CHAPTER 7:
Energy Programs

The department's primary energy-related responsibilities focus on administering the federally funded state Weatherization Assistance Program (WAP) and conducting the overall State Energy Program (SEP). The SEP consists of the general pursuit of all energy-related activities and is funded by the Department of Energy (DOE). Specific efforts include the administration and implementation of the Nebraska State Energy Code and administering the long standing and successful Dollar and Energy Saving Loan (DESL) program. The WAP and DESL program provide financial resources for Nebraska citizens to install upgrades to their homes or businesses to make them more energy efficient and decrease energy costs.

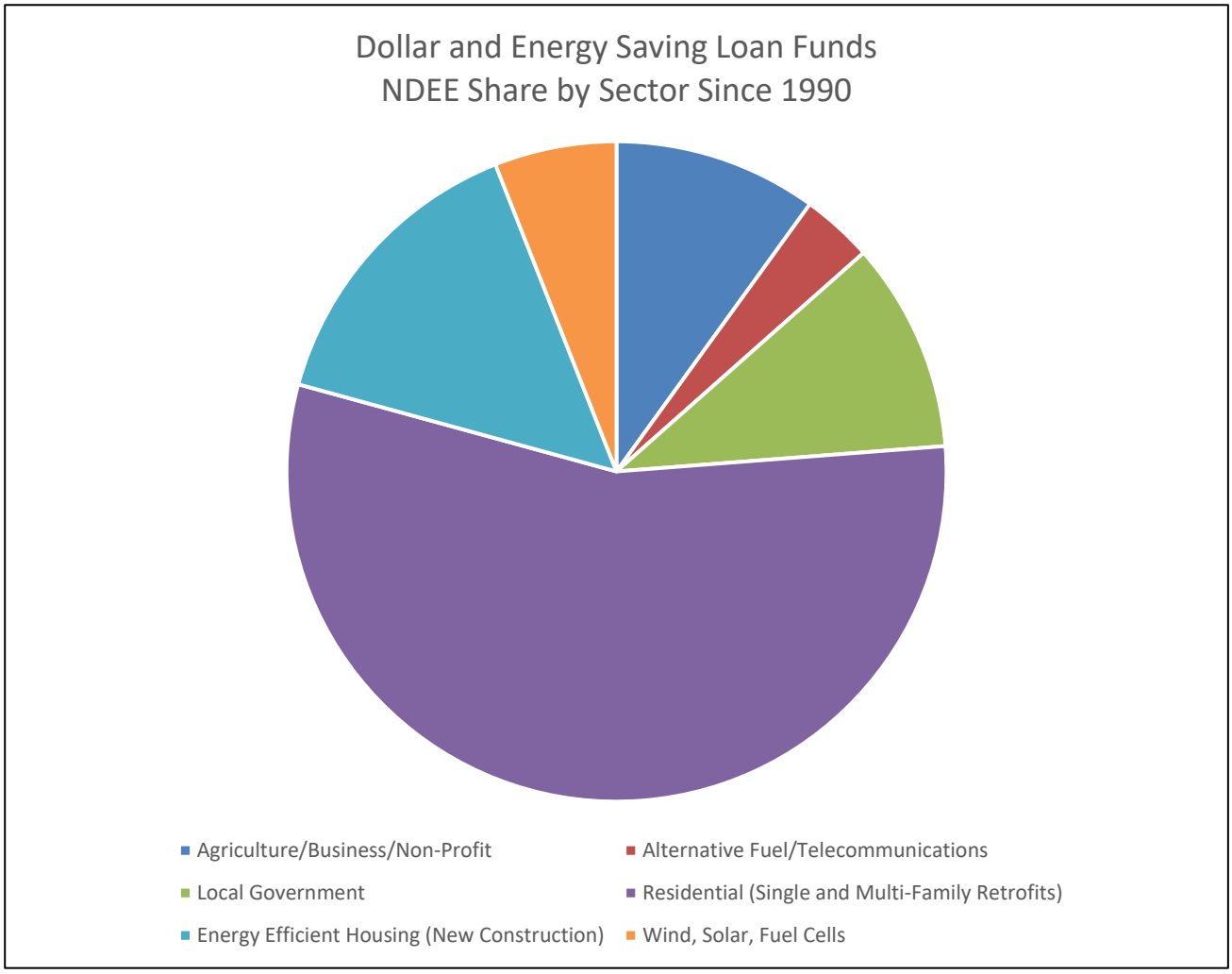
The Energy Programs continued to develop several new programs which address grid resiliency, school energy use efficiency, and home energy use efficiency. These programs are described below.

