Key energy-efficient features of your new home

Your thermal envelope

The thermal envelope, or shell, of your home (walls, roof and floor) is designed to keep you dry and comfortable. It protects you from rain, wind, sun, cold and heat. This shell is constructed from various products. Pieces of wood called studs and joists form the skeleton of the house, called the frame. Insulation is installed within the frame, on the exterior wall, floors and ceiling. Sometimes insulation may also be installed in interior walls for sound control. The frame is covered inside and out with different types of finishing products, such as sheetrock (inside) and siding and roofing (outside). The shell is completed by installing windows, skylights and doors.

The thermal envelope of this home includes the following energy-efficient best practices and products:

- **Reduced air leakage –** Air leaks are common in homes. These leaks bring in cold air in the winter and hot, humid air in the summer. Numerous air leaks can make the home uncomfortable and cause high energy bills. Windows and doors get most of the blame for these leaks, but in most houses they contribute only a small amount of the leakage. Most leaks are in places such as pipes and air ducts that go into the attic.

  The Duke Energy Progress Residential New Construction Program requires the builder to seal those places where pipes and ducts leave the house. Most of this work is difficult, or impossible, to see. Homes built under the program's specifications are allowed only a small amount of overall air leakage – much less than the typical home. The amount of air leakage is quantified by the Home Energy Rating System (HERS®) Rater during the blower door test. This independent verification ensures that your home's thermal envelope complies with the higher program specifications – which makes it at least 20 percent tighter than building code requirements.

- **Increased insulation –** Insulation helps keep heat inside in the winter and outside in the summer. The Residential New Construction Program requires participating builders to install increased insulation R-values and to use enhanced insulation techniques that help to minimize voids and gaps, which can help reduce drafts in your house. Great care has been taken by your builder to make sure that you get the maximum value from your insulation.

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The installation of insulation throughout the home is verified and graded by the HERS Rater to ensure the utmost energy efficiency value for your home.

- **High-efficiency windows** – Windows allow in light and fresh air. However, older windows can let too much heat out in the winter and too much heat in during the summer. And they let in full sunlight, which over time may fade furnishings. The windows required under the program have a special coating that reduces heat going through the glass. This type of window is called a “low-e” window. (“Low-e” stands for low emissivity, which is a measure of how much heat will move through the glass.) These high-efficiency windows make it easier to keep the house warm in the winter and cool in the summer. The coating also helps address any fading effect that sunlight may have on carpets, drapes and furnishings in the house. The low-e coating is practically invisible, so much so that you will probably never notice that it is there.

- **Greater HVAC duct performance** – Duct systems must be designed and installed so that the right amount of air reaches every room. To ensure that your heating, ventilation and air conditioning (HVAC) ductwork works as it should, the HERS Rater performs a duct blaster test to check for any leaks in the ductwork and air handler. This ensures that you benefit from the maximum efficiency and capacity of your home’s HVAC system. In fact, homes that qualify for the Residential New Construction Program have duct systems that perform 33 percent more efficiently than those designed to building code requirements.

DUKE ENERGY® PROGRESS

Your part: ways to save energy and money every day

There are many ways to improve the energy efficiency and indoor air quality in your home. Here are a few suggestions:

- **Change the filters** on your furnace/air conditioner/ventilation system on a regular basis. How often you need to change them depends on a lot of factors, such as how dusty it is outside and how many pets you have. Follow your builder's or the manufacturer's recommendations on how often to change your filters.

- **Set your thermostat** no higher than 72 F during the heating season and no lower than 75 F during the cooling season. Your heating and cooling systems have been sized per industry standards for energy efficiency and comfort. Be aware that setting your thermostat above the highest recommended temperature for heating and/or below the lowest recommended temperature for cooling may compromise the equipment's performance.

- **Use ceiling fans** only when rooms are occupied. Cooling associated with air movement can make occupants comfortable at air temperatures several degrees warmer than otherwise. But when rooms are empty, fans simply waste electricity and contribute heat from the fan motor. Turn off ceiling fans and lights when you leave the room.

