March 3rd, 2022

State Energy Conservation Office
Texas Comptroller of Public Accounts
2021CodeComments@cpa.texas.gov

Comments on the 2021 Energy Codes

Dear SECO,

On behalf of a variety of organizations that work in Texas, we submit these comments in support of moving forward on rulemaking as soon as possible to adopt the 2021 IECC and Chapter 11 (energy chapter) of the 2021 IRC as the state's building code for new residential and commercial construction. Given the growing electric demand in Texas, the recent problems with reliability of the Texas grid during climate extremes, and the multiple cities that face air quality issues because of high levels of ozone, we believe SECO must begin formal rulemaking, and adopt both Chapter 9 of the 2021 International Residential Code and the 2021 International Energy Conservation Code, as laid out in state statutes.

Buildings last for decades and ensuring that new construction meets the most recent energy codes will lower energy, water, gas, and overall costs for consumers. With our grid strained from high demand and new growth, now is the time to adopt the latest energy codes. Please move forward on adoption of the 2021 IECC and the energy chapter of the 2021 IRC.

The Law Supports Moving Forward on the 2021 Codes

Under state statute, and as confirmed with the passage in 2015 of HB 1736, SECO is required to review the 2021 codes once published, seek stakeholder input, and seek input and analysis by the Energy Systems Laboratory. Under Chapter 388.003 of the Health and Safety Code, if input and ESL analysis and input show that adoption of a statewide code will lower air emissions and increase savings, SECO should begin rulemaking and adopt the latest codes, making them effective no earlier than nine months after adoption. We support opening a rulemaking and making the codes effective nine months after adoption, hopefully by the summer of 2023.

Cities are already moving forward on code adoption

Cities are already actively beginning to consider the 2021 suite of codes, including the 2021 IRC and 2021 IECC. Thus, the City of Austin has already approved the 2021 IRC and 2021 IECC, implementing them in September of 2021. Similarly, NCTCOG, working through its Regional Codes Coordinating Committee, recently adopted recommendations that encourage member cities to adopt the 2021 IECC with some important local regional amendments. Currently, a number of local governmental entities are looking at possible adoption of the 2021 IECC and energy chapter of the 2021 IRC.

The new codes save energy, and reduce greenhouse gas and nitrogen oxide emissions

According to the Pacific Northwest National Laboratory, the official laboratory for the DOE, buildings contribute 35% of annual greenhouse gas emissions in the United States, so making sure they are as efficient as possible when constructed can significantly reduce their environmental impact and slow the course of climate change. According to the DOE, the savings by adopting the latest energy codes are equivalent to $162 in annual savings per residential unit. That also corresponds to a reduction in the use of fossil fuel power plants, meaning less pollution.

Data from the PNNL shows that commercial buildings built to the updated codes could see energy savings of 4.7% compared to older codes such as the 2018 IECC (which is roughly equivalent to the 2015 IECC). For homes, overall potential energy savings were calculated to be 9.4% over the older code, again calculated to the 2018 codes, which are very close to the 2015 residential energy code requirements. The benefits are even greater when considering the climate zones in Texas because of our very hot summers and climate extremes.

The up-to-date codes would also lower greenhouse gas and nitrogen oxide emissions. In fact, with four major metropolitan areas in Texas – San Antonio, El Paso, Dallas-Fort Worth and Houston-Galveston-Brazoria – suffering from dangerous levels of ozone (smog) pollution that do not meet EPA clean air requirements, reducing electricity use and power plant emissions will reduce ozone levels. Other cities like Waco, Austin, Longview-Tyler, Beaumont-Port Arthur and Victoria on occasion have high levels of ozone that surpass the clean air standards, though they remain in compliance. Better building codes that use less energy will literally reduce hospital bills, lost work, and premature deaths.

While the Energy Systems Laboratory has not officially released its analysis of the code, they have conducted a preliminary analysis that reveals that adoption of the 2021 codes

would be of great benefit to Texans in energy savings and pollution reduction due to our hot summers and extreme cold events in areas like the Panhandle.

