Green Goals

St. Louis Aims to Slash Greenhouse Gas Emissions — But It Won't Be Easy

By Sylvester Brown

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St. Louis' building standards now decree that all commercial and multifamily buildings 50,000 square feet or more must achieve certain energy performance goals — or face the possibility of large fines or even closure.

Ask an outsider about St. Louis, and they might tell you about the Gateway Arch, Chuck Berry, Tina Turner, barbecue and toasted ravioli. Being one of the top energy-efficient cities in the nation isn't exactly our claim to fame.

But St. Louis has become a leader in setting new building energy standards. These standards are aimed at reducing carbon emissions, decreasing building operating costs and revitalizing building stock. St. Louis is only the fourth jurisdiction in the nation — and the first in the Midwest — to adopt policies designed to meet the nation's energy and climate goals.

Malachi Rein is the director of the Building Energy Exchange St. Louis, or BE-Ex STL, which aims to be a resource for locals cutting emissions. He says St. Louis doesn't require the resources of New York or D.C. to be a leader in energy efficiency. With ingenuity and a commitment to resources, he says, other cities can follow our lead.

"You don't have to look like these big cities to have a great built environment, to have value in your building stock, to have buildings that perform well for their owners," Rein stresses. "In fact, if you look like St. Louis, if you have populations that need extra support to overcome historic systemic issues, you can do it, too."

The region faces serious threats as a changing climate increases temperatures and escalates the risk of bigger, more serious floods (see the first two chapters of this series online at riverfronttimes.com/readyornot). Yet local leaders haven't always prioritized mitigating those risks — or done so intelligently.

The work being done on building standards is something different — a place where St. Louis is ahead of the curve. But as long-planned efforts to strengthen standards are finally reaching fruition, some local developers have questions. In a region plagued by inequities and a city perpetually short on cash, they ask, how do we make sure people in less affluent areas don't get screwed?

And on a separate track, some Missouri lawmakers would like to block or even reverse the city's innovations. Backed by home builders' associations, they're seeking to force the city back to the standards in place 14 years ago.

It's part of a long-simmering feud between the state and its biggest metro area, and it could have a big impact on whether the city continues to innovate — or prioritizes growth at any cost instead of taking environmental impacts seriously.

An Emerging Leader in Building Energy Performance

Greenhouse gases are gases that trap heat in the Earth's atmosphere. Carbon dioxide, for example, enters the atmosphere through burning fossil fuels (coal, natural gas and oil), solid waste and even trees.

Carbon dioxide is the major gas emitted by human activities, but there's also methane, nitrous oxide and fluorinated gasses. Each of these gasses, according to the U.S. Environmental

Protection Agency (EPA), can remain in the atmosphere from a few years to a few thousand years. Some make the planet warmer by thickening the Earth's atmospheric blanket.

Since most urban dwellers aren't farming cows or burning coal, efforts to reduce greenhouse gases in most cities are focused on the built environment — on buildings. According to the EPA, commercial and residential buildings combined account for nearly 40 percent of total energy consumption in the U.S. — much more than, say, cars or factories.

In the city of St. Louis, residential, commercial and industrial buildings account for a staggering 80 percent of greenhouse gas emissions, according to BE-Ex STL. If the nation is to achieve its goal of zero carbon by 2050 set forth by the Paris Agreement, which President Joe Biden rejoined in 2021, the federal government and the private sector must make significant investments in green technology. And places like St. Louis will have to be part of the solution.

Unlike traditional building codes and policies, the city's new Building Energy Performance Standards, or BEPS, don't just apply to new buildings. They require that the energy performance of both existing and newly constructed commercial and multifamily buildings, 50,000 square feet and greater,be improved — or face the possibility of large fines or even closure.

St. Louis' trailblazing efforts in energy efficiency may be surprising to the general public, but those in the field, like Emily Andrews, executive director of the Missouri Gateway Green Building Council and a major player in setting the city's BEPS, trace the efforts back to 2017, the year St. Louis won a national grant focusing on energy efficiency in large buildings. The City Energy Project awarded the city technical support and funding for energy-efficiency benchmarking and improvements.