- **Use energy-efficient lighting.** Today's energy-efficient lights use 75 percent less energy than traditional lighting and last nine to 22 years. Plus, Duke Energy Progress offers discounts up to 65 percent on ENERGY STAR® qualified light-emitting diodes (LEDs), compact fluorescent lights (CFLs) and energy-efficient fixtures. Visit **duke-energy.com/lightdiscounts** for participating retailers.

- **Use cold water** when washing clothes whenever possible because 90 percent of the energy used comes from heating the water.

- **Dry one load of clothes after another** as the heat from the first load helps dry the next load.

- **Install low-flow showerheads** and faucet aerators to save both water and energy. Low-flow showerheads can reduce the amount of hot water by half.

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- **Use the air-dry option** on your dishwasher and skip the pre-rinsing option. By skipping the pre-rinse, you'll save as much as 20 gallons per load or 6,500 gallons per year.

- **Keep your freezer filled to capacity** so that it operates at its highest efficiency. If necessary, place covered plastic containers of water in the freezer.

- **Shade your home** with landscaping and window treatments, especially on the east and west windows. This can reduce indoor temperatures by as much as 20 percent. Clean south-facing windows and adjust window treatments and blinds to allow maximum sunlight into the home during cold weather.

- **Close the fireplace damper tightly** when you're not using it. A good chimney can draw up to 20 percent out of the house every hour. Heat from the heating system goes up the chimney even when you have a fire burning.

To improve the air quality in your home:

- **When vacuuming**, use either a central vacuum cleaner or a portable vacuum that has a high-efficiency filter.

- **Train your family** to wipe their feet and shoes clean on a doormat or take off their shoes at the door.

- **Keep chemicals** like paints, gasoline, pesticides, fertilizers, etc. in a detached garage or storage shed, if possible. If there is no detached storage space, take extra precautions to properly seal and store these items.

Visit **duke-energy.com/save** for more ways to save energy and money in your new home.

DUKE ENERGY® PROGRESS

Heating & Cooling Energy Usage Limited Guarantee

Because of your home's energy-efficient design and low Home Energy Rating System (HERS®) Index Score, your builder has offered you a Heating & Cooling Energy Usage Limited Guarantee.

The Limited Guarantee is for heating and cooling energy use only. It does not guarantee a monthly dollar amount. The dollar amount you see on the front of your guarantee is an estimate of your average monthly heating and cooling cost that was generated when your builder submitted your home plans to us.

We used the energy rates that were current at that time, which could have been six months or more before your home was built. Your actual costs will vary with local energy rate fluctuations. Also, this guarantee is not for whole-home energy use. When you receive your electric and gas bills, it will include heating and cooling energy use in addition to energy used for non-heating and cooling activities, such as energy used for lighting, electronic devices, dishwasher, TV, clothes washer/dryer, etc. Duke Energy Progress is utilizing a third-party administrator to manage and financially back the Limited Guarantee.

Quick facts about the Heating & Cooling Energy Usage Limited Guarantee:

- The Limited Guarantee covers only the energy used to heat and cool your home. It does not cover energy used for non-heating and cooling activities in your home, such as energy used for pools, spas, gas fire pits and the other tasks listed above.
- The Limited Guarantee is only applicable to the initial homeowner and will apply for three years from registration.
- Should a customer's heating and cooling energy usage exceed the stated Limited Guarantee after 12 months following the completion of the first billing cycle, and if all conditions have been met, the homeowner may be eligible to receive a payment for the amount that exceeds the Limited Guarantee.
- Any changes or modifications will affect your guarantee, for example adding a pool or spa. You must notify us at 855.679.4906 of these changes and modifications.

To take advantage of the Limited Guarantee, you must register your home by completing the registration card enclosed in this packet. For more information, call toll free 855.679.4906.