Establishing Incentives for Building Electrification through Congress: How to Strengthen and Accelerate Local Decarbonization Efforts

Megan Conner[*]

The commercial and residential building sector accounts for 37 percent of U.S. energy consumption, making sector-wide decarbonization a key priority for combating climate change. Yet new building construction continues to ensure the future of nonrenewable energy by placing natural gas infrastructure between building walls instead of all-electric wiring. While many city and municipal governments began crafting building electrification regulations in recent years, a confluence of challenges threatens their progress. Resource-constrained local governments ultimately struggle to compete when well-resourced natural gas interest groups lobby and litigate against building electrification measures, creating both state and federal preemption hurdles for local laws. One recent Ninth Circuit decision, California Restaurant Association v. City of Berkeley, *highlighted the complexity of these problems when the court federally preempted Berkeley's ban on natural gas piping in new buildings. The roadblocks faced by Berkeley and other localities raise the question: How can the United States alleviate local litigation burdens and bolster building decarbonization moving forward? This Note argues that Congress can and should pass new federal building electrification legislation to protect, incentivize, and accelerate local electrification efforts. First, this Note explores the potential to establish short-term electrification incentives targeting on-the-ground construction decisionmakers. Second, this Note demonstrates how a long-term incentive should dovetail into the regulatory scheme, leveraging a cooperative federalism framework for disseminating electrification incentives to local governments and preempting state prohibitions on progress. This Note concludes by calibrating this twofold policy against the strengths and weaknesses of tangential federal policies, particularly the recently enacted Inflation Reduction Act.*

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* J.D. Candidate, University of California, Berkeley, School of Law, 2025. Many thanks to Professor Holly Doremus, Grace Li, and the *Ecology Law Quarterly* editors for their invaluable feedback and support during the writing process.

INTRODUCTION

In an era when climate change is both pressing and politicized,[1] building electrification is a timely issue. In the United States, the residential and commercial building sector accounts for approximately 37 percent of total energy consumption.[2] Yet developers continue to dress new buildings with outdated natural gas piping systems and devices despite tremendous technological improvements in building appliances and infrastructure efficiency.[3]

An effective low-carbon economic transition will require a shift from natural gas to electric infrastructure in buildings. Electric infrastructure is critical to a low-carbon energy transition because various types of energy inputs can be electrified, including renewable, nuclear, and fossil fuel sources.[4] Although electric infrastructure does not guarantee clean and efficient electricity usage, it accelerates renewable energy adoption as renewable supplies expand.[5] The same cannot be said for natural gas infrastructure. Once a natural gas piping system is plastered into the walls of a new building, the costs and logistics of replacing this piping with electric wiring are immense barriers to decarbonization.[6]

Today, numerous cities, counties, and states are working meticulously to address this issue by instituting building electrification regulation through building codes, police powers, and air emission regulatory authority.[7]

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1. Research supports a strong causal link between anthropogenic greenhouse gas pollution since at least 1971 and global warming, leading to "[w]idespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere." CLIMATE CHANGE 2023 SYNTHESIS REPORT: SUMMARY FOR POLICYMAKERS 4-7 (Intergovernmental Panel on Climate Change, 2023), https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf. Yet, over the last three decades, U.S. partisan politics and climate change political discourse ballooned in tandem, with partisan division eventually overwhelming the climate change conversation. Patrick Egan & Megan Mullin, *US Partisan Polarization on Climate Change: Can Stalemate Give Way to Opportunity?*, 57 POL'Y SCI. & POLITICS 30, 30-33 (Sept. 7, 2023).

2. This 37 percent estimate by the U.S. Energy Information Administration (EIA) includes electrical system energy losses in the building sector. If calculating only end-use energy consumption in the U.S., the residential and commercial building sector accounts for 28 percent of all such consumption. *Frequently Asked Questions (FAQs): How Much Energy Is Consumed in U.S. Buildings?*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/faqs/faq.php?id=86&t=1#:~:text=In%202022%2C%20the%20combined%20end,British%20thermal%20units%20(Btu).&text=This%20was%20equal%20to%20about,use%20energy%20consumption%20in%202022 (last updated Apr. 30, 2024) [hereinafter *FAQs*].

3. *See generally* Heather Payne, *The Natural Gas Paradox: Shutting Down a System Designed to Operate Forever*, 80 MD. L. REV. 693 (2021).

