Energy Conservation and Optimization Programs Report

Annual Report to Minnesota Legislature

Programs supported by the Energy Conservation and Optimization (ECO) formerly Conservation Improvement Program (CIP)

Clean Energy Resource Teams

Conservation Applied Research & Development

Sustainable Buildings 2030

REPORT PREPARED BY:

Minnesota Department of Commerce
Division of Energy Resources
Energy Development Section
85 East 7th Place, Suite 280
St. Paul, MN 55101
651-539-1444
mn.gov/commerce

As requested by Minnesota Statutes § 3.197: This report cost approximately $1,450 to prepare, including staff time, printing and mailing expenses.

Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording. Printed on recycled paper.

Minnesota Department of Commerce

Mission

For more than 150 years, the Minnesota Department of Commerce and its predecessor agencies have served Minnesotans. Our mission is to protect and assist consumers, to ensure a strong, competitive, and fair marketplace, and to engage people and communities across the state.

Our Strategic Priorities

- Protect the public interest through consumer protection, consumer education, assistance to consumers, safety, health and financial security, and lowering inequities.
- Serve as a trusted public resource for consumers and businesses by listening and learning from the Minnesotans Commerce services, being effective stewards of public resources, advocating for Minnesota consumers and developing a policy, programmatic, and regulatory environment that meets their needs.
- Reduce economic barriers within Commerce regulatory oversight and reduce disparities within those of all races, ethnicities, religions, economic statuses, gender identities, sexual orientations, (dis)abilities, and zip codes.
- Ensure all, especially historically disadvantaged Minnesotans, are resilient to Minnesota's climate and engaged in advancing efforts to mitigate climate change.
- Ensure a strong, competitive, and fair marketplace for Minnesotans.

For more about the Department of Commerce: mn.gov/commerce.

Table of Contents

2023 Legislative Report for ECO Energy Programs

Funding for the Clean Energy Resource Teams (CERTs), Conservation Applied Research and Development program (CARD), and Sustainable Buildings 2030 (SB2030) has been established through Minnesota Statutes § 216B.241 within the Energy Conservation and Optimization (ECO) program. Previously the Conservation Improvement Program (CIP), the policy was modernized with the passing of the Minnesota ECO Act in 2021. The ECO Act provides a more holistic approach to energy efficiency programming. Notable highlights of the ECO Act include:

- Providing participating electric and natural gas utilities the opportunity to optimize energy use and delivery through the inclusion of load management and efficient fuel switching programs.
- Raising the energy savings goals for the state's electric investor-owned utilities.
- More than doubling the low-income spending requirement for all investor-owned utilities.
- Providing greater planning flexibility for participating municipal and cooperative utilities.
- Including activities to improve energy efficiency for public schools.

These funds originate from utility assessments that provide resources to the Department of Commerce (the Department) and other legislatively named entities to support achievement of Minnesota's statewide energy policy goals. Each of these programs is uniquely positioned to help continuously achieve energy efficiency and renewable energy project implementation throughout the state. The following report details the activities of each of these programs.

Pursuant to Minnesota Statutes, section 216B.241, subdivision 1e.

(a) The commissioner may, by order, approve and make grants for applied research and development projects of general applicability that identify new technologies or strategies to maximize energy savings, improve the effectiveness of energy conservation programs, or document the carbon dioxide reductions from energy conservation programs. When approving projects, the commissioner shall consider proposals and comments from utilities and other interested parties. The commissioner may assess up to $3,600,000 annually for the purposes of this subdivision. The assessments must be deposited in the state treasury and credited to the energy and conservation account created under subdivision 2a. An assessment made under this subdivision is not subject to the cap on assessments provided by section 216B.62, or any other law.

(b) The commissioner, as part of the assessment authorized under paragraph (a), shall annually assess and grant up to $500,000 for the purpose of subdivision 9.

(c) The commissioner, as part of the assessment authorized under paragraph (a), each state fiscal year shall assess $500,000 for a grant to the partnership created by section 216C.385, subdivision 2. The grant must be used to exercise the powers and perform the duties specified in section 216C.385, subdivision 3.

(d) By February 15 annually, the commissioner shall report to the chairs and ranking minority members of the committees of the legislature with primary jurisdiction over energy policy and energy finance on the assessments made under this subdivision for the previous calendar year and the use of the assessment. The report must clearly describe the activities supported by the assessment and the parties that engaged in those activities.

Overview of CERTs

Per Section 216B.241, subdivision 1e(c), the Clean Energy Resource Teams (CERTs) appropriation is $500,000 per fiscal year. CERTs are a statewide partnership[1] with a shared mission to connect individuals and their communities to the resources they need to identify and implement community-based clean energy projects. CERTs empowers communities and their members to adopt energy efficiency and renewable energy for their homes, businesses, and local institutions, and, increasingly, to shift some transportation and heating applications to electric. Through stories and decision tools, educational forums, programming cohorts, one-on-one assistance, and seed grants, CERTs helps move clean energy projects forward. CERTs' programs are developed and adapted to respond to the needs and interests expressed by Minnesota's varied communities. For instance, CERTs launched its Ambassadors initiative in response to demand from communities across the state for timely, reliable information about new programs and funding opportunities associated with the Inflation Reduction Act (IRA). Partners are critical to CERTs' work, including utilities, with whom CERTs continues to collaborate on most of its initiatives. A few examples include a manufactured home insulation pilot project with Xcel Energy, an innovative community solar and energy assistance pilot with Detroit Lakes Public Utilities, the Distributed Energy Resource Innovation Initiative with Great River Energy and its member cooperatives, and public engagement on electric vehicles.

Key metrics from CERTs' 2023 activities include:

- Sharing reliable clean energy information with the 136,000 individuals who accessed stories, clean energy guides, job opportunities, and events on the CERTs website 308,000 times. CERTs' most popular pages included its Guide to the Inflation Reduction Act (http://on.mncerts.org/IRA) and the Clean Energy Job Board, which had 323 individual job postings in 2023. (§ 216C.385, subd. 3 (3) and (5)).
- Hosting a total of **50 events**, both online and in person in all seven regions of the state, with a total of 2,777 attendees. These ranged from the Metro CERT Annual Event in Shoreview, to bilingual home energy events in Long Prairie and St. Cloud, to a peer-to-peer utility forum on electric vehicles and to manufactured home park efficiency events. CERTs also connected with **over 8,400 additional community members** through over 480 meetings, presentations, and other engagement activities. Through these forums, CERTs builds relationships within and among networks and provides learning opportunities to spark action. For instance, CERTs staff presented an overview on EVs and facilitated a panel for cities to share their experiences at the annual meeting of the City Engineers Association of Minnesota, with over 150 attendees. (§ 216C.385, subd. 3 (3) and (7)).
- Reaching over 12,600 people through the MN Energy Stories email newsletter, through which CERTs shared the **106 unique clean energy stories** and news it published this year (https://on.mncerts.org/stories), including **33 stories on seed grant projects**. CERTs extended its reach to broader audiences through **87 local media stories** featuring CERTs' programs and partnerships. (§ 216C.385, subd. 3 (5)).
- **Engaging 78 Regional Steering Committee members** from across CERTs' seven regions (https://on.mncerts.org/about). Steering committee members inform programming, serve as key

[1] The CERTs partnership joins the Minnesota State Energy Office, at the Minnesota Department of Commerce, Division of Energy Resources; the University of Minnesota Extension Regional Sustainable Development Partnerships; the Southwest Regional Development Commission; and the Great Plains Institute.

connectors in and to their communities, and drive the seed grant process, from priority setting to reviewing and awarding funds. (§ 216C.385, subd. 3(2), (3), (4) and (7)).

