

Buildings: Commercial

Ref	Checklist Item	Measurement Criteria	Comments	Points
J.1	Development			
J.1.1	Does the state have up to date efficiency codes for commercial buildings?	<p><u>Mitigation Score:</u></p> <p>5 – The state has gone above and beyond the most modern IECC code for commercial construction.</p> <p>4 – The state has mandated the most modern IECC code, or equivalent, for commercial construction.</p> <p>3 – The state has mandated the previous iteration of the IECC code, or equivalent, for commercial construction.</p> <p>2 – The state has mandated the iteration of the IECC code that is 6-8 years old, or equivalent, for commercial construction.</p> <p>1 – The state has mandated the iteration of the IECC code that is 9-11 years old, or equivalent, for commercial construction.</p> <p>0 – The state has mandated an older version of the IECC code, or does not mandate a state-wide energy efficiency code for commercial construction,</p>	<p>Building codes are the frontline of defense for energy efficiency in buildings¹. Generally, states use the International Energy Conservation Codes (IECC) to enforce the American Society of Heating, Refrigerating and Air-Conditioning Engineer’s (ASHRAE) energy efficiency standards for commercial construction. These codes and standards are updated every three years. Some states choose to design their own energy efficiency codes or leave building code decisions to municipalities. The DOE maintains a data base of the current energy efficiency codes in each state here.</p>	<p><u>Mitigation Score: 4/5</u> <u>Equity Score: NA</u> <u>Public Health Score: NA*</u></p> <p>Connecticut currently uses a slightly modified 2015 IECC code for commercial buildings earning them 3 points. They are however in the process of adopting the 2018 IECC codes². Governor Lamont EO 21-3 requires adoption of the most current version of the IECC.</p>
J.1.2	Does the state have legislation to enforce and enhance	<p><u>Mitigation Score:</u></p> <p>5 – The state has all five policies and programs listed to the right.</p>	<p>Beyond having a modern energy efficiency code for commercial buildings, states need to enforce that code and implement several other policies to realize the full potential of building codes. The state should have the following:</p>	<p><u>Mitigation Score: 3/5</u> <u>Equity Score: NA</u> <u>Public Health Score: NA</u></p>

* Public health and equity principles could apply to almost every question on this rubric. To avoid over-coding, we have only applied the relevant public health and equity principles to the checklist items most strongly linked.

	<p>commercial energy efficient building codes?</p>	<p>4 – The state has four of the five policies and programs listed to the right.</p> <p>3 – The state has three of the five policies and programs listed to the right.</p> <p>2 – The state has two of the five policies and programs listed to the right.</p> <p>1 – The state has one of the five policies and programs listed to the right.</p> <p>0 – The state does not have any of the policies or programs listed to the right.</p>	<p>a. Mandated regular (every 3 years) commercial code updates³</p> <p>b. Regular studies to determine actual commercial code compliance⁴</p> <p>c. Programs to encourage the support of commercial code compliance by utilities⁵</p> <p>d. Training/certification of commercial code enforcement officials⁶</p> <p>e. Stretch commercial building codes to act as a model for ambitious municipalities⁷</p>	<p>a. Connecticut does not mandate code updates</p> <p>b. The Connecticut energy efficiency board has commissioned code evaluation reports to examine compliance of commercial codes⁸</p> <p>c. As part of the 2019-2021 C&LM plan, the CT utilities aim to increase commercial building code training among a variety of stakeholder groups⁹</p> <p>d. Connecticut requires both training and certification of building officials. Mandated in Conn. Gen. Stat. §29-262¹⁰</p> <p>e. Connecticut does not have any stretch building codes</p>
<p>J.1.3</p>	<p>Does the state have permitting and zoning laws to encourage green commercial buildings? [PH.5.1 walkability]</p>	<p><u>Mitigation Score:</u></p> <p>4 – The state has policies which encourage all four strategies listed to the right.</p> <p>3 – The state has policies which encourage three of the four strategies listed to the right.</p> <p>2 – The state has policies which encourage two of the four strategies listed to the right.</p> <p>1 – The state has policies which encourage one of the four strategies listed to the right.</p>	<p>Zoning and permitting are two other tools which allow states to encourage greener building techniques. Both zoning and permitting laws are generally left up to municipalities, which means states have less power in this regard. However, states can encourage or permit municipalities to put favorable regulations in place.</p> <p>a. Green commercial buildings* are given a permitting fast track¹¹</p>	<p><u>Mitigation Score: 1/4</u> <u>Equity Score: NA</u> <u>Public Health Score: 0/1</u></p> <p>a. There exists no expedited permitting for green buildings in Connecticut at the state level. Connecticut could model the state of Hawaii, which mandates counties put in place a priority system for</p>

