

ULI AUSTIN NET ZERO IMPERATIVE



© 2022 URBAN LAND INSTITUTE

THIS REPORT IS SPONSORED BY:

City of Austin, Texas

Austin Energy

With financial support from a generous gift
from Owen Thomas to the ULI Foundation

ON THE COVER: Austin, Texas



Find this report and hundreds of others on Knowledge Finder,

the leading global resource of trends and best practices in real estate development and financing. Explore an ever-expanding library and find recommended content related to your interests, including reading lists, case studies, videos and webinars, books, and more.

knowledge.uli.org

About the Urban Land Institute

The Urban Land Institute is a global, member-driven organization comprising more than 45,000 real estate and urban development professionals dedicated to advancing the Institute's mission of shaping the future of the built environment for transformative impact in communities worldwide. ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific region, with members in 81 countries. ULI's extraordinary impact on land use decision-making is based on its members' sharing expertise on a variety of factors affecting the built environment, including urbanization, demographic and population changes, new economic drivers, technology advancements, and environmental concerns. Peer-to-peer learning is achieved through the knowledge shared by members at thousands of convenings each year that reinforce ULI's position as a global authority on land use and real estate. Drawing on its members' work, the Institute recognizes and shares best practices in urban design and development for the benefit of communities around the globe.

More information is available at uli.org. Follow ULI on [Twitter](#), [Facebook](#), [LinkedIn](#), and [Instagram](#).

About ULI Austin

As the preeminent, multidisciplinary real estate forum, ULI facilitates the open exchange of ideas, information, and experience among local, national, and international industry leaders and policymakers dedicated to creating better places. The ULI Austin District Council brings together real estate professionals, civic leaders, and the Austin community for educational programs, initiatives impacting the region, and networking events, all in the pursuit of advancing responsible and equitable land use throughout the region. With over 1,000 members locally, ULI Austin provides a unique venue to convene and share best practices in the region. ULI Austin believes everyone needs to be at the table when the region's future is at stake, so ULI serves the entire spectrum of land use and real estate development disciplines – from architects to developers, CEOs to analysts, builders, property owners, investors, public officials, and everyone in between. Using this interdisciplinary approach, ULI examines land use issues, impartially reports findings, and convenes forums to find solutions.

ULI District Council Leadership

Stephen Coulston

Principal, Perkins & Will
District Council Chair, ULI Austin

Heidi Cisneros

Managing Partner, Structures
Chair of Mission Advancement, ULI Austin

Allen Wise

First Vice President, IBC Bank
Co-Chair TAP Committee, ULI Austin

Jason Qunell

Director, University Federal Credit Union
Co-Chair TAP Committee, ULI Austin

Paulette Gibbins

Executive Director, ULI Austin

ULI Advisory Services: National and Global Programs

Since 1947, the ULI Advisory Services program has assembled well over 700 ULI-member teams to help sponsors find creative, practical solutions for complex land use challenges. A wide variety of public, private, and nonprofit organizations have contracted for ULI's advisory services. National and international panelists are specifically recruited to form a panel of independent and objective volunteer ULI member experts with the skills needed to address the identified land use challenge. The program is designed to help break through obstacles, jump-start conversations, and solve tough challenges that need an outside, independent perspective. Three- and five-day engagements are offered to ensure thorough consideration of relevant topics.

Learn more at americas.uli.org/programs/advisory-services.

ULI Advisory Services identify creative, practical solutions for complex land use and development challenges.

Technical Assistance Program (TAP)

Urban Land Institute harnesses its members' technical expertise to help communities solve complex land use, development, and redevelopment challenges. Technical Assistance Panels (TAPs) provide expert, multidisciplinary, unbiased advice to local governments, public agencies, and nonprofit organizations facing complex land use and real estate issues in the Austin region. Drawing from its professional membership base, ULI Austin offers objective and responsible guidance on various land use and real estate issues ranging from site-specific projects to public policy questions. The sponsoring organization is responsible for gathering the background information necessary to understand the project and present it to the panel. TAP panelists spend two days interviewing stakeholders, evaluating the challenges, and ultimately arriving at a set of recommendations that the sponsoring organization can use to guide development going forward.

The Net Zero Imperative

Thanks to a generous gift from Owen Thomas, ULI has launched the Net Zero Imperative – a multi-year initiative to accelerate decarbonization in the built environment. Additional gifts from Lynn Thurber, Joe Azrack, Franz Colloredo-Mansfeld, and Dan Cashdan further support and bolster the NZI program's scale and impact. Work to advance the initiative includes technical assistance panels in five global cities each year, designed to help developers, building owners, cities, and other relevant constituents reduce carbon emissions associated with buildings, communities, and cities. The fundamental goal of the effort is to provide concrete ideas and strategies to real estate owners, public sector leaders, and the general public to eliminate carbon emissions from the built environment to reach net zero. Through its work, the initiative will create global resources (research, toolkits, and other tools) to help all ULI members accelerate decarbonization in their real estate operations and in their cities.

Technical Assistance Panel and Project Staff

Panel Members

Bungane Mehlomakulu

Panel Chair

Head of Building Science & Performance

ICON Technology, Inc.

Matthew Fisher

Principal

Tech Fisher Solutions

Sarah King

Senior Vice President, Sustainability

Kilroy Realty

Anica Landreneau

Senior Principal, Global Director of Sustainable
Design

HOK

Amanda Masino

Chair, Natural Science / Director Environmental Justice

Huston-Tillotson University

Ben Myers

Vice President, Sustainability

Boston Properties

ULI Project Staff

Paulette Gibbins

Executive Director, ULI Austin

Cheryl McOsker

Director, ULI Austin

Ashley Besic Pollock, MSRE, Fitwel Ambassador

Senior Manager, ULI Greenprint Center for Building
Performance

Kelly Annis

Technical Writer, Branch Communications/ULI St. Louis

171



The City of Austin Permitting and Development Center on 6310 Wilhelmina Delco Drive embodies a number of net zero building practices, such as reclaiming stormwater onsite and does a good job of helping the city lead by example.

CONTENTS

Executive Summary	9
Introduction and the Net Zero Imperative	13
Establishing an Equitable Net Zero Culture for Austin	17
Education and Engagement	20
Balanced Regulation and Incentives	23
Initiatives	26
Next Steps	30
About the Panel	31

ULI



The interior spaces of the Permitting and Development Center likewise reflect a number of energy efficiency practices and products, such as low-voltage LED lighting, ample access to natural light, and heavily insulated windows.

EXECUTIVE SUMMARY

To better meet the challenges of a rapidly changing climate, growing population, and overburdened energy grid, the City of Austin has set its sights on becoming a net zero community by 2040, emitting zero greenhouse gases into the atmosphere and thereby lessening the negative impacts human activity is having on the climate. Net zero by 2040 is an audacious goal and one that the city can meet with careful planning. With roughly 50 percent of Austin's current carbon emissions derived from the built environment, advancing progress on energy efficiency, reducing fossil fuel combustion, and development of renewable energy for the city's new and existing buildings is paramount. To better understand the net zero opportunities within the real estate sector, the City of Austin (the city) turned to the Urban Land Institute Austin District Council (ULI) to help chart a path forward.

Collaboration will be key in achieving net zero. The private sector, including building owners and real estate developers, has a significant role to play in a city's net zero pursuit. The public sector likewise has a significant role to play, establishing efficient systems and processes within the regulatory framework, and balancing regulations and incentives to require or encourage the use of energy efficient technologies over traditional building approaches. With the additional assistance of innovative financing tools, willing and capable utility partners, engagement, and communication and education programs to support net zero initiatives, cities like Austin can develop a pathway toward their net zero energy goals and significantly reduce carbon emissions.

While the City of Austin is seeing progress relating to energy efficiency in new construction projects, and recently adopted the 2021 Energy Conservation Code for new construction, there remains significant legacy building stock constructed under generations of older building codes, maintained and operating to varying standards, and performing at a wide range of efficiency. In contemplating how to reach Austin's population of building owners and developers, ULI and the city identified a need for deeper study and investigation with members of the real estate development, consulting, and construction community. This process, conducted via ULI's trusted Technical Assistance

Panel (TAP) program, set forth to address what it will take to get developers to implement the net zero initiatives of fossil fuel reduction, reducing energy demand (including building envelope considerations), and incorporating on-site renewable energy in retrofits of commercial and multifamily buildings.

