Nebraska Energy Quarterly

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NDEE receives federal grant to improve grid resiliency

The Nebraska Department of Environment and Energy (NDEE) was awarded $10.8 million for the Grid Resilience State and Tribal Formula Grant from the U.S. Department of Energy.

This grant, provided through the Infrastructure Investments and Jobs Act, enables NDEE to move forward to improve the reliability of Nebraska's electrical grid and to enhance the grid's recovery after disruptive weather and attacks. Today's grant award encompasses funding for years one and two of the five-year program. NDEE expects to receive $5.4 million each year for three additional years for a total award of $27 million.

NDEE is working to create its Grid Resiliency Grant Program, which will distribute the federal funds through a competitive grant process to projects that strengthen and modernize the state's power grid. The agency will provide funding to the electricity industry to enhance the grid's ability to withstand and recover from storms, heat waves, physical attacks and cyberattacks.

As grid-impacting weather events – as well as intentional attacks – become more frequent and intense, and as reliance on the grid increases due to the transition from fossil fuels to electricity, it is imperative that the grid become even more reliable and resilient to maintain electricity flows to critical uses in homes, hospitals, nursing facilities, business and more.

"With this program, Nebraska's citizens will be able to count on a steady supply of electricity for their homes and Nebraska's businesses will continue to be among the most reliable and competitive in the country," NDEE Director Jim Macy said.

Stay up-to-date on NDEE's IIJA/BIL & IRA grant applications

NDEE has a developed web pages to provide updates on its grant applications for the Infrastructure Investment and Jobs Act (also referred to as the Bipartisan Infrastructure Law) and the Inflation Reduction Act grant programs. These webpages will be updated as needed.

The overview page includes links to specific programs that provide more details about the grant opportunity and where NDEE is in the application process.

Here's a quick overview of the non-competitive grant programs NDEE is working toward:

- State Energy Program - IIJA/BIL funding — Grant awarded and program under development
- Energy Efficiency Revolving Loan Fund Capitalization Grant Program — Application submitted
- Preventing Outages and Enhancing the Resilience of the Electrical Grid/Hazard Hardening — Application submitted
- Energy Efficiency and Conservation Block Grant Program — Application submitted
- High-Efficiency Electric Home Rebate Program — Preparing application
- Home Energy Performance-Based, Whole-House Rebates — Preparing Application

"This program will help Nebraska's publicly owned utilities move forward with projects in their queue which improve the reliability and resilience of the grid in the face of increased stressors as well as increased demand," Energy Section Supervisor Aaron Miller said.

With federal rules finalized and the Nebraska program approved, NDEE can now move forward to complete program parameters and specifications. NDEE intends to accept preproposals in early 2024 and advise prospective grantees which projects should be developed into full proposals. Then NDEE will evaluate proposals and send a set of them to the U.S. Department of Energy for final approvals.

A detailed webpage will be posted at the NDEE website as program development progresses.

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October marks Energy Awareness Month and Weatherization Day

October is Energy Awareness Month, which includes Weatherization Day on Oct. 30.

Energy Awareness Month aims to share information about energy efficiency and energy conservation. It also celebrates the economic and environmental benefits driven by energy efficiency. Energy efficiency is using technology that requires less energy to perform the same function, while energy conservation is any behavior that results in the use of less energy.

Weatherization Day highlights the Weatherization Assistance Program, which provides funding to states to weatherize homes for low-income households.

The Nebraska Department of Environment and Energy plays a critical role to protect and improve human health, the environment, and energy resources. NDEE's Dollar and Energy Saving Loans Program (DESL) helps thousands of Nebraska residents, local businesses, school districts and municipalities make their homes and buildings more energy efficient. Since March 1990, the DESL program has financed more than 30,000 energy saving projects totaling more than $385 million.

The department's Weatherization Assistance Program enables low-income families to make their homes more energy efficient, resulting in savings on their energy bills. Since 1977, the Weatherization program has spent more than $225 million to make energy efficiency improvements in more than 70,000 homes.

Photo by Moritz Kindler on Unsplash

October is Energy Awareness Month, and Oct. 30 is Weatherization Day. These events aim to share tips and tools to increasing energy efficiency and lower energy costs. One tip is to use smart home devices for your lights and thermostat to reduce energy use.

See the next page for maps that summarize how Nebraskans have benefited from the DESL and Weatherization programs.