One year later, in 2018, St. Louis was a winner in Bloomberg Philanthropies' American Cities Climate Challenge, a national initiative aimed at tackling climate change and a sustainable future. As a winning city, St. Louis was provided two years of in-person and technical assistance in areas that include leveraging of energy usage, developing a comprehensive solar action strategy and implementing an electric vehicle infrastructure plan.

Also in 2018, St. Louis adopted a new suite of building codes provided by theInternational Code Council (ICC). The codes — a major upgrade from the 2009 ones previously in use — significantly upgraded energy-efficiency requirements for new buildings, as well as major renovations of old ones. As with the BEPS, St. Louis was the first municipality in the region — and one of the first nationwide — to adopt the new codes.

Andrews says St. Louis has always been an “early adopter” of progressive energy-saving practices. Mostly, she says, because so many prominent firms in the region actually practice what they preach.

“We have some really strong architectural, engineering and contracting firms here working all over the country and, in some cases, all over the world, implementing these practices. So, it makes sense that the city would want to do these things.”

Erik Biggs, president of the American Institute of Architects-Missouri, is hyped about new standards. “It’s part of AIA’s mission statement, it’s part of our practice as architects to be aware of sustainable methods,” Biggs says. “We have a standard of practice that includes sustainable methods. It’s something ingrained that we take very seriously, just like safety and social equities.

It’s something we try to be conscious of on a day-to-day basis.” The Gateway Green Council worked to convene stakeholders from St. Louis City Hall, the commercial building sector, architecture and engineering firms, affordable housing and other groups, which led to a building energy improvement board. This group outlined policies centered around benchmarking ordinances and presented them to local and state lawmakers.

Largely based on their work, in 2020, the St.Louis Board of Aldermen unanimously passed, and Mayor Lyda Krewson signed into law, St.Louis' first Building Energy Performance Standards, mandating significant reductions in building energy use. They require buildings that do not meet performance targets to invest in energy-efficiency improvements in order to drive down energy use and emissions.

The Long Stick

St. Louis' standards aren't as demanding as Washington, D.C., or Denver's (which put energy performance standards on buildings of 20,000 square feet and bigger) or San Francisco's benchmark of 10,000 square feet and bigger. But St. Louis has its own set of challenges due to its decades-old housing and building stock.

An analysis by Washington University's Office of Sustainability found that St. Louis buildings are "considerably more inefficient than the national median." In 2022, then-Alderwoman Cara Spencer told St. Louis on the Air that 65 percent of St. Louis' buildings needed to make significant changes to hit the new standards. "The majority of our building stock is over 100 years old," Michalova says today. "I'm afraid that many of these old buildings won't meet the standards. We'll just have to figure out how to implement the standards. We will start with energy audits, benchmarking the buildings and figuring out the energy consumption of our buildings."

On its website Wash U's sustainability office adopted a positive spin on St. Louis inefficient building stock: "This means the opportunity for cost-effective climate action in our region is even greater. The inefficiency of St. Louis buildings represents a tremendous opportunity to reduce emissions, save money, create jobs, and protect public health."

"Inefficiency" may represent opportunity — but the reality of getting buildings to comply with the new standards may be a yeoman's task for city officials and building owners.

The Office of Building Performance has a huge stick: It can levy fines of up to $1,000 per day and even pull or deny occupancy permits for those who do not meet the new standards.

But, Michalova quickly stresses, it's not the city's preferred route.

"We really don't want that … We'd rather building owners spend the money instead on improvements instead of fines."

The day of reckoning is coming. After years of trying to get the attention of building owners, enforcement efforts will kick in based on next year's data.

