



Central CERT 2012-2013 Seed Grants

Helping Minnesota communities determine their energy future

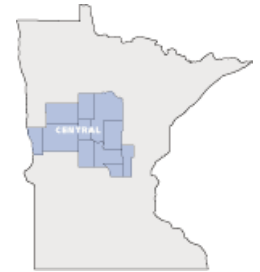
The Clean Energy Resource Teams (CERTs) connect you and your community with resources to identify and implement energy efficiency and renewable energy projects.

Central CERT awarded \$10,000 worth of seed grants, catalyzing energy efficiency and renewable energy projects across the region.

Funding is provided by the Minnesota Department of Commerce, Division of Energy Resources. Thanks to everyone who submitted a proposal. Learn more and see past projects at <http://projects.mncerts.org>.

Crosslake Presbyterian Church – Clean Energy “Show & Tell” Project

Crosslake, MN – A dedicated cadre of Crosslake Presbyterian Church members will assemble and disseminate data on four existing efforts their congregation has made towards clean energy stewardship: 1) audit for further energy saving improvements to their church, 2) research the performance and results of their geothermal heating/cooling system, 3) analyze the impact of their wind power purchasing, and 4) measure the carbon sequestration from old growth and new planting in ten acres of forest on the church’s property. After benchmarking what they have already accomplished, the church hopes to move forward with a new project, the installation of a 5kW photovoltaic solar system. (Energy Efficiency: Low-Cost/No-Cost Upgrades, Building Envelope, Lighting Upgrades; Renewable Energy: Solar Electric, Wind; Additional Technologies: Geothermal, Carbon Sequestration; \$4,000)



Paradox Farm – Passive Solar Deep Winter Greenhouse Utilizing Underground Heat Storage

Ashby, MN – The Passive Solar Deep Winter Greenhouse Project at Paradox Farm will develop and operate an innovative, low energy, deep-winter greenhouse utilizing underground heat storage. This greenhouse will be based on the successful Garden Goddess model developed by Chuck Waibel and Carol Ford of Milan, Minnesota. This structure will be an active teaching tool for those interested in sustainable food production, and the prototype will be used to demonstrate the feasibility of contemporary solar-based, fourth season growing opportunities in northern latitudes. (Energy Efficiency: Behavior change; Renewable Energy: Solar Thermal; Additional Technologies: Energy Storage; \$3,000)

APEX Solar and Rural Renewable Energy Alliance – Solar Thermal Ventilation & Make-Up Air Research

Pine River, MN – As homes become increasingly efficient through improved building techniques and energy efficiency measures, ventilation make-up air is required to ensure indoor air quality and combustion appliance safety and efficiency. Ensuring sufficient fresh air in a tightly air-sealed residence is a necessary but energy intensive process. Although heat recovery ventilators (HRV) reduce related energy consumption, there is an additional opportunity to pre-heat the incoming air with solar thermal. This project will compare the 1) feasibility, 2) performance, and 3) cost-effectiveness of two different solar air heat technology types at meeting this need and supplying residences with fresh, ventilation make-up air. (Renewable Energy; Solar Thermal; \$2,500)

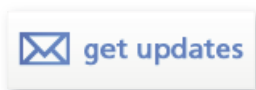
Center for Renewable Energy Education and Demonstration – Discovering Science on the Range in the Field of Energy

Central Region, MN – This cooperative effort involving the CREED Project, Hamline University’s Center for Global Environmental Education (CGEE) and the Laurentian Environmental Center (LEC), is designed specifically for high/middle school teachers wishing to update their Energy Efficiency/Renewable energy industry knowledge and to then encourage their students to choose a future career in this field. Statewide Seed Grant funding for this project will support the equivalent of 9 teachers in Minnesota. (Energy Efficiency, Renewable Energy and Additional Technologies; \$500)

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