- **Connecting directly with 205 communities** across the state, including 73 local governments, 11 Tribal nations, 58 schools, and 38 electric and gas utilities, as well as businesses and other organizations, establishing and strengthening the long term, cross-sector relationships that enable CERTs to help communities implement their clean energy projects. (§ 216C.385, subd. 3 (1) and (6)).

Saving or offsetting 19.4 billion BTUs. CERTs provides hands-on assistance to spur Minnesotans to move forward on clean energy action. Table 1 under 2023 Program Highlights, details actions that resulted in quantified energy savings or offsets in 2023. (§ 216C.385, subd. 3 (4) and (6)).

CERTs 2023 Activities

Connecting with Community

In 2023, CERTs connected with Minnesotans at community events across the state, sharing resources, answering questions, and learning about community members' energy concerns and priorities, which in turn continue to inform CERTs' programming. A sampling of events CERTs participated in include Duluth Harvest Fest, Winona Recharge Expo, Wright-Hennepin Cooperative Electric Association's electric vehicle Ride and Drive in Rockford, a Dassel-Cokato Sustainable Living Group event, and Earth Day events in Cass Lake, Hackensack, and Grand Marais, as well as Welcoming Week events in Willmar, Kerkhoven, Marshall, and Worthington, where CERTs connected with families about home energy. CERTs also helped staff the Department of Commerce's energy display in the State Fair EcoExperience building, engaging with Minnesotans from all corners of the state on a wide range of energy topics.

CERTs' regional steering committees – with members from utilities, local governments, community-based organizations, and more – continued to provide key cross-sectoral connections to communities throughout Minnesota. Monthly CERTs Lunch and Learn webinars brought together steering committee members and staff from across the state on topics ranging from clean energy opportunities arising from the Inflation Reduction Act to strategies for providing assistance to businesses and nonprofits.

Demystifying New Programs

In 2023, Minnesotans hungered for information about the Inflation Reduction Act (IRA). CERTs staff fielded countless IRA-related inquiries by phone, email, and at events. Staff worked to ensure that as the federal government issued guidance throughout the year, the information CERTs provided was accurate and up to date. As result, CERTs' IRA webpage has become a critical resource for Minnesotans seeking information on new programs: in 2023, the page was accessed over 74,000 times. CERTs' email newsletter, Minnesota Energy Stories, continued to be another means of communicating about program information, such as in April, when CERTs shared an Earth Month Activity encouraging households to plan ahead for energy efficiency upgrades that will have incentives available soon. Similarly, CERTs provided information to partners for their communications, working with Federated Rural Electric, for example, to co-develop a newsletter piece that was then shared with other Great River Energy cooperatives.

Responding to numerous requests, CERTs staff also presented directly on the new programs and resources to interested residents, professional associations, business groups, local governments, and nonprofits around the state, such as the Cities of Sebeka and Menahga; Dakota Electric Association Energy Trends Expo; Midwest Chapter of the Association of Energy Services Professionals; South Central MN Clean Energy Forum; Building

Owners & Managers Association of Minneapolis; University of Minnesota Crookston; Minnesota Power's Energy Design Conference; Minnesota Interfaith Power and Light; EnerChange; Northland Food Network; and a hearing of the Minnesota House Energy and Climate Committee.

Building Community Capacity with Ambassadors

CERTs launched the IRA Ambassadors program for Minnesotans looking to learn more about the new programs as well as gain resources to help people in their communities and organizations better understand how to access the clean energy incentives available within the bill. For this, staff developed a toolkit with brief videos explaining new programs and incentives, as well as slide decks and presentation scripts. In July, CERTs presented a "Become an Inflation Reduction Act Ambassador" webinar with over 100 attendees.

Within five months of its launch, the Ambassador group grew organically to 495 individuals, including 470 who opted in to a special monthly Ambassadors newsletter, which has insights and up-to-date overviews of the incentives and guidance, including resources from CERTs, the Minnesota Department of Commerce, the Internal Revenue Service, the Minnesota Air Source Heat Pump Collaborative, and others. CERTs also wrote and shared "Inflation Reduction Act Ambassador Story: Northfield man looks to protect his community's tomorrow" (https://on.mncerts.org/AmbStory).

The CERTs partnership will continue to engage the Ambassadors group, expanding its membership, and increasing its impact so that all Minnesotans – especially those who have been underserved – are aware of and have equitable access to rebates, tax credits, and other resources for implementing their clean energy projects.

Advancing Clean Energy for Schools

The Solar for Schools grant continues to be a popular program for schools, with over 70 applications submitted in 2022 and the first half of 2023. CERTs spread the word about this opportunity through both direct outreach and a broader communications strategy. CERTs provided technical assistance on site selection, financial incentives, curriculum guidance, and more. In 2023, CERTs presented to the Minnesota School Boards Association, Climate Generation's Teach Science teacher workshops, and E3: Energy Education for Educators workshop. CERTs also provided one-on-one assistance to dozens of schools, including writing and distributing RFPs for 4 districts. Another focus this year was working collaboratively with the Department of Commerce to evaluate and modify the program in light of legislative changes.

Five (5) systems were installed this year in connection with CERTs' work with this program, and more are underway. When the first installation at a participating school was completed – in Marshall – CERTs staff participated in the ribbon cutting event and published a story (https://on.mncerts.org/S4SMarshall). In addition to solar, CERTs staff assisted Lac Qui Parle Valley School District in identifying resources to bring a 225 kW wind turbine back into operability. Staff also reviewed energy production and financial estimates to ensure it was a financially worthwhile project (https://on.mncerts.org/WCWindmill). (See row A in Table 1 for energy generated from school projects.)

Finally, CERTs advised ServeMinnesota on the creation of the Minnesota Energy Climate Corps. The program, which will launch in 2024, will train youth to conduct energy audits in public buildings. CERTs helped identify interested schools and is helping to promote the program, with a focus on ensuring equitable access for youth who are Black, Indigenous, or People of Color.

Partnering with Tribal Nations

CERTs has formed relationships with nearly all of the eleven (11) sovereign Tribal nations located within Minnesota. Leaning into those relationships, CERTs was a key partner in ensuring that Tribal nations would be able to submit their 40101 D grid resiliency and the Energy and Efficiency Conservation Block Grant Program (EECBG) applications – many were unaware of the opportunities, so CERTs' outreach was critical.

CERTs is also partnering on the Rural Clean Energy Training Pathways project oriented toward building partnerships that strengthen both workforce development in rural communities and equitable development in the clean energy space. Key partners include White Earth Tribal and Community College, White Earth Nation's Economic Development Office and Tribal Utilities Commission, and Headwaters Regional Development Commission. This effort is supported by funding from DOE/NREL's Energizing Rural Communities Prize, which was awarded to CERTs and WETCC in July (https://on.mncerts.org/ERCPrize).