"Standards were set in 2021, but next year will be the first certification year when existing buildings need to show they are complying with building energy performance standards or not,"

Michalova says, with city officials reviewing and acting on those findings in 2025. Even then, most buildings that are unable to meet energy targets by the end of the compliance period will have four years to do so, and affordable housing groups and houses of worship will have an extended timeline of six years. The city offers a BEPS handbook and other resources on its website, stlbenchmarking.com. And part of Rein's job at BE-Ex STL is to offer resources that help even the most cash-poor building owners reach compliance.

Struggling to Find Capital

Kingsway Development is the lead driver of the $150 million Kingsway District project on the north side of Delmar Boulevard in the Fountain Park neighborhood.It includes a 100-room, boutique- type hotel; a 200-space parking garage; renovation of a 750-seat theatre and transforming a vacant factory into an office and business center and the development of the Delmar/Taylor

Kevin Bryant, founder and president of Kingsway Development, serves on the board of BE-Ex STL. He was recruited by 8th Ward Alderwoman Spencer, who used to have Rein's job.

"She asked me to join to represent developers building north of Delmar, who are often neglected or left out of these levels of conversations," Bryant confesses. Bryant defines himself as "pro-energy improvement." But while Bryant says he's all for the city enforcing its new building standards, that's only if resources are made available to offset the cost. Bryant doesn't think the new BEPS policies will necessarily hurt small or minority developers or building owners.Most won't be impacted by standards related to buildings that are 50,000 square feet or greater.

Bryant does, however, have concerns about requirements to upgrade or add new energy-saving measures to existing buildings. "Finding the funding to improve your building; that's what stings and not just for minority developers, but for all of us," he says. "It just hurts Black developers and Black building owners more because we have less access to capital. Most Black developers north of Delmar, including myself, and in other cities…we're struggling to find capital.

"So, when there's an ordinance or something that says now you must improve your circuit breakers or add solar outlets or upgrade your water supply …. if we can't go to the bank and readily pull-down the money to offset those costs, it just hurts. That's where the city or federal government needs to step in and help identify resources for all of us."

Homeowners, builders and nonprofits can work with the Building Division to determine alternative compliance methods, Michalova says, and BE-Ex STL was specifically established as a clearinghouse, offering support to homebuilders and homeowners about incentive programs, other resources and even technology to reduce energy consumption.

"The path to get there can be a challenge," Rein explains. "But that's the reason why the Building Energy Exchange and other high-performance building hubs popping up around the country exist.

Our goal is to help people navigate those hurdles and help folks that need extra support — especially those who've been marginalized — meet these goals."

Government support is also available. The federal Inflation Reduction Act of 2022 offers funding, programs and incentives aimed at accelerating the transition to a clean energy economy.

For example, the Clean Electricity Investment tax credit provision applies to all generation facilities (and energy storage systems) that have an anticipated greenhouse gas emissions rate of zero.

Residential home builders are eligible for tax credits if their projects meet ENERGY STAR program requirements. Commercial building owners who increase their energy efficiency by at least 25 percent will also be able to claim deductions.

Homeowners can claim up to $3,200 annually through new federal income tax credits to offset the cost of energy-efficient home upgrades. In addition, homeowners can also take advantage of the extended Residential Clean Energy credit, which provides a 30 percent income tax credit for clean energy equipment, such as rooftop solar, wind energy and geothermal heat pumps.

Bryant isn't particularly impressed. The "average person," he says, may not have the wherewithal to capitalize on these incentives.

"For instance, $3,200 may sound like a lot until you unpack the qualification requirements. The credit is generally limited to 30 percent of qualified expenditures made on property," he says. "True energy improvements of an old house can easily surpass $10,000, and that depends on whether you're doing more than just one item."

Still, Bryant insists any kind of government energy assistance is better than none. "It's a good start, but not enough to motivate anyone who is already struggling with finances." Rein, with Be-Ex STL, concedes that moving everyone, in every income bracket, to compliance will be challenging. However, he remains hopeful that a combination of public and private incentives and determination by stakeholders will help everyone meet the city's goals.

"Part of the mission of every group involved is to work together to find and use the tools and methods at our disposal to bridge gaps so that we can get everyone to the table and see everyone reap the rewards," Rein says.

