INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

Question/Comment:
1. Appendix CJ speaks to required storage of electricity on site. Are other forms of energy storage also acceptable responses to the requirement? 2. These changes appear to treat every project/site as separate entities. For larger facilities there may be many facilities on a single or adjacent sites. LEED and other rating entities have provisions for campus type accommodations of energy requirements to enable innovation on larger scales than individual projects might initiate. Will the City accept such campus wide solution options?
Response:
Thank you for your feedback. 1. Appendix CJ only considers electrical storage systems; other types of energy storage do not meet the requirements of Appendix CJ. 2. The building technical codes cover the design and construction of individual buildings, not buildings across a campus. Though a campus-wide approach could provide buildings the same functions that are listed in the energy code and may provide better outcomes, there is no current mechanism within the current plan review process to support this approach. We will work with the site plan review team to see what processes can be developed to enable this strategy.

Question/Comment:
Please include an ERV exemption for multi-family dwelling units. IECC C403.7.4.1 The commercial section of the IECC requires ERVs to be installed in all buildings. ERVs are not currently a sufficiently effective nor cost-effective solution for multi-family dwelling units in Austin's climate. While most commercial buildings require a relatively small number of larger, more efficient ERVs that can serve large areas, dwelling units each require their own smaller, less-efficient, and more expensive ERVs. The majority of projects that come across this requirement use a performance path to avoid the requirement and easily meet the overall code requirements without them. Some projects have paid the additional fees for an energy model solely to avoid the more expensive path of providing ERVs. Note that this is not just an issue for non-transient dwelling units - there may be instances where transient units for shelters and other short-term housing is impacted; however, the impact on hotels and non-housing related transient units and the needs/benefits in those scenarios is outside the scope of the housing impact. Recommendations: Modify IECC C403.7.4.1 to refer to dwelling units and add exemptions that cover multi-family housing and shelter housing. Edit C403.7.4.2 to conform language Chris Gannon, Architect Co-chair of Austin AIA Housing Advocacy Committee
Response:
Thank you for your feedback. The 2024 IECC introduces two options that – while not providing exceptions for ERVs – provide options for system designers that may avoid whole-building energy modeling. An additional prescriptive compliance option was added to Section C403.7.4.1 based on sensible recovery efficiency and net moisture transfer. The proposal authors noted that the provisions allow for smaller, in-suite H/ERVs that are less costly. Additionally, Section C403.1 allows the project to demonstrate that its HVAC system meets the provisions of the energy code through the calculation of the HVAC total system performance ratio (TSPR) as laid out in Section C409. The TSPR method allows for the project team to trade off performance of various HVAC system components, rather than trading of performance of entire building systems as done with a whole-building energy model. The PNNL estimates "that a 50,000 ft2 project will require 4-5 hours to conduct a TSPR analysis, compared to 75-100 hours for a full whole building performance analysis." We appreciate your bringing this concern to our attention and we will

investigate options that can make compliance easier while still meeting the performance objectives of the energy code.

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Question/Comment:
25-12-263 (A): "The following provisions are local amendments to the commercial provisions of the 2021 International Conservation Code. Each provision in this subsection is a substitute for an identically numbered provision deleted by Section 25-12-261(B) or an addition to the 2021 International Energy Conservation Code." -- I think this is supposed to reference 2024 IECC now yes? 6.5.10 Door Switches. If I understand this correctly, we are effectively turning off HVAC systems in a zone if an exterior door is propped open for more than 5 minutes. This makes pretty good sense. We do not want our buildings to heat/cool the entire neighborhood. No sense in making extremely tight building enclosures if the whole thing can be circumvented by a $0.50 wood doorstop or a landscaping rock you pick up off the sidewalk. On the flip side, is it allowed to automatically turn the systems back on at the previous set points when the door is closed? If not, I can see this playing havoc on the comfort and humidity levels in buildings with multiple tenants. Imagine someone moving into an apartment or dorm building. If you have to manually reset the HVAC systems, the common areas will be wildly uncomfortable

before anyone with access to the thermostat will think about turning the system back on.

Future Water Heater Space: I included this in the comments to the residential code as well. Why are we requiring a 3'x3'x7' area for the water heater? Even the largest heat pump unit I can find is only 28" in diameter. If the intent to ensure an air volume large enough for the heat exchanger, there are many other solutions including louvered doors, transfer grilles, or ducted supply/return runs. We believe the industry has provided enough variety within the market that we should not be code mandating a specific design solution; especially one that increases current industry footprint standards. 10.5.1.1

On-Site Renewable Energy: Is this section one of the optional points-based energy reduction methods? I understand mandating some sort of Solar Readiness on commercial buildings, that part of the code makes sense, but I certainly hope we are not going to require the general public to privately subsidize electrical production. I don't see how we can force people to pay for and install solar on their building.

Response:

Thank you for noting that we neglected to change the referenced code to the 2024 IECC rather than the 2021 IECC in 25-12-263 (A). We apologize for this oversight.

The language under 6.5.10 Door Switches does not specify how to implement the setpoint control when doors have closed and leaves it up to the design professional to implement the control.

The exception under CH103.1.2.1 or 8.4.5.2.1 allows projects with combustion service water heating with an input capacity of not more than 75,000 Btu/h to leave out the 3 ft x 3 ft x 7 ft room volume when the space containing the water heater provides for air circulation sufficient for the operation of a heat pump water heater. Several design options are given under CH103.1.2.2 or 8.4.5.2.2 for combustion service water heating systems that provide alternatives to reserved space.

Renewable energy systems are a new provision in the energy code, unless the project meets one of the exceptions listed. The 2024 IECC pathway provide projects several compliance options if renewable energy systems are not installed, including purchase of renewable energy credits or enrolling in a green tariff. ASHRAE 90.1-2022 allows projects to pursue a performance compliance path that doesn't necessarily involve a renewable energy system. Although projects are responsible for upfront costs of renewable energy systems, projects within Austin Energy service territory are eligible for energy production from renewable energy systems at the Value of Solar rate.

Question/Comment:

Sierra Club also supports the proposed amendments to and adoption of the 2024 Commercial IECC. In particular, we fully support with local amendments the adoption of appendices related to EV infrastructure and parking, demand responsive controls for space, lighting and water heating (with exceptions for water heater timers), electric energy storage systems, solar-ready, electric-ready and mandatory on-site renewable energy systems (with some exceptions). Assuring that new commercial buildings are incorporating new technology directly - through onsite renewable and storage systems and EV infrastructure - or at least being ready to incorporate will align with community values and ultimately reduce carbon and energy use.

Response:

Noted. Thank you for your feedback.

Question/Comment:
I support the proposed adoption of the 2024 Commercial IECC, including the amendments. Increasing energy efficiency is important for reducing greenhouse gas emissions and local air pollution, keeping bills affordable and increasing electric grid and community resilience.
Response:
Noted. Thank you for your feedback.

Question/Comment:
Regarding Appendix CI - proposing an exception/exemption for buildings or campuses that are participating in the Austin Energy Resilience as a Service (Raas) program or utilizing the AE-TES rider. In each of these situations associated facilities will already be effectively performing demand response actions that are either led by AE (RaaS) or performed daily due to the TES rider and not have additional large load to shed during the standard demand response windows. This would not exempt buildings on a campus that are not connected to TES or included in the RaaS evaluation of a campus. Glad to work on language to make this clear.
Response:
Since many RaaS participants use gas generators that could have emissions greater than our local electricity mix, we do not feel that this option would support the goals of energy code. Use of the AE-TES rider does not guarantee that electricity use is curtailed during high demand periods since the thermal storage tanks could be recharged during peak periods if they are exhausted. We feel that having equipment that has the capability to respond to a demand response signal is the best way to set up buildings to participate in demand response events.

Question/Comment:
Public Citizen strongly supports the City of Austin adopting the IECC 2024 Technical Code for commercial buildings, as proposed by staff. This code update is important for meeting the city's climate, energy and affordability goals. It will improve energy efficiency and the ability to participate in demand response programs for new buildings, while enabling easier and more affordable electrification of transportation and buildings. We support adopting the proposed base code and the proposed electric-ready, EV-ready, demand response and energy storage appendixes. These provisions will reduce greenhouse gas emissions, reduce other air pollution emissions and make buildings more resilient and flexible for future occupants. The EV-ready requirement is important for enabling wider adoption of electric vehicles. Electric vehicles are more affordable than ICE vehicles over time, but access to charging is still a challenge. The cost of installing a charger is significantly less if it is included in the original design of the building. Likewise, planning for future installation of electric appliances is cost-effective. These are important provisions for enabling beneficial electrification and decarbonization, as called for in the Austin Climate Equity Plan. Likewise, demand response and energy storage provisions align with the Austin Climate Equity Plan and the Austin Energy Resource, Generation and Climate Protection Plan.
Response:
Noted. Thank you for your feedback.

Question/Comment:
Section10.4.10.1 - EV Make Ready Code Consideration for a DCFC alternative for those business operations are more in-line with fast serve / quick serve where driver dwell time is <1 hour. see Cal Green Code 5.106.5.3.2.1 “The installation of each DCFC EVSE shall be permitted to reduce the minimum number or

required EV capable spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to serve panel or subpanel." For Travel Plaza, Quick Serve Restaurant and neighborhood fueling stations, installing level2 is not applicable to use case, additionally it has the tendency to add additional cost for excess panel capacity that is likely to be stranded. The State of Colorado has a similar exemption 1DCFC:10 EVSE Capable/installed stalls. Happy to collaborate and share like-kind scenarios ChargePoint is helping its customers across the country navigate the right product mix for their specific use case and customer experience.
Response:
Thank you for providing information about the DCFC alternative. The ordinance has been amended to include a power-allocation method option.

Question/Comment:
Prosped EV Ready/ and EVSE install code, consideration to add a requirement for commercial applications to follow US board of access EV accessibility requirements. in short.at least(1) stall @ 11' in width with a 5' Access aisle. https://www.access-board.gov/tad/ev/ California has similar requirements however goes a bit further. see attached guide
Response:
Thank you for your feedback. Section CG101.2.6 and 10.4.10.6 require compliance with Section 1107 of the International Building Code, which requires that not less than 5% of EV charging spaces be accessible by being at least 11 ft in width with a 5 ft access aisle.

Question/Comment:
Observation. EV Ready speaks in KVA. consideration to speak to KW and/or amperage as KVAis typciallynot a name plate listing or how loads are sized with NEC
Response:
Thank you for your feedback. Kilowatt (kW) is the metric used to indicate actual power delivered and is typically used to refer to the load. Kilo-volt-amperes (kVA) describes apparent power and is typically used to describe the system.

Question/Comment:
Please ensure 208/240v is required for all EV-Capable, EV-Ready, and EVSE installs - while 120v is fine for many owners, 240v incentivizes off-peak charging and helps improve adoption rates - consumers always overplan for their needs. This is especially critical for apartments.
Response:
Thank you for your feedback. Section CG101.2.5.1 and 10.4.10.5.1 size the system capacity at 7.2 kVA per EVSE space, which is intended to support Level 2 charging stations that require 30A at 208/240V.