		<p>0 – The state does not have any policies which encourage the strategies listed to the right.</p> <p><u>Public Health Score:</u></p> <p>1 – The state makes zoning allowances for green buildings</p> <p>0 – The state does not make zoning allowances for green buildings</p>	<p>b. Green commercial buildings are given a reduced permitting fee¹²</p> <p>c. Green buildings are given more generous zoning requirements such as FAR (floor to area ratios), or height restrictions¹³ [PH.5.1 walkability]</p> <p>d. The state encourages the use of rezoning requests as leverage to mandate green building practices¹⁴</p> <p>*Here green building refers to any building which is more conscious of GHG emissions. This could mean many things, including if it meets a certification like LEED or passive house, if it scores well on efficiency measurements, or if its materials act as carbon sinks or are lower carbon alternatives to traditional solutions.</p>	<p>processing permits for buildings which are designed to be LEED silver or equivalent¹⁵</p> <p>b. Class 1 renewable energy sources are exempt from permitting fees as mandated by Conn. Gen. Stat. 29-263¹⁶</p> <p>c. Conn. Gen. Stat. §8-2 allows, but does not mandate zoning to be used as a tool to encourage energy efficiency, either through building practices, or development strategies¹⁷</p> <p>d. Connecticut does not appear to encourage this strategy</p>
J.2	Retrofitting			
J.2.2	Is a whole energy building strategy used by the state in commercial buildings?	<p><u>Mitigation Score:</u></p> <p>4 – The state has all four program elements listed to the right.</p> <p>3 – The state has three of the four program elements listed to the right.</p> <p>2 – The state has two of the four program elements listed to the right.</p> <p>1 – The state has one of the four program elements listed to the right.</p> <p>0 – The state does not have any of the program elements listed to the right.</p>	<p>Often energy efficiency programs are centered around specific upgrades such as high efficiency light bulbs, or weather sealing. While these provide boosts in efficiency the most substantial improvements are achieved through an analysis of the whole building and upgrades which consider each other and work in conjunction. A good example of this is improved weather sealing and insulation coupled with HVAC downsizing. Without considering the increased efficiency of the building envelope, the HVAC would remain oversized and continue consuming too much power. Below are program elements to</p>	<p><u>Mitigation Score: 3/4</u> <u>Equity Score: NA</u> <u>Public Health Score: NA</u></p> <p>a. Both “Energy Opportunities” (Connecticut utilities’ medium to large business retrofit program) and “Small Business Energy Advantage” (Connecticut utilities’ small business retrofit program) begin with energy assessment of facilities²²</p>

			<p>incentivize this technique in commercial buildings.</p> <ul style="list-style-type: none"> a. Commercial energy audits as a core to energy efficiency retro fit programs¹⁸ b. Audits used as a stepping off point for retrofitting/recommissioning¹⁹ c. Programs form strong trade allies²⁰ d. Financial incentives promote holistic approaches over piecemeal upgrades²¹ 	<ul style="list-style-type: none"> b. Both programs use the facility assessment to offer a variety of other services²³ c. Utility sponsored programs use a network of certified contractors to perform commercial audits, and the 2019-2021 C&LM plan lists “strengthening trade ally networks” as a goal in the commercial sector²⁴ d. For the most part, commercial rebates appear to be piecemeal, with a lack of incentives to group for advanced efficiency. Other commercial financing options like CPACE are better tailored for holistic projects but again do not appear to incentivize them explicitly
<p>J.2.3</p>	<p>Does the state incentivize renewable thermal technology for the commercial sub-sector?</p>	<p>Mitigation Score:</p> <p>4 –The state has all four policies and programs.</p> <p>3 –The state has three of the four policies or programs.</p> <p>2 –The state has two of the four policies or programs.</p>	<p>Renewable thermal technology (RTT) provides a path to decarbonize a large segment of a home’s energy needs. While general financial incentives can be used for RTT systems there are several specific programs and policies which promote RTT adoption.</p> <ul style="list-style-type: none"> a. Financial incentives for large scale commercial RTT²⁵ b. Third party ownership (leasing) programs for commercial RTT²⁶ 	<p>Mitigation Score: 1/4 Equity Score: NA Public Health Score: NA</p> <ul style="list-style-type: none"> a. Connecticut has tax incentives for solar heating and geothermal installations²⁹