The goals of Energy Awareness Month and Weatherization Day are to share tips, tools and stories that promote the multiple benefits of energy efficiency, from lower costs to healthier homes. It's important to implement actions to improve energy efficiency on a daily, weekly, monthly, and annual basis. Energy impacts every citizen.

Keep an eye on NDEE's Facebook and X (formerly Twitter) accounts for energy facts throughout October. Be sure to like and follow the agency's social media so you don't miss this important information.

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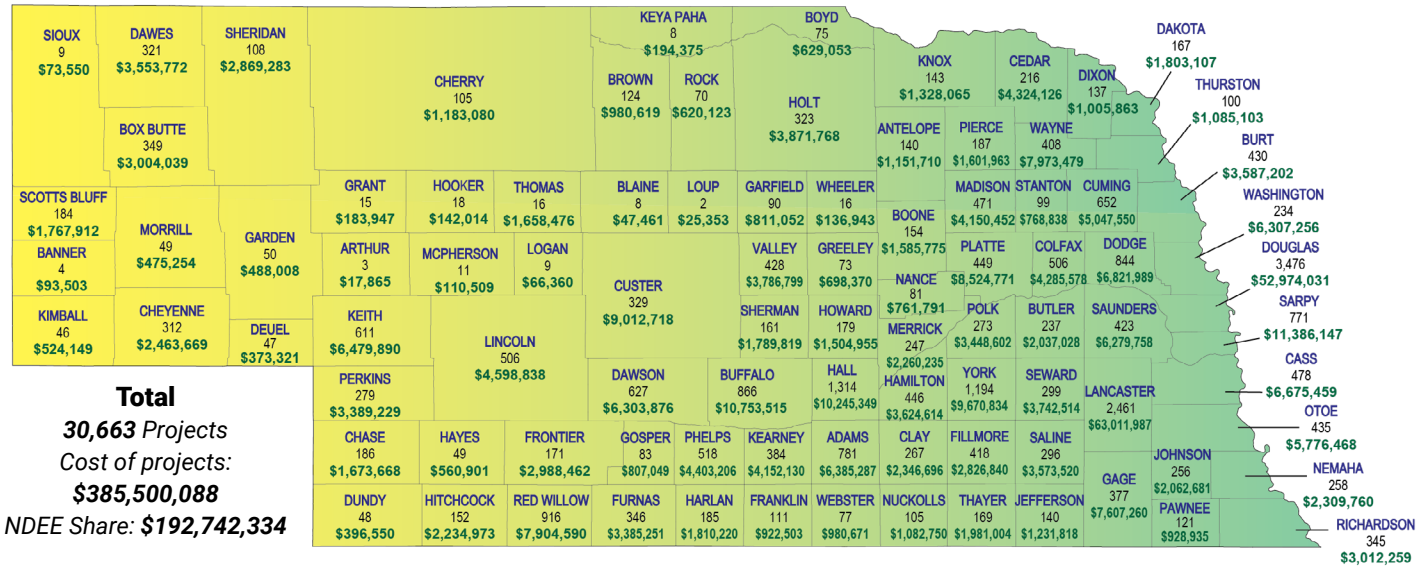
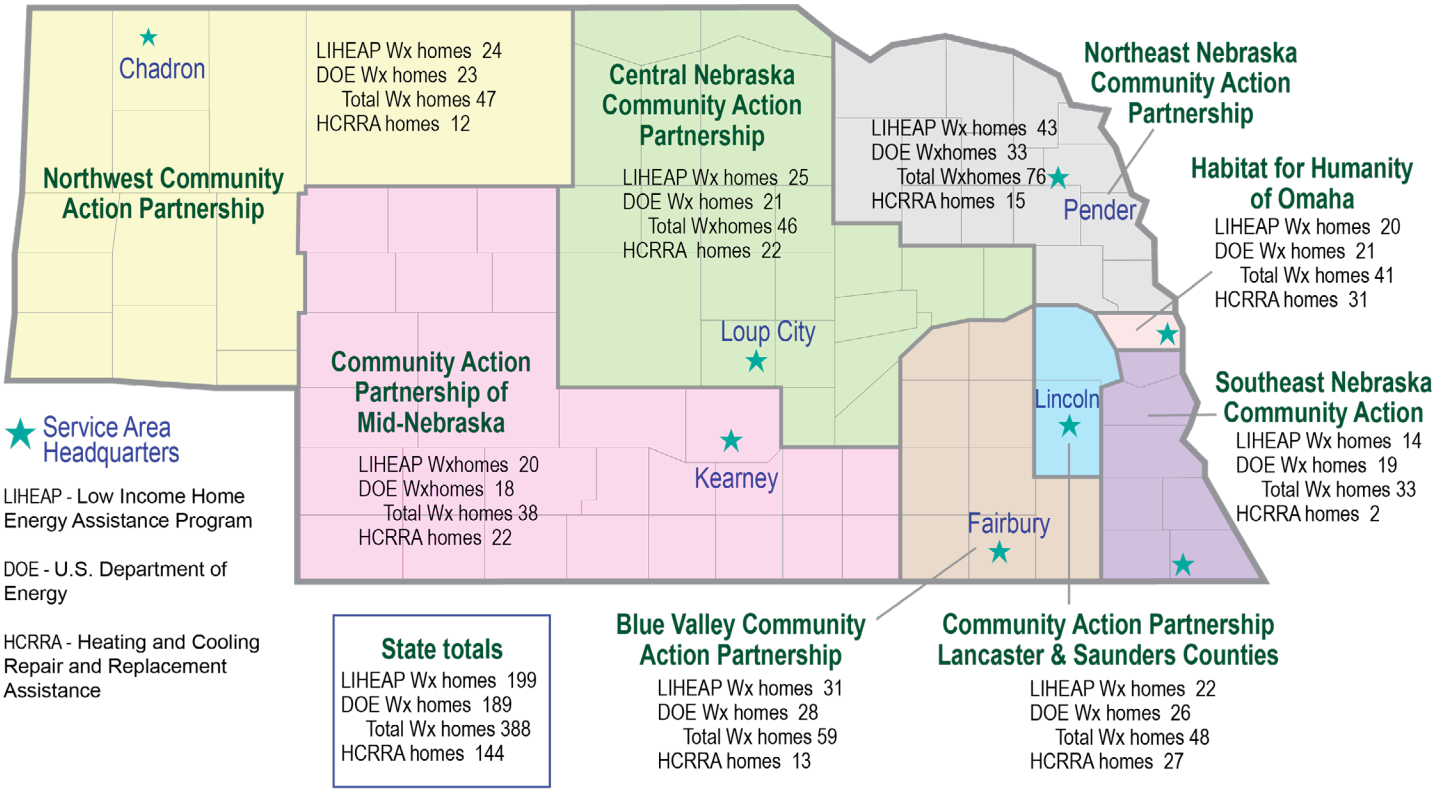
Number of DESL Projects by County and Dollar Amount of Projects as of June 30, 2022