A comprehensive annual report on energy activities is required by statute; the 2024 report will be included in a separate report submitted to the Governor and the Clerk of the Legislature by February 15, 2025. The State Energy Annual Report for 2023 may be found at http://dee.ne.gov/publica.nsf/PubsForm.xsp?documentId=9D63DE5512CB1EC086258AC3005E6369&action=openDocument

Dollar and Energy Savings Loan Program

The Dollar and Energy Saving Loans (DESL) program has helped tens of thousands of Nebraska residents, local businesses, school districts, and municipalities make their homes and buildings more energy efficient and helped them reduce energy bills by providing low-cost financing for energy-efficient equipment and projects. NDEE partners with Nebraska-based lending institutions by purchasing a portion of each loan (50-90%) thus incentivizing lower interest rates to the borrowers while leveraging lender funds for energy-saving projects.

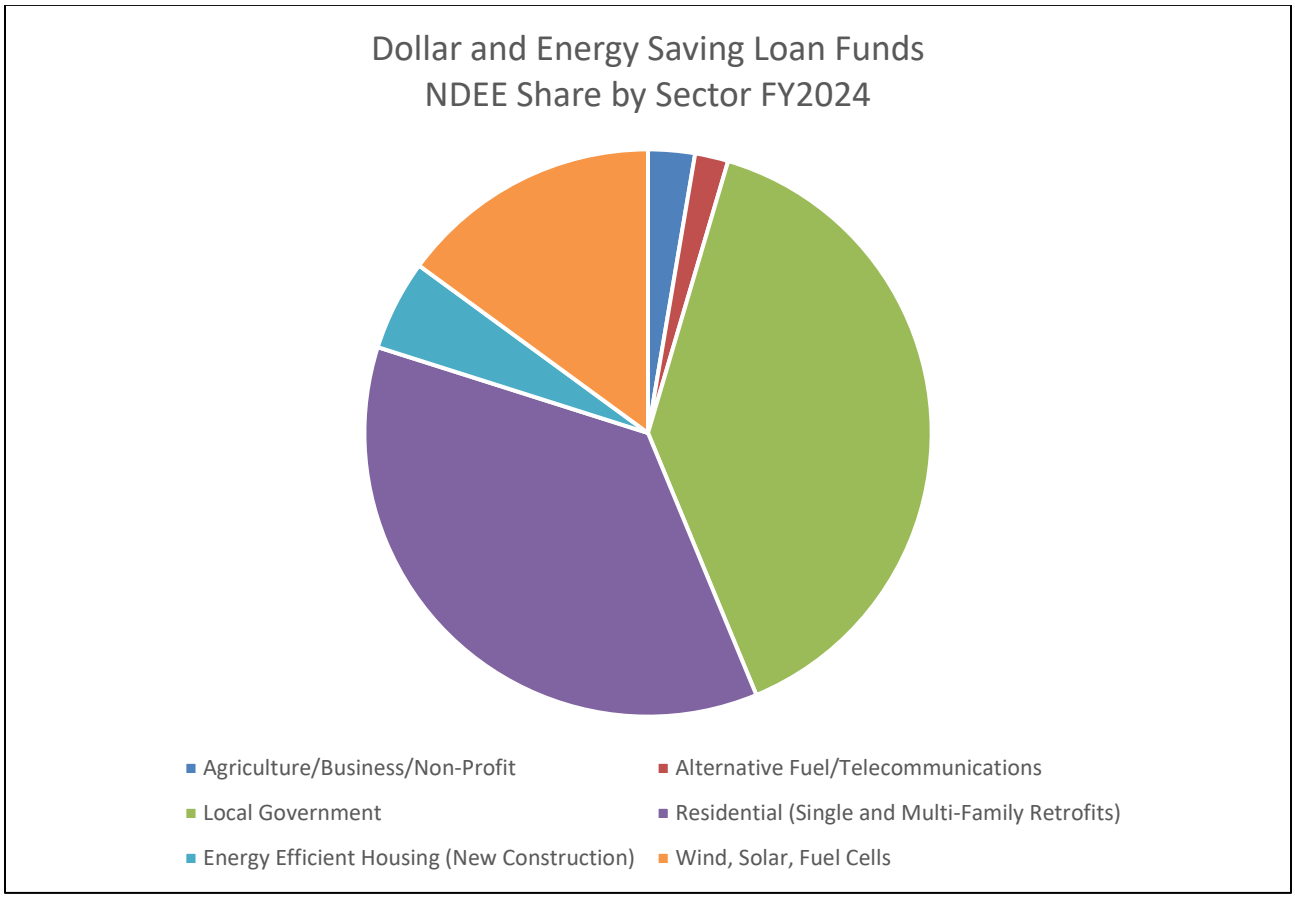
Since the inception of the program in 1990, the DESL program has helped finance 31,178 energy saving projects over 30,434 loans with the total cost of all improvements totaling over $401.8 million. The DESL revolving loan system will continue to provide energy conservation loans far into the future since the funding pool is continually replenished by loan repayments. These energy loans can be used for a multitude of energy-related projects including replacing inefficient lighting; installing highly rated, energy-efficient heating and cooling systems; adding new solar or wind generation; providing better thermal resistance with added insulation and replacing old windows and doors; installing large and small-scale solar projects; and constructing and long-term financing on new, above-code energy-efficient housing.