4. *Electricity Explained: Electricity in the United States*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php (last updated Mar. 26, 2024) [hereinafter *Electricity Explained*]. The EIA further suggests that "[e]lectrification is one of the most important strategies for reducing CO_2 emissions from energy in the Net Zero Emissions by 2050 Scenario, where the majority of emissions reductions from electrification come from the shift towards electric transport and the installation of heat pumps." Mathilde Huismans, *Electrification*, INT'L ENERGY AGENCY, https://www.iea.org/energy-system/electricity/electrification (last updated July 11, 2023).

5. Courtney Lindwall, *Decarbonization: Why We Must Electrify Everything Even Before the Grid Is Fully Green*, NAT. RES. DEF. COUNCIL (Dec. 1, 2022), https://www.nrdc.org/stories/why-we-must-electrify-everything-even-grid-fully-green.

6. *Infra* Part I.

7. *Infra* Part II(a).

Jurisdictions successfully adopting such policies encompass more than thirty-six million people across ten states.[8] Local governments retain institutional knowledge of local laws and community policy priorities, making them advantageous propagators for such regulation.[9] Yet, many localities face near-inevitable preemption litigation against their decarbonization mandates, even when their authority to regulate appears legally robust.[10] When powerful fossil fuel lobbies back up plaintiffs opposing building electrification, local governments' limited resources struggle to compete.[11] So how can the United States combat these barriers to the energy transition?

To accelerate U.S. building electrification, local governments need support and guidance from the federal government. Federal intervention can counteract fossil fuel-backed preemption challenges and alleviate local government resource constraints. While the federal government took tangential steps to address local building decarbonization in recent decades, primarily focusing on building appliance efficiency,[12] electrification policies aimed at building infrastructure are notably absent.[13] Congress should act on building electrification.

To maximize the chance of success and reduce political resistance to building electrification, Congress should establish incentive-based policy instruments to accelerate and support local building decarbonization action. This Note argues for a twofold approach to building electrification incentives. First, Congress should establish short-term incentives to nudge builders to install more electric infrastructure. Congress can take inspiration from the Inflation Reduction Act and emerging incentive-based regulations promulgated by cities.[14] Second, Congress should establish long-term incentives to encourage localities to act on building electrification. This could entail adopting a federal-local relationship reminiscent of the Clean Air Act's National Ambient Air Quality Standards (NAAQS) and State Implementation Plan (SIP) mechanisms but focusing on voluntary incentives rather than penalizing mandates.[15]

I. THE ROLE OF BUILDING ELECTRIFICATION IN U.S. DECARBONIZATION

The building sector is a key contributor to greenhouse gas emissions in the United States. The emissions impact is not solely concentrated in industrial buildings either: offices, retailers, restaurants, residences, and other unassuming

8. This statistic reflects research from March 2023. Leah Louis-Prescott & Rachel Golden, *How Local Governments and Communities Are Taking Action to Get Fossil Fuels out of Buildings*, ROCKY MOUNTAIN INST., https://rmi.org/taking-action-to-get-fossil-fuels-out-of-buildings/ (last updated Oct. 2, 2023).

9. *Infra* Part II(a).

10. *Infra* Part II(b)(3).

11. *Id.*

12. *Infra* Part II(c)(1).

13. *Infra* Part II(c)(2).

14. *Infra* Part II(a); *See also* Inflation Reduction Act of 2022, Pub. L. No. 117-169, 136 Stat. 1818.

15. *Infra* Part III(a)(1)(b).

structures cumulatively generate significant emissions output.[16] According to the U.S. Energy Information Administration (EIA), the residential and commercial building sectors' energy consumption accounted for approximately 40 percent of the total U.S. energy consumption in 2023.[17] This amounts to a 20.6 quadrillion British thermal units (Btu) footprint.[18] In the face of climate change, decarbonizing the commercial and residential building sector is critical for an effective energy transition.