Question/Comment:
Regrading EV Capable, recommend being a specific as possible to leave out the guess work from developers on how to size level2 conduit, circuit requirements for alllevel2: - min of1" conduit per future EVSE pedestal - a service panel or subpanel(s) should be provided with panel space and electrical load capacity for a dedicated 208/240Volt, 40-ampere minimum branch circuit for each EV Capbal space, with the delivery of 30-ampere minimum to an installed EVSE. - EVSE capable panel should be clearly labelled "EVSE future"

Response:
Thank you for your feedback. Section CG101.2.6 and 10.4.10.6 reference NFPA 70, which covers sizing of conduit.

Question/Comment:
Section C405.11.1 Automatic Receptacle Control - Code amendment should exclude this requirement completely. I am a professional electrical engineer on commercial buildings. Myself and every professional I have asked think the energy needed in wire, devices, and labor required to achieve this likely exceed any energy savings. I have attempted to look up the research and it is very thin. You are doubling the amount of plugs and copper line voltage drops down the wall, plus whatever control system you install to turn them off and on. In the end owners tend to override or not use the controlled receptacles in my experience. Furthermore, in my opinion, controlled receptacles are not safe. These are 120V 20A outlets completely capable of starting a fire. You are turning off outlets to save energy, but keep in mind you are also turning them on unexpectedly. Consider if someone puts something on top a space heater that is off at night, the next day it will turn automatically. We are putting these in schools. Thomas Ingram, P.E. Licensed Texas Professional Engineer #126808
Response:
Thank you for your feedback. Studies have shown that plug load control can reduce whole building energy consumption by 6 – 10%. We have not found any studies showing that show plug load controls are not safe.

Question/Comment:
July 8, 2024 Austin Energy Green Building EV Ready Building Code Commercial IECC [2024] Comment Electrify America applauds the City of Austin for recognizing the need for EV-ready buildings and appreciates the opportunity to submit comments on the city's proposed building codes. With respect to compliance with these EV-ready codes, Electrify America proposes that the city include a power-based threshold, known as a "power-allocation method," for meeting these requirements that would serve as an alternative to the benchmark based on percentage of parking spaces in a new facility. Setting a power-based requirement allows a property owner to meet EV charging requirements using the type of charger that best complements the use-case of their parking spaces. And, by doing so, the property owner can provide a better charging service to the driver using their parking space. California adopted the power-allocation method for meeting EV-ready requirements in 2023 which went into effect in 2024.So this is not a novel idea. Not all EV chargers provide the same charging speeds, and not all parking spaces are used the same. So, EV charging minimums should be flexible to allow property owners to comply by installing chargers that best match the use case of their spaces. At parking facilities that host vehicles for long periods of time, like residences and workplaces, slower level 2 chargers requiring hours to provide a meaningful charge can be appropriate. In contrast, at parking facilities that service commercial properties, parking sessions are much shorter. So, level 2 chargers are less effective because they do not offer significant range during the session. In these cases, Direct Current Fast Chargers (DCFC) are a much more appropriate solution because they provide a meaningful amount of range in a short amount of time. Thresholds for compliance with EV charging minimums based on a percentage of spaces disincentivize the build-out of fast chargers where they would be most effective. The reason is that the threshold is typically detrimentally high to be met with DCFC. The thresholds in the proposed language greatly exceed the number of chargers per station that is typical or even possible for fast charging providers. Under the proposed language, a parking facility with as few as 100 spaces would require between 15 and 30 chargers to be in compliance. Larger facilities, with about 1000 spaces could require 150-300 chargers. Even on the

lower end of this spectrum, in smaller commercial parking facilities, the required number of stations is extremely high for DCFC providers. For reference, the typical Electrify America station has between 4-6 chargers; though, stations of 8-12 chargers are becoming more common in larger lots. A station of 15 chargers, as could be required in a smaller 100-space lot under the proposed language, would be among the five largest stations in Electrify America's network. And the lot would likely be too small to host such a large station. 250 fast chargers, even in larger lots, is all but impossible with current technological, infrastructure, and resources limitations. Meeting these EV charging requirements through a combination of DCFCs and level 2 chargers does not alleviate these challenges. The proposed threshold based on the number of spaces could require the installation of dozens, or even hundreds, of level 2 chargers in addition to the fast chargers included in the station. Because demand for fast chargers is highest in facilities where parking sessions are often brief, these level 2 chargers installed merely to meet the statute's requirements are not likely to provide a meaningful service and not likely to be economically viable. So, the disincentive created by a space-based threshold remains despite compliance being possible. As an alternative, Electrify America supports a requirement that sets a minimum power level, scaled to the size of the parking facility, to be provided by EV chargers. A power-allocation method for compliance would permit a property owner to install the type of charger that best complements their land use and to provide a charging service that meets the needs of the drivers using their parking facility. The state of California, in the 2023 update to its green building code, known as "Calgreen," proposed and adopted a power-allocation threshold as an alternative and in addition to one based on the number of spaces. In the "Final Express Terms for Proposed Building Standards…." attached, the Buildings Standards Commission approved a framework that would require, for example, parking facilities of 100 spaces to provide, effectively, 165 kW of power and lots of 1000 spaces to provide 1300 kW of power. This framework right-sizes the EV charging minimums to reflect the large amount of power offered by DCFCs. Charging stations compliant with the National Electric Vehicle Infrastructure (NEVI) program's standards must include four chargers each providing at least 150 kW charging speeds, though the DCFC industry is capable of reaching 350 kW. So, a power-based requirement also complements the nationwide effort to expand fast charging infrastructure by encouraging the proliferation of NEVI-compliant stations. Although this power-based threshold produces fewer chargers, DCFCs provide greater amounts of charge and range than their level 2 counterparts and service more vehicles during a given time. Utilization data from Electrify America's public DCFCs and level 2 chargers show that fast chargers dispense nearly 10x the number of kilowatt hours and enable 10x the number of driving miles per year as level 2 chargers. Additionally, level 2 chargers typically experience a number of charging sessions in the hundreds, annually, whereas a DCFC station performs thousands of charging sessions per year. DCFCs' faster charging speeds provide more range in shorter period of time and result in more frequent turnovers from one session to the next. So, despite producing fewer chargers, the power-based threshold encourages the build-out of charging infrastructure that provides an equal, if not better, service to EV drivers. Power-based requirements provide property owners the flexibility to install the types of chargers, including DCFCs, that best meet the needs of their facility's users. A power-allocation method of compliance, adopted in California, removes the disincentive to expanding fast charging infrastructure presented by the need for superfluous level 2 chargers simply to meet a minimum. And it does so while enhancing the charging services provided to the EV driver. As Austin considers ways to best support the proliferation of fast charging infrastructure, the city has a unique opportunity to be a leading voice on this matter and positively influence other states nation-wide as they consider doing the same. Electrify America appreciates the opportunity to submit these comments and would be happy to discuss this matter further and answer any questions the Committee may have. Respectfully submitted, /s/ Anthony Willingham Anthony Willingham Government Affairs & Public Policy Lead—State Electrify America LLC 1950 Opportunity Way, Reston, VA 20190 anthony.willingham@electrifyamerica.com Attachment FINAL EXPRESS TERMS FOR PROPOSED BUILDING STANDARDS OF THE CALIFORNIA BUILDING STANDARDS COMMISSION REGARDING THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE,

CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 11 (BSC 04/22) ... Power allocation method shall include the following: 1. Use any kVA combination of EV capable spaces, Low Power Level 2, Level 2 or DCFC EVSEs. 2. At least one Level 2 EVSE shall be provided. TABLE 5.106.5.3.6 TOTAL NUMBER OF ACTUAL PARKING SPACES MINIMUM TOTAL kVA @ 6.6 kVA TOTAL kVA REQUIRED IN ANY COMBINATION OF EV CAPABLE, LOW-POWER LEVEL 2, LEVEL 2 OR DCFC 0-9 0 0 10-25 26.4 26.4 26-50 52.8 52.8 51-75 85.8 85.8 76-100 112.2 112.2 101-150 165 165 151-200 231 231 201 and over 20 percent of actual parking spaces x 6.6 Total required kVA =P x .20 x 6.6 Where P=Parking spaces in facility 1. Level 2 EVSE @ 6.6 kVA minimum. 2. At least one Level 2 EVSE shall be provided. 3. Maximum allowed kVA to be utilized for EV capable spaces is 75 percent. 4. If EV capable spaces are utilized, they shall meet the requirements of Section 5.106.5.3.1 EV capable spaces.
Response:
Thank you for providing information about the DCFC alternative. The ordinance has been amended to include a power-allocation method option.

Question/Comment:
Austin Energy Staff and City of Austin Department of Development Services: Texas Gas Service Company, a division of ONE Gas, Inc. ("Texas Gas Service") proudly provides over 235,000 customers inside the City of Austin ("City) and another 40,000 customers in the Austin Metro area with affordable, reliable and clean natural gas service. We are excited to work with the City and industry stakeholders in the development of a fuel neutral energy code, designed to achieve building energy conservation while maintaining building safety, energy affordability, and energy reliability and resilience within both the commercial and residential sectors. As a stakeholder, Texas Gas Service appreciates the City's willingness to grant the public time to review the proposed inclusion of all (or only parts) of the 2024 IECC (International Energy Conservation Code) within the City of Austin's building codes. Because the affordability of housing in the Austin area is important to current and potential residents,[1] and the adoption of certain portions of the latest energy codes will likely increase the prices of new homes, these adoption proceedings are important. As such, Texas Gas Service strongly supports the City of Austin's decision to organize public hearing(s) and to provide the opportunity for public comment surrounding any recommendations for adoption prior to taking final action. In 2024, ONE Gas, Inc. ("ONE Gas"), Texas Gas Service's parent company received a rating of AAA (on a scale of AAA to CCC) in the MSCI ESG Ratings assessment. ONE Gas, also holds a "Prime" corporate rating in ESG from Institutional Shareholder Services (ISS) and is a member of ONE

[1] *See*, data.austiontexas.gov, "Percentage of Households Paying More Than 30 Percent (and more than 50 percent) of Income Toward Housing," ttps://data.austintexas.gov/stories/s/EOA-C-1-Percentage-of-households-paying-more-than-/tevy-4u2b/; see also, The Texas Tribune, "Austin Will Try Again to Tame its Housing Affordability Crisis with Zoning Reforms. Can It Do It This Time?" September 19, 2023.

Future, a coalition of companies across the natural gas value chain that are committed to keeping emissions intensity below 1%, a goal the coalition has beaten every year ONE Gas has been a participant.

Further, natural gas has proven to be affordable, reliable and a clean energy source which works in tandem with the electrical grid. In support of our customers and our environment, Texas Gas Service offers a robust energy efficiency program throughout the State of Texas. Texas Gas Service was one of the first natural gas utility companies in the country to offer rebates for high efficiency appliances in Austin and have done so for 30 years. In the Central Texas Region alone, during 2023 and up until May 2024, TGS has provided over $750,000 in rebates to residential and commercial customers, including builders, for the installation and purchase of various high efficiency natural gas appliances, as well as weatherization strategies to improve building efficiency and reduce emissions. In 2023, our energy efficiency program avoided 44,400 metric tons of CO2e, which is equivalent to removing over 10,000 passenger vehicles off the road.

