

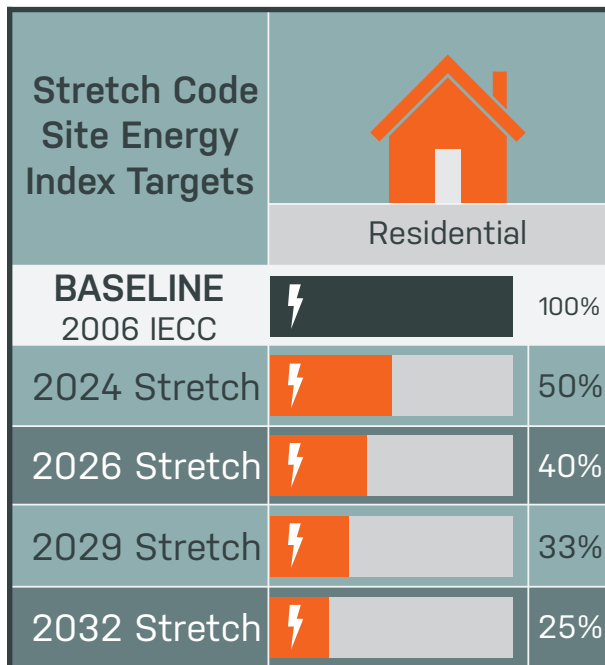
## What is a Stretch Code?

A stretch code is a more demanding code than a base code that some jurisdictions elect to adopt to gain greater energy savings. They generally emphasize performance over prescriptive compliance. In Illinois, the Illinois Energy Transition Act (IETA) establishes the minimum energy efficiency levels required by the Illinois Stretch Code.

## What is the Illinois Energy Transition Act?

Illinois Energy Transition Act (eff. 9-15-2021) is a comprehensive piece of Illinois energy legislation. The IETA includes a provision to create an IL state stretch energy code.

Illinois Energy Transition Act  
**20 ILCS 730/ Energy Transition Act**  
*(Click here for full text)*



## Site Energy Index Targets

The graphic to the left illustrates how the Site Energy Index (SEI) targets of the Illinois residential stretch code build on the 2006 IECC as a baseline. SEI is a metric representing a fraction of site energy use compared to a code baseline. Every 3 years, the performance targets will decrease in a predictable manner as dictated by the IETA.

In 2024, the target is 50% of the 2006 IECC baseline. In 2032, the energy used by stretch code-compliant residential buildings will be 25% of the energy used by a 2006 IECC code-compliant building.

Note: The performance targets within the stretch code must be met without including renewable energy sources.

## What is the Basis of the Illinois Residential Stretch Code?

The 2024 Illinois residential stretch code is based on the 2021 International Energy Conservation Code (IECC). The basic form and function of the IECC was used to create a familiar compliance experience for design teams working on stretch code projects. Specific requirements within the 2021 IECC have been refined or made more stringent and further requirements, compliance pathways, and appendices have been added to increase total building efficiency in response to the requirements of the IETA.



## Key Provisions of the Illinois Residential Stretch Code

**Compliance Pathways:** Allows additional standards such as: Phius, Phi, and Appendix RC- the Zero Energy Appendix as compliance pathways in the Illinois Stretch Code.

**Section R408 and Prescriptive Pathways:** Requires buildings to either install heat pumps for space heating and water heating and have a tighter building envelope than the base code (2 ACH50 +ERV/HRV) or achieve 30 credits from a new credits table in Section R408 that includes envelope, HVAC, and appliance measures. Dwelling units that are greater than 5,000 sf and are located above grade plane must achieve 35 credits.

**Electric Ready:** Requires mixed-fuel residential buildings to be electric ready for water heating, space heating, cooking, and clothes drying. Stretch Code provisions require branch circuit placement within three feet of relevant fuel-gas-fired appliances. To provide flexibility of choice and to reduce the cost barrier for future owners to select more efficient appliances.



This image shows an all-electric heat pump water heater that could replace an existing gas-fired or electric resistance unit. Heat pump water heaters use electricity to move heat from one place to another instead of generating heat directly resulting in increased efficiency. The Uniform Energy Factor (UEF) for heat pump water heaters can be 3.0 or higher.

Image source: SEDAC

**EV-Ready or EV Charger Installed:** Requires residential buildings to be EV-ready or EV charger installed. Multi-family residential buildings must comply with commercial stretch code EV readiness and installation requirements. Many of these requirements are already covered by the Electric Vehicle Charging Act (765 ILCS 1085).

This image shows a net-zero energy residential home with an electric vehicle charger installed in the car port.



Image source:  
[www.basc.pnnl.gov/images](http://www.basc.pnnl.gov/images)

**Demand Response Capable Thermostats and Water Heaters:** Requires thermostats and electric water heaters to be demand-response capable. A demand response thermostat allows users to participate in utility demand response programs to reduce demand during peak grid loading periods, if the consumer enables the feature.

**Performance Pathway Metric:** Revises the performance pathway so that compliance is based on site energy use instead of utility cost to meet IETA requirements. The stretch code performance path requires the performance model's annual energy use to be no greater than 71% of the standard reference design's annual energy use.

## Key Provisions of the Illinois Residential Stretch Code (cont.)

**Solar-Ready:** Requires residential buildings to be solar ready and multi-family residential buildings to comply with commercial stretch code solar readiness and installation requirements. Solar-ready means there must be construction documentation of appropriate roof area, load-bearing capacity, conduit path to electrical panel or plumbing from solar-ready zone to service water heating system.



This image shows an installed solar photovoltaic array on a commercial rooftop. Visible in the frame is a series of electrical conduit connecting the banks of panels to the system inverters and ultimately to the building's electrical service panel.

Image source: SEDAC

**ERI Pathway:** Revises Energy Rating Index (ERI) metric to comply with Illinois Energy Transition Act requirements. ERI is a metric that compares energy performance to a baseline rather than the energy cost. The Illinois Residential Stretch Code modifies the ERI path to allow for improved ventilation design.

**Existing Building Requirements:** Requires several important existing building measures in the 2024 IECC:

- Energy credits from Table R408.3 are required for additions and alterations
- Duct testing for newly installed ducts as part of an alteration
- HVAC load calculation/right-sizing
- HVAC controls

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