Seed grants have supported lighting upgrades at a boxing gym in Naytahwaush on the White Earth Reservation (https://on.mncerts.org/GymLights), staff training and materials for the Fond du Lac Band of Lake Superior Chippewa's clean energy tours (https://on.mncerts.org/FDLTour), and an EV Ride and Drive by the Leech Lake Band of Ojibwe. Seed grants also supported projects focused on energy efficiency and solar by the Grand Portage Band of Lake Superior Chippewa (https://on.mncerts.org/GPCleanEnergy). CERTs continues to work with the tribe and Arrowhead Electric Cooperative as they pursue funding opportunities for a microgrid project to improve grid reliability. Finally, CERTs' partnership with Indigenous entrepreneurs at 8th Fire Solar continues to flourish; after a series of CERTs-funded trainings with Lower Sioux Indian Community and Leech Lake Band of Ojibwe, 8th Fire Solar is now working with CERTs partner RSDP to create training videos that can be used across the state – and beyond (https://on.mncerts.org/GweStory). (See row B in Table 1 for energy saved and generated from seed grants.)

Connecting Jurisdictions to Networks and Opportunities

CERTs, along with partners at the Great Plains Institute (GPI), continue to convene the **Community Energy Network** – a network of over 100 local government staff from across the state who meet to learn about and discuss clean energy opportunities: federal funding through the EECBG program and the IRA; state policy changes and funding opportunities; and best practices and lessons learned from each others' energy-related activities. The network created two workgroups that are diving more deeply into the issue of energy efficiency in manufactured homes and into tapping into the direct pay provision of the Inflation Reduction Act. Furthermore, the network was engaged to help craft the Department of Commerce's Solar for All grant application and the MPCA's Climate Pollution Reduction grant application. The network also organized two (2) tours of the Steamfitter & Pipefitter Local 455's geothermal system. In another step to strengthen access to energy opportunities Southwest CERT (which is housed in SRDC) collaborated with Region 5 Development Commission to lead a full day event for all of Minnesota's **Regional Development Organizations** (RDOs), addressing ways that RDOs can work in the clean energy space. RDOs serve a key role in helping jurisdictions with community planning initiatives – including around energy.

CERTs continued to provide assistance and support to the 140+ **GreenStep cities and Tribal nations** as they work to implement clean energy-related best practices. This past year, in addition to direct outreach and assistance to individual communities, CERTs hosted two GreenStep workshops – one on electric vehicle readiness, including the new EV Smart Cities and Native Nations program, and one on financing energy efficiency and renewable energy. CERTs also wrote and shared a story about Leech Lake Band of Ojibwe's advancement from Step 2 to

Step 5 in the GreenStep Tribal Nations program, highlighting LLBO's leadership in the clean energy and sustainability space (https://on.mncerts.org/LLBOGreenStep).

Support for Local Government Projects

CERTs continued to provide **direct support to local jurisdictions** to advance local projects, advising the City of Cottage Grove on building a solar-ready facility, procurement best practices, and how to tap into federal funds to help pay for their solar project. The city installed a 29kW array at Glacial Valley Park in 2023. Furthermore, CERTs is advising Woodbury on a large park renovation project that includes geothermal and solar. CERTs assisted the City of La Crescent with funding options for air source heat pumps (ASHPs) – resulting in the installation of two 5-ton ASHPs at the Weiser Park Pavilion – and also presented to the City Council on options for procuring additional solar. The cities of Woodbury and Faribault engaged CERTs to review solar proposals. These projects will likely be installed next year. Last year's assistance with the revision of the State's Master Contract for solar yielded fruit this year, with projects in the City of Crystal, Afton State Park, and Camden State Park. (See row C in Table 1 for energy saved and generated from government projects.) This year, CERTs also served as a resource on solar for other jurisdictions – including Hackensack, Staples, Traverse County Soil and Water District, and St. Louis County, among others – with potential for future projects.

Building on Successful Strategies to Assist Businesses, Farms, and Nonprofits

CERTs continued to work to advance **Property Assessed Clean Energy (PACE)**, a clean energy financing tool with programs administered by the St. Paul Port Authority and the Rural Minnesota Energy Board. In connection with CERTs' work, PACE programs financed three energy efficiency projects. Additionally, CERTs collaborated with the Department of Commerce to reach out to Regional Development Commissions to further explore development of additional PACE programs in their respective regions. (See row D in Table 1 for energy saved from PACE projects.)

CERTs are now in the fifth round of its **Renewable Energy for Greater MN program (REGM-5)**, with funding from USDA Rural Development. CERTs staff work with farmers and rural small businesses to identify clean energy opportunities and funding options. This year, in conjunction with CERTs' REGM efforts, 25 farms and rural small businesses took steps toward implementing a renewable energy project, and 10 of these have installed solar projects so far. (See row E in Table 1 for energy saved from REGM projects.) In addition to the REGM projects, several additional projects were completed as a result of direct technical assistance to nonprofits and businesses, including a senior center in Silver Bay, a church in Crosslake, and a housing complex in Roseville. (See row F in Table 1 for energy saved and generated.) Over the course of the year, CERTs presented at in-person and online business and farm-oriented events in communities as varied as Pine River, Minneapolis, Ely, and Winona. In early 2023, for instance, Northeast CERT partnered with the Cook County Local Energy Project on a session for rural businesses and nonprofits, sharing information on energy efficiency, renewable energy, and funding options.

Advancing Innovation in Small Business Engagement

In the Metro, the DOE/NREL funded **Advancing Small Business Solar Equity** project reached the end of its first phase. A primary outcome of the project is the development of the Solar Hub Network as a program model. Housed in existing community-based organizations (CBOs), this will embed resources, education, and technical assistance for small businesses in communities and will link CBOs across the city, creating a culture of solar and energy efficiency in historically underserved business corridors. In West Central Minnesota, CERTs are partnering with Mid-Minnesota Development Commission to develop the **Energy to Grow Program**, which provides

businesses in MMDC's four-county region with resources for learning about energy savings opportunities, along with the one-on-one technical assistance needed to identify and implement energy efficiency projects. These collaborative efforts seek to reach businesses that have been underserved – such as those owned by members of immigrant communities – and is informed by CERTs' other work in this space, including the Conservation Applied Research and Development grant funded research completed this year on barriers to utility program participation by Latinx businesses (https://on.mncerts.org/CARDLatinxBiz [PDF]).

Another effort that stands out in this context is a constellation of collaborations with RSDP to assist rural groceries. CERTs co-hosted two well-attended webinars providing grant writing guidance to groceries in Greater Minnesota, following up with one-on-one assistance. CERTs helped connect thirteen (13) grocery stores to energy audits, especially in northwestern Minnesota where obtaining an audit can be difficult. Three applied for (and received) MDA Good Food Access Program grants for projects, and several more are exploring potential projects. CERTs also wrote and shared a story on projects at Aaron's Grocery in the small community of Fertile (https://on.mncerts.org/AaronsGrocery). Finally, staff have been assisting with a project to scope a potential solar and battery project for World Mart – a Worthington-based food truck that brings African groceries and cuisine to food deserts in Nobles County. This project aims to inspire other food truck vendors to consider ways to be more efficient and sustainable.