New building electrification is a priority for decarbonizing the building sector. Although electric infrastructure does not guarantee clean electricity usage, it facilitates renewable energy adoption as renewable supplies expand.[19] This is because electric infrastructure accepts inputs of nonrenewable energy (such as coal, natural gas, and petroleum), renewable energy (such as solar and wind), and nuclear energy.[20] Electric infrastructure's input flexibility significantly decreases physical and economic barriers to the building sector's low-carbon transition.[21] Then, as energy supply shifts over time, electrified buildings need not be renovated with new infrastructure to accommodate new energy source inputs.[22]

The same cannot be said for alternative infrastructure such as natural gas piping.[23] Natural gas systems installed in new buildings today threaten decarbonization in the building sector for decades ahead. For example, if a developer plans to place a gas stove in a new building's kitchen, the developer will install natural gas pipes during construction, before installing the kitchen walls. But the developer will not necessarily install electric wiring into that wall during construction since it is not needed for the gas stove hook-up. Consequently, future building users cannot swiftly switch to an electric stove without the electric hookup in the kitchen. Once natural gas pipes are sealed within a building's walls, changing that infrastructure presents an expensive headache.[24] Compounding this deterrent, natural gas infrastructure has an

16. *See Commercial Buildings Energy Consumption Survey*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/consumption/commercial/building-type-definitions.php (last accessed Sept. 18, 2024).

17. *See FAQs*, U.S. ENERGY INFO. ADMIN., *supra* note 2.

18. *Id.*

19. *See* CAITLIN MURPHY ET AL., ELECTRIFICATION FUTURES STUDY: SCENARIOS OF POWER SYSTEM EVOLUTION AND INFRASTRUCTURE DEVELOPMENT FOR THE UNITED STATES viii-xiii (Nat'l Renewable Energy Lab. 2021), https://www.nrel.gov/docs/fy21osti/72330.pdf.

20. *Electricity Explained*, U.S. ENERGY INFO. ADMIN., *supra* note 4.

21. *See* MURPHY, *supra* note 19, at xii.

22. *See id.* at 40.

23. For a renewable transition, only hydrogen power could potentially replace natural gas in current natural gas piping. However, research suggests that hydrogen blending in existing natural gas infrastructure would be economically infeasible and result in minimal emissions reductions. HERIB BLANCO, GLOBAL HYDROGEN TRADE TO MEET THE 1.5C CLIMATE GOAL, PART II: TECHNOLOGY REVIEW OF HYDROGEN CARRIERS 104-06 (Int'l Renewable Energy Agency 2022), https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Apr/IRENA_Global_Trade_Hydrogen_2022.pdf?rev=3d707c37462842ac89246f48add670ba.

24. *Cf.* Payne, *supra* note 3, at 723-24.

average lifespan of approximately eighty years.[25] This means that natural gas pipes installed in a new building are likely to outlive the original residents of the building itself.[26]

Yet, natural gas appliances and infrastructure are still consistently installed in new U.S. buildings. In 2020, 61 percent of all U.S. households used natural gas for at least one energy end-use.[27] "Space heating, water heating, and cooking were the most common end uses" of natural gas for households in 2020.[28] Of these household end uses, 52 percent of space heating and 48 percent of water heating users used natural gas systems.[29] For perspective, only 26 percent of residences nationwide use all-electric energy,[30] so building decarbonization clearly lags behind the pace required for an efficient low-carbon energy transition. New natural gas appliances installed today pose long-term barriers to emissions reduction progress. However, these appliances will not be phased out until the connected natural gas infrastructure is replaced with electric plug-ins. Regulation needs to drive this shift.

II. BUILDING ELECTRIFICATION FROM THE BOTTOM-UP: WHY EMERGING LOCAL REGULATION NECESSITATES FEDERAL SUPPORT

Generally, localities appear to care about building electrification and decarbonization. Many local U.S. cities, municipalities, and even states are electrifying new buildings using various regulatory approaches.[31] Furthermore, localities are well-positioned to tackle building electrification. Local governments typically have a vested interest in urban planning and building codes, with prioritized power to regulate these topics.[32] Local citizens and officials also have a more nuanced understanding of local laws and typical

25. *Id.* at 705.

26. As of 2022, the average life expectancy of someone born in the U.S. is approximately 76.4 years. Yuki Noguchi, *American Life Expectancy Is Now at Its Lowest in Nearly Two Decades*, NPR (Dec. 22, 2022), https://www.npr.org/sections/health-shots/2022/12/22/1144864971/american-life-expectancy-is-now-at-its-lowest-in-nearly-two-decades.

