

# Electric Readiness in Residential Energy Code

## Building Energy Code Technical Brief

### INTRODUCTION

States and jurisdictions interested in future-proofing their buildings for years into the future are starting to consider energy code provisions like electric readiness. Electric-readiness provisions incorporated into residential energy codes increases flexibility for a homeowner to have the future choice of installing natural gas or propane or electric systems and appliances. Readiness considerations include providing sufficient electric panel capacity, necessary branch circuit outlets and pre-wiring for future electric appliances, and sufficient space for electric heat pump water heating equipment.

From Maine to California, many cities and states already are considering or starting to incorporate provisions to enable electric readiness in their building energy codes. The Department of Energy (DOE) created a technical brief to assist state and local governments in incorporating readiness elements directly into their respective codes, as well as to help inform future International Energy Conservation Code (IECC) development. The technical brief includes five electric-readiness strategies for residential buildings:

- household ranges and cooking appliances
- household clothes dryers and water heaters
- water heaters
- space heating
- electrification-ready circuits.

### IMPACTS

- Buildings account for more than 70 percent of U.S. electricity use. Effectively managing their loads can greatly facilitate the transition toward a clean, reliable power grid.
- National adoption of energy efficiency and demand flexibility will help assure access to an affordable, reliable, and modern U.S. electric power system. Under this scenario, it's estimated that up to \$200 billion in U.S. electric power system cost savings could be realized over the next two decades.
- Across America, millions of homes possess lower-capacity electric panels that would need an upgrade to accommodate new high-efficiency electric technologies. Investments of tens of billions of dollars would be needed to update their electric panels.
- Electric readiness in *new* construction can help address this issue by providing a low-cost solution when compared to retrofitting at a later date. Electrical panels that are sized sufficiently to accommodate future full electrification cost far less than the estimated \$1,000 to \$5,000 for upgrading an electrical panel as part of a home renovation.
- In addition to saving consumers money, energy codes that contain electric-readiness provisions support consumers' ability to realize the cost and

benefits derived from demand flexibility and increased use of variable renewable energy.

- Electric readiness makes it easier for homeowners to accommodate either fossil fuel or electrical appliances and equipment, enabling them to make the best decision depending on system and fuel costs.

## BACKGROUND

DOE and Pacific Northwest National Laboratory have developed a series of technical briefs supporting national, state, and local initiatives to update and advance building energy codes. Each brief is presented in a module-based format, centered on technologies, measures, or practices that can be incorporated as “plug-ins” to building energy codes. These are made available for adoption directly by state and local governments or for future consideration as part of the national model energy codes such as the IECC or ASHRAE Standard 90.1. The collection of briefs supports DOE’s mission to provide technical assistance supporting states and local governments, helping them to successfully implement their building codes, as well as pursue energy reduction goals.

## LEARN MORE

Find the full technical brief, including supporting technical information and sample code language, at

[https://www.energycodes.gov/sites/default/files/2025-01/TechBrief\\_EV\\_Charging.pdf](https://www.energycodes.gov/sites/default/files/2025-01/TechBrief_EV_Charging.pdf)

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