Following a careful review of the briefing materials, interviews with public and private sector stakeholders, and deliberation among the TAP panelists (the panel), the panel recognized a need to establish a culture of energy efficiency throughout the city and identified the following key areas of focus to help the city meet its net zero goals: education and engagement, regulation and incentives, and initiatives.

At the outset, the panel recommended that the city embrace a culture of net zero across every department and throughout all of its actions. The work cannot reside solely in the Office of Sustainability, Austin Energy, or the Austin Energy Green Buildings program. Success requires coordination, streamlining, and simplification across all agencies and departments intersecting with building owners, developers, and their representatives. Austin already boasts a broad range of city employees who understand the individual role they each play in the net zero pursuit, however it will be essential for agency and department *leaders* to underscore how important

a coordinated effort to implement the Climate Equity Plan is for the City of Austin. Similarly, building owners, corporate tenants, nonprofit and faith-based organizations, and individual Austin residents should be engaged to understand the role they can play in reducing the city's carbon emissions and creating a healthier, more sustainable Austin. Maintaining a strong sector-spanning vision and reinforcing consistent messaging in the community will help to solidify and expand the city's culture of equitable climate action.

While the goal is community-wide net zero emissions, the city should provide even greater support to communities of color and other groups that have been historically marginalized. Centering equity in the framework and in the deployment of these recommendations will be key to combating systemic racism and rectifying and repairing past injustices. The panel defined equity for this process as avoiding negative externalities of displacement, unaffordability, or utility burden, particularly for households already paying a larger percentage of their income on utilities. An equitable process should serve as a catalyst for growth, job creation, and prosperity – serving all beneficially.

While the majority of Austin's buildings are controlled by the private sector, the city does have its own building stock where it can lead by example, and it has significant influence over the private sector where it can leverage education, incentives, and initiatives to push for and reward the adoption of energy efficient products and practices.

Education & Engagement

Value Proposition. The pace of progress in the energy sector is impressive and innovations in energy efficient building products and systems provide an ever-improving range of options. This progress has inspired some forward-looking building owners to pursue deep energy retrofits, various energy conservation measures, and onsite renewable energy generation. The city should help scale best practices through engagement with the broader real estate industry (lenders, appraisers, data aggregators, etc.) to foster increased understanding by these professionals of the value of these improvements relative to other buildings in the market.

Awareness. The city and its utility, Austin Energy, are focused on and committed to supporting work that results in reduced energy consumption and lower carbon emissions. Programs are in place and support is available for those who seek it. Yet there remains a significant lack of awareness among developers and building owners as to the available programs and incentives, particularly relating to existing buildings, and the timing of eligibility for these programs appears to be a particular stumbling block. In the process of crafting a heightened educational campaign around the value of energy efficiency and methods of reducing building-related emissions, additional attention should be paid to increasing community and property owners' early awareness of the tools and resources that currently support energy efficient improvements to structures, the timing of which is particularly important for those pursuing renovations or redevelopment.

Balanced Regulation and Incentives

There are Austin-area developers and building owners who are already leading in this area today, investing to improve energy efficiency, electrifying their buildings, installing onsite renewable energy sources, and retrofitting buildings with materials that reduce infiltration and reflect heat. They are willing to undertake these improvements, knowing that the return may be realized in a number of years, not months. While encouraging, this group is relatively small and the majority of developers are not yet willing or able to justify the capital investment required. To encourage more activity from building owners and developers in pursuing energy-efficient retrofits and renewable energy installation, the city should explore additional incentive programs. The city has the ability to further spur the adoption of net zero practices through incentives such as additional rebates on equipment purchases, reduced processing time during the permitting stage, or 'jumping the line' for those employing a certain degree of energy efficient mechanisms, increased density, reduced parking minimums, or other concessions.

Austin already has a successful incentivized green building program in place, Austin Energy Green Building (AEGB), and could leverage it further as a stretch code, incentivizing certain building criteria for existing

buildings and new construction in the short term, with a clear timeline for eventually making these requirements mandatory. As the green building criteria are phased in, the next tier of incentivized criteria is phased in, eventually becoming mandatory, again over a clear timeline that is communicated in advance. This gives the market time to adapt to new requirements, the workforce time to gain strength, and technology or materials time to scale and come to market. This also allows early adopters to take advantage of a leadership position and the incentives available for their leadership. It allows Austin to best leverage its incentive pool to continue to pull the market towards leading edge technology, rather than incentivizing the mainstream. It provides predictability, which eliminates the risk and uncertainty from changes in regulation. Several cities in Canada, including the City of Toronto have adopted “step codes” where the changes and updates to the building code are established years in advance providing industry with clear direction and time to plan for and adapt to the new regulations before they come into effect.

Initiatives

The city can also take the lead in either establishing or providing connections to a variety of initiatives that may assist with adoption of energy efficient products and processes.

Resilience Hubs. Several communities in the U.S. have taken steps to create resilience hubs, leveraging public buildings (schools, libraries, etc.) to serve as places of

power storage at a district scale and providing power resilience in times of need.

Renewable Energy Initiatives. Additional initiatives to support solar installations on private property should be considered along with mechanisms to provide credits for power sent back to the grid. The city’s district cooling loops are also systems that are ripe for further leverage. Working in concert with development, the city can help ensure access and connections to cooling loops at the time of construction as well as better leverage the residual heat produced from the cooling loop.

Financing Initiatives. There are a wide range of financing initiatives that have been deployed in other communities that Austin may wish to consider. While it is not the city’s role to create or deploy private financing, it is able to convene conversations with financing entities and provide municipal support where needed to help design mechanisms that will help the city achieve its net zero goals.

City Staffing and Support. Net zero greenhouse gas emissions by 2040 will require a clear path for all parties involved. The city can help ensure that as many of the potential barriers to the adoption and installation of energy efficient products and processes are removed. Staffing capacity will be of key concern as the city contemplates certain actions contained in this report, namely providing expedited permit processing as an incentive. At a time when both the private and public sectors are experiencing an incredibly tight labor market, careful attention should be given to ensure that current city staff have the resources



Austin is in the midst of a tremendous development boom, which puts the city in the enviable position of being able to ask for additional measures to reduce carbon in development proposals.

they need, including additional staffing where needed, to deliver on the promises made to the broader community to achieve net zero.

To be successful, an enhanced or accelerated green building program must remove barriers or delays in the development and construction process. It will require coordination, streamlining, and simplification across all agencies and departments intersecting with building owners and developers. Austin is fortunate to have many dedicated individuals supporting disparate energy and green building programs across multiple departments or agencies, however in order to effectively scale up adoption of energy efficiency and renewable energy technologies and construction practices, the barriers must be removed. It is essential that agency and department leaders work together to streamline permitting and approvals for projects that are meeting Austin's climate and equity goals. One of the key challenges the city faces with implementing new incentives is building confidence within the owner/developer community that the new programs have clear, achievable, and beneficial goals. Owners and developers expressed significant reservations about the city's ability to develop and implement meaningful programs when real or perceived challenges remain with the city's permitting and land development process. As part of implementing any new program, the city is encouraged to provide attention and resources to improving the coordination and implementation of existing plan reviews and regulatory processes.

There is good news in that many other U.S. cities are embarking on similar journeys, and many have programs in place that may serve as helpful guides or templates for the recommendations contained herein. Austin's inclusion in the Urban Land Institute's Net Zero Initiative will also serve the city well in that the initiative is founded on principles of information gathering, resource sharing, and collaborative learning across sectors and across geographies.

Austin has stepped out as an assertive and ambitious city in its pursuit of net zero and has accelerating that goal to 2040 will require a community-wide effort. At a time when competition to be in Austin is high and development pressures favor the city, now is the time to lead with a culture of equitable net zero – for all of Austin.

Summary of Recommendations*

The panel made the following recommendations:

- Codify the plan and identify criteria
- Embrace a culture of net zero across every department and throughout all of its actions.
- Establish a culture of energy efficiency throughout the city.
- Provide even greater support to communities of color and other groups that have been historically marginalized.
- Lead by example with improvements to city-owned buildings.
- Scale best practices through engagement with the broader real estate industry to foster understanding of increased value.
- Increase awareness of and access to existing tools and resources supporting energy efficient improvements.
- Explore additional incentive programs - additional rebates on equipment purchases, reduced processing time during the permitting stage, or "jumping the line."
- Incentivize certain building criteria for existing buildings and new construction in the short term, with a clear timeline for eventually making these requirements mandatory.
- Establish or provide connections to a variety of initiatives such as resilience hubs, renewable energy initiatives, and financing options.
- Further leverage solar integration and district cooling loops.
- Ensure that current city staff have the resources they need, including additional staffing where needed, to deliver on the promises.