Total
30,663 *Projects*
Cost of projects:
$385,500,088
NDEE Share: ***$192,742,334***

NDEE

Total Nebraska Homes Weatherized by Area Providers July 2021 - June 2022



NDEE

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16th annual Nebraska Wind and Solar Conference to be held Oct. 24-25

Photo by Karsten Wurth on Unsplash

Registration for the 16th annual Wind and Solar Conference is now open. The event will take place Oct. 24-26 at the Marriott Cornhusker Hotel in Lincoln and will provide information about wind and solar development in the state.

The Nebraska Wind and Solar Conference will continue its practice of presenting information about all aspects of wind and solar development.

The event will be held Oct. 24-25 at the Marriott Cornhusker Hotel in Lincoln. Registration is open.

Aaron Miller, NDEE's State Energy Program and Dollar and Energy Saving Loan Program supervisor, is a member of the planning committee.

"Energy and its technologies and policies rapidly change," Miller said. "The conference is a way for stakeholders in Nebraska to learn what's happening right now with wind and solar energy."

This year, the conference will include the following presentations:

- The Growing Role of Renewable Energy – David Terry, President, National Association of State Energy Officials.
- Challenges to Meet Record Electrical Growth – Lisa Hale, Lincoln Electric System; Brooke Aken, Omaha Public Power District; and Nicole Sedlacek, Nebraska Public Power District.
- Measuring the Benefits of Renewable Energy Development – David Levy, Partner, Baird Holm; Patrick Waldron, Tax Specialist Senior, Nebraska Department of Revenue.
- IRA Production of Hydrogen – Gerrett Goldfinger, NextEra; Josh Westling, Founder, JWC GBurg, LLC.
- Policy and Legislative Update: State Senators Panel
- Climate Update – Martha Durr, Director, Nebraska State Climate Office.
- Battery Storage Session – Jacob Steubing, VP, Power Markets Gridstor, LLC; Melissa Miller, Eolian.
- SPP: A Look at the Queue and Congestions Issues – Casey Cathey, Director of Systems Planning, Southwest Power Pool.