But an even bigger problem for the city's ambitions might be a familiar foe — the state of Missouri.

Building Opposition

Missouri Rep. Dan Houx (R-Warrensburg) is a real estate developer, home builder and licensed Realtor. In 2018, he was the recipient of the St. Louis Home Builders Association Award.

And Houx would like to undo everything St. Louis has been doing. While his effort has been less publicized than the legislation that would have set up a state office to prosecute crime in the city, or the bill that would have forced the city's police department back under state control, last March, Houx introduced a bill seeking to have a similar impact on the city's new energy-efficient building codes.

House Bill HB 580 would require municipalities that updated their building codes to 2018 international standards, including measures that increase energy efficiency, to roll back to the earlier, 2009 iteration.

Jessica Deem, a licensed architect and owner of a design firm specializing in sustainable renovations, wrote in a March commentary for NEXTSTL that HB 580's standards would disqualify municipalities from Inflation Reduction Act funding, which includes $1 billion in funding for state and local governments that have adopted national energy codes.

"Missouri, the original 'home rule' state, has always been big on local control," she wrote. "When it comes to codes, we take our hands-off approach seriously as one of only seven states without a statewide building code. This approach has famously allowed some (mostly rural) areas of Missouri to exist without any building codes at all. Many Missouri counties do not require residential building permits. Home rule also gives Missouri communities the freedom to adopt modern building codes — and most cities, towns and some counties have done so for decades.

"Why then is a state without a building code suddenly trying to make local building ordinances null and void?"

The answer lies in St. Louis' ambitious greenhouse gas efforts.

In a House summary of HB 580, supporters argued that building codes should address public health and safety matters, only, and not be tied to guidelines that seek to improve energy efficiency — "which is not the role of government or of a building code."

Text within the bill threatened to make "null and void" any "ordinance, resolution, regulation, code or policy" that mandate how homes should be built under what proponents believe are "unreasonable" standards. The bill could make it illegal for St. Louis area municipalities to enforce portions of locally adopted ordinances like St. Louis' new BEPS.

Witnesses who testified in favor of the bill included home builders associations from both St. Louis and Kansas City, representatives from the Kansas City Regional Association of Realtors and the Mid-America Carpenters Regional Council.

A House summary explained their arguments: "The supposed cost savings of energy-efficient homes will never be recouped by the consumer because some of the recommendations are so costly and unnecessary.

"Implementing these guidelines would increase the cost of new houses, having the unintended effect of making a new home unaffordable for a growing number of people, who in turn would be incentivized to remain in older, less energy-efficient homes, thus defeating the very purpose of the guidelines."

Witnesses in opposition of HB 580 included representatives from the North American Insulation Manufacturers Association, the Missouri Sierra Club and more.

They argued that not only would HB 580 prevent communities from adopting new energy ordinances, codes and policies, it would permanently limit construction standards for energy use reduction in new and existing homes and buildings.

Steve O'Rourke, an energy consultant, solar distributor and a Missouri Gateway Green Building Council board member, provided written testimony against HB 580. He speaks passionately and technically about the "building envelope" (basically building exteriors) as a factor in trying to meet zero energy requirements.

O'Rourke argues that it's less costly for homeowners if energy-efficient measures are installed when buildings are constructed.

"Yes, it's going to cost more but not prohibitively more," O'Rourke says. "Yes, I can blow in more insulation into my attic barely cost-effectively, but I can't open up the walls and add insulation. It's more costly to take cheap windows out than to have better, more efficient ones installed when you're building the building."

Even so, he adds, "I don't want to demonize homebuilders. They're in a business and they want to build as cheaply as they can, flip it and sell for as much as possible. Most have no incentives to build an energy-efficient building because they aren't ever going to pay any utility bills."

He jabs the GOP-led House majority in Jefferson City.