The availability of natural gas for end-use in commercial and residential buildings is vital to the City of Austin's ability to put forth a viable energy portfolio. As proven on numerous occasions over the past few years, natural gas is a critical component to a comprehensive energy plan. Because our infrastructure is located primarily below ground, our natural gas system has a 99% reliability rating. During Winter Storm Uri, (and the subsequent ice storms) we kept the gas flowing to provide life-saving services to our customers. During URI, service was interrupted to only 300 of our more than 690,000 customers that we serve throughout the state of Texas, and most of these outages lasted less than 24 hours.

It is important to us that our customers continue to have access to safe and reliable natural gas in both good and difficult circumstances. And so, ONE Gas and members of each of its divisions (including Texas Gas Service) monitored and participated (both on its own and where possible in collaboration with others), in the IECC's process of drafting, reviewing and adoption of the 2024 IECC codes. Along the way, we and other collaborators with interests tied to the Austin community have worked diligently to provide relevant input on a variety of issues raised during the IECC's code adoption process. As can be expected some of our recommendations were considered while others went unacknowledged and unheard. However, we recognize that local government is more likely to have the ability recognize and to consider the real impacts that certain actions may have on its residents, industry and community. It is with this understanding that we are highlighting certain important issues that may have negative impacts on our customers ability to make reasonable and affordable choices related to building construction, the appliances they may desire and their ability to choose safe and reliable energy to warm their homes or businesses and/or to operate their appliances. We respectfully request your careful and thoughtful consideration of our recommendations below. Additionally, we are attaching, in *Appendix I*, proposed code language, that if adopted would implement building energy

conservation measures in an equitable, affordable, and reliable manner for all Austinites.

Summary of Recommendations:

- **Electric Readiness – Sections 8.4.5 and RK101**: This portion of the code is intended to prepare such buildings for electrification if and when fossil fuels are no longer a permissible or viable, cost-effective option. However, requirements for "electric readiness" for residential and commercial buildings were not properly justified in the IECC drafting process and as a result, led to these proposed requirements being relegated by the IECC committee as guidance material only and placed in an appendix of the 2024 IECC.[2] Based on the lack of confidence in the justification and general uncertainty surrounding this proposed code, we recommend that the City of Austin reject the promulgation of this portion of the 2024 IECC appendix as requirements in the City of Austin energy code. Instead, should the City find some value in this proposed section, we encourage the City to revise the code language to align more closely with the manner of adoption by the 2024 IECC, which made the use of the information as non-mandatory guidance only for builders, building operators, and homeowners.
- **Partnership with Interested Parties**: We strongly encourage the City of Austin to take steps to invite and build a close partnership with the local home builder associations to afford ready opportunities to understand the true cost implications of electric-ready code provisions that may be imposed upon Austinites, builders, and building operators, should the City choose to enforce or the building owner opt to pay for such electric-readiness preparations. Until true costs are determined, we recommend the City delay its final decision on this proposed code provision, given the importance of making sure there is an adequate supply of affordable new housing for all. Austin housing costs for both new homes and rental properties continue to climb, shutting out many potential new and low-income community home buyers and renters. The City of Austin needs to integrate housing affordability considerations in its consideration of 2024 IECC code adoption, looking at both the impact upon housing costs of construction and affordability directly affected by 2024 IECC and code amendment provisions.
- **Section R408 "additional energy credits" and Table R408.2:** Publication of the revised Section R408 was done without broad stakeholder consensus concerning justification of the credit values, or the development of sound definitions of technology categories used for Table R408.2 credit assignments. Further, we are also raising a concern regarding the level of consideration given to the issues of relative site energy, full fuel cycle energy, and emissions

[2] https://www.iccsafe.org/products-and-services/i-codes/code-development/2024-iecc-appeals/

reductions, and to the quantitative basis for numerical credit values across envelope and mechanical system options. among technology options for specific fuels and end uses, or between competing electric and gas options for residential buildings. We encourage the City of Austin to withhold adoption of this section until it has had an opportunity to independently review and justify these credit assignments from its adoption of the Table R408.2 credits as published to address the lack of technical consensus and justification during the 2024 IECC deliberations, with a specific focus on climate and emissions factors relevant to City of Austin energy supply alternatives foreseeable over the current IECC code cycle.

In addition, the "additional energy credits" in Table R408.2, presume a federal minimum energy efficiency for non-weatherized residential natural gas central furnaces of 95% AFUE and base additional credits on this minimum energy efficiency as a baseline. However, the federal minimum efficiency standard of 95% AFUE is under challenge in lawsuits filed by the American Gas Association (AGA) and other petitioners[3] and as a result cannot simply be presumed as the baseline for Table R408.2 credits. If the *AGA, et. al.* petitions are successful, the federal minimum efficiency for non-weatherized residential natural gas central furnaces would remain at 80% AFUE, and "additional energy credits" available in Table R408.2 would have to be adjusted to account for the 80% AFUE baseline. Texas Gas Service recommends that the City of Austin revise its proposal for "additional energy credits" to recognize efficiency improvements over the current 80% baseline. This should begin at 90% AFUE for incentivizing installation of Category IV natural gas furnaces (i.e., condensing combustion, positive venting pressure) as a first tier of "additional energy credits" as available, to builders for both singularly credited measures and in combination with other measures such as installation of high efficiency air conditioning as currently offered in Table R408.2. We recommend this revision be made applicable at least until a court order is issued.

- **Texas Utility Code §181.903 (Texas 2021 HB 17) – Restriction on Regulation of Utility Services and Infrastructure**: In 2021, the Texas Legislature took steps by adopting HB 17 (now codified as Tex. Util. Code § 181.903) to protect builders and property owners from facing the negative impacts of regulation that either encourages or discourages the installation of certain utility facilities based on energy type. To avoid potential conflict with this recent state law, we strongly encourage the city to conduct a comprehensive and thorough legal review of the proposed new codes in light of the legislative intent to ensure preservation of fuel choice for commercial and residential customers.

For a more detailed discussion and support of our positions as summarized points above, please

[3] *AGA, et al., v. DOE*, D.C. Cir. Nos. 22-1030 and 23-1337.

see "Texas Gas Service Attachment A" as attached hereto. Again, we appreciate the opportunity to meaningfully participate in the City's process of reviewing the 2024 IECC code provisions for consideration of adoption and implementation by the City. We stand ready to provide additional details or to respond to questions on this subject upon the City's request.

Sincerely,

Jason Ketchum
VP Commercial

TEXAS GAS SERVICE – ATTACHMENT A

Discussion of Recommendations

2024 IECC and Electric-Readiness Provisions (Sections 8.4.5 and RK101.1)

As proposed, the City of Austin's draft technical code language requires infrastructure for water heaters, clothes dryers, and cooking appliances that utilize fuel gas or liquid fuel, to also include installation of a dedicated 240-volt branch circuit outlet to be installed within 3 feet of each appliance specified above. During the 2024 IECC appeals process and final decision-making period, the ICC Board of Directors specifically recognized that the 'electric-ready' code provisions (and other associated requirements) did not comport with traditional "Scope" and "Intent" of the IECC. As a compromise, the Board agreed to place the problematic language into appendices based upon the Board's understanding that such coverages **could not be justified as IECC requirements**, which represent minimum energy conservation requirements. (*emphasis added*.)

Texas Gas Service's concern with the 'electric-ready' code provisions is that the economic analysis presented within the IECC code process was fundamentally flawed by the reliance on the presumption as a matter of course, that replacement of gas appliances with electric alternatives will take place in 100% of occupancies. The cost comparison used to support the presumption was restricted to the incorporation of electric infrastructure at the time of construction versus the possibility of future retrofit installation of electric infrastructure. The presumption did not allow for consideration of the facts that: (1) replacement of gas appliances with electric alternatives will not occur in all occupancies; and, (2) policies that would require such replacement in all cases, would run counter to cautions expressed by the ICC Board that could be challenged on federal preemption of EPCA covered products, discuss later in these comments. Additionally, any replacement not so mandated would need to be accounted for in actuarial predictions of gas appliance retirements. None of these considerations were taken into account

in the development phase of the 'electric ready' provisions, now residing in IECC's Appendix RK.

The City of Austin, in their code changes summary, specifically states that electric-readiness code provisions are adopted to align with their Climate Equity Plan. According to the plan, the city will achieve energy efficient, net-zero carbon buildings with "equity principles" in mind to ensure that impacts to low-income communities and communities of color are fully understood and taken into consideration.[4] Texas Gas Service stands with the City in its pursuit of a reduction in green house gas ("GHG") emissions, in an equitable manner. However, we believe that it necessary to work toward achieving such a goal through a fuel agnostic approach to the adoption of the 2024 IECC. We also believe that natural gas emissions reduction strategies must be developed and deployed in a fair and equitable manner. Further, Texas Gas Service also believes that such emission reduction strategies should be achieved with consideration of economic justice for all Austinites.

We define economic justice to encompass three primary pillars: affordability, energy choice, and energy access. Like environmental justice, economic justice is the fair treatment of all people, regardless of income level, with respect to the City's enforcement of energy regulation, or in this case, the development, adoption and enforcement of building codes.

Language within the Climate Equity Plan specifically provides that such strategies designed to reduce natural gas emissions "may include but are not limited to" use of renewable natural gas and expansion of energy efficiency programs, and other "new technologies and programs."[5] However, if the proposed electric-readiness language is adopted as a requirement for new residential and commercial buildings, the ability for the City to utilize new technologies and programs to reduce natural gas emissions will no longer be an option because electric-readiness language is adopted upon the premise that electrification of the building sector will indeed occur and natural gas end-use will no longer be a viable option. By requiring placement of a branch circuit to include labels such as "for future electric clothes drying equipment", the City is indirectly banning natural gas by requiring use of electric appliances. TGS is concerned that if such language is finalized and adopted, a dangerous precedent will occur by limiting the City and its residents to one single energy source - electricity. An equal important concern is that adoption of this strategy would also be contrary to the legislative intent expressed in Texas 2021 HB 17

[4] Austin Climate Equity Plan https://www.austintexas.gov/sites/default/files/files/Sustainability/Climate%20Equity%20Plan/Climate%20Equity%20Plan%20Full%20Document__FINAL.pdf

[5] https://www.austintexas.gov/sites/default/files/files/Sustainability/Climate%20Equity%20Plan/Climate%20Equity%20Plan%20Full%20Document__FINAL.pdf, pg. (50, 94)

(Tex. Util. Code § 181.903).

In support of the legitimacy of our concern, during the May 30th, 2024, in-person code engagement meeting, Austin Energy staff stated that the reason for electric-readiness language adoption is to prevent the higher cost of electrifying the residential and commercial building sectors in the future. They also stated that the driver behind electric-readiness is to "allow these projects to have a choice when the homeowner decides in the future to replace that equipment, they can have an option of what fuel source to use." We found this reasoning confusing as today, homeowners already have a choice to choose electric appliances as well as natural gas appliances. There is nothing now that prevents Austinites from choosing electric appliances. In addition, Austin Energy staff stated that electric-readiness provisions are drafted for adoption "based off of the equipment we have now" not on potential future additions which is contrary to the actual intent of the 'electric ready' provisions.[6] Before the City moves forward with any serious considerations for the adoption of the proposed 'electric ready' provisions, we ask that the City encourage staff to further explain what equipment is available now that wouldn't be available to consumers but for an adoption of the proposed code requirements.