Food Shelves: Energy Opportunities for Facilities and for Shoppers

In 2023, CERTs' approach to food shelf work was two-pronged: reducing facility energy costs for the food shelves themselves and helping reduce home energy burden among food shelf shoppers. For food shelf facilities, this included connecting them with energy audits, conducting non-sales solar site assessments, and identifying funding opportunities for lighting, refrigeration, HVAC, and solar. Utility programs, USDA funding, IRA-related incentives (especially Direct Pay), and PACE were among the resources shared. This work progressed over the course of the year, and then in early fall it picked up dramatically as CERTs conducted intensive outreach to over 60 food shelves, presenting a well-attended webinar – Energy Projects for Food Shelves – and providing direct assistance around two time-constrained funding opportunities: Minnesota Department of Human Services' Food Shelf Capital Improvement Grant and CERTs' Seed Grants (https://on.mncerts.org/FoodShelfRecap). Numerous food shelves indicated an intention to submit proposals. Partnerships have been essential to this work. CERTs has worked closely with UMN Extension's "Super Shelf" team, while utilities like Otter Tail Power, Crow Wing Power, Anoka Municipal Utilities, and Minnesota Power have provided additional assistance, such as energy audits.

CERTs also worked to connect food shelf shoppers to resources to help them reduce their energy burden at home, including information on no-cost and low-cost measures they can take to improve efficiency, DIY energy efficiency items, and sign-ups for Energy Assistance and for energy bill consultations with Citizens Utility Board of Minnesota. CERTs engaged and shared home energy efficiency and affordability resources with food shelf shoppers in East Grand Forks, Onamia, Walker, Longville, Pine River, and Pequot Lakes. In addition, CERTs staff provided extensive support to an RSDP pilot project to create a Monthly Energy Savings Challenge to help food shelf shoppers take steps to reduce their energy burden. This project, which focused on the Neighbors United Resource Center in Granite Falls, is now being edited for replication at other food shelves. (See row G in Table 1 for energy saved from residential efficiency outreach.)

Reducing Energy Burden for Manufactured Home Residents

In Minnesota, nearly half of households living in manufactured homes have an annual income of $35,000 or less, and energy burden presents a significant challenge for many of them. CERTs organized energy efficiency

"blitzes" in fourteen (14) different parks, serving over 900 households through outreach events. Partners are essential to this work. Numerous utilities participated in these events, providing program information and conservation kits with energy saving items. Community Action Agencies provided information on Energy Assistance and Weatherization Assistance Programs. Park managers offered on-the-ground logistical support. Finally, nonprofits offered other relevant information and often helped with trust building and translation services. CERTs featured several of these efforts in stories, such as the Mora and Eagle Lake events in "Community Energy Blitzes" (https://on.mncerts.org/EnergyBlitz). (See row H in Table 1 for energy saved from manufactured home park efficiency outreach.)

CERTs staff also supported three (3) projects to pilot solar for manufactured home residents, including a partnership between Minnesota Department of Commerce, Detroit Lakes Municipal Utility, MAHUBE-OTWA Community Action Agency, and the Humphrey School of Public Affairs. This project seeks to develop a replicable community solar model to reduce energy burden for income-eligible households through partnerships between the existing Energy Assistance Program and cooperative and municipal utility partners. The team installed its first 11 kW community solar array in 2023, as described in "Equitable Solar Access project hits a major milestone" (https://on.mncerts.org/ESAProject) and shared nationally through a Clean Energy States Alliance webinar (https://on.mncerts.org/CESAWebinar). (See row I in Table 1 for energy generated from income-eligible solar projects.)

Advancing Electrification: Electric Vehicles and Heat Pumps

The EV-Smart Cities and Native Nations programs launched in early 2023, with webinars, guides, and events to help participating communities advance EV readiness (https://on.mncerts.org/EVSmart). A highlight this year was partnering with the Leech Lake Band of Ojibwe on a June 23 EV Ride & Drive in Cass Lake (https://on.mncerts.org/LLBOEV). The first such event for the Tribe, it was partially funded by a CERTs Seed Grant and also aligned with LLBO's involvement with the EV-Smart Native Nations program. (See row J in Table 1 for energy saved from EV projects.)

Staff presented about air source heat pumps (ASHPs) to audiences ranging from United Health Group to the Electrify Everything Earth Day Expo in Bloomington. CERTs also wrote and published a series of "Ask Alexis" ASHP advice columns (https://on.mncerts.org/AskAlexis). Readers submitted their own home heating and cooling situations and questions which were then answered in future columns. To complement this residential consumer-oriented content, CERTs published a story featuring Otter Tail Power's partnership with United CAP and with Habitat for Humanity on the installation of ASHPs in multifamily buildings and new construction single family homes, respectively (https://on.mncerts.org/ASHPAccess).

Clean Energy and Rural Economic Development

The clean energy transition has significant implications for rural economic development, and CERTs engaged with communities on a range of related issues:

- Working with the county commissioners of the Rural Minnesota Energy Board in Southwest Minnesota on transmission and renewable energy siting issues.
- Facilitating the Distributed Energy Resource Innovation Initiative with Great River Energy and its member cooperatives on innovative best practices for serving their members.
- Engaging community on solar siting challenges and opportunities with the Dodge County Chapter of the Minnesota Farmers Union.

- Sharing CERTs' ongoing work related to proactive solar siting at a DOE/National Association of State Energy Offices (NASEO) webinar.
- Hosting a webinar for solar installers and farmers on how the Minnesota Agricultural Water Quality Certification Program can be an opportunity for farms that are hosting solar.

In Northwest Minnesota, the CERTs and RSDP-supported **Design for Community Regeneration** project (D4CR) has expanded from a community level scale in Warren to a regional scale. D4CR helps participants imagine a more regenerative, equitable, and prosperous future through facilitated conversations about local assets, developmental innovations and realistic action steps. Clean energy components include innovations for energy efficiency for residential and commercial buildings, renewable energy opportunities, and energy independence aspirations. The goal of the regional phase is to identify common goals and opportunities and seek collaboration among communities in Northwest Minnesota (https://on.mncerts.org/WarrenD4CR).

Following up on the completion last year of research by CERTs and the West Central Research and Outreach Center on the economics of using wind to produce green ammonia, CERTs partnered with the Rural Minnesota Energy Board to host a virtual event on the economic development opportunities connected with green hydrogen and ammonia, especially in Southwest and West Central Minnesota (https://on.mncerts.org/RMEBGreenHydro).

In the fall, CERTs partnered with the Heliene solar manufacturing facility in Mountain Iron to host a **clean energy careers event**. The event brought together Iron Range professionals to learn and engage around opportunities in the clean energy economy. Several job, career, and entrepreneurial opportunities were featured, including a local solar installer startup and a green building professional. There were also tours of the expanded Heliene solar manufacturing plant, which is planning to hire over a hundred new line operators for a new production line (https://on.mncerts.org/NECleanEnergyCareers).

CERTs Clean Energy Impacts

Table 1 details efforts with quantified energy savings or energy generated in 2023[2] as a result of CERTs work, including a row identifier, a description of the effort, and the BTUs saved or generated.