Mike Johanns, former U.S. senator and U.S. secretary of agriculture, will give the keynote address on Oct. 24. On Oct. 25, the keynote speakers will be John McClure, executive president of external affairs and general council at Nebraska Public Power District; Kevin Wailes, CEO of Lincoln Electrical Systems; and Javier Fernandez, CEO of the Omaha Public Power District.

The registration deadline is Sept. 24.

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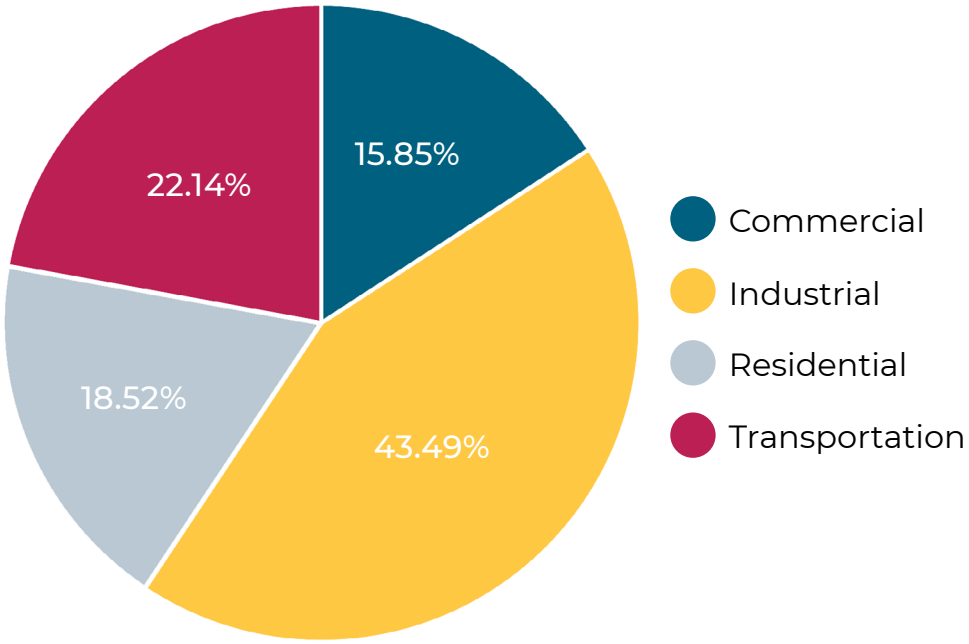
Nebraska by Numbers

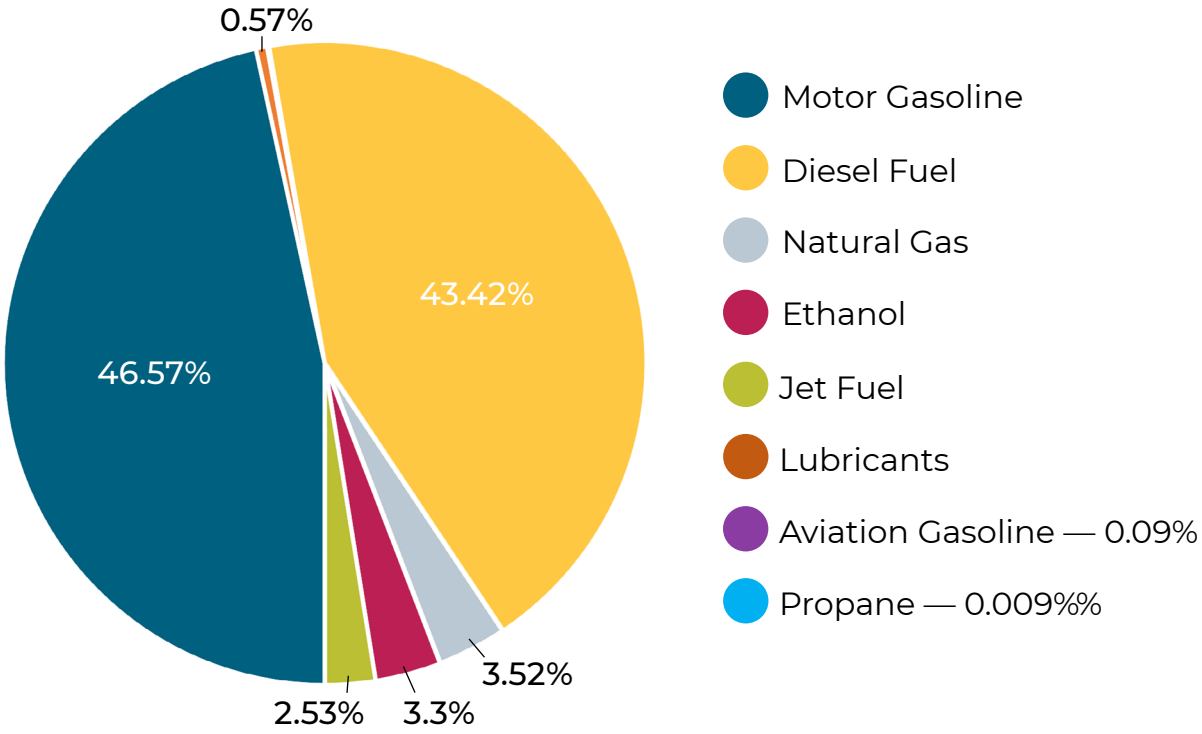
This edition of Nebraska by Numbers focuses on total energy consumption in Nebraska by sector (commercial, industrial, residential and transportation), and takes a closer look at the fuel types consumed by the transportation sector in 2020. Previous editions of the NEQ included information on the commercial, industrial and residential sectors.

