

## Recommendation on Building Codes

The Task Force finds that continued improvement in base energy codes to reduce peak and overall energy use is of benefit to low-income and middle-income residents and to Austin Energy overall. By reducing the energy use of new and rehabilitated buildings Austin can lower emissions and water use from existing fossil fuel plants, reduce the need to buy expensive peak power off the market and potentially provide demand response capabilities to meet peak demand or even participate in energy markets. The Task Force reaffirms the goal of making new home construction in Austin, Texas to be net-zero energy capable by the end of 2015, while recognizing there are challenges with fully meeting this goal.

We recommend in 2015 that Austin Energy work with the relevant advisory committees, city departments and city council to adopt:

1. The 2015 IECC codes for residential construction, including local amendments to reach the net-zero-energy capable homes approved by City Council in 2007;  
*Development of Austin's 2015 Energy Code has begun including stakeholder meetings which have been ongoing. It is anticipated that changes to the code will result in a 12 – 15% improvement in efficiency compared to the 2012 Energy Code. This will bring us close to the goal of net-zero-energy capable homes*
2. The local amendments should consider new technologies like making all homes “solar-ready,” incorporating demand response, energy storage and electric vehicle charging technologies as appropriate.  
*Ensuring design and construction do not preclude the application of on-site generation, demand response, energy storage and electric vehicle charging infrastructure may be more appropriate. Issues of affordability must be considered, as sweeping requirements may add an additional financial burden to homeowners. Historically, the City has provided incentives such as ratings, rebates and rates that fit with the City's goals and cost metrics to drive the adoption of new technologies until they reach market viability.*
3. City Council should adopt a policy that builders of all new single family homes built after 2016 should offer buyers an optional solar package, either on the rooftop or as part of a community solar project.  
*Not all homes are suitable for solar due to orientation or shading issues. Austin Energy is developing a community solar program that should be available for customers mid to late 2016. Community solar projects owned by third parties within Austin Energy's service area would violate the exclusive right to provide electric service. There are other electric utilities serving parts of Austin's (code) jurisdiction which could be considered for this recommendation.*
4. If Austin Energy allows an alternative compliance path such as a Home Energy Ratings Index (HERS), the number should be set appropriately so as not to undermine the net-zero energy capable goal or overall building envelope performance.  
*The ERI is indexed on the 2006 IECC and, as applied in the 2015 IECC, allows building to the 2009 prescriptive envelope requirements. Adopting an ERI above*

- that set forth in the 2015 IECC could allow construction of an envelope with lower performance than that allowed under Austin's current code. If a higher ERI is allowed, it should align with other compliance paths and provide an alternative – not weaker – means of compliance. Austin's 2009 prescriptive requirements, which have fenestration U factor and wall insulation requirements more stringent than the published 2009 IECC, should be used as a baseline for the ERI path.*
5. Either the 2015 IECC codes for commercial construction – including larger multi-family units -- or an equivalent code such as the ASHREA 90.1 – 2013 code  
*The initiative to move to ASHRAE 90.1-2013 has already begun. Notable to this cycle is that the city would like to eliminate the current structure whereby two energy codes (both the IECC and 90.1) are effective for the commercial sector. The IECC, by necessity, must allow compliance with 90.1 as an alternative. It has been found that in practice, this dual code structure fosters confusion that limits understanding and therefore code efficacy. This initiative is also supported by the Zucker report which essentially recommends simplification of the building codes.*
  6. Consider local amendments to the commercial codes to incorporate onsite renewable energy, demand response, storage and electric vehicle charging stations.  
*Since the code describes mandatory requirements, issues of affordability must be considered. AE's strategy concerning this has therefore been to offer incentives to support new technologies but not generally to propose that they be mandatory. Ratings have been used to educate the market and drive early adoption and acceptance, ultimately achieving market transformation as the measures are adopted in code.*

*It is being proposed this cycle that new and remodeled buildings be demand response capable when the most attractive technology for mechanical and lighting system control (direct digital control) has been selected by the project.*

*In the future, it is likely that infrastructure for renewable energy, energy storage, and EV charging will be included as mandates but those issues will need to be carefully considered within the context of the current and future market conditions as well as the political climate in Texas. Too many requirements too early could be counterproductive in the long term.*

7. Consider setting a net-zero capable goal for all other buildings, including commercial buildings by 2020 by creating a task force to research and provide recommendations on achieving net zero energy for all new buildings.  
*For commercial buildings in Austin, net zero is an extremely aggressive goal in most cases. Austin is very hot in the summer and commercial buildings, with their extremely varied occupancies, tend to have dominant internal loads.*

*Technological issues stand as a significant barrier to the feasibility of ZNE for the average commercial project. For example, while some buildings will be better suited to sufficient onsite energy generation (single story buildings with a large footprint will support large solar arrays for example) others do not (high rises with limited roof area).*

8. Updating our Austin Green Building Programs to inspire builders to go beyond base codes.

*The Green Building ratings are updated in concert with the adoption of new energy codes, and are always ahead of codes. Green building programs are under constant review and updated to match changing market dynamics as well as code changes.*

9. Improving coordination between the Austin Energy Green Building and code development department and permitting and compliance so that builders actually comply with energy codes.

*Coordination between Austin Energy Green Building and building review and inspection is generally good, and there is a high degree of compliance with the energy code. AE has provided substantial training and support to the City for the energy code enforcement, and there have been improvements in this area.*

*Additional resources such as dedicated energy code plan reviewers and inspectors (with appropriate training) would improve community awareness, understanding, and compliance. Adopting one commercial energy code, as cited under #5 above would also help with community awareness, understanding and compliance. The benefits obtained from proper staffing would have the largest impact. The building official is requesting additional FTE's in the 2016 budget for permit review.*

The Task Force believes that by updating our base energy code, Austin can continue to be a leader on producing carbon-free energy the old fashion way – not using it in the first place.