Electric-Readiness Cost Concerns

According to the Pacific Northwest National Laboratory (PNNL), the entity that conducts the energy savings calculations of the newest IECC provisions, 'electric readiness' provisions are simply a measure in place in case natural gas is no longer a viable option. Specifically, the lab states that electric-readiness codes prevent homeowners from incurring "future costs should fossil fuels become less affordable or even unavailable over the life of the building." [7] PNNL also states that electric readiness codes will help "improve the cost effectiveness of electrification in the future," not in the present. Again, these statements are based on an assumption that such required additional electrical infrastructure will be used and useful to consumers in a timely manner.

In the City's proposal for adoption of the 'electric ready' provisions, it has not provided a definition of "future" in a manner to permit the City the ability to consider the costs against any 'future' benefits of the proposed adoption.

Also, in addition to PNNL analysis, the New Building Institute (NBI), another stakeholder in the 2024 IECC process and strong proponent of electric-readiness code language, stated that the cost of electrical panel upgrades and associated electric-readiness infrastructure for a new build "is equivalent to the expense of upgrading to an average stone kitchen countertop," or between

[6] Technical Code Amendments In-Person Document, https://publicinput.com/g4245?lang=en
[7] https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-32183.pdf

$1,000-$1,800.[8] This analysis assumes that the average homeowner can afford the cost equivalent of upgrading to a kitchen countertop and that they will in fact reap the "thousands of dollars" saved from using such infrastructure.

Finally, in 2021, Home Innovation Research Labs published cost analyses conducted for the National Association of Home Builders for four major U. S. cities comparing gas equipped houses to all electric houses.[9] For new home construction in Houston, Texas (the metropolitan area closest to Austin), the study showed that costs of electrification (including costs of appliances for cooking, clothes drying, space heating (and cooling), and service water heating) averaged $24,282 **more** than the average baseline gas house . This total cost, while not specific to electric-ready equipment, addresses appliance costs, and illustrates two impacts. First, the increased cost of going all-electric in an average home is, on its own, an inducement not to later switch or add new fuels and to instead, make use of the already installed electric-ready infrastructure. This burden will force builders and owners to forgo consideration of the benefits of alternative fuel sources in favor of avoiding stranding the costs of that alternative infrastructure as a direct result of the mandated code compliance. Second, the added total cost to residential construction is likely to negatively impact economically disadvantaged and first-time home buyers by escalating home prices generally. Of course, these costs do not capture direct costs of electric-ready provisions such as branch circuits and panel upgrades. However, the U. S. Energy Star program estimates that panel upgrades for new builds (compared to that of standard systems) may add $1,000 to $2,500 and branch circuit costs of $300 to $1,000 per end use appliance with higher costs, where runs of circuits increase in length and increasing numbers of wall penetrations.[10] In cases where these added expenses become stranded costs in particular, the added cost to home construction would represent a decidedly negative impact on consumer resources and financing capacity.

Conflict with Chapter 181, Section 181.903 of the Utilities Code

Texas Gas Service believes that draft language regarding electric-readiness codes for both commercial and residential end-uses may be in direct violation of Tex. Util. Code § 181.903 (Texas 2021 HB 17), which was signed into law on May 18th, 2021. The law specifically states that no

[8] https://newbuildings.org/wp-content/uploads/2022/04/BuildingDecarbCostStudy.pdf

[9] Home Innovation Research Labs, "Cost and Other Implications of Electrification Policies on Residential Construction," prepared for National Association of Home Builders, February 2021.

[10] U. S. Energy Star, "Make Your Home Electric Ready:" https://www.energystar.gov/products/energy_star_home_upgrade/make_your_home_electric_ready

regulatory or planning authorities, or political subdivision "may adopt or enforce an ordinance, resolution, regulation, code, order, policy, or other measure that has the purpose, intent, or effect of directly or indirectly banning, limiting, restricting, discriminating against, or prohibiting the connection or reconnection of a utility service or the construction, maintenance, or installation of residential, commercial, or other public or private infrastructure for a utility service based on the type or source of energy to be delivered to the end-use customer."[11]

As discussed above, the electric-ready code provisions for commercial and residential buildings have a purpose and intent to indirectly ban, limit, and discriminate against natural gas end-use. The provisions serve to prohibit the connection of a utility service based on the type of energy source, in this case, natural gas, and to prevent it from being delivered to the end-use customer in the future. By requiring installation of branch circuits with labels that state 'for future electric appliance,' next to natural gas appliances, and by specifically targeting those buildings that operate natural gas appliances, the City would be prohibiting fuel choice.

Due to our stated concerns, we strongly encourage a comprehensive and thorough legal review of state law to ensure that fuel choice for commercial and residential customers is preserved as intended under Texas law.

Additional Considerations for Deliberation by City of Austin:

A. Recent Electricity Cost and Reliability Projections

Austin Energy provides valuable electricity services via various renewable resources such as solar, wind, and biomass. Because these resources are dependent upon weather patterns, which are drastically changing due to climate change, additional fuel resources like nonrenewables and natural gas distribution services are critical to meeting the ongoing (and increasing) high demand for electricity.

Growing electricity demand from residential and commercial customers, increasing use of AI, and a transition away from fossil fuels is pushing the US electric grid to the brink, according to McKinsey & Company, the Federal Energy Regulatory Commission (FERC) and multiple news outlets.[12] In FERC's May 2024 summer energy market and reliability report, it explained that U.S. electric demand is expected to increase 2.7% this summer to 1,487 TWh compared to last

[11] See, Tex. Util. Code § 181.903(b)(May 18, 2021).
[12] https://www.washingtonpost.com/business/2024/05/13/power-grid-transmission-lines-electricity/ https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/investing-in-the-rising-data-center-economy

summer. Similarly, U.S. data center load is expected to grow to nearly 21 GW this year, up from 19 GW in 2023, FERC staff said in the report. Electric demand from such facilities across the U.S. is expected to climb to 35 GW by the end of this decade, according to the report.[13]

A report released in June 2024, by the National Energy Assistance Directors Association (NEADA) and the Center for Climate and Energy Poverty shows increases in the US electricity bill average since 2014. Specifically, for the Southwest Region of the US, (which includes Texas), consumers can expect an average electricity bill to be upwards of $858 during the cooling season from June - September 2024. This burden weighs heaviest on low-income consumers. According to the report, the high costs are exacerbated by extreme heat events caused by climate change. The report recommends policy alternatives that are inclusive of low-income communities, such as weatherization assistance and installation of heat pumps. However, the heat pump recommendation does not take into consideration the impacts of climate zone differentiation and may not be suitable for the Southwest Region. Nonetheless, Texas Gas Service provides weatherization assistance throughout the Central Texas Region as well as rebates to make high efficiency natural gas appliances affordable for low-income customers.[14] This report provides a snapshot into the importance of a fuel agnostic approach to energy usage via all policy avenues, including building code development.

In addition to the NEADA report, the North American Electric Reliability Corporation (NERC) predicts a "potential for insufficient operating reserves" for ERCOT this summer if demand is at its highest. The report specifically states that although solar PV is added at a rate outpacing demand, energy risks are growing when solar output is at its lowest. Transmission permitting and development delays also contribute to this energy risk concern for ERCOT. Natural gas end-use offers certainty when the electric grid is not able to perform at its highest and meet the demand of the growing Texas population.[15]

B. **The Berkeley Gas Ban and Court Challenges to State and Local Codes Disproportionately Affecting Fuel Gas Installation**.

Earlier this year, the City of Berkeley, California, repealed their ban on natural gas end-use in new residential and commercial buildings after the Ninth Circuit Court of Appeals ruled that such a ban was in violation of the Energy Policy and Conservation Act (EPCA). The ruling states that EPCA preempts state regulation or building code from regulating the efficiency of natural gas

[13] https://www.ferc.gov/news-events/news/report-2024-summer-energy-market-and-electric-reliability-assessment
[14] https://neada.org/wp-content/uploads/2024/06/2024summeroutlook.pdf
[15] https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SRA_2024.pdf

appliances; instead, the US Department of Energy oversees this concern. Many stakeholders including the California Restaurant Association and builders, were in opposition to a direct ban on natural gas end-use. As a result of the decision, other cities throughout California have repealed their bans on natural gas end-use. Although the City of Austin's proposed energy code is not a direct ban on natural gas use in new residential and commercial buildings, the premise of electric-readiness code language is to prepare for a future for electrifying buildings and a hypothetical world without natural gas end-use, all of which is to be paid for by customers who may or may not want to discontinue their use of natural gas appliances.

C. **Legal Interpretation of Federal Preemption Risks Forewarned by 2024 IECC Cautionary Notices of Appendix Adoptions as Requirements**

As several appendices of the 2024 IECC note the potential for federal preemption issues with the use of appendix material as requirements, ONE Gas recognizes that all requirements that set criteria for EPCA "cover product" federal minimum efficiency standards other than the promulgated minimum efficiency standard subject the City of Austin to these risks if adopted as building requirements. Based upon court cases involving the EPCA statute and its prohibition of federal minimum efficiency standards, these risks are not manifest just for incidents where a local jurisdiction is setting conflicting minimum standard and can include energy efficiency programs that create biases against such minimum efficiency standard "covered products." [16] As discussed for Table R408.2 above, ONE Gas strongly recommends that the City conduct a review of 2024 IECC requirements for "covered products" and determine whether or not such adoption of the proposed electric ready provisions would impose a risk of the City of violating federal preemption prohibitions. Although in its comments to the 2024 IECC, ONE Gas recommended that ICC conduct its own legal analysis of potential conflicts and associated risks for the benefit of potential adopting jurisdictions, the ICC Board, in recommending advisory language in appendix material covering this issue "punted" the consideration of the issue of potential risks to local jurisdictions to assess.

D. **Impacts of Additional Electricity Demand Upon Carbon Emissions Under Scenarios of Grid Makeup.**

The City of Austin neither provides nor documents usage of any impact analysis covering expanded electricity demand that might arise as a consequence of electric-ready provisions in the

[16] Air Conditioning, Heating and Refrigeration Institute v. City of Albuquerque, Docket No. 08-633 MV/RLP, October 3, 2008.

code and replacement of natural gas end use applications that may result. This is a serious deficiency in the ability of the City to assess benefits as well as costs of electric-ready requirements. Based upon federal grid electricity data published by the U. S. Environmental Protection Agency (EPA) in its eGRID database and employed in energy emissions estimating tools such as GTI Energy's EPAT tool for the City of Austin,[17] current grid electricity consumed in the City accounts for 916.5 pounds of carbon dioxide (CO2) per megawatt of power. Unless the City can demonstrate dramatic reductions in this CO2 emission rate in the future, electric-ready provisions in buildings (if put into effect) will proportionately increase the City's CO2 emissions in the future. Also, these data sources document that current source energy consumption factors for the City of Austin to be 2.38 times the energy delivered to building sites in comparison to natural gas, which only accounts for a 1.09 times source energy factor. Emissions are proportional to these source energy factors and the current electricity grid mix. As a result, forced fuel switching to grid electricity based upon current data would likely increase the City's emissions contribution over maintaining use of natural gas for many applications. ONE Gas strongly recommends that the City, prior to agreeing to promulgate electric-ready building requirements, take these effects into account. If the City bases its code on a different grid electricity future, that forecast should be made available to the public for review.