Table 1: CERTs' Quantified Impacts Summary

ID	Effort Description	BTUs[3]
A	**School Projects:** Assisted 5 schools with installation of 40 kW solar arrays as part of the Solar for Schools program, generating a total of 262,800 kWh annually, and assisted Lac Qui Parle Valley Schools with repair of 225 kW wind turbine.	**2,252,831,314 Generated**
B	**2022 CERTs Seed Grants:** 71 projects are now complete, including 49 completed this year. These projects leveraged $700,000 from other sources and involved or reached over 145,000 Minnesotans. 21 projects had a clean energy installation focus (as opposed to education, outreach, research only) - 1 with manufactured home parks (savings included in row H), 13 energy efficiency projects (saving 329,462 kWh and 9,012 therms annually), 2 solar PV projects (generating 447,210 kWh annually), 1 solar thermal project (saving 109 gallons propane), and 5 transportation electrification projects (saving 2,929 gallons gasoline and using 27,014 kWh for charging).	**2,035,250,486 Saved** **1,525,880,520 Generated** **251,645,975 Net Saved**
C	**Government Projects:** Assisted the City of Cottage Grove with solar (30 kW) and La Crescent with two 5-ton ASHPs. The revised State master contract was used for arrays at Camden State Park (39.9 kW), Afton State Park (4.7 kW), and the City of Crystal Police Department (36 kW).	**1,588,033 Saved** **495,814,651 Generated**
D	**Property Assessed Clean Energy (PACE) Financing:** Engaged communities and businesses in PACE programs, which resulted in 3 energy efficiency projects being financed by PACE. Projects included upgrades to boilers, heating systems, and refrigeration.	**2,606,401,333 Saved**
E	**Renewable Energy for Greater MN:** Worked with farmers and rural small businesses to identify energy efficiency opportunities, prioritize renewable energy options, and connect to resources for project implementation. 10 solar projects have been completed thus far, producing 492,716 kWh annually.	**1,688,040,252 Generated**
F	**Direct Business and Organization Assistance:** Assisted with 29 kW solar at North Shore Area Partners in Silver Bay, 47 kW solar at Crosslake Lutheran Church in Crosslake, community solar for Greenhouse Village Cooperative in	**163,782,720 Saved**

[2] Due to the timing of this report, data herein covers activities spanning November 1, 2021 – October 31, 2022.

[3] Calculations include conversions as follows: 3,412 BTUs per kWh; 100,000 BTUs per therm; 114,000 BTUs per gallon gasoline; 91,500 BTUs per gallon propane.

	Roseville, and energy efficient refrigeration at Bronson Market in Lake Bronson.	**2,362,944,484 Generated**
G	**Community-based Residential Energy Efficiency:** Connected multifamily housing in Windom and Cloquet to Minnesota Energy Resources' multifamily efficiency program, saving 1,310 therms; distributed efficiency items through food shelves and events, saving 4,937 therms and 12,346 kWh.	**666,854,184 Saved**
H	**Manufactured Home Parks:** Distributed 10,247 energy saving items (light bulbs, showerheads, faucet aerators, and do-it-yourself weatherization kits) and catalyzed 36 home energy assessments with Home Energy Squad. Partnered with 8 utilities and 6 organizations to reach 910 units across 14 manufactured home parks. In total, generating savings of 251,405 kWh and 36,314 therms.	**4,489,168,923 Saved**
I	**Income-Eligible Community Solar:** Assisted with implementation of income eligible community solar in Detroit Lakes (11 kW) and Eden Prairie (25% of 1.084 MW).	**213,101,792 Generated**
J	**Electric Vehicles (EVs) and EV Charging Infrastructure:** Edina and Minnetonka installed 4 dual-head Level 2 charging stations and 1 DC fast chargers (all publicly-available), as well as added 6 electric fleet vehicles, resulting in 8,285 gallons gasoline avoided and 77,213 kWh used for charging.	**681,039,926 Net Saved**
	Total Quantified CERTs Program Savings	**19.4 billion**

Overview of CARD Program

The Conservation Applied Research and Development (CARD) grant program is administered by the Department of Commerce (the Department). Approximately $2.6 million is available annually for the program. The grant funds benefit the State of Minnesota and Minnesota ratepayers through the Energy Conservation and Optimization (ECO) programs that utilities operate. With the passing of the ECO Act in 2021, CARD projects and programming in 2022 or earlier will refer to supporting the CIP policy framework, and CARD projects and programming in 2023 or later will refer to supporting the ECO policy framework.

Significant CARD program metrics for calendar year 2023 are summarized in Table 2.

Table 2. CARD program metrics for Calendar Year 2023

Description of Metric	For Calendar Year 2023[a]
Successful CARD grant funding cycles	1[b]
Request for Proposals (RFP) issued by Department	0
Request for Information (RFI) issued by Department	0

Description of Metric	For Calendar Year 2023[a]
Notice of Intent (NOI) to Propose submitted by Responders and reviewed by Department staff	92
Notice of Intent (NOI) to Propose submitted by Responders and pending review by Department staff	0
Full proposals submitted by Responders and evaluated by Department staff	41
R&D project contracts executed through the CARD grant program	1
CARD projects awarded, pending contract execution	17
Ongoing contracted CARD projects	13
Completed CARD grant projects	6

a. Includes activities through December 01, 2023 when this report was compiled.
b. This funding cycle is currently in process and won't close out until 2024.

2023 CARD Projects

CARD projects quantify the savings, cost-effectiveness and field performance of advanced technologies; characterize market potential of products or technologies within the state; study and characterize hard-to-reach market sectors; investigate and pilot innovative program strategies; and review and analyze relevant policy issues. Completed CARD projects provide utilities with informative and timely information to enhance energy efficiency program designs within their ECO portfolios.

Since the beginning of the CARD program through 2023, the CARD program has funded 179 projects totaling over $39 million. These projects received (or will receive) an additional $8.3 million in matching funds. [4] In 2023, 17 CARD grants were awarded through a RFP process, representing over $5 million in funding, plus $328,176 in matching funds (Table 3). Occasionally the Department will fund a CARD project outside of the competitive RFP process. This is typically in cases where a necessary project/service requires a sole source provider, or when the Department has the opportunity to leverage CARD funds for a project already underway or being funded from multiple sources. In 2023, one such project was awarded by this means, representing $3,790 of total funds (Table 4).

[4] Award amounts shown in Table 3 are based on initial awards and does not include additional amounts that might be added through amendments. To date additional funds added through amendments has totaled only 0.4% of initial awards. Amounts shown in the table also do not reflect funds left unspent after the close of contracts. To date, unspent money returned to the CARD fund has been about 2% of initially awarded funds. In addition, matches shown in Table 2 are based on match commitments in initial grant contracts; collected matches often exceed what was committed in the contract. On average, matching funds are approximately 17% ***higher*** than initially estimated.

Table 3. CARD program RFP & Non-RFP Funding and Awards in 2023

Solicitation Type	Number	Dollars Awarded	Estimated Match
All RFP Funded CARD Projects	17	$5,036,099	$328,176
Non-RFP Funded	1	$3,790	$0
All CARD Projects	**18**	**$5,039,889**	**$328,176**

The vast majority of CARD grants are primarily funded through a competitive Request for Proposal (RFP) process. Based on a review of current Energy Conservation and Optimization (ECO) needs with input from utilities and other stakeholders, the Department issues an RFP, and reviews and evaluates each submitted proposal based on specific criteria including:

- ECO priorities:
- Proposal's content, scope of work and work plan;
- Responder's qualifications, skills and experience;
- Anticipated impacts of the project outcomes; and
- Project budget (which often includes matching funds from the responder).

