# Rhode Island Needs Updated Building Codes

## Background Information

International Energy Conservation Codes (IECCs) are set by the International Code Council (ICC) and updated every three years. The ICC code-building process is informed by stakeholders who interact with and use the code: Contractors and builders, design professionals, code officials, government officials, energy experts, etc. This collaborative process creates an IECC that lays out minimum energy efficiency requirements for new and renovated buildings and can lead to cost savings for building owners and occupants, as well as reductions in greenhouse gas emissions. R.I. Gen. Law § 23-27.3-100.1.5.4 statutorily requires Rhode Island to adopt the latest International Energy Conservation Code for residential construction. Despite this requirement, Rhode Island has only incorporated the 2018 code, when the latest iteration is 2021, and the 2024 IECC is expected to be released this Fall.

H6101/S0855: *An Act relating to health and safety – state building code,* directs the Rhode Island building code standards committee to adopt the 2021 IECC as base code for both residential and commercial buildings by September 1st, 2023, and subsequently the 2024 IECC within one year of its publication, which is expected this Fall.

According to the Department of Environmental Management's 2019 GHG Inventory, the building sector makes up almost 30% of all Greenhouse Gas emissions in the state, and we do not currently have a clear path on how to reduce these emissions. Updating state building codes is a commonsense way to reduce emissions from new and renovated buildings and meet the Act on Climate.

## Benefits of the 2021 IECC for Rhode Island

The 2021 IECC requires various improvements in building envelope, mechanical systems, and electrical power and lighting systems. You can learn more here. Adopting the 2021 IECC as base code for both commercial and residential buildings can bring several benefits to Rhode Island:

### 1. Save Rhode Islanders Money

Energy codes reduce the cost of ownership and offer a return on investment. For example, improved insulation and better windows can lower utility bills by better controlling home heating and cooling. According to a study by the Pacific Northwest National Laboratory on the Cost Effectiveness of the 2021 IECC for Residential Rhode Island Buildings, adopting the 2021 IECC will result in **18.5% energy savings statewide, which equates to $791 annual utility bill savings for the average Rhode Island household.**

2. **Reduce Greenhouse Gas Emissions**

The PNNL study also found that adopting the 2021 IECC would **reduce statewide emissions by 626,100 metric tons** over the course of 30 years, which is equivalent to the annual CO2 emissions of **136,200 cars on the road.**

3. **Protect the Health of Residents**

According to a joint study by the American Council for an Energy-Efficient Economy (ACEEE) and the Physicians for Social Responsibility, **reducing energy consumption by 15% nationwide would save more than six lives daily, save Americans up to $20 billion through avoided health harms annually, and prevent 30,000 asthma episodes**. This is because when people and businesses save energy, less needs to be produced, resulting in less pollution from fossil-fuel power plants. Furthermore, up-to-date energy codes will protect Rhode Islanders by **ensuring proper ventilation and therefore improved indoor air quality, reducing the risk of respiratory problems**.

4. **Create High Quality Jobs**

The PNNL study estimates that adopting the 2021 IECC would result in **7,165 jobs** in Rhode Island over the course of 30 years.

5. **Make Rhode Island Eligible for IRA funding**

In order to be eligible for **$330 million** in Inflation Reduction Act (IRA) funding for further code implementation, Rhode Island must adopt the 2021 IECC unamended.

## Benefits of the 2024 IECC for Rhode Island

The 2024 IECC sets further efficiency standards for building design and construction. Implementing the 2024 IECC as base code will set Rhode Island to a higher standard, bring more savings to the state, and further decrease our emissions footprint. The American Council for an Energy-Efficient Economy (ACEEE), estimated that the **2024 Commercial IECC would reduce energy use intensity by 8-12% compared to the 2021 IECC**. The Pacific Northwest National Laboratory estimated that the **2024 Residential IECC would reduce energy use intensity by an average of 8%, energy cost by 7%, and emissions by 7% compared to the 2021 IECC**. You can find the current draft of the 2024 IECC, expected to be published in Fall 2023, here.

One crucial benefit of adopting the 2024 IECC for residential buildings is the required electric readiness provisions. Electric readiness will ensure that homes are constructed with the future in mind, allowing them to easily add electric vehicles (EVs), solar, heat pumps, and more. This preparedness will accelerate the transition to all electric and is critical for Rhode Island to meet the Act on Climate.

GREEN ENERGY CONSUMERS ALLIANCE

1. **Highlights of the 2024 IECC:**
    a. **Key Commercial Requirements**
        i. **Demand Response Controls for HVAC Systems (C403.4.6-C403.4.8):** These controls respond to occupant needs and will adjust the temperature based on the number of occupants present at a given time
        ii. **Occupant Sensors for Ventilation (C403.7.8):** These sensors will respond to movement, which will reduce the system's energy consumption when the building is unoccupied
        iii. **Electric Vehicle Charging Infrastructure (C405.14):** New buildings are required to have a certain number of spaces dedicated to electric vehicles, depending on the type of building and use. The number of required spaces has increased from the previous version of the 2021 IECC
        iv. **Requirements for On-Site Renewable Energy Generation (C405.15):** New buildings are required to generate renewable energy (such as solar) on site, with options for offsite generation if on-site is not possible
        v. **Requirements for On-Site Renewable Energy Generation (C405.16):** New buildings need to either store electricity on site or have the infrastructure in place for future capability
        vi. **Guidance on Thermal Bridging in Exterior Walls (C402.7):** A thermal bridge is a component of the building thermal envelope that transfers heat through the assembly by way of construction materials (such as steel). This language reduces thermal bridges mitigating heat loss through the building's envelope
    b. **Key Residential Requirements**
        i. **Attic Knee Walls (R402.2.3):** Added new specific insulation requirements to address attic knee walls, which historically have been difficult to air seal.
        ii. **Demand Responsive Water Heating (R403.5.5):** New requirement for demand responsive controls for electric storage water heaters
        iii. **Maximum Total Duct System Leakage (R403.3.6):** Updated total duct leakage requirements
        iv. **Electric Readiness (R404.5):** Installation of new electrical plugs are required near cooking products, household clothes dryers, and water heaters that are currently using fossil fuels for future electric appliance installation
        v. **Renewable Energy Infrastructure (R404.6):** New requirement for a solar ready zone
        vi. **Electric Vehicle Power Transfer Infrastructure (R404.7):** New requirement for an electric vehicle (EV)-capable, EV-ready, or supply equipment (EVSE) installed space per home