APPENDIX I

Texas Gas Service's Proposed Code Language Update

(Austin's Commercial Code Provisions with PROPOSED Changes Highlighted in Blue)[18]

8.4.5 **Additional electric infrastructure.** Electric infrastructure in *buildings* that contain combustion equipment ~~shall~~ may be installed in accordance with this section.

[17] https://cmicepatcalc.gti.energy/BuildCityHouse.aspx.

[18] Please note, in addition to the proposed edits as highlighted in blue, TGS added formatting edits only to the City's original draft document to improve readability of the same information upon inclusion into the Company's comments.

Combustion space heating. Spaces containing combustion equipment for space heating ~~shall~~ may comply with **Sections 8.4.5.1.1**, **8.4.5.1.2** and **8.4.5.1.3**

.4.5.1.1 **Designated exterior locations for future electric space-heating equipment.** Spaces containing combustion equipment for space heating ~~shall~~ may be provided with designated exterior location(s) shown on the plans and of sufficient size for outdoor space-heating heat pump equipment, with a chase that is sized to accommodate refrigerant lines between the exterior location and the interior location of the space heating equipment, and with natural drainage for condensate from heating operation or a condensate drain located within 3 feet (914 mm) of the location of the future exterior space-heating heat pump equipment.

.4.5.1.1 **Dedicated branch circuits for future electric space-heating equipment.** Spaces containing combustion space-heating equipment with a capacity not more than 65,000 Btu/h (19 kW) ~~shall~~ may be provided with a dedicated 240-volt branch circuit with ampacity of not less than 50. The branch circuit ~~shall~~ may terminate within 6 feet (1829 mm) of the space heating equipment and be in a location with ready *access*. Both ends of the branch circuit ~~shall~~ may be *labeled* with the words "For Future Electric Space Heating Equipment" and be electrically isolated. Spaces containing combustion equipment for space heating with a capacity of not less than 65,000 Btu/h (19 kW) shall be provided with a dedicated branch circuit rated and sized in accordance with **Section 8.4.5.1.3**, and terminating in a junction box within 3 feet (914 mm) of the location the space heating equipment in a location with ready *access*. Both ends of the branch circuit ~~shall~~ may be *labeled* "For Future Electric Space Heating Equipment."

Exceptions:

1. Where a branch circuit provides electricity to the space heating combustion equipment and is rated and sized in accordance with **Section 8.4.5.1.3**.
2. Where a branch circuit provides electricity to space cooling equipment and is rated and sized in accordance with **Section 8.4.5.1.3**.
3. Where future electric space heating equipment would require three-phase power and the space containing combustion equipment for space heating is provided with an electrical panel with a label stating "For Future Electric Space Heating Equipment" and a bus bar rated and sized in accordance with **Section 8.4.5.1.3**.
4. *Buildings* where the 99.6 percent design heating temperature is not less than 50°F (10°C).

TABLE 8.4.5.1

ALTERNATE ELECTRIC SPACE HEATING EQUIPMENT CONVERSION FACTORS (VA/kBtu/h)

99.6% HEATING DESIGN TEMPERATURE	**Ps**

Greater Than (°F)	Not Greater Than	VA/kBtu/h
50	N/A	N/A
45	50	94
40	45	100
35	40	107
30	35	115
25	30	124
20	25	135
15	20	149
10	15	164
5	10	184
0	5	210
-5	0	243
10	5	289
-15	-10	293

For SI: °C = [(° F) – 32]/1.8, 1 British thermal unit per hour
= 0.2931 kW.

Additional space heating electric infrastructure sizing. Electric infrastructure for future electric space heating equipment ~~shall~~ may be sized to accommodate not less than one of the following:

1. An electrical capacity not less than the nameplate space heating combustion equipment heating capacity multiplied by the value in **Table 8.4.5.1**, in accordance with **Equation 8.4.5.1**.VAs = Qcom x Ps
2. **Equation 8.4.5.1**

Where VAs = The required electrical capacity of the electrical infrastructure in volt-amps.Qcom = The nameplate heating capacity of the combustion equipment in kBtu/h Ps = The VA per kBtu/h from **Table 8.4.5.1** in VA/kBtu/h.

3. An electrical capacity not less than the peak space heating load of the *building* areas served by the space heating combustion equipment, calculated in accordance with **Section 6.4.2.1**,

multiplied by the value for the 99.6 percent design heating temperature in **Table 8.4.5.1**, in accordance with **Equation 8.4.5.2.**

VAs = Qdesign x Ps

Equation 8.4.5.2

Where VAs = The required electrical capacity of the electrical infrastructure in volt-amps.

Qdesign = The 99.6 percent design heating load of the spaces served by the combustion equipment in kBtu/h.

Ps = The VA per kBtu/h from **Table 8.4.5.1** in VA/kBtu/h.

2. **Combustion service water heating** Spaces containing combustion equipment for *service water heating*

~~shall~~ may comply with **Sections 8.4.5.2.1**, **8.4.5.2.2** and **8.4.5.2.3**.

.4.5.1.1 **Combustion service water heating electrical infrastructure.** For each piece of combustion equipment for water heating with an input capacity of not more than 75,000 Btu/h (22 kW), the following electrical infrastructure is required:

1. An individual 240-volt branch circuit with an ampacity of not less than 30 ~~shall~~ may be provided and terminate within 6 feet (1829 mm) of the *water heater* and shall be in a location with ready *access* .
2. The branch circuit overcurrent protection device and the termination of the branch circuit ~~shall~~ may be *labeled* "For future electric water heater."
3. The space for containing the future *water heater* ~~shall~~ may include the space occupied by the combustion equipment and shall have a height of not less than 7 feet (2134 mm), a width of not less than 3 feet (914 mm), a depth of not less than 3 feet (914 mm) and with a volume of not less than 700 cubic feet (20 m3).

Exception: Where the space containing the *water heater* provides for air circulation sufficient for the operation of a heat pump *water heater*, the minimum room volume shall not be required.

.4.5.1.1 **Designated locations for future electric heat pump water heating equipment.** Designated locations for future electric heat pump water heating equipment ~~shall~~ may be in accordance with one of the following:

1. Designated exterior location(s) shown on the plans, of sufficient size for outdoor water heating heat pump equipment and with a chase that is sized to accommodate refrigerant lines between the exterior location and the interior location of the water heating equipment.
2. An interior location with a minimum volume the greater of 700 cubic feet (19 822 L) or 7 cubic feet (198 L) per 1,000 Btu/h (293 W) combustion equipment water heating capacity. The interior location shall include the space occupied by the combustion equipment.

3. An interior location with sufficient airflow to exhaust cool air from future water heating heat pump equipment provided by not fewer than one 16-inch (406 mm) by 24-inch (610 mm) grill to a heated space and one 8-inch (203 mm) *duct* of not more than 10 feet (3048 mm) in length for cool exhaust air.

.4.5.1.1 **Dedicated branch circuits for future electric heat pump water heating equipment.** Spaces containing combustion equipment for water heating with a capacity of greater than 75,000 Btu/h (21 980 W) ~~shall~~ may be provided with a dedicated branch circuit rated and sized in accordance with **Section 8.4.5.2.4** and terminating in a junction box within 3 feet (914 mm) of the location the water heating equipment in a location with ready *access* . Both ends of the branch circuit shall be *labeled* "For Future Electric Water Heating Equipment."

Exception: Where future electric water heating equipment would require three-phase power and the main electrical service panel has a reserved space for a bus bar rated and sized in accordance with **Section 8.4.5.2.4** and *labeled* "For Future Electric Water Heating Equipment."

.4.5.1.1 **Additional water heating electric infrastructure sizing.** Electric infrastructure water heating equipment with a capacity of greater than 75,000 Btu/h (21 980 W) ~~shall~~ may be sized to accommodate one of the following:

1. An electrical capacity not less than the combustion equipment water heating capacity multiplied by the value in **Table 8.4.5.2** plus electrical capacity to serve recirculating loads as shown in **Equation 8.4.5.3**.VAw = (Qcapacity x Pw) + [Qrecirc x 293 (VA/(Btu/h))] **Equation 8.4.5.3**

Where VAw = The required electrical capacity of the electrical infrastructure for water heating in volt-amps Qcapacity = The water heating capacity of the combustion equipment in kBtu/hPw = The VA per kBtu/h from **Table 8.4.5.2** in VA/kBtu/h Qrecirc = The capacity required for temperature e maintenance by recirculation, if applicable, in Btu/h

2. An alternate design that complies with this code, is *approved* by the authority having jurisdiction and uses no energy source other than electricity or *on-site renewable energy*.

TABLE 8.4.5.2

ALTERNATE ELECTRIC WATER HEATING EQUIPMENT CONVERSION FACTORS (VA/kBtu/h)

99.6% HEATING DESIGN TEMPERATURE	**Ps**

Greater Than (°F)	Not Greater Than	VA/kBtu/h
55	60	118
50	55	123
45	50	129
40	45	136
35	40	144
30	35	152
25	30	162
20	25	173
15	20	185
10	15	293
5	10	293
0	5	293
Less than 0°F		293

For SI: °C = [(° F) – 32]/1.8, 1 British thermal unit per hour = 0.2931 kW.

3. Combustion cooking. Spaces containing combustion equipment for cooking ~~shall~~ may comply with **Section**

4.5.1.1 or **8.4.5.3.2**.

.4.5.3.1 **Commercial cooking.** Spaces containing commercial cooking appliances shall be provided with a dedicated branch circuit with a minimum electrical capacity in accordance with **Table 8.4.5.3.1** based on the appliance in the space. The branch circuit ~~shall~~ may terminate within 3 feet (914 mm) of the appliance in a location with ready *access* . Both ends of the branch circuit shall be *labeled* with the words “For Future Electric Cooking Equipment” and be electrically isolated.

9.4.5.3.1 **All other cooking.** Spaces containing all other cooking equipment not designated as commercial cooking appliances ~~shall~~ may be provided with a dedicated branch circuit in compliance with **NFPA 70** Section 422.10. The branch circuit ~~shall~~ may terminate within 6 feet (1829 mm) of

fossil fuel ranges, cooktops and ovens and be in a location with ready *access* . Both ends of the branch circuit ~~shall~~ may be *labeled* with the words "For Future Electric Cooking Equipment" and be electrically isolated.