Indeed, a more detailed analysis of Texas residential construction by an analysis conducted under contract with the DOE made the following recommendations:

"Moving to the 2021 International Energy Conservation Code (IECC) is cost-effective for both single-family and low-rise multifamily residential buildings in Texas. The 2021 IECC will provide statewide energy savings of 8.9% across all climate zones compared to the current state energy code. This equates to $174 of annual utility bill savings for the average Texas household. It will reduce statewide CO2 emissions over 30 years by 45,080,000 metric tons, equivalent to the annual CO2 emissions of 9,805,000 cars on the road (1 MMT CO2 = 217,480 cars driven/year). Updating the state energy code based on the 2021 IECC will also stimulate the creation of high- quality jobs across the state. Adopting the 2021 IECC in Texas is expected to result in homes that are energy efficient, more affordable to own and operate, and based on current industry standards for health, comfort and resilience."[1]

The same contract[2] also looked at the impact of commercial code adoption in Texas and made the following summary recommendations:

Moving to the ASHRAE Standard 90.1-2019 (ASHRAE 2019) edition from Standard 90.1-2016 (ASHRAE 2016) is cost−effective for Texas. Standard 90.1-2019 will provide an annual energy cost savings of $0.053 per square foot on average across the state. It will reduce statewide CO2 emissions by 13.8 MMT (30 years cumulative), equivalent to the CO2 emissions of 3,005,000 cars driven for one year.

Updating the state energy code based on Standard 90.1-2019 will also stimulate the creation of high-quality jobs across the state. Standard 90.1-2019 is expected to result in buildings that are energy efficient, more affordable to own and operate, and based on current industry standards for health, comfort, and resilience.

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[1]Victor R Salcido, Yan Chen, Yu Long, Xie Zachary and T Taylor, **Cost-Effectiveness of the 2021 IECC for Residential Buildings in Texas,** July 2021, Prepared for the U.S. Department of Energy under Contract DE-AC05-76RL01830

[2] M Tyler, Y Xie, E Poehlman, M Rosenberg, **Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2019 for Texas,** July 2021, Prepared for the U.S. Department of Energy under Contract DE-AC05-76RL01830

The tables below show the expected impact of upgrading to Standard 90.1-2019 from a consumer perspective and statewide perspective. These results are weighted averages for all building types in all climate zones in the state, based on weightings shown in Table 4. The methodology used for this analysis is consistent with the methodology used in the national cost- effectiveness analysis.1 Additional results and details on the methodology are presented in the following sections.

Consumer Impact

Annual (first year) energy cost savings, $0.053/ft2

Added construction cost, $/ft2: -$1.013

Publicly-owned scenario LCC Savings, $/ft2: 3.63

Privately-owned scenario LCC Savings, $/ft2: 3.23

Winter Storm Uri revealed how much demand is created from inefficient housing stock

Winter Storm Uri led to hundreds of deaths, and millions of Texans suffering with no power, and billions in extra energy costs. While the failure of many power plants to operate was the major cause of the crisis, there is no question that older buildings built to outdated energy codes were part of the problem. Making sure our new buildings are as energy efficient and resilient as possible is key to solving our grid crisis. Adopting new codes is particularly important to Texans with limited incomes, so that new apartments and single family homes are built to standards that will improve quality of life and lower energy bills.

Adopting the latest codes will provide access to additional funding opportunities from the federal government

Under the IIJA approved by Congress, a section of the bill creates a grant program for cost-effective code implementation for efficiency and resilience. Specifically**,** this section creates a grant program within the Building Technologies Office to enable sustained, cost-effective implementation of updated building energy codes. This section authorizes $225,000,000 for the period of FY22-26, but those grants are geared toward states that have adopted the 2021 energy codes.

Because of these reasons, our organizations strongly support moving forward on rulemaking to adopt both the 2021 IECC and 2021 IRC Energy Chapter. We also

encourage SECO to provide robust training and education opportunities to builders and city and county officials to be better prepared for code adoption.

Sincerely,

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