27. Kaili Diamond & Matthew Sanders, *Today in Energy: The Majority of U.S. Households Used Natural Gas in 2020*, U.S. ENERGY INFO. ADMIN. (Mar. 23, 2023), https://www.eia.gov/todayinenergy/detail.php?id=55940.

28. *Id.*

29. *Id.*

30. *See* Kaili Diamond et al., *Over One-Quarter of U.S. Households Use Electricity as the Only Source of Energy*, U.S. ENERGY INFO. ADMIN. (July 12, 2022), https://www.eia.gov/todayinenergy/detail.php?id=52999&src=%E2%80%B9%20Consumption%20%20%20%20%20%20Residential%20Energy%20Consumption%20Survey%20(RECS)-b3. Alternatives to electricity typically include "natural gas, fuel oil, propane, or wood." *Id.* And notably, all-electric homes are most pervasive in Florida (77 percent), Hawaii (72 percent), and a few other states such as Washington, Louisiana, Tennessee, Alabama, North Carolina, and South Carolina. *Id.*

31. *See* Louis-Prescott & Golden, *supra* note 8.

32. *See* LINDA R. ROWAN ET AL., BUILDING CODES, STANDARDS, AND REGULATIONS: FREQUENTLY ASKED QUESTIONS 1-5 (Cong. Rsch. Serv. 2023), https://crsreports.congress.gov/product/pdf/R/R47665#. Local governments often negotiate and enter into agreements with land developers with land use planning and regional interests in mind. *See generally* DAVID L. CALLIES ET AL., DEVELOPMENT BY AGREEMENT: A TOOL KIT FOR LAND DEVELOPERS AND LOCAL GOVERNMENTS (Am. Bar Ass'n 2012).

developer activity. Localities are acutely sensitive to community health and safety, which can prove helpful when assessing the risks of different building systems and appliances.[33] Additionally, since local authorities are physically proximal to the citizens they regulate, they may be better positioned to integrate constructive community input when drafting regulations.

However, climate change is a global issue. Sometimes, regional action on climate change elicits strong responses from stakeholders outside the immediate community. Other times, regional governments have too little incentive to act because the global climate threat does not feel geographically proximal or imminent. Consequently, U.S. localities are confronting challenges to building electrification that hamper a low-carbon energy transition. As discussed further below, federal congressional action may be a lucrative pathway to confront these challenges.

A. Characterizing Emerging Local Regulation

A variety of local building electrification policies are emerging in the U.S., but they appear unevenly distributed across jurisdictions.[34] Predominantly progressive states and cities currently lead the charge in building electrification regulation. Over seventy cities and counties in California alone have emerging building decarbonization plans.[35] Washington, New York, and Massachusetts are crafting statewide initiatives.[36] Moreover, many cities within these states have supplemental building emissions mandates, incentives, or a mix of both.[37]

Those localities acting to decarbonize buildings promulgate their regulations using various legal mechanisms. Some invoke police powers, suggesting that natural gas alternatives to electric building infrastructure pose significant health and safety risks to building dwellers.[38] Many others root their

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33. *Cf.* ROWAN ET AL., *supra* note 32, at 2; *see generally* Patricia A. Collins & Michael V. Hayes, *The Role of Urban Municipal Governments in Reducing Health Inequities: A Meta-Narrative Mapping Analysis*, 9 INT'L J. EQUITY HEALTH 13 (2010).

34. *See* Sarah J. Fox, *Why Localizing Climate Federalism Matters (Even) During a Biden Administration*, 99 TEX. L. REV. 122, 132-35 (2021).

35. *Zero Emission Building Ordinances*, BLDG. DECARBONIZATION COAL., https://buildingdecarb.org/zeb-ordinances (last visited Sept. 18, 2024).

36. Daniel Markind, *New York State Pushes Ahead on Natural Gas Ban*, FORBES (May 8, 2023), https://www.forbes.com/sites/danielmarkind/2023/05/08/new-york-state-pushes-ahead-on-natural-gas-ban/?sh=71e317d36fe7; Tom DiChristopher, *Massachusetts favors building electrification in final energy code update*, S&P GLOBAL (Sept. 28, 2022), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/massachusetts-favors-building-electrification-in-final-energy-code-update-72296997. Of note, Washington state decided to revise a natural gas ban proposal to avoid Berkeley-style preemption concerns within the Ninth Circuit. David Iaconangelo, *Washington State Hits the Brakes on Landmark Gas Ban*, E & E NEWS (May 25, 2023), https://www.eenews.net/articles/washington-state-hits-the-brakes-on-landmark-gas-ban/.