* More detailed descriptions of these recommendations are found in the following pages. This list is for reference only and should not be taken out of context.

INTRODUCTION AND THE NET ZERO IMPERATIVE

In July 2021, ULI launched the global Net Zero Imperative to help accelerate market transformation toward a net zero built environment, defined as a building portfolio that is highly efficient and fully powered by on-site and off-site renewable energy sources. ULI's Net Zero Imperative (NZI), funded with generous support from ULI member Owen Thomas, supports the work of local communities seeking concrete ideas and strategies for real estate owners, public sector leaders, and the general public to eliminate carbon emissions from the built environment and reach a state of zero net carbon emissions.

Why is it important?

Over the past five years, nearly every country and more than 300 US cities made a commitment to achieve the Paris Climate targets. As of 2020, only a handful of cities have made meaningful progress in developing climate action plans that will accelerate decarbonization of the built environment. Yet cities, countries, investors, and tenants are still looking to the buildings sector to meet comparable greenhouse gas reduction goals.

Leading investors are including environmental, social, and governance goals in their real estate debt and equity considerations, leading tenants are including it in their leasing decisions, and regulators are incorporating a path

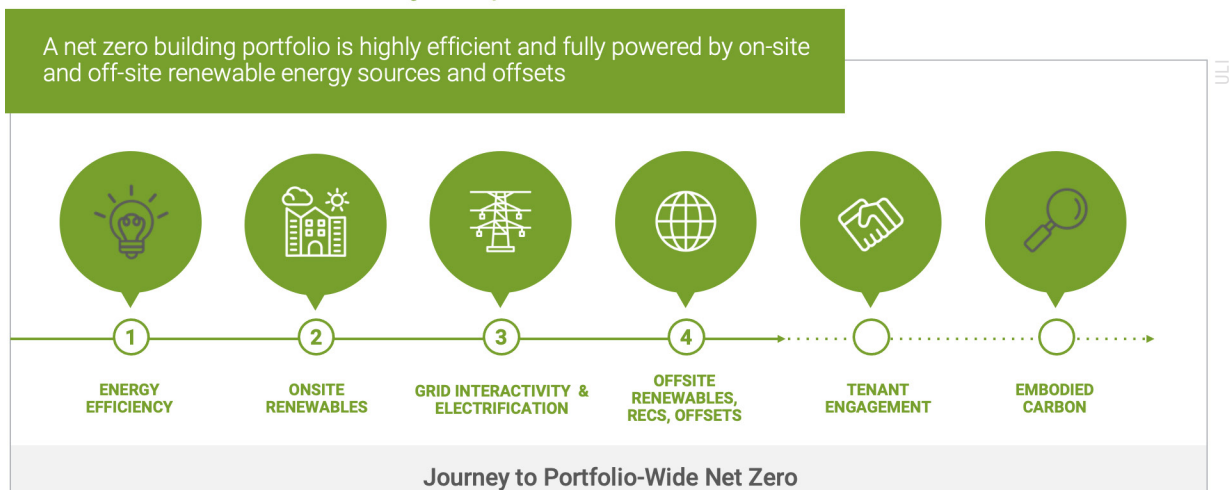
to net zero into building codes and regulations for new and existing buildings.

NZI Goals

Using ULI's trusted TAP program, eight cities across the globe are working to achieve the following NZI goals for their community:

- Accelerate the decarbonization of the built environment;
- Chart a cost-effective path to net zero for the real estate industry;
- Leverage the power of ULI's global network to drive development and investment that supports this path to decarbonization;

Net Zero Community Impact



- Get the private sector working hand-in-hand with cities on policy and incentives that can help accelerate investment in decarbonization; and
- Develop case studies and tools based on global best practices highlighting cost-effective strategies across geographies, asset classes, and building types.

ULI’s Role in Driving toward Net Zero

As a global organization focused on transformative impact in communities worldwide, ULI has an important role to play in action toward a net zero built environment.

Deep Network. ULI has a deep network in cities across the globe and can bring leading experts on net zero together with the architects, builders, owners, investors, and policymakers who can make meaningful progress on decarbonization.

Private Sector Leadership. ULI is a steadfast leader in these cities throughout changes in government leadership or sentiment on climate. ULI is building capacity, interest, and investment in the private sector, building momentum towards decarbonization that will be sustainable. Additionally, through ULI’s local district council network, it can provide connections, convening power, and local awareness in ways other organizations cannot.

Cohort Engagement. As a global organization, ULI builds cohorts that help local leaders get the resources they need to succeed in their decarbonization efforts. ULI’s goal is to connect local leaders with technical experts to work through the mechanics of decarbonization and connect local leaders with a global network of architects, developers, investors, and land use planners who can help move the industry forward on their goals.

Austin was selected as one of eight global cities to advance the energy performance of buildings through the NZI. The other cities include Kansas City, Missouri;

Los Angeles, California; Minneapolis, Minnesota; San Jose, California; Shenzhen, China; Beijing, China; and Toronto, Canada. The multi-year cohort model will allow these cities the opportunity to collaborate and share best practices and collective resources. For Austin, the NZI also supports the funding of this study, bringing national

Buildings are responsible for 40% of global greenhouse gas emissions, and up to 70% of emissions in urban cities.

and local expertise to advise on the creation of a net zero initiatives for the region.

Understanding that this is an all-hands-on-deck moment, the City of Austin and Austin Energy agreed to work directly with ULI to identify the most practical and impactful manners by which the city, its building owners, developers, and

residents can begin to make progress toward net zero in the built environment.

Austin NZI Study Scope

In September 2021, the City of Austin adopted the [Austin Climate Equity Plan](#), which seeks to help the city reach net-zero community-wide greenhouse gas emissions by 2040. “Getting to net-zero means the Austin community would reduce our use of fossil fuels to nearly zero. We set this goal because we believe it is possible and know it is needed to preserve a livable climate.” (Austin Climate Equity Plan.) The plan outlines goals in five focus areas: Sustainable Buildings, Transportation and Land Use, Transportation Electrification, Food and Product Consumption, and Natural Systems.

With the Climate Equity Plan as its roadmap, the City of Austin and Austin Energy sought guidance from ULI’s panel of local and national experts via the TAP process to address the means by which the built environment can play a role in advancing the plan’s goals. While broadly a policy study, the panel was asked to consider the city of Austin as its geographic scope and focus on the existing building environment and opportunities to reduce fossil fuel demand in buildings. While the decarbonization of the built environment includes all building types, the panel primarily focused on commercial buildings, which includes retail,

Panel Scope

What can the City of Austin do to get developers to implement the net zero initiatives of fossil fuel reduction, reducing energy demand (including building envelope considerations) and incorporating on-site renewable energy in retrofits of commercial and multifamily buildings?

Guiding Questions

What are effective methods the City of Austin could utilize to incentivize developers/owners to reduce the use of fossil fuels in favor of high efficiency equipment in multifamily and commercial buildings, specifically in existing buildings over time, and not incorporating in new buildings (including hot water)?

What can the City of Austin implement to encourage multifamily and commercial building owners to conduct deep energy efficiency retrofits of their assets (e.g., Envelope, HVAC, Lighting, Plug Loads)? How can the City of Austin help owners determine when to modify vs. replace envelopes of existing buildings for balance of operational energy demand vs. embodied carbon?

What is necessary from the City of Austin to get developers/owners of commercial and multi-family buildings to design buildings with consideration of grid interaction (may include on-site renewables, but also includes how those renewables interact with grid demand and response)? What is the role of the city-owned utility, Austin Energy in supporting this goal?

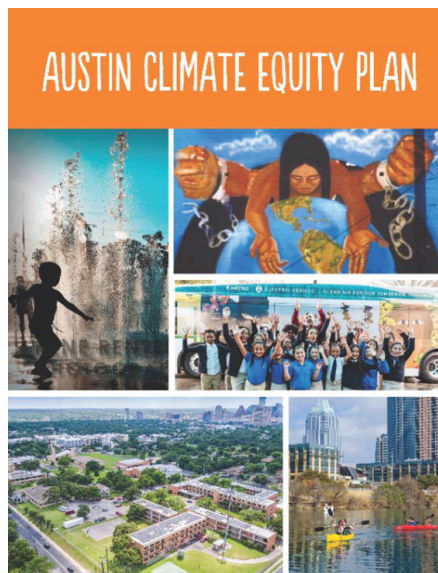
What could the City of Austin and Austin Energy do to ensure that the transition burden to decarbonized energy is not passed along to historically marginalized residents in the city?

office, and multifamily residential buildings of five units or more.