		<p>1 –The state has one of the four policies or programs.</p> <p>0 – The state does not have any of the policies or programs</p>	<p>c. Financial incentives for commercial buildings which package RTT with renewable electricity²⁷</p> <p>d. Inclusion of medium to large scale RTT in renewable portfolio standards²⁸</p>	<p>b. Connecticut does not have any state-run RTT leasing programs for commercial buildings</p> <p>c. Connecticut’s C-PACE program can be used for both RTT and renewables, but Connecticut does not have programs specifically designed to group these two</p> <p>d. Connecticut does not include medium to large scale RTT in its RPS</p>
<p>J.2.4</p>	<p>Does the state have green building retrofit programs for a wide variety of business classes? [EQ.1.1, EQ.3.1] [PH.1.3, PH.2.1, PH.5.1]</p>	<p><u>Mitigation Score:</u></p> <p>3 –The state includes all three groups in green building programs.</p> <p>2 – The state includes two of the three groups in green building programs.</p> <p>1 – The state includes one of the three groups in green building programs.</p> <p>0 – The state does not include any of groups in green building programs.</p> <p><u>Equity Score:</u></p> <p>3 –The state includes all three groups in green building programs.</p> <p>2 – The state includes two of the three groups in green building programs.</p>	<p>While many green building retrofit programs can be used for dissimilar businesses, some types of businesses benefit from programs designed specifically for them or need to be explicitly included in standard programs. Beyond that, studies show that investments in green retrofits of nonprofits, houses of worship, and small businesses all have higher impacts on low- and middle-income groups³⁰. Green buildings have better indoor air quality and environmental conditions than traditional buildings,³¹ factors that are important for ensuring a healthy workforce. The health benefits of green commercial buildings should be made available to all types of businesses. Below are key groups for states to consider.</p> <p>a. Nonprofits³² [EQ.1.1, EQ.3.1] [PH.1.3, PH.2.1, PH.5.1]</p> <p>b. Houses of worship³³ [EQ.1.1, EQ.3.1] [PH.1.3, PH.2.1, PH.5.1]</p>	<p><u>Mitigation Score: 2/3</u> <u>Equity Score:2/3</u> <u>Public Health Score: 2/3</u></p> <p>a. Connecticut utilities does not appear to have green building solutions tailored towards non-profits</p> <p>b. Houses of worship are covered under the Small Business Energy Advantage Program³⁵</p> <p>c. The Connecticut utilities have designed the Small Business Energy Advantage program, tailored for small businesses³⁶</p>

