included efforts to decarbonize low-income households. The Next Generation Act of 2007 set a statutory goal of an 80% reduction in GHG emissions statewide by 2050. Minnesota is not currently on track to meet this goal: since 2005, GHG emissions in the residential building sector have increased by 32%. This is partly driven by increased heating and cooling demands caused by the changing climate and Minnesota's broad year-round temperature range (-20F - to 100F). Winter nights in northern Minnesota are 7.3°F warmer now than a century ago. As a state with an over-reliance on fossil fuels for heating, Minnesota's cold winters, combined with hot and humid summers, result in Minnesota's buildings consuming high levels of energy for thermal conditioning.

This pilot program would provide a critical funding piece to undertake roofing and electrical work on up to 85 Minnesota homes. Benefits of this project will accrue to the residents themselves, and society in general. Positive benefits and outcomes include: 1) Increasing the number of homes with deep energy retrofits; 2) Improving equitable access to weatherization and deep energy retrofits; 3) improving resident's health, safety and comfort; 4) Increasing the number of solar-ready and electrification-ready homes; 5) lowering energy bills, freeing money for other uses; 6) improving household resilience to withstand increasingly frequent and severe climate event; 7) demonstrating a decarbonization path for the income-qualified residential sector; 8) contributing towards meeting GHG reduction goals; and, 9) offering workforce development and job creation opportunities within communities impacted.