The local and national experts comprising the TAP panel provided the study with expertise in the areas of development, design, energy infrastructure and consulting, and community development.

TAP Process

The TAP process, objective and instructive by design, equipped the panelists with briefing materials prior to the TAP work sessions and



<https://www.austintexas.gov/page/austin-climate-equity-plan>

interviews with a large number of key stakeholders helped further inform the panel around the issues for the Austin market. The stakeholder interviews introduced to the panel over 40 municipal professional staff, business owners, property owners, developers, utility representatives, lenders, architects, and leaders of community organizations. The insights gathered from these interviews further informed the panelists' understanding of current energy efficiency initiatives underway and potential gaps in

Insights from Stakeholder Interviews – what we heard

- Current city growth provides a window of opportunity for change
- City should lead in demonstrating green building practices (competitive RFPs, master development agreements)
- Last-minute, unexpected fees result in lesser number of affordable units delivered, which in the long-term results in a population that is pushed further out of the city and increase vehicle miles traveled
- Incentives could include reduced time, increases in FAR/height regulations, tax abatement, reduce non-CBD parking requirements
- City-owned development and the Climate Equity Plan are not fully aligned
- Lenders and appraisers do not yet value green investments
- Permitting process is broken; it requires repair to rebuild confidence for any new incentives and initiatives – and the land development code is a dinosaur with 10,000 band-aids
- Incentives around permitting will not work based on issues and concerns with the existing expedited plan review process
- Owners and developers prefer a simple stick over a complicated carrot
- Public transportation should be prioritized
- Density is an effective incentive along with tax abatements, and a reduction in parking requirements outside the CBD

Equitable Process

Avoiding negative externalities of displacement, unaffordability, and utility burden, particularly for households paying a larger percentage of income on utilities. An equitable process should serve as a catalyst for growth, job creation, and prosperity – serving all beneficially.

programs and helped the panel begin to identify areas of need around education, potential opportunities for incentives, and additional initiatives that can further the city’s net zero goals.

Given the city’s additional inclusion of equity in the panel’s guiding questions, the panel quickly determined that equity should be woven into all of their considerations and ensuing recommendations, instead of treated as a separate matter. To that end, the panel also detailed the following as their agreed-upon definition of equitable process: avoiding negative externalities of displacement, unaffordability, and utility burden, particularly for households paying a larger percentage on utilities. An equitable process should serve as a catalyst for growth, job creation, and prosperity – serving all beneficially.



The TAP panel interviewed a wide variety of public and private sector stakeholders.

ESTABLISHING AN EQUITABLE NET ZERO CULTURE FOR AUSTIN

Through the 2015 adoption of the Community Climate Plan and the 2021 adoption of the Austin Climate Equity Plan (the Climate Equity Plan), the city has set forth a path to achieve community-wide net zero greenhouse gas emissions by 2040. While the 2040 goalpost may be seen by some as aggressive, it may be reached if the city, its professional staff, and the community are committed to charting a net zero path and incorporating the changes needed to meet that goal.

Codify the Plan. One of the most important things to ensure the effective implementation of the carbon reduction goal within the Climate Equity Plan would be to codify the targets necessary to be met along the path to achieving the goal. The requirements can be stepped over time with a clear roadmap for the private sector to understand what the new requirements will be. The codification of the carbon reduction goals should be aligned across both the building and land development codes. Detailed implementation can follow through rulemaking, but codifying the plan will give it some teeth. For example, when Washington, D.C. adopted the Clean Energy DC Plan with similar goals for reaching zero carbon through transportation, building efficiency, and renewable energy, the most important step was following the Clean Energy DC Plan with the Clean Energy DC Omnibus Act in 2018 to codify the plan.

Identify Criteria. To support its 2040 goal, the city would benefit from clearly defining its net zero criteria.

- These criteria will identify the targets that are being or will need to be measured, such as energy use intensity and carbon emissions per square foot, to determine net zero achievement. The establishment of a related rating process could also provide an equitable review of buildings and a means by which developers and building owners can market the net zero status of the building.
- With the criteria identified, the next step will be to use the 2040 end goal and back-cast the data to determine the percent reduction that must be derived from new

“I would rather deal with a simple stick than try to figure out a complicated carrot.”

– Real estate developer when asked about the variety of potential incentives for energy-efficiency processes and products

buildings and existing buildings. This should be aligned with the anticipated decarbonization of the grid.

- Through the back-casting process, the city will be able to create projections of the anticipated trajectory for each of the measured targets and thus provide building owners, developers, and the broader community with milestones along the way.

Clear Process. The process of adopting, measuring, and tracking net zero practices will work best when it is a clear, equitable, and effective process, and the city should pilot programs, educate before/during/after pilots, test frequently, and calibrate programs along the way.

- Incentives for early goal achievement should be factored into the system.
- A clear and consistent pathway should be established in order to “fast-track” the permitting process for high-efficiency, net zero or net positive projects in both new



The City of Austin is leading by example by moving the operations of the building and permitting departments to a building and campus that feature a variety of green building practices and products.

construction and for retrofitting existing buildings; this needs to be coupled with measurable improvement in the existing permitting and land development process to build confidence that any new fast-track process will yield meaningful time reductions.

- There should also be a process by which permitting staff can efficiently approve variances or code modifications to encourage outcome-based energy solutions.
- Simple and clear repercussions through regulation for missed targets may be preferable over complicated, time-consuming, or competitive incentives.
- Broad and transparent access to energy consumption and benchmarking data, including carbon emissions, will encourage building owners to more readily/

frequently use the data and become more active partners in the process of achieving net zero community-wide.

Education. Education will play a critical role in the speed with which the community embraces the city's net zero culture and pursues net zero practices.

- The development industry – developers, lenders, and appraisers – will benefit from an increased understanding of the value of energy-efficiency practices and products and the related value that transfers to the real estate asset.
- The broader community will likewise benefit from a better understanding of how the stated goal of net zero by 2040 will positively impact the average Austin resident and how everyone, each individual homeowner

and renter, can play a role in reducing carbon emissions and supporting Austin's commitment to climate equity. This message can be reinforced for the consumer via a statement of renewable energy used, as a percentage of total energy consumption, on the customer bill.

- With the city's Green Building Awards program already in place, there is a ready resource and vehicle for elevating net zero work. By elevating the profile of the awards program, there is an opportunity to broaden the community's awareness of progress made to-date.
- Aligning and simplifying the marketing and communication messages across all of the city's existing programs, including those run by Austin Energy, can help simplify access and understanding for owners, contractors, and consumers.

Staffing. It is highly likely that the city's commitment to its 2040 goal will require additional and better coordinated staffing support.

- More specifically, there is a need for a new role within Austin Energy to liaise intentionally and frequently with building owners and developers providing affordable and attainable multifamily housing for the city's low-income residents. This segment of the building industry faces unique financial challenges where new requirements provided late in the development or design process can sink implementation of energy saving measures.
- Staffing resources such as Climate Corps and AmeriCorps could provide the additional human resources the city needs to meet these objectives in the short term.

Alignments. The work of achieving net zero community wide is not one department's responsibility; it does not rest on the shoulders of the city's Chief Sustainability Officer. Instead, this work must be embraced across every department and become the culture of the city's operations. This will require careful and intentional alignment within city processes, departments, policies, and staff responsibilities.

- The natural alignments that come with the city owning Austin's electric utility, Austin Energy, present a clearer and less encumbered collaboration opportunity than experienced by other cities with independent utilities. At the same time, naming and intentionally working to even more effectively align Austin Energy Green Building with Austin Energy distribution holds great promise when the city considers how it may better integrate its grid and flex to better align with renewable energy sources embraced by or under construction at private properties across the city.
- It is also important to review city building and operation policies and ensure alignment with greenhouse gas reduction policies. It is possible that legacy building policies may not take into account the potential for reducing embodied carbon or promoting energy-efficient practices or products.
- The city has worked diligently to draft and approve the Climate Equity Plan. That plan should be promoted, included, and referenced in all of the city's requests for proposal/qualifications and in master developer discussions and bids.
- Outcome-based requirements, which allow for creativity and ingenuity by the private sector while still achieving reduced carbon emissions goals, should be considered just as viable as stated Austin Energy Green Building practices. The expansion of these practices and requirements should align with the longer-term nature of the Climate Equity Plan, into 2040 and well beyond.