		<p>1 – The state includes one of the three groups in green building programs.</p> <p>0 – The state does not include any of groups in green building programs.</p> <p>Public Health Score:</p> <p>3 –The state includes all three groups in green building programs.</p> <p>2 – The state includes two of the three groups in green building programs.</p> <p>1 – The state includes one of the three groups in green building programs.</p> <p>0 – The state does not include any of groups in green building programs.</p>	<p>c. Small businesses³⁴ [EQ.1.1, EQ.3.1] [PH.1.3, PH.2.1, PH.5.1]</p>	
<p>J.2.4</p>	<p>Does the state have green building retrofit programs designed to serve industrial/manufacturing customers? [EQ.4.1, EQ.4.2] [PH.1.1, PH.1.3, PH.2.1]</p>	<p>Mitigation Score:</p> <p>5 – The state has all five policies/programs listed to the right.</p> <p>4 – The state has four of the five policies/programs listed to the right.</p> <p>3 – The state has three of the five policies/programs listed to the right.</p> <p>2 – The state has two of the five policies/programs listed to the right.</p> <p>1 – The state has one of the five policies/programs listed to the right.</p> <p>0 – The state does not have any of the policies/programs listed to the right.</p>	<p>The industrial sector is responsible for a large portion of emissions in many states. The simple HVAC, building envelope, and lighting upgrades which can be used for the majority of commercial buildings do not begin to tackle the wider array of energy uses of industrial processes. Because of this, states need to make sure they have programs in place to best reduce industrial building’s emissions. Below are key elements for states to have.</p> <ul style="list-style-type: none"> a. Programs targeted to industrial customers³⁷ b. Custom programs prepared to do large one-off evaluations and retrofits³⁸ c. Industrial customers are not allowed to opt-out of energy efficiency fund contributions³⁹ 	<p>Mitigation Score: 4/5 Equity Score:0/1 Public Health Score: 0/1</p> <ul style="list-style-type: none"> a. Connecticut utilities have programs designed for industrial customers⁴² b. Connecticut utilities work with large manufacturing customers one-on-one to provide tailored solutions to improve efficiency of their facilities⁴³ c. All Connecticut customers of electricity utilities are required to pay into the Connecticut energy efficiency fund⁴⁴

		<p><u>Equity Score:</u></p> <p>1 – The state has programs designed to reduce emissions concentrations through facility retrofits.</p> <p>0 – The state does not have programs designed to reduce emissions concentrations through facility retrofits.</p> <p><u>Public Health Score:</u></p> <p>1 – The state has programs designed to reduce emissions concentrations through facility retrofits.</p> <p>0 – The state does not have programs designed to reduce emissions concentrations through facility retrofits.</p>	<p>d. Incentives for combined heat and power installations⁴⁰</p> <p>e. Programs designed to reduce emissions concentrations through facility retrofits⁴¹ [EQ.4.1, EQ.4.2] [PH.1.1, PH.1.3, PH.2.1]</p>	<p>d. Combined heat and power installations are exempt from property taxes as mandated by Conn. Gen. Stat. §12-81.⁴⁵ DEEP also offers grants and loans for combined heat and power installations.⁴⁶</p> <p>e. Connecticut does not make an effort to combat pollution hotspots through targeted efficiency programs for industrial facilities.</p>
<p>J.3 Financial Incentives</p>				
<p>J3.1</p>	<p>Does the state have tax credits for green commercial buildings?</p>	<p><u>Mitigation Score:</u></p> <p>3 – The state has policies in all three of the tax incentives categories listed to the right.</p> <p>2 – The state has policies in two of the three tax incentives categories listed to the right.</p> <p>1 – The state has policies in one of the three tax incentives categories listed to the right.</p> <p>0 – The state does not have tax incentives for energy efficiency projects</p>	<p>Tax credits are an established mechanism which can be used to incentivize green commercial buildings. Below are key types of credits for states to have:</p> <p>a. Property tax incentives for green commercial buildings⁴⁷</p> <p>b. Corporate tax credit or deductions for green retrofitting/developing⁴⁸</p> <p>c. Immediate tax benefits for short-term investors/ commercial buildings owners⁴⁹</p>	<p><u>Mitigation Score: 1/3</u> <u>Equity Score: NA</u> <u>Public Health Score: NA</u></p> <p>a. Conn. Gen. Stat. §12-81 exempts solar heating and geothermal systems, and geothermal systems from adding assessed property value⁵⁰</p> <p>b. Conn. Gen. Stat. §12-217mm established a green buildings tax credit for LEED certified buildings.</p>