TABLE 8.4.5.3.1

COMMERCIAL COOKING MINIMUM BRANCH CIRCUIT CAPACITY

COMMERCIAL COOKING APPLIANCE	MINIMUM BRANCH CIRCUIT CAPACITY
Range	469 VA/kBtu/h
Steamer	114 VA/kBtu/h
Fryer	200 VA/kBtu/h
Oven	266 VA/kBtu/h
Griddle	195 VA/kBtu/h
All other commercial cooking appliances	114 VA/kBtu/h

For SI: 1 British thermal unit per hour = 0.2931 kW.

Combustion clothes drying. Spaces containing combustion equipment for clothes drying ~~shall~~ may comply with **Section 8.4.5.4.1** or **8.4.5.4.2**.

.4.5.1.1 **Commercial drying.** Spaces containing clothes drying equipment and end uses for commercial laundry applications ~~shall~~ may be provided with conduit that is continuous between a junction box located within 3 feet (914 mm) of the equipment and an electrical panel. The junction box, conduit and bus bar in the electrical panel ~~shall~~ may be rated and sized to accommodate a branch circuit with sufficient capacity for equivalent electric equipment with equivalent equipment capacity. The electrical junction box and electrical panel ~~shall~~ may have labels stating, "For Future Electric Clothes Drying Equipment."

.4.5.1.1 **Residential drying.** Spaces containing clothes drying equipment, appliances and end uses serving multiple *dwelling units* or sleeping areas with a capacity less than or equal to 9.2 cubic feet (0.26 m3) ~~shall~~ may be provided with a dedicated 240-volt branch circuit with a minimum capacity of 30 amperes, ~~shall~~ may terminate within 6 feet (1829 mm) of fossil fuel clothes dryers and ~~shall~~

may be in a location with ready *access* . Both ends of the branch circuit ~~shall~~ may be *labeled* with the words "For Future Electric Clothes Drying Equipment" and be electrically isolated.

9.4.5 **On-site transformers.** *Enclosed spaces* and underground vaults containing onsite electric transformers on the *building* side of the electric utility meter ~~shall~~ may have sufficient space to accommodate transformers sized to serve the additional electric loads identified in **Sections 8.4.5.1**, **8.4.5.2**, **8.4.5.3** and **8.4.5.4**.

(Residential Code Provisions with PROPOSED Changes Highlighted in Blue)

RK101.1 Electric readiness. Water heaters, household clothes dryers and cooking appliances that use fuel gas or liquid fuel ~~shall~~ may comply with **Sections RK101.1.1** through **RK101.1.4** **RK101.1.5**.

A space that is at least 3 feet (0.91 m) by 3 feet (0.91 m) wide by 7 feet (2.13) high ~~shall~~ may be available surrounding or within 3 feet (0.91 m) of the installed water heater.

Exceptions:

1. Installed heat pump water heaters.
2. Installed tankless water heaters on the exterior of the *dwelling unit*.
3. Water heaters serving multiple dwelling units in a R-2 occupancy.

Response:

Thank you for your comments and recommendations. Please see below for responses to each recommendation.

- **Electric Readiness-Sections 8.4.5 and RK101.** Many new appendices were introduced in the 2024 code cycle. The content of Appendices RK and CH initially were included in the main body of the energy code by the majority voting action of the consensus committee, however, were moved to appendices after an appeal process. The City of Austin has proposed to adopt Appendices RK and CH as developed in the consensus committee process and with the inclusion of a water heater space requirement as initially proposed by the US Department of Energy. The ICC board did not cite lack of confidence in these provisions in their decision to move these provisions to an appendix, but rather noted that these provisions address greenhouse gases. Appendices are designed to be optional and can be adopted by authorities having jurisdiction that seek to take advantage of the benefits of the provisions in an appendix. The City of Austin does not propose to adopt Resource RRA.
- **Partnership with Interested Parties.** The City of Austin appreciates close partnerships with all stakeholders involved in the Technical Building Codes knowing they all bring different perspectives and expertise. We welcome more opportunities with the local home builder associations to understand impacts new codes bring. All proposed city code amendments, ordinances, and other proposed changes must complete an Affordability Impact Statement (AIS) to identify any potential impacts on housing affordability. Potential impacts are to include construction costs or savings for the developer and operation costs or savings for the homeowner or renter.
- **Section R408 "additional energy credits" and Table R408.2.** Section R408 credit values were

determined through modeling by the US Department of Energy's Pacific Northwest National Lab (PNNL). Due to PNNL's federally mandated role in modeling and issuing determination and cost effectiveness studies for the energy code, they were asked by the consensus committee to perform the preliminary modeling throughout the code development process. PNNL staff attended consensus committee, subcommittee, and work group meetings, presented modeling results 2-3 times and answered questions throughout the code development process. Ultimately, the consensus committee voted in favor of the final version of Section R408 through multiple cycles in the standards development process and multiple ballots. We recommend any interested parties that would like to propose changes do so for the 2027 IECC code cycle. Like any other federal or state legislative changes that may occur between code cycles, if federal action necessitates changes to Section R408 the City of Austin has various avenues to implement those changes, if and when needed.

- **Texas Utility Code §181.903 (Texas 2021 HB 17) – Restriction on Regulation of Utility Services and Infrastructure.** The requirement to label and reserve additional electrical infrastructure installed to support the provisions of Appendix CH Electric-ready Commercial Building Provisions for future electrical equipment was removed to remove limits on use of that electrical infrastructure. The proposed Electric Readiness standards are intended to expand customer appliance choice (now and in the future). The provision doesn't limit or discourage the use of any fuel source nor does Electric Readiness prohibit, limit, or restrict builders from connecting to any utility service.

Question/Comment:

The American Gas Association (AGA) represents more than 200 local energy companies committed to the safe and reliable delivery of clean natural gas to more than 73 million customers throughout the nation. AGA appreciates the opportunity to comment on the proposed changes to the City of Austin's commercial energy code. Our first concern is the city is not referencing a published 2024 edition of the IECC but relies on a redline version that may not be what is eventually published by the ICC. We would ask that the efforts to modify the commercial and the residential Austin Texas energy codes be based on a published and publicly available edition of the 2024 IECC and not rely on a redline version that may have, for a number of reasons, differences then the published 2024 IECC.

Regarding the proposed revisions to add Appendix CG Electric Vehicle Charging Infrastructure and additional requirements and Appendix CH – Electric-Ready Commercial Building Provisions, we do not believe these additions help the city to meet its energy and emissions reduction goals and in fact, will result in an overall increase in both as well as an increase in construction cost that will impact the affordability of new and existing structures. Regarding the Electric Vehicle infrastructure, etc. requirements, it is clear that this will add significant cost and electricity usage with no specific documentation and analysis that justifies the benefits of such and extensive requirement for commercial building installations. The Appendix CH – Electric-Ready Commercial Building Provisions is even more troublesome since it adds a costly requirement that may never be used in the commercial application and if used, can actually add more source energy use than the fossil fuel appliances that it targets for possible future replacement. The ICC Board of Directors took the logical action at the end of the 2024 International Energy Conservation Code development process to remove both the Electric Vehicle provisions and the Electric-Ready Commercial Building Provisions from the compliance requirements of the 2024 IECC and we urge that the City of Austin, Texas do the same. The AGA March 20, 2024 Press Release that provides the March 18, 2024 ICC Board of Directors action on these requirements can be found here. In summary, AGA respectfully request that the city of Austin, Texas remove Appendix CG and Appendix CH from consideration during this code development process.

Response:

Thank you for your feedback. The redline version of the 2024 IECC is a final draft version similar to redline versions of other I-codes. All final changes to the model code are incorporated in the redline version. ICC is expected to publish the non-redline print and digital versions July 2024. The redlined version is available for purchase as a pdf at https://shop.iccsafe.org/2024-international-energy-conservation-coder.html. Once the non-redline print and digital versions are available, they will also be available for purchase in ICC's shop.

The City of Austin Climate Equity Plan identifies use of electric vehicles as a way to reduce community greenhouse gas emissions and adoption of new energy and building codes as one of the strategies to pursue to meet its goals. The EV-readiness provisions of Appendix CG are meant to reduce the costs associated with upgrading electrical infrastructure and trenching of surface parking lots to accommodate EV charging infrastructure. Studies have shown that these costs can be 4 – 6 times higher if done as a future retrofit over the costs if done at new construction.

The electric-readiness provisions of Appendix CH are meant to reduce costs if building owners choose to install electric equipment instead of combustion equipment at some point in the future. While there are upfront costs associated with the provisions of Appendix CH, the retrofit costs needed to alter buildings so that they can accommodate electric equipment is greater than the costs needed to do so at new construction. It is important to note that these cost savings will not be realized if electric equipment is not installed in the future.

Question/Comment:
I support the proposed adoption of the 2024 Commercial IECC, including the EV-ready, electric-ready, energy storage and demand response amendments.
Response:
Noted. Thank you for your feedback.

Question/Comment:
We support the proposed adoption of the 2024 Commercial IECC, including the EV-ready, electric-ready, energy storage and demand response amendments. Increasing energy efficiency is important for reducing greenhouse gas emissions and local air pollution, keeping bills affordable and increasing electric grid and community resilience. Thank you
Response:
Noted. Thank you for your feedback.

Question/Comment:
RE: Tesla Comments on City of Austin Residential and Commercial Electric Vehicle Readiness proposals of the 2024 International Energy Conversation Code (IECC) Dear Austin Energy Green Building Staff,

Tesla[19] appreciates the opportunity to comment on Austin Energy's Residential and Commercial Electric Vehicle Readiness proposals of the 2024 International Energy Conversation Code (IECC). We applaud the City's leadership in pushing forward the energy code in a timely manner. Although many cities and states have adopted energy codes, only a handful have been proactive in adopting, updating, and enforcing the most up-to-date codes. Energy codes ensure that a building's energy use is included as a fundamental part of the design and construction process of new buildings; making an early investment in building energy improvements will pay dividends to Austin residents for years into the future.

We offer the following comments on the 2024 IECC Electric Vehicle Readiness proposals for both commercial and residential buildings.

1. **We support the residential electric vehicle readiness proposal for one-and two-family dwellings, townhomes, and R-2 occupancies.**

The residential proposal derived from Appendix RE of the 2024 IECC Residential code requires that new one- and two-family dwellings and townhouses with designated parking provide one EV capable, EV ready, or EVSE space per dwelling unit. Multifamily buildings with four stories or less must provide an EV capable space, EV ready space, or EVSE space for 40 percent of dwelling units or automobile parking spaces, whichever is less. These requirements give building owners flexibility in establishing the level of EV readiness that will fit their current and future needs, while still providing the necessary minimum EV charging load that the distribution system needs to be sized for.

Moreover, the language in Appendix RE was developed as a consensus proposal during the IECC code development process with input from a diverse group of stakeholders including representatives from the home builders, electrical manufacturers, EV charging providers, and utilities. It went through several rounds of public comment and editorial changes to ensure clarity, consistency, enforceability, and technical soundness. Adopting Appendix RE outright would help staff streamline and quicken the public input process given that the language has already been thoroughly vetted.