Each of these categories – criteria, process, education, staffing, and alignment – help the city articulate its climate goals and establish a culture of net zero throughout Austin. The alignment of the practices and processes across city departments and into the development community will begin to have a noticeable impact and can provide the foundation upon which the city can spread the net zero message and culture community-wide and equitably among individual residents.

EDUCATION AND ENGAGEMENT

While the topics of climate change, carbon emissions mitigation and reduction, and net zero initiatives are finding ready audiences around the globe, the financial benefits of net zero development need to be clarified and better understood by building owners and developers. Few have embraced the net zero value proposition, and many struggle to justify initial cost premiums. Education and engagement – starting with those who directly influence the built environment today – is a key recommendation of the TAP panel.

Fossil Fuel Reduction. Reducing reliance on fossil fuels is one of the most important steps to take in the pursuit of a net zero environment. As more and more electrical power is generated from renewable sources, individual building owners should likewise strive to eliminate onsite fossil fuel combustion for heating and hot water by electrifying these systems. Making the case for and elevating the benefits of renewable energy sources are tasks that are under the city's control and should be a priority. The case for this fossil fuel reduction/elimination includes benefits for both building owners and tenants.

- Existing Buildings. Fossil fuel reduction in existing buildings is particularly challenging and typically requires first addressing energy efficiency. Energy efficiency reductions and weatherization improvements of existing buildings will support transitions away from fossil fuels and make the improvements financially viable.

- Human Health. While gas leaks can result in an explosion at the source of the leak, the more frequent and pressing health concern is the negative impacts on respiratory health and wellness. It is also important to note that air quality and its impact on human health is an equity issue as lower income households have fewer resources for healthcare and poor respiratory health makes occupants vulnerable to more serious illnesses like the flu, asthma, and Covid-19.
- Cost Control and Environmental Protection. The benefits of renewable energy are worth promoting to the community and include lower energy bills, reduced maintenance costs, and quieter building operations. The city may wish to leverage a 2018 Environmental Protection Agency guide to help describe and quantify the benefits of energy efficiency, the move to renewable sources, and a shift to electrification. See "[Quantifying the Multiple Benefits of Energy Efficiency and Renewable Energy: A Guide for State and Local Governments.](#)"
- Superior User Experience. For many people, a gas range provides the preferred method of cooking and has been a staple in restaurants across the U.S. Today, however, electric-powered induction ranges are providing homeowners and chefs with a welcome alternative to potentially leaky and dangerous gas cooktops. Induction ranges cook quicker and respond faster than traditional gas ranges. There is also a safety case to be made as induction ranges are cool to the touch and instead use the connection to a metal pot or pan as the conductor of

“The major health concern about outdoor methane leaks is that they contribute to smog, which aggravates asthma and other respiratory conditions.”

– Environmental Defense Fund

What do the chefs think?

While it may be challenging to move the consumer public from gas ranges to electric and/or induction ranges, what do professional chefs think? Is it possible to get an entire industry to shift its age-old practice of gas range cooking to a newer model, one that features safer environments, more precise temperatures, and a more eco-friendly approach? Owners of Austin's Aviary Wine + Kitchen have made the switch to induction cooking and are finding success. On the west coast, Reem Assil, owner of restaurants in Fruitville and San Francisco, California, has made the switch, knowing that it is one more powerful step in the elimination of the carbon monoxide that comes with gas ranges.

[Local chef invited to swap gas range for an eco-friendly induction cooktop.](#)

heat, transferring energy only when the pot is connected to the induction mechanism through the glass cooktop. Educating building owners, commercial kitchen operators, homeowners, and renters about the benefits of induction cooktops will encourage potential users to pursue induction ranges as viable alternatives.

Opportunities for Existing Buildings. It is not clear that the development community in Austin is aware of the current programs in place to support energy-efficiency upgrades and weatherization to existing buildings. It may also be that the information currently posted online about these opportunities is not as clear as it could be or there may be eligibility issues limiting participation. The timing of application for incentives relative to building audits may also preclude participation in some programs. Stakeholders noted a perception that if changes were made to buildings or site plans to optimize electrification/decarbonization, it would slow the approval process as the project moves through city departments. The city should pursue just the opposite – expedited movement for optimized projects. Additionally, the city should work on a campaign to elevate the opportunities for net zero retrofits to existing buildings, with particular emphasis on upgrades to multifamily affordable and workforce housing units. The city can make clear connections to existing funding in order to better leverage the resources already in place and shift ASHRAE audits to a five-year cycle for large commercial buildings thereby removing barriers to funding that may unnecessarily restrict or tether incentive applications to decennial audit programs.

Leveraging Solar Power. There also appeared to be some confusion among building owners relating to the tie between solar power generated onsite, the difference between net metering and the Value of Solar (VoS) rates, and metering across projects. With Austin Energy supplying 50 percent of its power via renewables, it is clear the city is intimately aware of the value of solar and related operational challenges and benefits. When it comes to tying in with privately-owned onsite solar generation, additional education and clarification around the process, clarification about the accounting process for VoS rates, and information about collaborative design opportunities with Austin Energy would be beneficial and may spur additional installations of private solar arrays.

Appraiser Awareness. Austin already has a building benchmarking program that has been fairly successful, even through the pandemic (compliance rates dipping slightly from 85% to 80%). Building performance should be an important part of asset value. An Austin Green Building labeling program, not just for new buildings, but for existing buildings, can contribute to overall market recognition for building performance. As new net zero initiatives take hold and building owners and developers bring more buildings to the market that feature energy-efficient operations, the appraisal industry will benefit from more intentional education, likely hosted or provided by Austin Energy, around the net zero value proposition for buildings. Similarly, the tools of the appraisal industry, notably Co-Star, will need to factor into its data the value benefits of energy-efficient buildings.

Broker Awareness. Environmental, social, and corporate governance (ESG) metrics are increasingly impacting organizations' share price, recruiting and retention abilities, investment potential, bond ratings, and other areas of concern to both publicly traded and private companies, as well as institutions. Publicly traded companies are furthermore impacted by the new SEC rule change requiring carbon and climate risk disclosure. Austin can provide a one-page explanation of how green buildings and net zero buildings affect tenant organizations and their climate commitments.

Financing. In addition to educating the public on the benefits of electrification, the development and land use industry would benefit from additional information and education relating to financing mechanisms that support energy-efficient practices and products. The Commercial Property Assessed Clean Energy (C-PACE) program is one such tool that is in place in the Austin market. Property owners apply for financing through the C-PACE program administrator. Notes or bonds that are issued through the local C-PACE program are purchased by private lenders, typically banks or insurance companies. Proceeds from the sale of the notes or bonds are advanced to the property owner to be used for designated energy-efficient improvements. Principal and

interest payments for the notes or bonds are collected by the local taxing authority, typically along with property taxes, and forwarded to the lender or its trustee. C-PACE can be a powerful tool in the market and could be better leveraged through the re-establishment of a C-PACE czar who could serve as a champion for the resource, connection point for developers, and central information point for the C-PACE program in Austin.

Workforce Development. Austin's aspirations can be realized if there is sufficient will and talent to bring the vision to life. As Austin lays out a trajectory to reach zero energy and zero carbon, it is important to ensure there is a synchronized workforce development plan in place that anticipates the burgeoning needs of the construction industry and produces the skills that will be in demand so that the jobs created, and the revenue, stay close to home. The City of Austin should leverage existing partnerships with local colleges and universities to build training and certificate programs around building performance jobs, such as building energy audits, energy modeling, commissioning (MEP systems and enclosure, retro-commissioning), life cycle analysis, building engineer (ongoing performance monitoring and optimization), renewable energy systems design and installation, and others.

BALANCED REGULATION AND INCENTIVES

Incentives will encourage and accelerate the adoption of net zero practices. Options could include improving process speed and coordination of permitting/approval process speed, utility rebates, grants, low interest loans (i.e., PACE), density bonuses, reduced parking minimums (outside CBD), fee waivers, and property tax abatement. At this still-early stage in net zero adoption, the city needs to provide first-mover incentives that will establish more precedent-setting projects that represent the changes, practices, and products needed to reach the Climate Action Plan's net zero goals. While moving to net zero is the right decision – for the city, the climate, and our future – it also needs to be “the right decision without regrets,” as one stakeholder noted. It needs to make financial sense for the developer, the building owner, and the tenant/customer.