				<p>The amount of the credit depends on the level of certification (gold vs platinum) and the type of renovation/ construction, however this legislation was repealed⁵¹</p> <p>c. Conn. Gen. Stat. §12-217mm was designed for building owners and could have been transferred to any other taxpayer, but as stated previously this was repealed⁵²</p>
<p>J3.2</p>	<p>Does the state have grants/rebates for green commercial buildings?</p>	<p><u>Mitigation Score:</u></p> <p>5 – The state has policies in all five of the capitol subsidy categories listed to the right</p> <p>4 – The state has policies in four of the five capitol subsidy categories listed to the right.</p> <p>3 – The state has policies in three of the five capitol subsidy categories listed to the right.</p> <p>2 – The state has policies in two of the five capitol subsidy categories listed to the right.</p> <p>1 – The state has policies in one of the five capitol subsidy categories listed to the right.</p>	<p>Capitol subsidies, like grants or rebates, offer a direct solution to the higher upfront costs of green building or retrofiting. Below are rebate and grant programs which form a comprehensive state program.</p> <ul style="list-style-type: none"> a. Rebates for green development⁵³ b. Rebates for green retrofiting⁵⁴ c. Grants for green retrofiting⁵⁵ d. Grants for green development⁵⁶ e. Grant/rebate programs that cover the cost of certifications for commercial buildings, such as LEED⁵⁷ 	<p><u>Mitigation Score: 2/5</u> <u>Equity Score: NA</u> <u>Public Health Score: NA</u></p> <ul style="list-style-type: none"> a. Connecticut Utilities sponsor a program to provide custom rebate-like incentives for new commercial construction, which is more energy efficient than the standard building codes⁵⁸ b. State utilities sponsor several rebate programs for energy efficient commercial equipment. The same custom rebate program which can be used for new

		<p>0 – The state does not have rebates or grants for commercial green buildings.</p>		<p>construction can also be used for major renovations of commercial buildings⁵⁹</p> <ul style="list-style-type: none"> c. Connecticut does not have grants for green commercial retrofitting d. Connecticut does not have grants for green commercial development e. Connecticut does not help pay for LEED or any other green building certification
<p>J.3.3</p>	<p>Does the state have financing options for green commercial buildings?</p>	<p>Mitigation Score:</p> <ul style="list-style-type: none"> 4 – The state has all four of the finance programs listed to the right. 3 – The state has three of the four finance programs listed to the right. 2 – The state has two of the four finance programs listed to the right. 1 – The state has one of the four finance programs listed to the right. 0 – The state does not have finance programs for green homes. 	<p>Like other capitol subsidies, financing options offer a way to distribute higher up-front costs of green buildings across a longer time frame. This allows the green building’s energy savings to pay off the higher upfront costs. Below are best practice financing programs for green buildings:</p> <ul style="list-style-type: none"> a. “Green mortgages” for green commercial buildings⁶⁰ b. On bill financing for green retrofitting of commercial buildings?⁶¹ c. low-interest loans for green retrofits of commercial buildings⁶² d. CPACE financing for Green retrofits of commercial buildings 	<p><u>Mitigation Score: 2/4</u> <u>Equity Score: NA</u> <u>Public Health Score: NA</u></p> <ul style="list-style-type: none"> a. Connecticut does not have a “green mortgage” program for commercial buildings b. Connecticut does not offer on-bill financing for commercial green retrofits; however, PA 13-298 Sec. 58 does mandate residential on-bill financing⁶³ c. Connecticut utilities administer loan programs designed for small businesses, and medium to large

				<p>businesses to perform green retrofits. All are low-interest⁶⁴</p> <p>d. Connecticut has an active C-PACE program⁶⁵</p>
Section J Total				<p>23/42 ~54.8%</p>
Section J Equity Total				<p>2/4 ~50.0%</p>
Section J Health Total				<p>2/5 ~40.0%</p>

¹ EPA Energy and Environment Guide to Action Chapter Four. (2015). Environmental Protection Agency. https://www.epa.gov/sites/production/files/2017-06/documents/guide_action_chapter4.pdf

² Building Energy Codes Program. (n.d.). US Department of Energy. <https://www.energycodes.gov/adoption/states/connecticut>

³ Berg et al, “The 2019 State Energy Efficiency Scorecard.” ACEEE, October 2019.

⁴ Berg et al, “The 2019 State Energy Efficiency Scorecard.” ACEEE, October 2019.

⁵ Berg et al, “The 2019 State Energy Efficiency Scorecard.” ACEEE, October 2019.

⁶ Berg et al, “The 2019 State Energy Efficiency Scorecard.” ACEEE, October 2019.