Dollar and Energy Saving Loan Funds – NDEE Share by Sector Since 1990

SECTOR	Total Loaned	NDEE Share	Total Projects
Agriculture/Business/Non-Profit	$ 42,271,529	$ 20,345,566	1,736
Alternative Fuel/Telecommunications	$ 11,473,505	$ 7,147,364	44
Local Government	$ 30,768,381	$ 21,010,369	161
Residential (Single and Multi-Family Retrofits)	$ 218,376,788	$ 113,194,746	28,711
Energy Efficient Housing (New Construction)	$ 80,589,209	$ 30,122,752	303
Wind, Solar, Fuel Cells	$ 18,417,229	$ 12,206,432	223
TOTALS	**$ 401,896,640**	**$ 204,027,229**	**31,178**

In fiscal year 2024, the DESL program helped finance over $13.5 million for 347 new loans that improved energy efficiency for 353 new projects. Over that time, on residential projects alone, the DESL program is estimated to have saved 194,684 kilowatt-hours of electricity, 183,685 therms of natural gas and reduced carbon emissions by almost 25,175 tons.



FY 2024 Dollar and Energy Saving Loan Funds – NDEE Share by Sector

SECTOR	Total Loaned	NDEE Share	Total Projects
Agriculture/Business/Non-Profit	$ 386,047	$ 250,931	2
Alternative Fuel/Telecommunications	$ 456,962	$ 178,481	1
Local Government	$ 4,386,287	$ 3,690,000	3
Residential (Single and Multi-Family Retrofits)	$ 5,286,984	$ 3,402,139	328
Energy Efficient Housing (New Construction)	$ 807,000	$ 485,400	1
Wind, Solar, Fuel Cells	$ 2,193,746	$ 1,407,444	18
TOTALS	**$ 13,517,026**	**$ 9,414,395**	**353**

DESL Project Highlights FY 2024

New energy efficient windows installed with funds from the NDEE's Dollar and Energy Saving Loan Program (2023).

Energy efficient lighting installed throughout the business and roof-mounted 100kW solar array, Grand Island (2023).

DESL team traveled to Loup City to see the progress of energy efficiency renovation projects at Loup City Public Schools. NDEE and Citizens Bank & Trust worked to provide a $4 million loan for renovations to lighting, HVAC and windows at LCPS.