Rental Listings With Energy Scores Prompt Greener Choices

Bloomberg.com, May 19, 2022

A May 2022 Bloomberg article highlighted a recent report by the American Council for an Energy-Efficient Economy, noting that if prospective home renters have an easy way to compare energy costs between units, they selected the more energy-efficient unit 21% more frequently.

“This was true across all income bands, not just those most burdened by energy costs.”

For cities like Austin, one of a small number of U.S. cities that has a rental energy disclosure policy in place, building owners and developers may find stronger demand for more energy-efficient units – and perhaps a stronger case for retrofitting existing units and embracing net zero practices in new construction.

www.bloomberg.com/news

Lead by Example. As mentioned, a culture of net zero must span all city departments. When issuing requests for proposals, the city should add language to incentivize respondents' reduction of fossil fuel reliance. Leading by example also includes publicizing the city's efforts to reduce fossil fuel reliance in city-owned buildings.

Incentives for Reducing Reliance on Fossil Fuels. Austin Energy has embraced the idea of providing incentives for energy efficiency in both residential and commercial environments. It is in their best interest to reduce the overall load on the grid and support the reliable operation of the utility going forward.

- For multifamily projects, both new construction and renovation, Austin Energy is encouraged to expand its incentive program to include rebates for the installation of electric or induction cooktops in 100 percent of a building's units.
- Similarly, rebates should also be offered for the installation of high-efficiency electric water heaters and heat pumps.
- For commercial buildings, notably those housing retail restaurant operations, Austin Energy is likewise encouraged to provide rebates for the installation of induction commercial cooking appliances.

Incentives for Developers of New Buildings. For developers bringing new buildings to the Austin market, other net zero incentives should be considered.

- Increased density. For developers operating in – or wanting to enter – the Austin market, the pressure on land and developable space is high. Using density regulations, specifically allowing greater density in exchange for net zero pursuits, will be of particular interest to a significant number of developers and is worth considering and planning for today so the city will be ready tomorrow to enter such negotiations.
- Time = Money. While this is true for many industries, developers feel the pressure of time acutely as financing is at play and markets are continually shifting. If it is possible for the city to provide expedited processes at specific points in time during permitting and/or inspection, it should use a pre-defined and reliable expedited process for those developers who are pursuing net zero in the building at hand.
- Tax abatement is another tool at the city’s disposal, which may be used to encourage net zero building development. Used judiciously, tax abatement can be a powerful negotiating mechanism for the city and may help the developer close a gap in their capital stack.

Incentives for Owners of Existing Buildings. Existing buildings across the city contribute to 50 percent of the emitted carbon in Austin and were a focus for the panel. With a host of existing programs already in place to support energy-efficient upgrades, greater emphasis may need to be placed on leveraging what is already available as the incentives noted above cater more actively to new building construction. It will also be helpful for the city to calibrate the level of incentives with the equity and carbon reduction goals, which should help gain the attention of owners of existing buildings, spurring them into action. Building owners may also find value in pursuing a certification, badge, or other “green” label for energy performance achievements in existing buildings. Similar to the LEED certification signage posted in building lobbies, this green badge, likely based on an EPA Energy Star score or Austin



Signage, badges, and certifications on and around buildings, highlighting green building practices can increase the public’s understanding of and appreciation for carbon-reduction efforts.

Additional References on Expedited “Green Building” Permitting

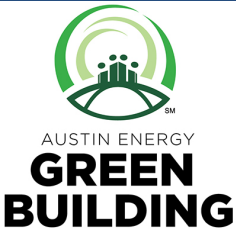
- Salt Lake City, Utah – expedited projects meet Energy Star HERS rating of 85 or better
- San Diego, California – [Sustainable Building Expedite Program](#) and [Affordable Housing Requirements and Expedite Program](#)
- Houston, Texas – [Expedited building permits](#) issued for Energy Star HERS of 75 or better; also program focused on green infrastructure to alleviate flooding:
- Seattle, Washington – [Priority Green Expedited](#) shortens time by meeting green building rating
- Miami-Dade County – [Green Building Incentive](#) lets project take fast track permitting
- Issaquah, Washington – Green Building Incentives Built Green certification by fast tracking permit
- Chicago, Illinois – [Expedited Green Permits](#) given for LEED Homes or Green Globes ratings
- San Francisco, California, Priority permits issued if meeting one of a variety of green certifications
- [Other local government policy examples](#)

Energy Green Building Program (Energy Star + additional measures) could be similarly awarded and included in the marketing of buildings to prospective tenants, many of whom are increasingly demonstrating an interest in occupying space that is energy efficient.

Incentives for Community Residents. In addition to the larger incentives the city can provide to induce action in the development community, there are steps that can be taken and incentives provided to help the community and individual residents embrace their role in Austin’s pursuit of net zero. Austin Energy should consider incentives for consumers’ pursuit of solar installations at their residences. Careful attention should be paid to intentionally including and supporting low-income residents in these

conversations, understanding that the cost burdens shouldered by these community residents could be significantly and positively impacted through the addition of solar power to buildings and/or homes. It is possible that by providing aggregation investment opportunities, via community solar for example, this segment of Austin’s population may have more ready access to this important renewable energy source.

Austin Energy is encouraged to continue to expand its community solar program, launch and expand outreach programs to educate commercial customers about the pending VoS initiative, and the expand the budget for renewable energy incentives in the Austin community.



Austin Energy hosts a variety of green building workshops throughout the year that could be expanded and further leveraged to raise the visibility of the city’s incentive programs and catalyze additional green building efforts.

An Upcoming Seminar or Event

Upcoming Events		
Date	Event	Info
May 10, 2022	<p>Climate Equity Plan: What Does It Mean for Austin?</p> <p>Austin’s Climate Equity Plan was created with input from nearly 200 community members with an intentional focus on engaging racially and economically diverse residents about the challenges, barriers, and opportunities facing historically excluded groups. The Austin Climate Equity Plan includes the bold and aggressive goal of equitably reaching net-zero community-wide greenhouse gas emissions by 2040 with a strong emphasis on cutting emissions by 2030.</p> <p>Learn how an equity tool helped account for outcomes related to health, affordability, accessibility, community capacity, cultural preservation, accountability, and a just transition to green jobs.</p>	Get Details
July 12, 2022	Equity in Community Development Workshop	Check back for details
September 13, 2022	A Sustainable City: Infrastructure, Electrification and Transportation	Check back for details
October 1, 2022	Cool House Tour	Check back for details
December 13, 2022	Reducing Environmental Impacts of Refrigerants and Concrete	Check back for details
January 10, 2023	Making the Case: Financial Analysis of Green Building	Check back for details

AUSTINENERGY.COM

INITIATIVES

Combined with robust educational outreach and targeted incentive packages, there are additional initiatives the city should consider to move building owners and developers toward a path of embracing net zero products and processes across all building types. From efficient grid interaction to financing tools to community-wide initiatives like resiliency hubs or district cooling, the city's actions and programmatic initiatives can reinforce the culture of net zero and continue to support an equitable energy environment that is beneficial to all Austin residents.

Resilience. Resilience measures can take a wide range of forms, yet even the measures that are designed to increase personal or individual resilience will positively impact the resilience of the broader community. In some communities, city-owned assets have been further leveraged by adding battery storage for the community at a district scale. These buildings, often public schools, libraries, police/fire stations, etc., can also serve as points of refuge, charging stations for phones in times of mass power outage, and community distribution centers in instances of greater need.

Solar Integration. When it comes to improving community-wide energy efficiency, it will be important to improve individual building integration with the grid to provide greater

incentives for using on-site renewables like solar. For building owners who leverage solar on-site, there is some confusion as to whether or not behind-the-meter storage is available and how the VoS rates for excess renewable energy sent back to the grid reduce their utility bills. To expand the benefits further, a new program combining solar and energy storage incentives would allow Austin Energy to leverage behind-the-meter storage for demand management. By incentivizing energy storage, peak loads may be shifted and relieve grid stress, providing greater grid resilience. By removing any and all barriers to solar installation, from permitting through to execution of interconnection (and addressing any perceived barriers), the city should see an uptick in solar installations and on-site energy generation.