⁷ Building Efficiency. (2020, April 24). National Conference of State Legislatures. <https://www.ncsl.org/research/energy/building-efficiency.aspx>

⁸ DNV GL - Energy. (2015). *COMMERCIAL & INDUSTRIAL NEW CONSTRUCTION BASELINE AND CODE COMPLIANCE STUDY*. Connecticut Energy Efficiency Board – Evaluation Committee. https://www.energizect.com/sites/default/files/C%26I%20New%20Construction%20Baseline%20and%20Code%20Compliance%20Study%20%28C19%29%2C%20Final%20Report_11-6-15.pdf

⁹ 2020 Plan Update to the 2019-2021 Conservation & Load Management Plan (p. 13,29).

¹⁰ Licensure of building officials. Continuing educational programs. Suspension or revocation of license or certificate. Hearing. Appeal. Indemnification., 29–262 (1991). https://www.cga.ct.gov/current/pub/chap_541.htm#sec_29-262

¹¹ Green buildings incentives. (2007). NAIOP.

¹² Good to know: Green building incentive strategies. (2014, May 2). U.S. Green Building Council. <https://www.usgbc.org/articles/good-know-green-building-incentive-strategies-0>

¹³ Green buildings incentives. (2007). NAIOP.

Philip Schaffner, & Jake Waxman. (2009). *Green Zoning: Creating Sustainable Communities Through Incentive Zoning*. Harvard Kennedy School. https://www.hks.harvard.edu/sites/default/files/centers/rappaport/files/schaffner_waxman.pdf

¹⁴ Warwick Sangster. (2006). *Benchmark Study on Green Buildings: Current Policies and Practices in Leading Green Building Nations*. Industry Canada, Energy and Environmental Industries Branch. <http://www3.cec.org/islandora-gh/en/islandora/object/greenbuilding%3A143/datastream/OBJ-EN/view>