In summary, RFP funded grants account for 94.4% of all CARD projects awarded and 99.9% of 2023 CARD funding. By comparison, sole source grants or professional/technical contracts only account for 5.6% of funded CARD projects and less than 1% of CARD dollars spent (Figure 1).

Figure 1. CARD program RFP versus Non-RFP Awards in 2023

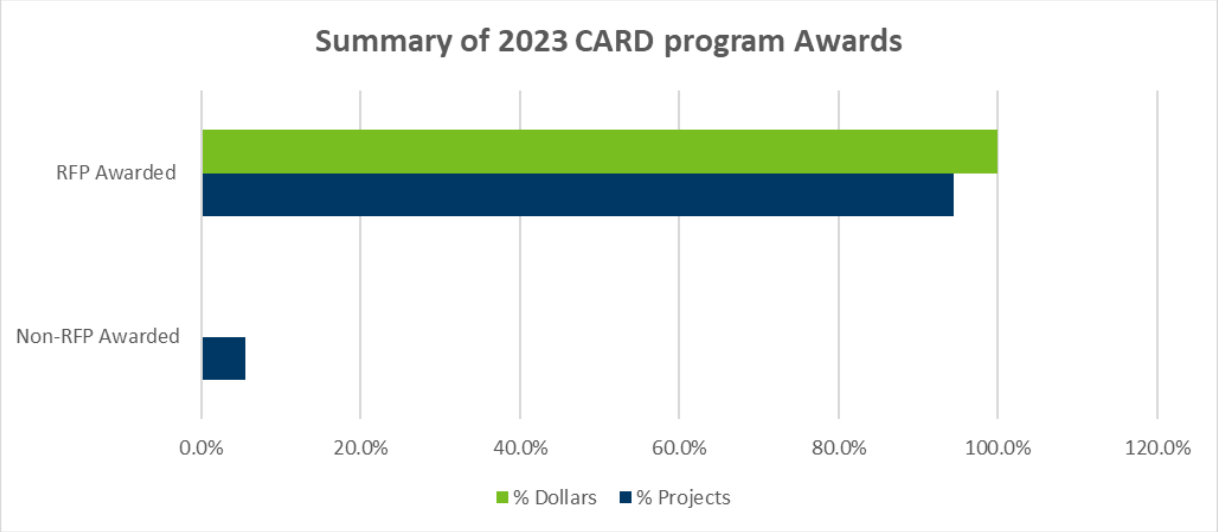

Table 4 lists the six completed CARD projects in 2023, including details on each project.

Table 4. CARD projects completed in 2023.

RFP Year	Fund Cycle	Grantee	Project Description	Dollars Awarded	Estimated Match	Year of Completion
2020	12	Cadmus Group	Measuring the Equivalent Full Load Heating and Cooling Hours for Residential HVAC Equipment in Minnesota	$111,270	$4,060	2023
2020	12	Center for Energy and Environment	Air-to-Water Heat Pumps: The cold climate solution for high-efficiency cooling, space heating, and water heating	$330,048	$26,772	2023
2020	12	Great Plains Institute	Electric Utility Energy Conservation Program Participation Rates and Barriers to Participation among Latinx-owned Businesses across Minnesota	$50,000	$8,390	2023
2020	12	Cadmus Group	Measuring the Savings from Smart Thermostats Installed in Minnesota Homes	$120,180	$4,060	2023
2020	12	Center for Energy and Environment	Overcoming the Market Barriers for RTU Retrofit Enhancements	$175,521	$18,447	2023
N/A	N/A	Nighthawk Marketing	Webinar editing and closed captioning for ADA Compliance	$3,790	$0	N/A
-	-	**Totals:**	**6 projects**	**$790,809**	**$61,729**	-

Table 5 lists the 14 contracted CARD projects that are new or were ongoing, including details on each project.

Table 5. New and Ongoing CARD projects in 2023

RFP Year	Fund Cycle	Grantee	Project Description	Dollars Awarded	Estimated Match	Anticipated Completion
2018	10	LHB, Inc.	Field study of phase change material (PCM) use for passive thermal regulation	$321,631	$13,507	2024
2018	10	Center for Energy and Environment	Ductless cold climate heat pumps for multifamily applications	$343,940	$41,354	2024

RFP Year	Fund Cycle	Grantee	Project Description	Dollars Awarded	Estimated Match	Anticipated Completion
2020	12	Slipstream	Refrigeration Thermal Storage for Energy Efficiency	$266,650	$16,272	2025
2020	12	U of MN – Center for Sustainable Building Research	The Market for Passive House Multifamily Projects in Minnesota	$255,580	$33,747	2026
2020	12	Center for Energy and Environment	Advanced Controls for Residential HVAC Fan	$288,659	$23,983	2024
2020	12	Slipstream	Cold-Climate Variable Refrigerant Flow Demonstration and Market Research	$378,957	$44,864	2024
2020	12	Slipstream	Equity, Empowerment, and Energy Reduction through Community Engagement and Behavioral Interventions	$449,885	$24,010	2024
2020	12	Michaels Energy	A Field Study of Ground Source Technology in Retrofit Applications in Urban (space constrained) Commercial Buildings	$295,894	$28,920	2025
2020	12	ThermoLift Inc.	Installation/use of patented thermal compression heat pump (TCHP) a refrigerant-free cold-climate natural-gas heating, cooling, and hot water system	$100,000	$74,125	2025
2020	12	Center for Energy and Environment	Optimizing the New Generation of Grocery Refrigeration Equipment	$392,393	$22,674	2024
2020	12	Slipstream	Field Demonstration of ASHRAE Guideline 36-2018 High-Performance Sequences of Operation for HVAC Systems	$364,710	$30,225	2025
2020	12	Center for Energy and Environment	How Smart Do Intelligent Buildings Need to Be?	$202,737	$11,585	2024
2018	10	Center for Energy and Environment	Optimized Installations of Air Source Heat Pumps for Single Family Homes	$360,707	$52,007	2024

RFP Year	Fund Cycle	Grantee	Project Description	Dollars Awarded	Estimated Match	Anticipated Completion
N/A	N/A	Nighthawk Marketing	Webinar editing and closed captioning for ADA Compliance	$3,000	$0	2024
		Totals:	**14 Ongoing projects**	**$4,024,743**	**$417,273**	

Figures 2 and 3 are examples of the types of equipment being installed as part of two cold-climate air-source heat pump CARD studies. These innovative heat pumps are designed to provide air conditioning and most of the heating for a single-family home or a multifamily unit.

Figure 2. Ducted Whole House Cold-Climate Air-Source Heat Pump, which Includes an Outdoor Condenser unit (left) that is connected to an Evaporator Coil installed in the Ductwork of the Forced-Air Furnace Inside the Home (right) (Photos courtesy of the Center for Energy and Environment).