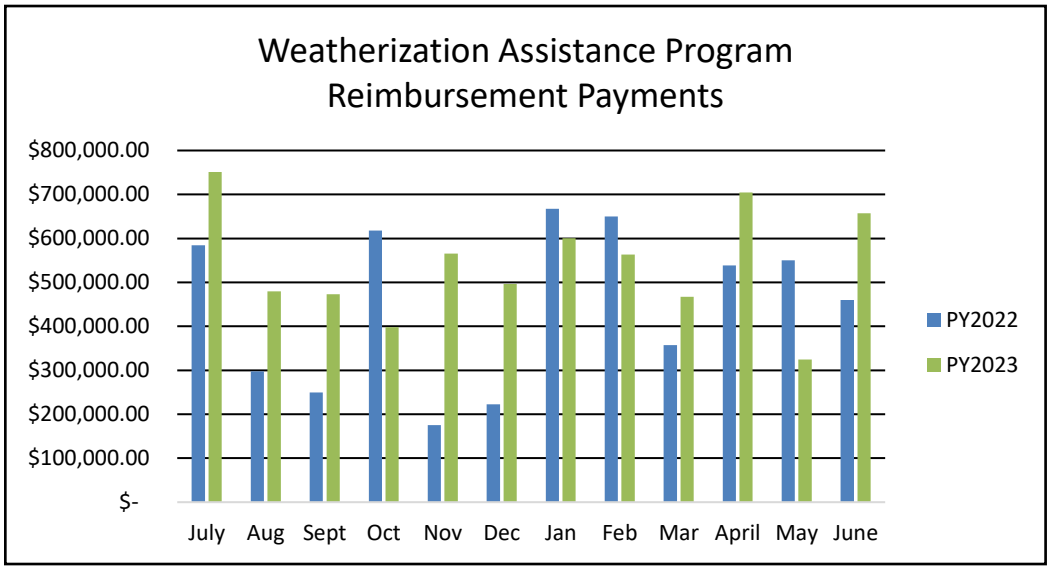
Weatherization Assistance Program

This federally funded program enables low-income families in Nebraska to reduce their energy bills by making their homes more energy efficient. Program staff evaluate the homes of clients that meet income requirements and are approved for weatherization assistance services to identify the most effective energy- and dollar-saving improvements. Seven community action agencies and one non-profit agency are responsible for implementing the home weatherization improvements in Nebraska.

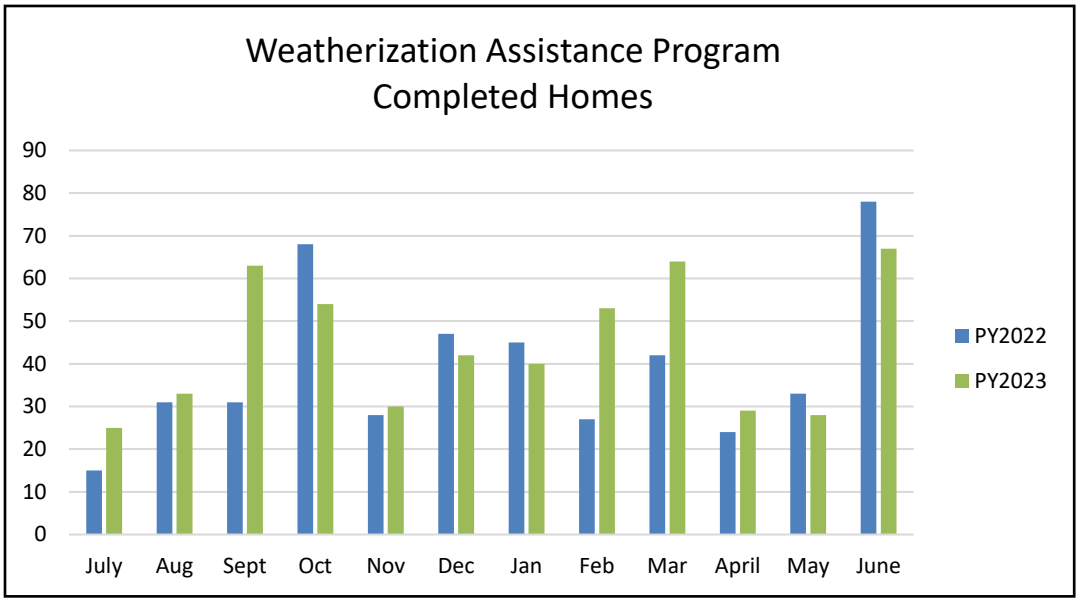
The types of improvements vary based on an energy audit analysis of the home; improvement investment averages between $6,000 and $8,000 per home, excluding the cost of health and safety improvements such as furnace repairs. The most common improvements are adding insulation, air sealing the home, repairing and replacing furnaces, installing energy-efficient lighting, and installing weather-stripping. Beyond the energy savings achieved, clients generally notice an increase in comfort due to reduced drafts and a more even temperature throughout their home. Between July 1, 2023 and June 30, 2024, 461 homes were weatherized across the state, helping to reduce the energy burden for low-income Nebraskans. Weatherization Program staff inspect a minimum of 10-15% of all completed homes to ensure the quality of work performed.