- ¹⁵ *Priority Permit Processing for Green Buildings (Hawaii) | Open Energy Information*. (2015, February 12). [https://openei.org/wiki/Priority_Permit_Processing_for_Green_Buildings_\(Hawaii\)](https://openei.org/wiki/Priority_Permit_Processing_for_Green_Buildings_(Hawaii))
- ¹⁶ Permit to construct or alter. Education fee. Exemption for Class I renewable energy source projects. Building permit application fee exemption for repair or replacement of certain concrete foundations., 29–263 (2011). https://www.cga.ct.gov/current/pub/chap_541.htm#sec_29-263
- ¹⁷ Regulations, 8-2 (1978). https://www.cga.ct.gov/current/pub/chap_124.htm#sec_8-2
- ¹⁸ *Commercial Energy Policy Fact Sheet-Audits and Retro-commissioning*. (n.d.). Local Governments for Sustainability. https://www.imt.org/wp-content/uploads/2018/02/Commercial_Energy_Policy_Fact_Sheet_-_Audits_Retrocommissioning.pdf
- ¹⁹ *Commercial Energy Policy Fact Sheet-Audits and Retro-commissioning*. (n.d.). Local Governments for Sustainability. https://www.imt.org/wp-content/uploads/2018/02/Commercial_Energy_Policy_Fact_Sheet_-_Audits_Retrocommissioning.pdf
- ²⁰ *Commercial Energy Policy Fact Sheet-Audits and Retro-commissioning*. (n.d.). Local Governments for Sustainability. https://www.imt.org/wp-content/uploads/2018/02/Commercial_Energy_Policy_Fact_Sheet_-_Audits_Retrocommissioning.pdf
- ²¹ *Commercial Energy Policy Fact Sheet-Audits and Retro-commissioning*. (n.d.). Local Governments for Sustainability. https://www.imt.org/wp-content/uploads/2018/02/Commercial_Energy_Policy_Fact_Sheet_-_Audits_Retrocommissioning.pdf
- ²² *Small Business Energy Advantage*. (n.d.). [Text]. Energize Connecticut. <https://www.energizect.com/your-business/solutions-list/Small-Business-Energy-Advantage>
Energy Opportunities. (n.d.). Energize Connecticut. <https://www.energizect.com/your-business/solutions-list/Energy-Opportunities>
- ²³ *Small Business Energy Advantage*. (n.d.). [Text]. Energize Connecticut. <https://www.energizect.com/your-business/solutions-list/Small-Business-Energy-Advantage>
Energy Opportunities. (n.d.). Energize Connecticut. <https://www.energizect.com/your-business/solutions-list/Energy-Opportunities>
- ²⁴ *2020 Plan Update to the 2019-2021 Conservation & Load Management Plan* (p. 5).
- ²⁵ Paul Molta, & Krisztina Pjeczka. (2017, July 20). *Renewable Heating and Cooling: The Next Efficiency Frontier*. Yale Center for Business and the Environment. <https://cbey.yale.edu/our-stories/renewable-heating-and-cooling-the-next-efficiency-frontier>
- ²⁶ Paul Molta, & Krisztina Pjeczka. (2017, July 20). *Renewable Heating and Cooling: The Next Efficiency Frontier*. Yale Center for Business and the Environment. <https://cbey.yale.edu/our-stories/renewable-heating-and-cooling-the-next-efficiency-frontier>
- ²⁷ Helle Gronli, Joseph Schiavo, Philip Picotte, & Amir Chireh Mehr. (2017). *Feasibility of Renewable Thermal Technologies in Connecticut, A Field Study on Barriers and Drivers*. Yale Center for Climate and Business. https://cbey.yale.edu/sites/default/files/2019-09/FORTT_Barriers%20and%20Drivers.pdf (p40)
- ²⁸ *Renewable Thermal in Renewable Portfolio Standards*. (n.d.). Renewable Thermal Collaborative. https://www.renewablethermal.org/wp-content/uploads/2018/12/RTC-Factsheet-Renewable-Thermal-in-RPSs_12_13_18.pdf
- Samantha Donalds. (2018). *Renewable Thermal In State Renewable Portfolio Standards*. The RPS Collaborative. <https://www.cesa.org/wp-content/uploads/Renewable-Thermal-RPS.pdf>
- ²⁹ Exemptions, 12–81. https://www.cga.ct.gov/current/pub/chap_203.htm#sec_12-81
- ³⁰ Ariel Dreobl. (2019, November 13). *How efficiency programs serve low-income communities*. ACEEE. <https://www.aceee.org/blog/2019/11/how-do-efficiency-programs-serve-low>
- ³¹ Lucon et al. 2014: Buildings. In: *Climate Change 2014: Mitigation of Climate Change*. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. (p708-709)
- ³² Ariel Dreobl. (2019, November 13). *How efficiency programs serve low-income communities*. ACEEE. <https://www.aceee.org/blog/2019/11/how-do-efficiency-programs-serve-low>
- ³³ *Supporting Healthy Houses of Worship*. (2019). Environmental Protection Agency. https://www.epa.gov/sites/production/files/2019-10/documents/healthyhousesofworship2019_booklet-v7s.pdf
- Ariel Dreobl. (2019, November 13). *How efficiency programs serve low-income communities*. ACEEE. <https://www.aceee.org/blog/2019/11/how-do-efficiency-programs-serve-low>
- ³⁴ Ariel Dreobl. (2019, November 13). *How efficiency programs serve low-income communities*. ACEEE. <https://www.aceee.org/blog/2019/11/how-do-efficiency-programs-serve-low>
- ³⁵ *Small Business Energy Advantage*. (n.d.). [Text]. Energize Connecticut. <https://www.energizect.com/your-business/solutions-list/Small-Business-Energy-Advantage>
- ³⁶ *Small Business Energy Advantage*. (n.d.). [Text]. Energize Connecticut. <https://www.energizect.com/your-business/solutions-list/Small-Business-Energy-Advantage>
- ³⁷ *Industrial Programs*. (n.d.). ACEEE. <https://www.aceee.org/topic/industrial-programs>

- Best-practice Industrial Utility Programs.* (n.d.). Southwest Energy Efficiency Project. <https://www.swenergy.org/industrial/bestpractices>
- ³⁸ *Best-practice Industrial Utility Programs.* (n.d.). Southwest Energy Efficiency Project. <https://www.swenergy.org/industrial/bestpractices>
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