Information used to create these graphs comes from The Nebraska Department of Environment and Energy and the Energy Information Administration.

Total energy Consumption by sector, 2020



Net energy consumption by fuel type Transportation Sector, 2020



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Sources: The Nebraska Department of Environment and Energy and the Energy Information Administration

DIY project Home Energy Assessments

Information from the U.S. Department of Energy

While a professional home energy assessment is the best way to determine where your home is losing energy and where you can save, you can conduct your own simple but diligent walk-through and spot many problems in any type of house.

This "do-it-yourself" home energy assessment can help you pinpoint some of the easier areas to address. Do not assume that just because your home is new that there are no opportunities to save energy.

Photo by Erik McLean on Unsplash

Home energy assessments are a good way to get a general idea of how you can improve the energy efficiency of your home, such as improvements to insulation.

Locate and Seal Air Leaks

First, make a list of obvious air leaks. The potential energy savings from reducing drafts in a home may range from 10% to 20% per year, and the home is generally much more comfortable afterward.

Check for indoor air leaks, such as gaps along the baseboard or edge of the flooring and at junctures of the walls and ceiling. Also check for leaks on the outside of your home, especially in areas where two different building materials meet. Other places to check for leaks include windows, doors, lighting and plumbing fixtures, switches, and electrical outlets. Also check for open fireplace dampers. See detecting air leaks for detailed instructions on finding air leaks yourself. Learn more about detecting air leaks.

You should plug and caulk holes or penetrations for faucets, pipes, electric outlets, and wiring. Look for cracks and holes in the mortar, foundation, and siding, and look for leaks around windows and doors. Learn more about selecting and applying caulk and weatherstripping.

Consider Ventilation

When sealing any home, you must always be aware of the danger of indoor air pollution and combustion appliance "backdrafts." Backdrafting is when the various combustion appliances and exhaust fans in the home compete for fresh air. An exhaust fan may pull the combustion gases back into the living space, increasing indoor levels of carbon monoxide. This can obviously create a very dangerous and unhealthy situation in the home.

In homes where a fuel is burned (i.e., natural gas, fuel oil, propane, or wood) for heating, be certain the appliance has an adequate air supply. Generally, one square inch of vent opening is required for each 1,000 Btu of appliance input heat. Burn marks or soot around the appliance burner or at the vent collar, or visible smoke anywhere in the

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utility room while the appliance is operating, indicate poor draft. When in doubt, contact your local utility company, energy professional, or ventilation contractor. Learn more about proper ventilation.

Check Insulation Levels
Heat loss through the floor, ceiling, and walls in your home could be very large if the insulation levels are less than the recommended minimum. Older homes may especially have inadequate insulation.

Check the breakout box on the next page for tips to checking the insulation levels in different areas of your home.

Inspect Heating and Cooling Equipment
Inspect heating and cooling equipment annually, or as recommended by the manufacturer. If you have a forced-air furnace, check your filters and replace them as needed. Generally, you should change them about once every month or two, especially during periods of high usage or if your home has poor indoor air quality. Have a professional check and clean your equipment once a year.