District Cooling. Considering other community or district-wide opportunities, the potential for expanding the city's district cooling loops is worth strong consideration. The city should identify where and how people can connect to the district cooling loop at present and understand where growth is headed such that the city is in a position to offer viable and cost-effective connections when development is ready to begin. The efficiency of district cooling, while typically envisioned for dense downtown neighborhoods, is also worth considering for lower density developments. The opportunities for capturing heat rejection and using that energy to power other uses in lower density developments are likewise encouraged. Ultimately, the city and the development community would benefit from a clear and concise explanation of district cooling – how and where to connect, the benefits to the building owner, the positive impacts on energy consumption and reduced carbon emissions, and more. In addition to the information currently posted on Austin Energy's website, which does include information about the benefits of district cooling, a simple one-page overview on the potential for connecting and possible system expansion could help ease the education of interested parties and facilitate an uptick in connections.

Financing. Financing for net zero products and practices may take a variety of forms, yet more traditional lenders, those whom building owners and developers typically approach for improvements, may not yet be familiar with or as readily willing to consider financing green building items.

The city is encouraged to lead the way by establishing a green financing mechanism with local lenders to assist with deep retrofits of existing buildings. Again, there may be some additional education or exploration needed for all to gain comfort in the green lending tools, but there are models in other markets to which Austin leadership can turn for guidance.

- Texas has a PACE bond program, but traditional lenders may hesitate to educate borrowers about this product as the associated interest rates are lower. The City of Austin can partner with lenders to broadcast PACE lending and the advantages for deep green energy retrofits.
- In 2015, New York established the NY Green Bank, a division of NYSERDA to "accelerate clean energy deployment... by working in collaboration with the private sector to transform financing markets."

Why District Cooling?

In cities around the world, district cooling is integral energy infrastructure to reduce strain on the electric grid caused by increasing demands for air conditioning, which typically create 50-70 percent of peak electricity demand. By aggregating the cooling need of a network of buildings, district cooling creates an economy of scale that drives efficiency, balances electric loads, reduces capital costs for building owners, and reduces fuel costs. For more information, visit the [International District Energy Association](#).

Austin's current district cooling services include the Downtown Central Business District Cooling Plants, the Domain District Cooling System, and the Mueller Redevelopment Zone Plant. Expansion of these facilities or expansion of the service into other areas would provide additional access, and ultimately more affordable access to energy efficient cooling services across Austin.

- The DC Sustainable Energy Utility was created by the DC Clean and Affordable Energy Act in 2008. It diverts a small portion of utility rates and provides rebates for new construction and retrofit projects in DC.
- The Clean Energy DC Omnibus Act of 2018 created the DC Green Bank to support funding of energy efficiency retrofits spurred by DC’s Building Energy Performance Standard. The Act also seeded the Bank with \$40 million
- Several institutions have established [Revolving Green Funds](#), a one-time capital pool created to invest in energy efficiency projects that is replenished from energy savings and then reinvested in more projects.
- Similarly, through the same net zero initiative work underpinning this TAP, Kansas City, Missouri, is considering steps to establish the first green bank in its region to help finance the critical pre-development work needed to get net zero projects off the ground and help close the financing gap for deep retrofits of affordable multifamily projects.

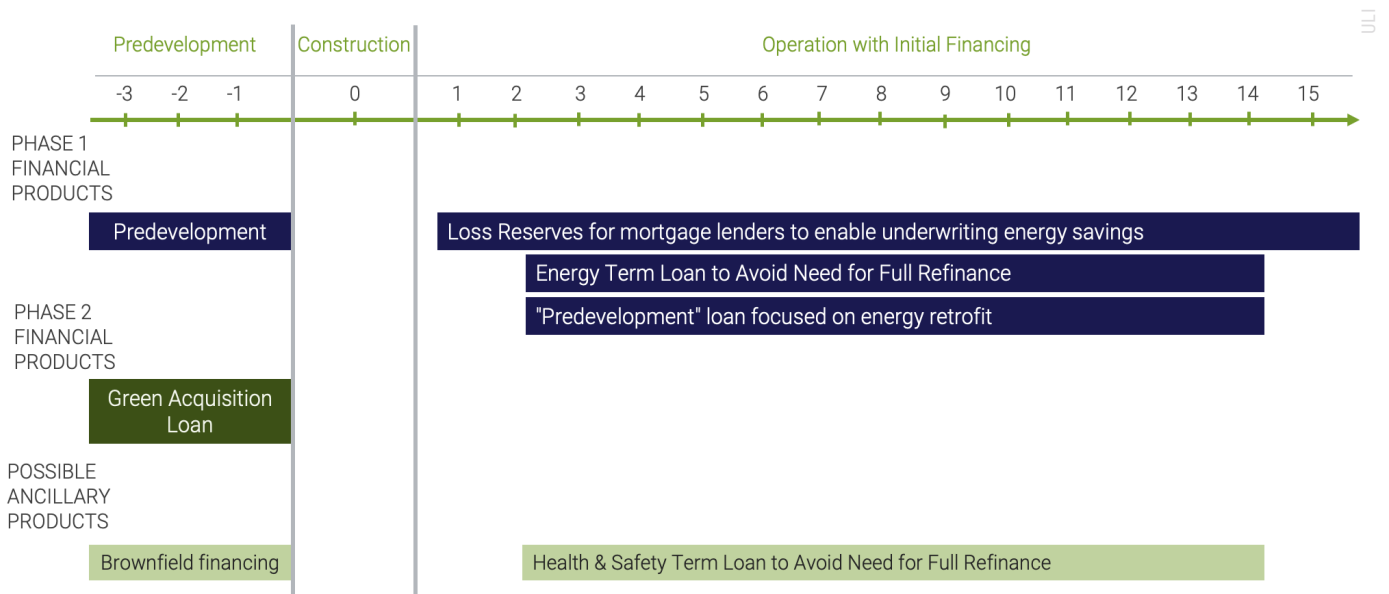
cost burdens and the potential for predatory lending. Austin could also partner with community-based non-profit organizations to set up revolving green funds to invest in energy retrofits for low income, attainable, and workforce housing.

Additional models of energy efficiency initiatives include:

- In Washington, D.C., the DC Sustainable Energy Utility has partnered with the District Department of Energy & Environment to create the [Affordable Housing Retrofit Accelerator](#) in order to provide technical and financial assistance in support of energy-efficient retrofits in affordable multifamily buildings to meet the Building Energy Performance Standard.
- To further encourage deep energy retrofits, the city could establish a challenge prize similar to the [Empire Building Challenge at NYSERDA](#). The goal of the Empire Building Challenge is to “accelerate commercialization of new low carbon retrofit products and design approaches through advanced demonstration projects.”

For Austin, a green bank could provide critical capital support in underserved communities to reduce additional

Timeline for Proposed Financing Products and Possible Ancillary Products



ULI Kansas City led a recent net zero TAP focused on the establishment of a green banking mechanism for the region. This chart outlines how such a fund could provide a wide variety of loan products to support projects at various stages of development.

Resilience Hubs

Communities around the country are leveraging the power of their public assets by turning them into multifunctional resilience hubs. These resilience hubs serve residents before a crisis (via their core functions as libraries, schools, etc.), during a crisis by providing safe space and resources, and after a crisis by providing follow-on programming or resources to help the community stabilize.

Resilience hubs are community-serving facilities augmented to support residents, coordinate communication, distribute resources, and reduce carbon pollution while enhancing quality of life.

—resilience-hub.org

Typically, resilience hubs are placed in buildings that are proximate to neighborhoods, they feature large spaces for gathering, and they are already a trusted part of the community's social and physical fabric. Many cities are finding the perfect solution in existing community assets like libraries, recreation centers, and schools because these spaces are easily accessible, open to the public, and, with certain modifications, can be trusted to remain open in times of crisis.

Ideally, a resilience hub features a sustainable and climate-responsive design in its building structures and systems. Features such as resilient energy systems

and communications systems are critical to serve the community before, during, and after a crisis. The facility must also be equipped with the materials and resources (e.g., food and medical supplies) that may need to be distributed in times of crisis. Additional enhancements might include an expansion of the building's programming to provide year-round health and social services as well as training to support the surrounding neighborhood's emergency preparedness and adaptive capacity to climate change. Learn more at <http://resilience-hub.org>.