2. We strongly recommend increasing EV-ready requirements and including EVSE-installed spaces for certain commercial occupancy types

We are concerned that the omission of EV-ready and EVSE-installed spaces in Table CG101.2.1 from all commercial occupancy types expect Groups R-1 and R-2 will result in an under-investment in necessary charging infrastructure to support current and future EV drivers in Austin. The current proposal heavily stacks EV-capable requirements across nearly all commercial building types, which puts the burden on building owners, EV drivers, or

[19] Tesla's mission is to accelerate the world's transition to sustainable energy. To accomplish its mission, Tesla designs, develops, manufactures, and sells high-performance fully electric vehicles and energy generation and storage systems, installs, and maintains such systems, and sells solar electricity. Tesla also owns and operates an extensive EV charging network across the U.S. including stations in Austin. At Gigafactory Texas in Austin, TX, Tesla produces the Model Y crossover, and Cybertruck and manufactures Tesla's new, advanced 4680 lithium-ion battery cell, cathode, and battery packs. Upon completion, Gigafactory Texas will invest over $10B in factory development and create at least 10,000 new jobs.

tenants to have an outlet or EVSE wired and installed at their parking space. While an EV capable space requires panel capacity, a dedicated circuit and raceway, it does not include a way for someone to drive up to a parking spot and plug in and charge. In particular, this barrier presents a significant obstacle to installing EV infrastructure at multi-family dwellings, which have proven to be the most challenging sector to deploy EV infrastructure.
Unlike residents of single-family homes, multi-family tenants are commonly renters without the authority to retrofit parking spaces to install charging equipment. When retrofitting to provide EV charging is possible, tenants and owners can face costs of 4-6 times higher than if done during new construction[20]. The ability to charge an EV overnight is additionally important for multifamily tenants who are rural, low-income, and in disadvantaged communities, who typically have longer commutes and drive older EVs with shorter ranges.
Several cities and counties across the country have included ambitious EVSE-installed and EV-ready requirements for commercial building types, including Scottsdale, Tucson, Coral Gables, St. Petersburgh, St. Louis County, Charlotte, Columbus, Orlando, Chicago, Seattle, and many others. We recommend that Austin match or exceed the ambition of its peer cities and adopt EV-ready and EVSE-installed requirements for new commercial buildings. Tesla proposes revisions to Table CG101.2.1 in the Appendix 1.

3. We recommend including a Direct Current Fast Charging (DCFC) compliance pathway that provides new commercial buildings the option to meet compliance with charging that mirrors dwell times.

Depending on the type of nonresidential building and the typical dwell time a vehicle is parked, a higher power level for charging beyond a standard Level 2 charger may be most beneficial. A DCFC compliance pathway would allow new non-residential buildings the option to meet EV-capable and EVSE compliance either through Level 2 or DCFC. For example, commercial buildings with short dwell times, such as grocery stores, would have the ability to use a DCFC compliance ratio of 5:1 EVSE installed if minimum requirements are met and at least one Level 2 EVSE is installed. A DCFC compliance option is important as it provides building owners with the incentive to go beyond minimum EVSE requirements and the optionality to install the level of EV charging, either Level 2 or DCFC, that best fits customer needs. This optionality also results in a more efficient use of state and private infrastructure investment given more optimal charging station usage. Tesla proposes recommended language in the attached Appendix 2.

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Tesla appreciates the opportunity to provide feedback on 2024 IECC Electric Vehicle Readiness proposals for both commercial and residential buildings. We look forward to continued work with the City of Austin on its transportation electrification efforts. Thank you for the opportunity to submit these comments.
Sincerely,
Tessa Sanchez
Senior Policy Advisor
Business Development and Public Policy
Tesla, Inc.

[20] https://caletc.aodesignsolutions.com/assets/files/CALGreen-2019-Supplement-Cost-Analysis-Final-1.pdf

Response:
Thank you for your feedback. In regards to your commercial energy code comments: 2. Providing the percentage of EV capable and EV ready parking spaces listed in Table CG101.2.1 10.4.10-1 at new construction provides the infrastructure needed for installation of EVSE in the future while also removing the demolition costs of installing the infrastructure in the future. While studies have shown that the costs per parking space for EV infrastructure decrease as the percentage of EV capable/ready parking increases and when EVSE are installed at the time of construction, having EV capable/ready parking spaces allow building owners to judge when there is sufficient demand to justify the installation of EVSE. 3. The ordinance has been amended to include a power-allocation method option.

Question/Comment:
Eric.Tate@atmosenergy.com July 8, 2024 City of Austin Austin City Hall 301 W. Second St. Austin, TX 78701 Re: Comments on Proposed 2024 Technical Code Amendments Dear City of Austin: Atmos Energy Corporation ("Atmos Energy") supports fuel-neutral energy codes that are consistent with state and federal law. As proposed, the 2024 Technical Code would adopt provisions of the International Energy Conservation Code ("IECC") and 2024 IECC appendices that advance the electrification of homes and businesses. Atmos Energy urges the City not to include these provisions in the final 2024 Technical Code. Atmos Energy is the nation's largest natural-gas-only distributor, serving more than three million natural gas distribution customers in over 1,400 communities in eight states, from the Blue Ridge Mountains in the East to the Rocky Mountains in the West. Included in Atmos Energy's service territory is the City of Austin, within which Atmos Energy serves approximately 11,000 customers. Atmos Energy's vision is to be the safest provider of natural gas services and the company is committed to the safety and success of our communities, the environment, delivering a reliable source of energy, and providing exceptional customer service. This vision continues to fuel Atmos Energy's investment in modernizing its system, which is integrated with our comprehensive environmental strategy focused on reducing the environmental impact from our operations. This strategy includes a robust set of programs that improve consumer energy efficiency within our service territories. Efforts to affordably increase energy efficiency for the broadest number of

residents and businesses should be fuel neutral. Currently, the proposed 2024 Technical Code amendments would adopt provisions that favor electrification.[21] Before finalizing the amendments, Atmos encourages the City to consider the following—

1. **Fuel neutral measures promote efficient appliances and reliable energy**. Atmos Energy's SmartChoice Energy Efficiency Program offers rebates and incentives for businesses and residential customers, including those in the City, who install energy-efficient natural gas appliances such as furnaces, tankless water heaters, smart thermostats, and more.[22] The efficiency benefits of natural gas appliances are heightened when considering the energy consumed to generate and distribute the resource—transporting natural gas from wellhead to consumer's meter results in less than 10% of energy lost, compared to a 63% energy loss in transporting electricity from powerplant to consumer home.[23]

2. **Fuel neutrality is the most affordable approach to achieving emission reductions.** Costs are a significant factor in a consumer's decision to replace an appliance in their home, and natural gas appliances are often a more affordable option for improving energy efficiency. For example, in the forecast of the Department of Energy ("DOE") of the average unit costs of residential energy sources, the DOE found that electricity is 3.3 times more expensive than the equivalent energy through the direct use of natural gas.[24] Atmos Energy recommends that the City work with local industry to fully understand the actual cost impacts of imposing the provisions being considered.

3. **Whether the codes at issue cost effectively increase energy efficiency is untested**. In considering electric-favoring provisions, fuel neutral alternatives were not adequately evaluated as part of the 2024 IECC code development process. For example, the underlying analyses supporting the electric-readiness appendices were flawed and oversimplified—only comparing costs at time of construction versus retrofitting.[25] Further, earlier this year, the Board of the International Code Council—the organization responsible for developing the 2024 IECC—found that certain provisions, including some in the 2024 Technical Code amendments, were not consistent with the intended purpose of "providing the minimum efficiency requirements for buildings that result in the maximum level of energy efficiency that is safe, technologically feasible, and life cycle cost effective considering economic feasibility, including potential costs and saving for consumers and building owners, and return on investment."[26]

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[21] Attachment A lists the 2024 IECC provisions the City has proposed to include in the 2024 Technical Code amendments that advance electrification.

[22] Atmos Energy, Mid-Tex SmartChoice Rebates, https://www.atmosenergy.com/ways-to-save/mid-tex-appliancerebate-program/.

[23] Atmos Energy, Natural Living: Natural Gas: The Natural Choice for a Better Home, a Better Environment (Spring/Summer 2024) at 11,

[24] Energy Conservation Program for Consumer Products: Representative Average Unit Costs of Energy, 88 Fed. Reg. 58,575, 58,576 (Aug. 28, 2023).

[25] Such analysis overlooks the possibility that electric readiness measures may never be fully utilized, as well as the varying timelines on which buildings will begin to utilize their readiness infrastructure.

[26] International Code Council, 2024 IECC Appeals: ICC Board of Directors Actions Report, Apr. 11, 2024, at 6.

4. **The codes at issue do not concern energy conservation.** The International Code Council Board evaluated the function of the codes at issue here and found that they do ***not*** "concern[] . . . building energy conservation."[27,28] Accordingly, these codes do not accomplish the Technical Code's foundational purpose of conserving energy use by homes and businesses and should not be included in the final 2024 Technical Code.[29]

* * *

To aid in the City's review of the proposed 2024 Technical Code amendments, a list of the 2024 IECC provisions that should not be included in the final 2024 Technical Code amendments is attached. Atmos Energy sincerely appreciates the City's consideration of these comments.

Please do not hesitate to reach out to Eric Tate at 469-975-4615 if you have questions or would like to discuss these comments further. Atmos looks forward to continuing to engage with the City on the code amendment process.

Sincerely,
Eric Tate
Manager of Public Affairs Atmos Energy Corporation
cc: Austin Energy Green Building Staff

Attachment A

As explained in Atmos Energy's comments, we ask that the City omit or make optional the following proposed provisions which directly or indirectly preference electrification:

Commercial:

- Section C8.4.5: Additional Electric Infrastructure
- Appendix CB: Solar-Ready Zone – Commercial
- Appendix CG: Electric Vehicle Charging Infrastructure
- Appendix CH: Electric-Ready Commercial Building Provisions

Response:

Thank you for your comments and recommendations. Please see below for responses to each recommendation.
1. Thank you for your notes.
2. The City of Austin appreciates close partnerships with all stakeholders involved in the Technical Building Codes knowing they all bring different perspectives and expertise. We welcome more opportunities with the development community to understand impacts new codes bring.
3. We understand that the point being made by the quote of the IECC intent statement from the 2024 IECC Appeals ICC Board of Directors Actions Report is that the provisions being appealed address greenhouse gas emissions rather than directly affecting building energy conservation. The report does not indicate that cost was a consideration in the board's decision.

[27] Id. at 10.
[28] Also of note, the Board went on to determine that all-electric requirements pose a "significant risk of preemption
based on case law" and added "[a] cautionary note regarding the risk of preemption." Id. at 5
[29] See Austin, Texas Code, Section 25-12-261 (entitled "International Energy Conservation Code")

4. Appendices are designed to be optional and can be adopted by authorities having jurisdiction that seek to take advantage of the benefits of the provisions in an appendix.