In program year PY2023 the program received funding from four sources: DOE's Weatherization Assistance Program, DOE Bipartisan Infrastructure Law (BIL), Low-Income Home Energy Assistance Program (LIHEAP) financed through the Nebraska Department of Health and Human Services, and State Petroleum Violation Escrow (PVE) Funds. Since the WAP began in 1977, $240 million has been provided to make energy efficiency improvements in 71,576 homes. The Department is allowed to use $800,000 from the LIHEAP budget for Heating and Cooling Repair and Replacement Assistance (HCRRA), with a limit of $6,000 per client. This program offers furnace and AC repair or replacement assistance to extremely low-income clients.

The chart below shows the Weatherization Assistance Programs reimbursements for FY2022/2023 and FY2023/2024.



The following chart shows the Weatherization Assistance Programs production for FY2022/2023 and FY2023/2024.



Like many entities involved in the construction and/or rehabilitation industry, Nebraska's Weatherization network participants continue to face the challenges associated with material and labor shortages and increased costs. NDEE Weatherization Assistance Program staff continue to work with and collaborate with sub-grantees and federal funding partners to ensure Nebraska's low-income families receive safe, quality, cost-effective services and equipment.

State Energy Program and Special Projects

The US Department of Energy (DOE) provides funds to states for the general operations of State Energy Offices. These funds support the day-to-day energy responsibilities of NDEE. Funds are used to monitor the price and supply of traditional energy sources throughout the year and provide support for the DESL program along with serving as a primary funding source for several other efforts that are the responsibility of the Energy Programs. A description of those efforts follows.

Energy Codes

In 2019, the Nebraska Energy Code was updated from the 2009 standards established by the International Energy Conservation Code to the 2018 standard. Nebraska was among the first states to adopt the 2018 standard. With the adoption of the updated code, homeowners of the typical three-bedroom house are projected to save between $165 and $206 annually on energy costs.

NDEE staff continue to be actively involved in providing training on the 2018 code through training partnerships with the Midwest Energy Efficiency Alliance (MEEA) and other organizations. Through the partnership with MEEA, more than three dozen virtual and in-person training sessions have been held on many different aspects of the Nebraska Energy Code. NDEE is continuing virtual and in-person training efforts through this partnership and will be hosting practical trainings with an emphasis on teaching stakeholders in Nebraska how to

perform the new testing and verification methods defined in the Nebraska Energy Code. NDEE and MEEA host the Nebraska Energy Codes Collaborative Meeting where stakeholders and code officials from across the state meet quarterly to discuss the hurdles that Nebraska faces in energy conservation in building practices. Strategies and experience overcoming these hurdles are shared to improve compliance with the Nebraska Energy Code. Ideas and strategies for future energy conservation in Nebraska are also discussed.

NDEE performs on-site inspections each year when receiving complaints from owners of newly built houses. If a home is found to not comply with the Nebraska Energy Code within two years after construction, NDEE issues an order to the prime contractor to take the necessary actions to bring the building into compliance.

NDEE also reviews all new buildings constructed in whole or in part with state funds to ensure that these buildings are being designed with the energy efficiency and conservation measures intended by the Nebraska Energy Code. The department reviews anywhere from two to four dozen different state funded building applications per year. This fiscal year the department reviewed 29 applications. If the designs are found to not comply with the Nebraska Energy Code, NDEE issues an order to the prime contractor to take the necessary actions to bring the building design into compliance.

