

2022 CT Building Code: Changes to the Energy Code



2022 CT Code: Energy Impacts

- First State to adopt 2021 ICC Family of Codes
- Significant Energy Savings over 2015
- Further efficiency increases for State construction with eventual adoption of revised HPBS



2022 CT Code: Energy Impacts

- **Summary Findings:**
- **HVAC:**
 - **2018-Max ventilation control requirements for multiple zone systems**
 - **2021-Demand controlled ventilation**
 - **2018-Ventilation optimization control strategies**
 - **2018 & 2021-Increased equipment efficiency requirements**
 - **2021-Heat pump domestic water heater requirements**
 - **2021-Data center mechanical load components**



2022 CT Code: Energy Impacts

- **Summary Findings:**
- **Lighting:**
 - **2018-Lighting Power Densities (LPD) reduced by 20%**
 - **2021-Additional LPD reductions**
 - **2018-High efficacy lamping increased to 90% from 75%**
 - **2018-Expanded daylighting and occupancy sensor controls**
 - **2021-Automatic control of receptacle loads**
 - **2021-Daylighting controls requirements**



2022 CT Code: Energy Impacts

- **Summary Findings:**
- **Envelope:**
 - 2021- Air leakage testing requirements
 - 2021- Infiltration reductions
 - 2021- Interlocking operable openings with HVAC system



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Statewide Impacts:

- From IECC 2021 Residential Analysis:

Statewide Impact - Emissions

Statewide Impact	First Year	30 Years Cumulative
Energy cost savings, \$	2,204,000	739,800,000
CO ₂ emission reduction, Metric tons	4,456	1,975,000
CH ₄ emissions reductions, Metric tons	0.15	68
N ₂ O emissions reductions, Metric tons	0.017	8
NO _x emissions reductions, Metric tons	2.37	1,048
SO _x emissions reductions, Metric tons	0.24	106

Statewide Impact – Jobs Created

Statewide Impact	First Year	30 Years Cumulative
Jobs Created -- Reduction in Utility Bills	98	2,497
Jobs Created -- Construction Related Activities	177	4,536



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Residential Analysis:

- From IECC 2021 Residential Analysis:

Consumer Impact

Metric	Compared to the 2015 IECC with amendments
Life-cycle cost savings of the 2021 IECC	\$4,077
Net annual consumer cash flow in year 1 of the 2021 IECC ²	\$111
Annual (first year) energy cost savings of the 2021 IECC (\$) ³	\$292
Annual (first year) energy cost savings of the 2021 IECC (%) ⁴	8.8%



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Residential Analysis:

- **From IECC 2021 Residential Analysis:**

Table 1. Life-Cycle Cost Savings of the 2021 IECC compared to the 2015 IECC with amendments

Climate Zone	Life-Cycle Cost Savings (\$)
5A	4,077
State Average	4,077

Note: Warm-humid climate zones are labeled "WH"



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Residential Analysis:

- From IECC 2021 Residential Analysis:

Table 2. Consumer Cash Flow from Compliance with the 2021 IECC Compared to the 2015 IECC with amendments

	Cost/Benefit	5A	State Average
A	Incremental down payment and other first costs	\$394	\$394
B	Annual energy savings (year one)	\$301	\$301
C	Annual mortgage increase	\$136	\$136
D	Net annual cost of mortgage interest deductions, mortgage insurance, and property taxes (year one)	\$53	\$53
E			
=	Net annual cash flow savings (year one) [B-(C+D)]	\$111	\$111
F			
=	Years to positive savings, including up-front cost impacts [A/E]	4	4

Note: Item D includes mortgage interest deductions, mortgage insurance, and property taxes for the first year. Deductions can partially or completely offset insurance and tax costs. As such, the "net" result appears relatively small or is sometimes even negative.



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- **Resources:**
- [IECC 2021 CT Residential Analysis](#)
- [ASHRAE 90.1 - 2019-CT Cost Effectiveness Analysis](#)
- [NEEP Key Changes for 2021 IECC Northeast and Mid-Atlantic](#)