Question/Comment:

To: Austin Mayor and City Council
From: Todd McAlister, Executive Director, South-central Partnership for Energy Efficiency as a Resource
Date: July 9, 2024
Re: International Energy Conservation Code 2024 Technical Code

Amendments Honorable Mayor Watson and City Council Members,

The South-central Partnership for Energy Efficiency as a Resource (SPEER) is the U.S. Department of Energy (DOE) recognized Regional Energy Efficiency Organization supporting energy and building code education, adoption and compliance throughout Texas and Oklahoma. Through this work, SPEER facilitates educational trainings and acts as a resource for local governments and the state as they seek to adopt new energy and building codes. In this capacity, SPEER supports the efforts of the City of Austin to review and consider adoption of the 2024 International Energy Conservation Code (IECC 2024) with amendments.

The review, adoption, and enforcement of updated energy codes across the state will enhance efficiency in new buildings, lower energy costs for homeowners, and increase reliability and resiliency to the region's energy grid. As new technologies flow into the region and the state prepares for a more diverse resource mixture to the wholesale electricity market, it is imperative for cities like Austin to adopt new codes to adequately prepare and receive the added efficiency gains which provide passive survivability and lower bills to the ratepayer.

Residential Amendments:

Relating to the IECC 2024 Residential Code Amendments outlined by the current proposal, SPEER supports the proposal for adoption with amendments by the City of Austin. The proposal provides consumers with adequate choice in fuel types through requiring electric ready homes, however, stops short of mandating specific fuel type requirements. This change allows for easier adoption of electric vehicles and backup generation for residents while not limiting their options for implementing new measures. Additionally, the changes to the ceiling insulation portions of the code protects residents of Austin from incoming heat transfer from their roofs which will ultimately aid in conserving energy in heating and cooling of homes. Lastly, the updated "pick-a-package" for home appliances will work as a force multiplier for conserving energy and reducing costs for customers. Maintaining an updated home envelope and with new energy efficient appliances will build the city's resiliency and reliability during peak summer months and extreme weather events year-round. These savings are noted in the Pacific Northwest National Labs reporting on the 2024 IECC suite. The Residential updates will result in increases of 5% energy savings, 7% energy cost savings, and reductions of carbon emissions for the region of 7%.

Commercial Amendments:

SPEER supports the proposed amendments for the 2024 IECC Commercial Model Codes.

Similar to the Residential Model Codes, the Commercial amendments provide electric ready commercial buildings without limiting consumer choice for implementation of measures. Through providing electric ready buildings, consumers have the opportunity to install their choice of fuel type for backup generation resources, as well as being prepared for increased electric vehicle adoption in the region.

Conclusion:

SPEER appreciates the opportunity to submit this letter of support for adoption and implementation of the 2024 IECC suite and looks forward to working with the City of Austin for additional amendments and adoption in the future.

Sincerely,

Todd McAlister
Executive Director, SPEER

Cc: Randy Plumlee, Codes Program Manager, SPEER
Noah Oaks, State and Local Policy Manager, SPEER

Response:

Noted. Thank you for your feedback.

Question/Comment:

July 8, 2024 Attention: Public Comments Dear Austin Energy Green Building Staff, Vehicle Readiness proposals of the 2024 International Energy Conversation Code (IECC) The Alliance for Transportation Electrification appreciates the opportunity to comment on Austin Energy's Residential and Commercial Electric Vehicle Readiness proposals of the 2024 International Energy Conversation Code (IECC). We applaud the City's leadership in pushing forward the energy code in a timely manner. Although many cities and states have adopted energy codes, only a handful have been proactive in adopting, updating, and enforcing the most up-to-date codes. Energy codes ensure that a building's energy use is included as a fundamental part of the design and construction process of new buildings; making an early investment in building energy improvements will pay dividends to Austin residents for years into the future. We offer the following comments on the 2024 IECC Electric Vehicle Readiness proposals for both commercial and residential buildings. 1. We support the residential electric vehicle readiness proposal for one-and two-family dwellings, townhomes, and R-2 occupancies. The residential proposal derived from Appendix RE of the 2024 IECC Residential code requires that new one- and two-family dwellings and townhouses with designated parking provide one EV capable, EV ready, or EVSE space per dwelling unit. Multifamily buildings with four stories or less must provide an EV capable space, EV ready space, or EVSE space for 40 percent of dwelling units or automobile parking spaces, whichever is less. These requirements give building owners flexibility in establishing the level of EV readiness that will fit their current and future needs, while still providing the necessary minimum EV charging load that the distribution system needs to be sized for. Moreover, the language in Appendix RE was developed as a consensus proposal during the IECC code development process with input from a diverse group of stakeholders including representatives from the home builders, electrical manufacturers, EV charging providers, and utilities. It went through several rounds of public comment and editorial changes to ensure clarity, consistency, enforceability, and technical soundness. Adopting Appendix RE outright would help staff streamline and quicken the public input process given that the language has already been thoroughly vetted. 2. We strongly recommend increasing EV-ready requirements and including EVSE- installed spaces for certain commercial occupancy

types We are concerned that the omission of EV-ready and EVSE-installed spaces in Table CG101.2.1 from all commercial occupancy types expect Groups R-1 and R-2 will result in an under-investment in necessary charging infrastructure to support current and future EV drivers in Austin. The current proposal heavily stacks EV-capable requirements across nearly all commercial building types, which puts the burden on building owners, EV drivers, or tenants to have an outlet or EVSE wired and installed at their parking space. While an EV capable space requires panel capacity, a dedicated circuit and raceway, it does not include a way for someone to drive up to a parking spot and plug in and charge. In particular, this barrier presents a significant obstacle to installing EV infrastructure at multi-family dwellings, which have proven to be the most challenging sector to deploy EV infrastructure. Unlike residents of single-family homes, multi-family tenants are commonly renters without the authority to retrofit parking spaces to install charging equipment. When retrofitting to provide EV charging is possible, tenants and owners can face costs of 4-6 times higher than if done during new construction2. The ability to charge an EV overnight is additionally important for multifamily tenants who are rural, low-income, and in disadvantaged communities, who typically have longer commutes and drive older EVs with shorter ranges. Several cities and counties across the country have included ambitious EVSE-installed and EV- ready requirements for commercial building types, including Scottsdale, Tucson, Coral Gables, St. Petersburgh, St. Louis County, Charlotte, Columbus, Orlando, Chicago, Seattle, and many others. We recommend that Austin match or exceed the ambition of its peer cities and adopt EV-ready and EVSE-installed requirements for new commercial buildings. Tesla proposes revisions to Table CG101.2.1 in the Appendix 1. 3. We recommend including a Direct Current Fast Charging (DCFC) compliance pathway that provides new commercial buildings the option to meet compliance with charging that mirrors dwell times. Depending on the type of nonresidential building and the typical dwell time a vehicle is parked, a higher power level for charging beyond a standard Level 2 charger may be most beneficial. A DCFC compliance pathway would allow new non-residential buildings the option to meet EV- capable and EVSE compliance either through Level 2 or DCFC. For example, commercial buildings with short dwell times, such as grocery stores, would have the ability to use a DCFC compliance ratio of 5:1 EVSE installed if minimum requirements are met and at least one Level 2 EVSE is installed. A DCFC compliance option is important as it provides building owners with the incentive to go beyond minimum EVSE requirements and the optionality to install the level of EV charging, either Level 2 or DCFC, that best fits customer needs. This optionality also results 2 https://caletc.aodesignsolutions.com/assets/files/CALGreen-2019-Supplement-Cost-Analysis-Final-1.pdf in a more efficient use of state and private infrastructure investment given more optimal charging station usage. ATE proposes recommended language in the attached Appendix 2. . ATE appreciates the opportunity to provide feedback on 2024 IECC Electric Vehicle Readiness proposals for both commercial and residential buildings. We look forward to continued work with the City of Austin on its transportation electrification efforts. Thank you for the opportunity to submit these comments. Sincerely, Rick Tempchin Alliance for Transportation Electrification rick@evtransportationalliance.org 202-258-2912 *** APPENDIX 1 Language to be added is underlined. Language to be removed is struck. TABLE C405.14.1 REQUIRED EV POWER TRANSFER INFRASTRUCTURE Occupancy Group A Group B Group E Group F Group H Group I Group M Group R-1 Group R-2 Group R-3 and R-4 Group S exclusive of parking garages Group S-2 parking garages EVSE Spaces 5% 0% 5% 0% 5% 0% 2% 0% 1% 0% 5% 0% 5% 0% 10% 0% 10% 0% 0% 0% 5% 0% EV Ready Spaces 5% 0% 10% 0% 10% 0% 0% 0% 10% 0% 10% 0% 5% 5% 0% 0% 10% 0% EV Capable Spaces 10% 30% 30% 5% 0% 30% 30% 35% 35% 5% 0% 30% 1 Tesla Road, Austin, TX 78725 P 650 681 5100 F 650 681 5101 APPENDIX 2 Language to be added is underlined. Language to be removed is struck. CG101.2.1 Quantity. The number of required electric vehicle (EV) spaces, EV capable spaces and EV ready spaces shall be determined in accordance with this section and Table CG101.2.1 based on the total number of automobile parking spaces and shall be rounded up to the nearest whole number. For R-2 buildings, the Table CG101.2.1 requirements shall be based on the total number of dwelling units or the total number of automobile parking spaces, whichever is less. 1. Where more than one parking facility is provided on a

building site, the number of required automobile parking spaces required to have EV power transfer infrastructure shall be calculated separately for each parking facility. 2. Where one shared parking facility serves multiple building occupancies, the required number of spaces shall be determined proportionally based on the floor area of each building occupancy. 3. Installed electric vehicle supply equipment installed spaces (EVSE spaces) that exceed the minimum requirements of this section may be used to meet the minimum requirements for EV ready spaces and EV capable spaces. 4. Installed EV ready spaces that exceed the minimum requirements of this section may be used to meet the minimum requirements for EV capable spaces. 5. Where the number of EV ready spaces allocated for R-2 occupancies is equal to the number of dwelling units or to the number of automobile parking spaces allocated to R-2 occupancies, whichever is less, requirements for EVSE spaces for R-2 occupancies shall not apply. 6. Requirements for a Group S-2 parking garage shall be determined by the occupancies served by that parking garage. Where new automobile spaces do not serve specific occupancies, the values for Group S-2 parking garage in Table CG101.2.1 shall be used. 7. Group S-2 parking garages with no less than 50% long term parking spaces shall provide no less than 10% EV capable spaces. Long term parking spaces are considered as parking spaces where users generally park for more than 8 hours at a time, including overnight, at places such as airports, transit hubs, etc. 8. The installation of Direct Current Fast Charging (DCFC) EVSE shall be permitted to reduce the minimum number of required EV capable or EV ready spaces without EVSE or EVCS with Level 2 EVSE by five and reduce proportionally the required electrical load capacity to the service panel or subpanel.

Response:

Thank you for your feedback. In regards to your commercial energy code comments:

2. Providing the percentage of EV capable and EV ready parking spaces listed in Table CG101.2.1 10.4.10-1 at new construction provides the infrastructure needed for installation of EVSE in the future while also removing the demolition costs of installing the infrastructure in the future. While studies have shown that the costs per parking space for EV infrastructure decrease as the percentage of EV capable/ready parking increases and when EVSE are installed at the time of construction, having EV capable/ready parking spaces allow building owners to judge when there is sufficient demand to justify the installation of EVSE.
3. The ordinance has been amended to include a power-allocation method option.