"They always say: 'Stay out of my business, government.' They don't want the feds telling Missouri what to do, but here they are trying to get state government to tell local municipalities what they can and cannot do. We have local municipalities trying to improve their building codes and you want the state to say, ‘No, you can’t do that!’”

Home builders’ claim that energy-efficient measures will only drive up the costs of homes is a tad bit hypocritical, O’Rourke adds.

“You don’t hear them say, ‘Oh, you know, those granite countertops made the house unaffordable.’ They put in all kinds of sexy amenities in buildings that have no payback at all. I’m saying there are plenty of ways to make buildings affordable and energy efficient.”

Despite robust testimony and committee debates, House Bill 580 didn’t make it to the floor in the last legislative session. O’Rourke warns that “home builders aren’t giving up” and predicts the bill will resurface.

House Bill 580 wasn’t the state’s only attempt to undo energy-related advances by local governments. This spring, the Missouri House passed House Bill 184, which would block efforts like St. Louis County’s 2021 ordinance requiring electric vehicle charging stations in parking lots. (After facing pushback, the council modified the ordinance, though a similar measure requiring the infrastructure for charging stations remains law in the city.)

The bill stalled out in the Senate, but opponents expect to see lawmakers try again in a future session.

A National Dialogue with Local Stakes

HB 580 didn’t just try to block new energy standards. It also mandated that home builders face no requirements to disclose efficiency data or offer upgrades in the design phase, when critical performance decisions are solidified.

That type of legislation, O'Rourke argues, is counterproductive. If anything, he says, there should be efforts to make energy efficiency more transparent for homeowners.

"We have labels on our food, right? Everything you buy at the grocery store is labeled so we know the ingredients and content of the product so the consumer can tell if the product has healthy content or not," O'Rourke says, adding, "Homes do not have labels. We have HERS® (Home Energy Rating System) ratings and the Energy Star system, but the typical homebuyer has no idea because there's not much transparency in terms of utility costs, unless the previous owner wants to share that information.

"If we required an energy audit for every building when it goes up for sale, have it evaluated and scored, then people would be able to evaluate if the house is an energy pig or if it's energy efficient."

O'Rourke believes that if more people were educated on the overall benefits of energy performance standards, like BEPS, there would be less debate, less legislative pushback and more public acceptance. He longs for sustainable practices to be more mainstream, more of an accepted part of the nation's dialogue.

Many in the field of sustainable energy are looking to the federal government to make energy-efficient matters more pedestrian.

Last year, the Biden-Harris administration announced the nation's first-ever Federal Building Performance Standard, which set an ambitious goal to cut energy use and electrify equipment and appliances in 30 percent of the building space owned by the federal government by 2030.

The federal government has often made progressive decisions that altered the political, social and racial landscape in this country. Federal programs such as Franklin Roosevelt's New Deal and Harry Truman's mandate to desegregate the U.S. armed forces set the stage for widespread acceptance and change in the country's social fabric.

AIA-Missouri President Biggs considers the government's new building performance standard a precursor of what's to come in the building industry throughout the nation.

"It's not like this is something new," Biggs says. "We're not talking about the future, it's the present. Technologies are changing, methods are evolving and eventually, this [sustainable building] effort will be a part of our DNA."

Still, in St. Louis, whether the city's ambitious plan to cut greenhouse gas emissions succeeds now comes down not to big federal programs, but to individual building owners; not to energy experts, but to small business owners and individuals with a million other things on their to-do list.

Michalova stresses that the city will work with anyone who wants to get their building into compliance with the standards, including offering a "custom compliance pathway" for those with unique circumstances.

And with state efforts to block new standards halted for now, building owners can't just ignore the issue. They were required to submit their 2022 data by May 1. Just around 50 percent had done so by mid-June, Michalova says. That's not a great sign that everyone will be ready to show full compliance with the standards in 2024.

Even so, Michalova holds out hope. "Buildings have this year and next year to make changes," she says. "I am optimistic." This article has been updated.

For more on the River City Journalism Fund, which provided funding for this project and seeks to support local journalism in St. Louis, please see rcjf.org.