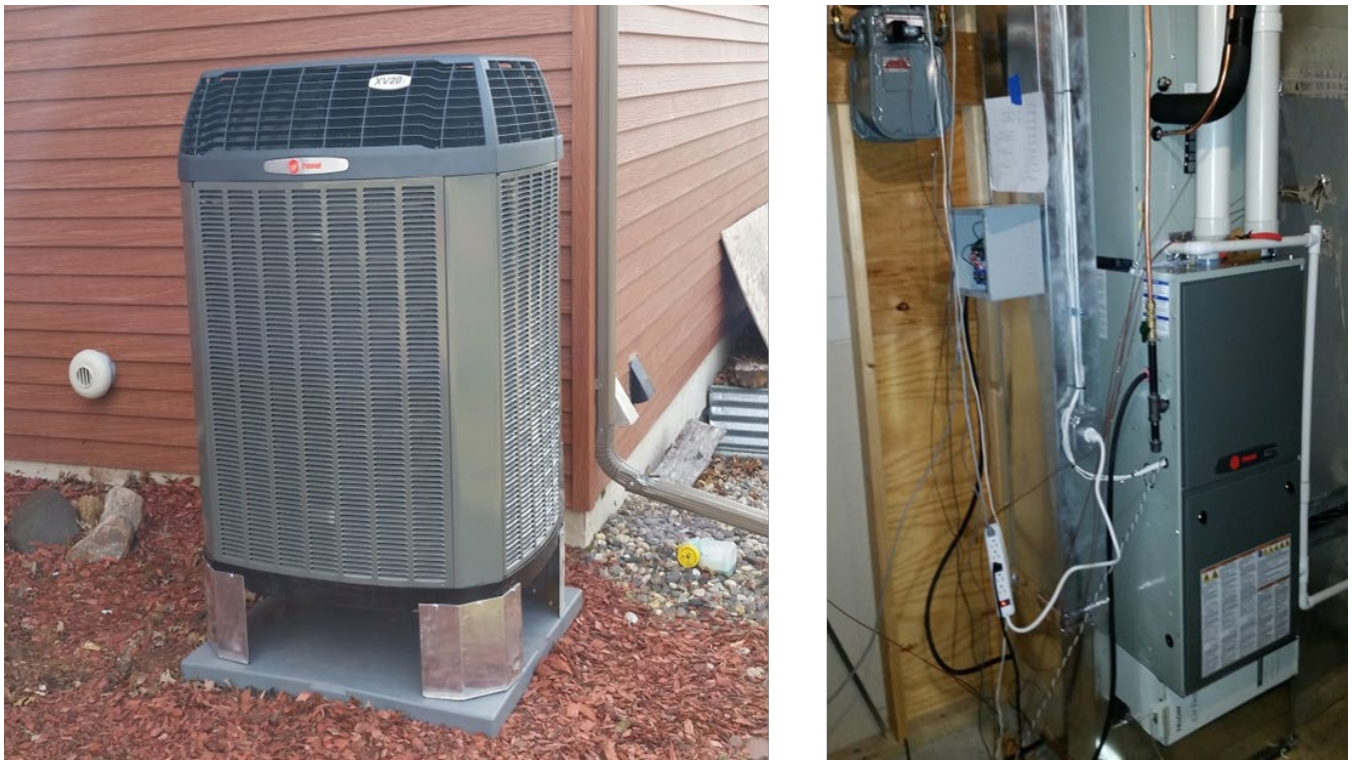

Figure 3. Ductless Cold-Climate Air-Source Heat Pump, which Includes an Outdoor Condenser Unit (left) and an Indoor Evaporator Unit or Head (right). (Photos courtesy of the Center for Energy and Environment)

Overview SB 2030 Program

The Minnesota Department of Commerce submits this report pursuant to Minnesota Statutes § 216B.241, subd. 9(f), on the cost-effectiveness and progress of implementing the SB 2030 performance standards and shall make recommendations on the need to continue the program.

The Minnesota Sustainable Building 2030 program requires all state-bonded projects that began schematic design after August 1, 2009, to meet an energy reduction of 60% compared to the average building. Starting in 2015, projects had to meet a 70% reduction standard. In 2020, this target moved to 80% better than a baseline building and is slated to shift to a 90% reduction in 2025.

The SB 2030 legislation requires the Center for Sustainable Research (CSBR), in cooperation with Commerce, to "establish cost-effective energy-efficiency performance standards for new and substantially reconstructed commercial, industrial, and institutional buildings that can significantly reduce carbon dioxide emissions by lowering energy use in new and substantially reconstructed buildings." All program elements are to be based on scientific or real-world experience in building energy conservation, and all buildings are to be scientifically benchmarked and real reduction in energy consumption measured.

The energy standards for all types of buildings are to be comprehensive, reliable, and equitable and provide procedures for the ongoing monitoring of energy use in buildings that have adopted the performance standards. Minnesota Statutes § 216B.241 requires that utilities develop and implement programs that help building owners achieve the energy savings goals through design assistance, incentives, and verification.

Finally, continuing education and training programs for Minnesota designers, engineers, and building operators are fundamental to the initiation of the SB 2030 standards and the law made education and training a primary goal.

Major accomplishments of the SB 2030 initiative through 2023 include:

- 253 buildings designed to the SB 2030 Energy Standard are predicted to save approximately 924 million kBtus/year.
- To date, 90% of all building projects enrolled in the SB 2030 program have documented designs that met or exceeded the SB 2030 Energy Standard.
- Buildings designed to the SB 2030 Energy Standard are predicted to save approximately $18.0 million per year assuming an average cost of $19.49 per mmBtu.
- Buildings designed to the SB 2030 Energy Standard anticipate a reduction in carbon emissions of 113,000 tons of CO2e annually.
- Projects have reported anticipated energy consumption of 24% less than their 2030 Energy Standard.
- 182 completed SB 2030 projects are estimated to have saved 5,257 million kBtus, a reduction of 677,000 tons of CO2e and a savings of $102.4 million to-date.

SB 2030 Activities

Program Progress

Ongoing efforts are focused on the continual improvement of the tool that will be used to establish customized Energy Standards and development of the administration of the program. Additional efforts include the creation

of a case study database, the development of a sustainable building operations system, and the integration of SB 2030 with the utilities' CIP programs, hosting education classes for designers and building operators, and assisting design teams in the integration of the SB 2030 Energy Standards into projects. Below are listed details of these program components.

Case Studies Database

As part of the program, predicted building performance has been documented for 187 SB 2030 projects. Reported metrics may include predicted energy use, carbon emissions and construction costs, along with several water, waste, and indoor environmental quality metrics. These case studies, which are in various stages of the design process or operation, are displayed online on the B3 Case Studies Database, where owners and project teams can market their successes, and design teams can search for strategies that may help them reach the SB 2030 Standards. As operations data is collected for these projects the case studies database will update, allowing the evaluation of their actual performance.

Sustainable Building Operations

It is essential that SB 2030 designed buildings are operated at the energy standards that they were designed to achieve. To do this, building operators need methods to ensure that each significant energy consuming device is using only as much energy as needed to perform its intended function. A web-based application has been developed to enable building operators to perform this function by completing occasional routine checks on large energy consuming equipment in the building. This web-based application is used to create a custom Energy Efficient Operations (EEO) Protocol. This application performs four critical functions:

- Enables users to create a customized set of tasks for a particular building,
- Notifies building operators when tasks are due to be completed,
- Supplies detailed instructions on how to perform the task, and tracks completion and status of tasks for a building, and
- Notifies facilities managers when tasks uncover malfunctioning systems.