Emergency Support Function 12 – Energy

Emergency response at the state level is divided into 15 functions. Each function represents a different category, such as public health and medical services, communications, public works, and transportation Emergency Support Function 12 (ESF12) represents energy. NDEE ESF-12 coordinators attend over two dozen meetings, webinars, and trainings each year alongside partners that include DOE's Office of Cybersecurity, Energy Security and Emergency Response, National Association of State Energy Officials, Governor's Homeland Security Advisors, Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, Southwest Power Pool, National Propane Gas Association, RBN Energy, Nebraska Emergency Management Agency, Pennsylvania Emergency Management Agency, Oil Price Information Service of Dow Jones, National Fusion Center, and the National Association of Regulatory Utility Commissioners.

At some of these sessions, ESF 12 coordinators were briefed on energy risks, reliability and resilience, transmission planning, electrical resource adequacy, energy markets, energy needs at planting and at harvest, fuel inventory levels, energy market dynamics, fuel transportation, hours of service waivers, cybersecurity, infrastructure protection, disaster recovery, and overall energy security planning.

ESF 12 coordinators toured the Nebraska Public Power District's Cooper Nuclear Station to see up close the operations of a nuclear station. They also participated in quarterly exercises to practice response to a radiological disaster at Cooper Nuclear Station. Each of the quarterly exercises consisted of two sessions: a dress rehearsal and an evaluation.

ESF 12 coordinators participated in quarterly internal training sessions covering a variety of topics and scenarios, such as hours-of-service waivers and who to contact in specific disasters.

Energy Security Plan

An energy security plan is a comprehensive operating manual for state government leaders charged with the responsibility of ensuring the health and safety of its citizens during periods of energy emergencies. Basic information, such as contact information, is updated annually.

States' plans were submitted by September 30, 2023, to be reviewed by the DOE's Cybersecurity, Energy Security, and Emergency Response (CESER) office for the second time. Plans had to show that the required elements were addressed, or meaningful progress had been made. CESER determined that NDEE had fulfilled the required elements. Each year for the next two years, NDEE is to update and submit the plan to the Nebraska Governor for review. A letter from the Governor is to be sent to CESER certifying or not certifying that the plan meets the six BIL elements.

State Heating Oil and Propane Program (SHOPP)

The Energy Information Administration (EIA), the independent statistical and analytical agency within DOE, conducts the State Heating Oil and Propane Program (SHOPP) from October to March —the heating season— each year. NDEE staff collect heating oil and propane prices for the program each week from selected Nebraska vendors, provides them to EIA which combines the data from multiple states and publishes state, regional and national average prices.

The data is used by NDEE to monitor the prices during the winter season in an effort to maintain awareness of developing price or supply irregularities. The data is also used by policymakers, industry analysts, and consumers.

Price data may be found at:

- Propane Prices: https://neo.ne.gov/programs/stats/inf/86.html
- Heating Oil Prices: https://neo.ne.gov/programs/stats/inf/87.html
- Annual Report: https://neo.ne.gov/programs/shopp/shopp.html

Midwestern Petroleum Shortage Response Collaborative

NDEE is working with a group of states to share resources and strengths to assist each other in the event of regional energy emergencies. This collaborative, which is named the Midwestern Petroleum Shortage Response Collaborative, developed a region-wide petroleum shortage response plan. The Collaborative also leverages peer expertise to improve state energy security and response plans.

The Collaborative includes energy and emergency management agencies from Nebraska, Wisconsin, North Dakota, Illinois, Missouri, Indiana, Iowa, Tennessee, Kentucky, Michigan, Kansas, Ohio, and Minnesota.

The Collaborative accomplished three project goals:

- Create a regional fuel response framework
- Gain insights for enhanced state emergency fuel plans
- Gain a developed network collaborative of trusted, established entities that can be leveraged for future regional planning initiatives and during real-world events.

The states also achieved seven priorities:

- Establish structure and framework for collaboration
- Enhance regional coordination and response to petroleum shortage emergencies among the participating states

- Discover states' strengths to be leveraged
- Share resources
- Prioritize response actions and measures
- Standardize information flows
- Pre-identify tools and templates that may be necessary to respond to a petroleum shortage.