If the unit is more than 15 years old, you should consider replacing your system with one of the newer, energy-efficient units. A new unit would greatly reduce your energy consumption, especially if the existing equipment is in poor condition. Check your ductwork for dirt streaks, especially near seams. These indicate air leaks, and they should be sealed with a duct mastic. Insulate any ducts or pipes that travel through unheated spaces. An insulation R-Value of 6 is the recommended minimum for ductwork.

Lighting
Energy for lighting accounts for about 10% of your electric bill. Examine the light bulbs in your house and consider replacing inefficient bulbs with a more efficient choice, such as ENERGY STAR light-emitting diodes (LEDs) bulbs or energy saving incandescents. Also look for ways to use connected home devices or lighting controls such as sensors, dimmers, or timers to reduce lighting use.

Photo by Rederico Bottos on Unsplash
Using LED light bulbs is another way to improve energy efficiency in your home.

Appliances and Electronics
The appliances and electronics you choose and how you use them affect your energy use and costs. Examine the appliances and electronics in your home and estimate their energy use. Consider strategies for reducing the energy use of your appliances and electronics.

You might consider the following:
- Unplugging an item when it is not in use to prevent phantom loads
- Changing the settings or using the item less often
- Purchasing a new, more efficient product. Learn more about shopping for efficient appliances and electronics
- Utilizing smart home energy management systems to monitor and control energy consumption of devices.

Your Whole-House Plan
After you know where your home is losing energy, make a plan by asking yourself a few questions:
- How much money do you spend on energy?
- Where are your greatest energy losses?
- How long will it take for an investment in energy efficiency to pay for itself in energy cost savings?
- Do the energy-saving measures provide additional benefits that are important to you—for example, increased comfort from installing ENERGY STAR certified windows?
- How long do you plan to own your current home and how much value do you want to get out of your home?

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- Can you do the job yourself or do you need to hire a contractor?
- What is your budget?
- How much time do you have for maintenance and repairs?

Professional Home Energy Assessment
Once you have finished your do-it-yourself assessment, consider calling in a pro to complete a more thorough assessment. Your self-assessment can help the auditor better analyze your home. Learn more about professional home energy assessments.

Checking your insulation

Attic
If the attic hatch is located above a conditioned space, check to see if it is at least as heavily insulated as the attic, is weather stripped, and closes tightly. In the attic, determine whether openings for items such as pipes, ductwork, and chimneys are sealed. When sealing gaps around chimneys or other heat producing devices, be sure to use a non-combustible sealant.

While you are inspecting the attic, check to see if there is a vapor barrier under the attic insulation. If there does not appear to be a vapor barrier, you might consider painting the interior ceilings with vapor barrier paint. This reduces the amount of water vapor that can pass through the ceiling. Large amounts of moisture can reduce the effectiveness of insulation and promote structural damage.

Make sure that the exterior attic vents are not blocked by insulation. Baffle vents may be installed to allow air flow into your attic space. You also should seal any in the ceiling with flexible caulk and cover the entire attic floor with at least the current recommended amount of insulation.

Walls
Checking a wall's insulation level is more difficult. Select an exterior wall and turn off the circuit breaker or unscrew the fuse for any outlets in the wall. Be sure to test the outlets to make certain that they are not "hot" by plugging in a functioning lamp or portable radio. Once you are sure your outlets are not getting any electricity, remove the cover plate from one of the outlets and gently probe into the wall with a thin, long stick or screwdriver. A plastic crochet hook is particularly suited, as it will retrieve small bits of any insulation material for easy identification. If you encounter a slight resistance, you have some insulation there. Unfortunately, this method cannot tell you if the entire wall is insulated, or if the insulation has settled. Only a thermographic inspection can do this.

Basement
If your basement or crawlspace is unconditioned and open to the exterior, determine whether there is insulation under the living area flooring. Insulation is recommended in some situations where the basement is conditioned. In most areas of the country, an R-value of 25 is the recommended minimum level of insulation for basements and crawlspaces.

If the sub-space is enclosed and contains heating or cooling appliances, air ducts or plumbing, you should insulate the sub-space perimeter rather than the living space floor. The insulation at the top of the foundation wall and first floor perimeter should have an R-value of 19 or greater. If the basement is intentionally conditioned, the foundation walls should also be insulated to at least R-19. Your water heater, hot water pipes, and furnace ducts (especially if located in unconditioned space, such as an open crawl space) should all be insulated. For more information, see DOE's insulation section.

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