Eight (8) tasks are currently supported in the online tool with ready-made templates. Two (2) methods have been developed to check on correct operation of heat recovery devices, and one for demand-controlled ventilation (DCV). We also support the creation of custom tasks for system types that are not directly supported by a ready-made template.

To enable the creation of a robust EEO Protocol, and for sustained efficient operation of mechanical systems, it is critical that the design and commissioning process produce robust documentation about system parameters and correct system operation. We are in the process of performing a detailed investigation focused on system documentation available to building operators in SB 2030 buildings. This will help inform future development of program requirements to ensure that building owners have the information they need to correctly operate their building systems.

SB 2030 Utility Programs

As the SB 2030 energy performance standard has been implemented, the project team has worked cooperatively with utilities to develop and/or modify CIP programs to encourage new buildings to meet the SB 2030 standards. Priority items are listed below.

A) Comprehensive design assistance services.

B) Bonus incentives (per unit of savings) for achieving SB 2030 standards.

C) Comprehensive whole-building performance program for small buildings.

No utilities have yet provided financial incentives related specifically to achieving the SB 2030 Energy Standard. New construction programs do provide incentives based on energy savings for performance over and above the energy code, as well as no-cost services for projects committing to a high level of savings, including reporting of the SB 2030 Energy Standard, and B3 Guidelines tracking tool entry of data and submittals which has assisted in streamlining submissions and program compliance verification.

Sustainable Building 2030 Education

Educational programs and outreach for designers continue to be delivered. Two (2) workshops on B3 Moisture and Water Control Requirements were conducted in person in March. A B3 recognition event, "Best of B3", took place at the Second Harvest Heartland B3 project site. Later in May, two (2) panel discussions on B3/SB 2030 were featured at the Getting to Zero Forum in Minneapolis. The sessions were titled "*Code Breakers: How to Reduce Embodied Carbon in Building Codes"* and *"How to Avoid the Potholes: Developing Roadmaps to Plan for Net Zero."* Also in May 2023, presentations on B3/SB 2030 were conducted in collaboration with the Minnesota Department of Management and Budget, targeting Local Units of Government and State Agencies. In June a program titled *"Best Practices for Operations Hand-Off"* was made available for on-demand access on the b3mn.org website. Also, in June a brief overview of the SB 2030 program was posted for on-demand access. Several other resources have also recently been posted for on-demand access on b3mn.org, including guides on the B3 Tracking Tool, Variances and Non-Compliance, and Daylighting design. Many of these presentations were recorded are available online at the B3 Guidelines Training page. Throughout the year many individual team meetings were also held with design firms working on projects participating in the program—both to outline program requirements and to work through project-specific issues as they arise.

State-Bonded Project Cost Effectiveness Actual Results

From 2009 through December 2023, 253 building projects have been involved in the SB 2030 process and have reported Energy Standard and Design Energy Consumption values. Of these 253 projects, 163 of the 176 state-required building projects and 66 of 77 volunteer building projects have reported as on track to meet the required SB 2030 Energy Standard. To date, 90% of all buildings project enrolled in the SB 2030 program have reported meeting or exceeded the SB 2030 Energy Standard in design. On average, these projects have reported anticipated energy consumption of 24% less than their 2030 Energy Standard.

When compared to buildings that just met the minimum energy code requirements, the buildings designed to the SB 2030 Energy Standard are predicted to save approximately 924 million kBtu/year, a reduction in Carbon emissions of 113,000 tons of CO2e, and a savings of $18.0 million per year assuming an average cost of $19.49 per mmBtu.[5]. As new projects are added each year and projects meet the 2020-2025 energy standard, ongoing annual savings to the State and other building owners will increase. Based on submitted anticipated

[5] The average cost per kBtu from the B3 Benchmarking database is $0.01948689 for the most recent available estimate (assuming a mix of electricity, gas, and other fuels). Beginning in the 2019 report the data used to estimate program savings was improved from prior years – restricting the evaluation to only Minnesota buildings in the B3 Benchmarking program and eliminating outliers that skewed this rate. Earlier reports have not been amended to reflect this change.

performance the 182 completed SB 2030 projects are estimated to have saved 5,257 million kBtu, avoided 677,000 tons of CO2e and saved $102.4 million as of January 1, 2024. The total cost of the program using CIP funds is approximately $7.7 million through September 2023.

Table 6 summarizes these results.

Table 6. SB 2030 Estimated Cost Savings

Report year	Number of reporting projects	Estimated energy savings per year, mmBtu	Estimated cost savings per year, million $	Estimated energy savings to-date, mmBtu*	Estimated cost savings to-date, million $*
2013	40	250	3.25	--	--
2014	66	327	5.24	--	--
2015	78	490	7.04	--	--
2016	93	534	8.3	--	--
2017	126	634	9.8	--	--
2018	154	867	12.6	1,765	25.7
2019	166	923	14.8	1,817	29.1
2020	185	1,023	15.7	2,893	44.4
2021	197	1,067	17.5	4,581	75.0
2022	217	1,083	20.0	5,140	94.9
2023**	244	919	16.7	4,594	83.5
2024	253	924	18.0	5,257	102.4

*Note that savings to-date were not estimated prior to the 2018 report.

**The US Bank Stadium, although having gone through design and construction SB 2030 review and approval, has been removed from our tracking between the 2022 and 2023 reporting years and resulted in a reduction in reported annual and to-date savings metrics between those years. Prior year metrics have not been updated to remove this project.

Example projects recently participating and contributing to this savings were recognized as finalists at the 2023 Best of B3 Award Event.

SB 2030 Next Steps

All work on the SB 2030 program completed to-date shows it is cost effective to meet the SB 2030 target. Ninety one percent of all buildings involved in the program were able to meet the SB 2030 Energy Standard with little additional cost to the overall projects. Total project costs are $7.7 million through September 2023.

The Sustainable Building 2030 Standards program should continue. The program has demonstrated the value of establishing customized performance targets early in the design process, which permits projects flexibility in how to best achieve those targets. The savings to-date reflect the significant energy, cost and carbon reductions achieved by the program. More educational opportunities are needed for architects and engineers to facilitate

more SB 2030 designs. Two of the three largest electric investor-owned utilities have developed comprehensive design assistance services, but not all utilities have fully integrated SB 2030 programs.

Future areas of consideration in the SB 2030 Program development include the consideration of time-of-day CO2 emissions factors, which could allow the SB 2030 Program to encourage strategies that decrease energy use when the grid is the most fossil fuel dependent and could be used by design teams to accurately adjust the carbon intensity relative to the efficiency strategies that they select.

Work continues on the next stages of the SB 2030 program to support the reduction requirement for new projects, which is slated to increase to a 90% reduction in 2025. A program update proposal is underway to accommodate this shift—research and planning are focused on optimizing strategies for grid interactivity and determining the best approach for using forecasted carbon emissions factors. Other ongoing work is related to carbon accounting and investigating alternatives to renewable energy certificates for off-site resources used for project compliance. Cost effective analysis updates are anticipated to continue to track improvement in the carbon intensity of electricity and in order to consider the effective life of various efficiency measures. This and other program development efforts will require continued research from the project team led by the Center for Sustainable Building Research at the University of Minnesota, to ensure that projects are able to comply in a cost-effective manner with the SB 2030 Standard while ensuring that the robust program goals are maintained.