New Programs Under Development

The Infrastructure Investment and Jobs Act (IIJA) of 2021, also known as the Bipartisan Infrastructure Law (BIL), and the Inflation Reduction Act (IRA) of 2022 provide $97 billion in funding to the U.S. Department of Energy (DOE) for investments in climate and energy over several years.

Over time NDEE's State Energy Program expects to receive approximately $37 million in IIJA formula funds and approximately $93 million from IRA formula funds from the DOE for grid resilience, energy efficiency and conservation, renewable energy technologies, and workforce development. Formula funding is predetermined and noncompetitive, but NDEE must apply for it.

State Energy Program – IIJA/BIL Funding

The purpose of this formula grant is to provide funding to States for planning activities and programs that help reduce carbon emissions in all sectors of the economy. NDEE received $4,603,380.00 from DOE to support K-12 public schools with grants for energy audits to identify retrofit projects that could improve energy efficiency and/or air quality in school buildings and other planning activities and programs to reduce carbon emissions. This program is under development.

Energy Efficiency Revolving Loan Fund Capitalization Grant Program

This formula grant provides capitalization grants to States to establish a revolving loan fund, through which the State will provide loans and grants for energy efficiency audits, upgrades, and retrofits to increase energy efficiency and improve the comfort of buildings. NDEE plans to support energy efficient measures in residential, public, and commercial buildings, with an emphasis on K-12 schools, by providing low-interest loans to finance projects. NDEE will partner with Nebraska lenders by purchasing a percentage of the loans at zero interest, which lowers the interest rate and leverages lender funds for each loan. NDEE will use a portion of the funding to provide free energy audits to qualifying schools. NDEE's application is pending with DOE.

Preventing Outages and Enhancing the Resilience of the Electric Grid/Hazard Hardening

The purpose of this formula award is to prevent outages and enhance the resilience of the electric grid. NDEE plans to support grid improvement projects that result in a more resilient electrical grid and promote an equitable energy economy. Eligible projects will rebuild and restore infrastructure for transmission and distribution, protect existing equipment from weather-related events, support new adaptive protection technology, and provide recruitment and retention of energy technology workers. Funding will be distributed equitably to Nebraskans, including underserved communities that are more susceptible or vulnerable to electric power outages. To date NDEE has received $15,857,833.00 from DOE. NDEE

accepted local eligible entities applications for this funding from April 30, 2024 to June 21, 2024. NDEE will announce awards once project reviews are completed by DOE.

Energy Efficiency and Conservation Block Grant Program

This formula grant assists States, local governments, and Tribes in implementing strategies to reduce energy use, reduce fossil fuel emissions, and improve energy efficiency. In FY 2024, NDEE received $1,779,420 from DOE to support local communities in implementing high-impact, self-sustaining clean energy projects.

Eligible projects include upgrades to energy efficient lighting; installation of renewable energy systems on government buildings; development of alternative transportation infrastructure such as pedestrian walkways and bicycle paths; and public education to promote energy efficiency and conservation. Projects are to provide communitywide benefits and may get special consideration if they provide local employment opportunities and workforce training. Priority may be given to projects in communities identified as having a high energy or environmental burden.

This program will provide funding for communities based on their individual needs. Subawards will be granted to communities through a competitive process. NDEE opened the application period for six weeks ending April 30, 2024. NDEE will announce awards once project reviews are completed.

Home Efficiency Rebates (IRA §50121) (HER)

The purpose of this program is to award grants to state energy offices to develop a whole-house energy saving retrofits program that will provide rebates to homeowners for whole-house energy saving retrofits. Depending on whether a project meets several different rules, eligible projects can include attic insulation, whole home air sealing, duct sealing and insulation. NDEE received $1,145,342 from DOE to begin developing this program.

Home Electrification and Appliance Rebates (IRA §50122) (HEAR)

This program provides federally funded rebates to eligible property owners who replace energy inefficient appliances with efficient ones or have other work performed to improve the energy efficiency of the property. NDEE received $1,138,678 from DOE to begin developing this program. Example electrification projects include:

- electric heat pump water heater;
- electric heat pump for space heating and cooling;
- electric stove, cooktop, range, or oven;
- electric heat pump clothes dryer;
- electric load service center (e.g. circuit breaker panel);
- insulation;
- air sealing and materials to improve ventilation; or
  electric wiring.