CITY OF TALLAHASSEE

NEXT STEPS

The City of Austin has set forth an ambitious goal of achieving net zero community-wide by 2040. With roughly 40 percent of global carbon emissions coming from the built environment, addressing the energy usage of the city's existing buildings and the energy efficiencies of the buildings under development are of critical importance. Building owners would like to operate buildings that are more energy efficient. Developers are seeing on the horizon the market value of delivering more energy-efficient buildings. Residents and commercial tenants will appreciate the opportunity to retain their hard-earned dollars by spending less each month on utilities. People want to build and renovate using green practices and the city can and should lead the way in the path toward net zero.

For the city, an important first step is creating a culture of energy efficiency and carbon accounting internally across city departments and externally with building owners, businesses, and residents. By providing educational information – fliers, webinars, and workshops – about the benefits, incentives, and practices of green building, the city can help raise awareness of and support the growing market for green building practices. This broader awareness and understanding across the population will also help drive demand, from current and future tenants (both residential and commercial), for energy efficient spaces.

Supporting energy and programmatic education with incentives and removing any complexities or barriers to adoption will help the city catalyze the type of new development and building renovations it would like to see. This is work that will make a significant difference in accelerating the path toward net zero in 2040.

Additional initiatives, such as resilience measures, programs to promote solar installation and integration, and innovating financing mechanisms may also prove helpful in the adoption of green building practices by building owners and residents. While it was not discussed during the panel in detail, increasing the adoption of demand response measures especially among high peak load commercial and industrial users is becoming increasingly important to

improve the efficiency of the grid and reduce peak demand growth.

In all instances, the city is encouraged to clarify its net zero objectives and create a culture that fully supports those objectives at every step of new construction and building renovation/redevelopment processes. It is important to continue to seek partners in these efforts, particularly developers who are willing to use, install, and demonstrate new products and technologies and building owners who are equally committed to pursuing climate equity goals. With a net zero culture that permeates the city's operations – at every level in every department – and the city's interactions with all community partners and stakeholders, there is a greater chance that the city can meet or even exceed its stated goals.

As one stakeholder noted, "this isn't about future things; this is about the current reality we are all facing." The city has recognized the challenges its residents are facing and will continue to face into the future if a viable path toward a more carbon-neutral environment is not achieved. With committed elected leadership, knowledgeable professional staff, and the resources to support the work, the City of Austin is in a position to lead the way for community-wide net zero. For all Austin residents. Equitably.

ABOUT THE PANEL



Bungane Mehlomakulu
Panel Chair
Head of Building Science & Performance
ICON Technology, Inc.

As Head of Building Science and Building Performance at ICON, Bungane Mehlomakulu is responsible for overseeing the overall performance of the ICON wall system, in particular as it relates to thermal, moisture, acoustical, infiltration, and acoustical performance. He also oversees the overall building performance for the ICON home. This includes establishing performance metrics such as energy, and water, thermal comfort and leading the effort to develop design solutions that make the ICON home a leader in sustainable and resilient building performance in the residential market.

Mehlomakulu is an active member of the built environment community and remains committed as a Co-founder of the Austin Green Awards and ULI Texas Chapter representative to the High Performance Building Design Evaluation System Advisory Committee for the (Texas) State Energy Conservation Office. He was previously a member of the City of Austin Sustainable Buildings Advisory Group and a board member of EcoRise. In 2017, he was a jurist for the Committee on the Environment Top 10 National Awards. He is passionate about the built community and sustainability and is frequently asked to speak for a variety of high profile engagements.



Matthew Fisher
Principal
Tech Fisher Solutions

Matthew Fisher has a ten-year real estate focused career with over \$4 billion dollars of new development and capital improvement project experience across commercial, mixed use, and residential markets. Matthew graduated from Texas Tech University with a degree in Construction Engineering in 2013 and began independently consulting in 2017, specializing in design and implementation of emerging sustainable building technologies.



Sarah King
Senior Vice President,
Sustainability
Kilroy Realty

Sarah King is Senior Vice President of Sustainability at Kilroy Realty, working to advance

the sustainability performance of all new and existing buildings in the Kilroy portfolio. She leads the sustainability team and its efforts on operational & embodied carbon, energy efficiency, renewable energy, health & wellness, water use & waste reductions, and positive social impact.

Sarah has been working in the sustainability field for over 20 years. Prior to joining Kilroy, she held sustainability roles at Skanska USA Commercial Development and DuPont. She has also worked for several NGOs, including Climate Mayors and the Environmental Law Institute.

She earned a BA in economics from Carleton College and an MBA from The George Washington University School of Business. Sarah holds LEED Green Associate, Fitwel Ambassador, and WELL AP credentials. She volunteers on the Net Impact Advisory Board at the University of Washington Foster School of Business and sits on the Advisory Board of the Carbon Leadership Forum. Sarah is an Aspen Institute Catto Fellow.



Anica Landreneau
Senior Principal, Global
Director of Sustainable Design
HOK

Anica Landreneau leads HOK's global sustainable design practice, serving on the firm's board

of directors and design board.

Based in Washington, DC, Anica manages the successful development and implementation of sustainability strategies on local and worldwide projects, working with both public and private sectors clients on regional, campus, portfolio and building scale projects, including existing building stock.

Anica serves locally on the Green and Energy Codes TAG, is on the Mayor's Green Building Advisory Council and co-chairs the Building Energy Performance Standard Task Force. Anica also serves on the national USGBC LEED Advisory Committee, IECC 2024 Code Development Committee and Consultative Council for the National Institute for Building Sciences. She is a Senior Fellow of the New Buildings Institute and a member of the AIA's 2021 Board Government Advocacy Committee.

Anica previously served on the AIA Blue Ribbon Panel on Codes, coauthoring *Disruption, Evolution, and Change: AIA's Vision for the Future of Design and Construction*. With the U.S. General Services Administration, she coauthored *The New Sustainable Frontier: Principles of Sustainable Development*.

Anica's testimony before Congress and policy recommendations were included in the Majority Staff Report, *Solving the Climate Crisis: The Congressional Action Plan for a Clean Energy Economy and a Healthy, Resilient, and Just America*.



Amanda Masino
Chair, Natural Science /
Director Environmental Justice
Huston-Tillotson University

Amanda Masino, Ph.D., is Associate Professor of Biology and Chair of Natural Science

at Huston-Tillotson University (HT). Amanda co-created and now directs HT's STEM Research Scholars Program, which in the last 6 years has provided 130 funded undergraduate research experiences to HT students. Amanda led an NSF-funded re-design of HT's Natural Science curriculum to emphasize inquiry-led learning and embed research skills into coursework. Her own research projects include a resident-focused investigation of affordable housing impacts and the environmental health of our homes, a collaborative project investigating urban wildlife as environmental sentinels, and student-led analysis of cardiovascular health disparities.

Amanda directs HT's new Environmental Justice major, co-founded and organizes HT's annual environmental justice conference, the Building Green Justice Forum, and mentors environmental student group Green is the New Black. She also directs the St. David's Foundation Scholars, a pre-health career enrichment and scholarship program which seeks to diversify health fields, and mentors HT's chapter of the Minority Association of Premedical/Pre-health Students.

Amanda earned her B.S. in Zoology from Texas A&M University and her Ph.D. in Genetics and Developmental Biology from the University of Texas Southwestern Medical Center. Her postdoctoral work at the University of Washington in Seattle focused on cardiac stem cells. She advocates frequently for environmental justice and diversity in science.



Ben Myers
Vice President, Sustainability
Boston Properties

Ben Myers serves as Vice President, Sustainability, where he is responsible for sustainability and ESG strategy, implementation, reporting, and stakeholder engagement.

He has a genuine passion for sustainable real estate and is committed to disrupting the status quo as an industry leader on climate action, resilience, green building, renewable energy, healthy workspaces, and urban ecosystems. Prior to being appointed to the role in 2015, Mr. Myers held positions in construction management at the Company, as well as green building services at Harvard University. Mr. Myers holds an MA in Urban Environmental Leadership from Lesley University and a BS in Civil & Environmental Engineering from the University of Massachusetts at Amherst.



Find this report and hundreds of others on Knowledge Finder,

the leading global resource of trends and best practices in real estate development and financing. Explore an ever-expanding library and find recommended content related to your interests, including reading lists, case studies, videos and webinars, books, and more.

knowledge.uli.org



Austin

ULI Austin
1101 West 34th St, #688
Austin, TX 78705

512-853-9803
austin@uli.org

austin.uli.org



knowledge.uli.org