37. Fox, *supra* note 34, at 133-34.

38. *See* Tom DiChristopher, *What Striking Down Berkeley's Gas Ban Means for US Building Electrification Push*, S&P GLOBAL (Apr. 19, 2023), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/what-striking-down-berkeley-s-gas-ban-means-for-us-building-electrification-push-75275004 (mentioning, after a circuit court invalidated a Berkeley restriction on gas

regulation in building code authority.[39] Still others like New York use more novel approaches, such as leveraging air emissions monitoring power to regulate building profiles.[40]

Importantly, regulatory instruments also differ widely across implementing localities. While some cities move to outlaw natural gas in new buildings altogether, others selectively ban natural gas infrastructure in certain building types or certain appliance hook-ups.[41] And some cities do not ban natural gas at all. Instead, they created rebates or expedited permitting benefits as incentives for developers to adopt electric infrastructure.[42] These incentives also include electric-preferred regulation, such as efficiency or renewable energy requirements for new construction that nudge local actors towards electric options.[43] State Public Utility Commissions (PUCs) additionally may supplement city regulation with equity-related building electrification incentives.[44]

However, regulatory progress on building electrification is not pervasive. Many states and localities have yet to act on building electrification. In fact, many politically conservative states have preempted building electrification regulation altogether, including Arizona, Georgia, Kentucky, Louisiana, Minnesota, Mississippi, Oklahoma, and Tennessee.[45] In total, about 50 percent of states are on pace to prohibit natural gas restrictions in buildings.[46] In states that lack cities acting to electrify buildings anyway, preemption may be symbolic.[47]

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piping, "plenty of pathways for local governments to still restrict gas in new construction and protect their residents and address the climate crisis").

39. *See id.*

40. *See* NEW YORK CITY, LOCAL LAW no. 154 (2021). New York State and New York City building electrification regulations represent compatible frameworks. *See* Markind, *supra* note 36.

41. *See generally* JIM MEYERS, BUILDING ELECTRIFICATION: HOW CITIES AND COUNTIES ARE IMPLEMENTING ELECTRIFICATION POLICIES (Sw. Energy Efficiency Project 2020), https://lpdd.org/resources/report-building-electrification-how-cities-and-counties-are-implementing-electrification-policies/.

42. *See, e.g.*, *id.* at 2, 5.

43. *Id.* at 10-12. Among California localities, Santa Monica, Marin County, San Mateo, and San Luis Obispo adopted such electric-preferred regulation. Boulder, Colorado likewise adopted an electric-preferred policy. *Id.* Maryland designed an aggressive electric-preferred performance standard designed to become electric-forcing over time. Maryland's law requires buildings exceeding 35,000 feet to incrementally decrease their GHG emissions to reach net-zero by 2040. *See* Jeff St. John, *Maryland Just Passed One of the Most Aggressive Climate Laws in the US*, CANARY MEDIA (Apr. 12, 2022), https://www.canarymedia.com/articles/policy-regulation/maryland-just-passed-one-of-the-most-aggressive-climate-laws-in-the-us; *see also* Climate Solutions Now Act of 2022, S.B. 528, Reg. Sess. (Md. 2022).

44. *See Cities & States Moving to All-Electric Buildings*, CLIMATENEXUS, https://gas.climatenexus.org/gas-free-buildings (last visited Dec. 14, 2023).

45. Fox, *supra* note 34, at 134.

46. Tom DiChristopher, *Half of US States Are on Pace to Prohibit Local Gas Bans*, S&P GLOBAL (June 21, 2023), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/half-of-us-states-are-on-pace-to-prohibit-local-gas-bans76245300#:~:text=On%20March%2017%2C%20North%20Dakota,preemption%20bill%20on%20May%204.

47. Fox, *supra* note 34, at 134.

But for a few progressive cities stranded within conservative states, preemption is a severe constraint on local efforts. In Austin, a draft Climate Equity Plan originally contained ambitious building electrification mechanisms to support the city's 2040 decarbonization goal.[48] Yet, aggressive industry lobbying and a Texas state preemption on natural gas bans undermined these electrification ambitions.[49] Other cities may be deterred from even initiating electrification proposals due to state legal barriers like those seen in Texas.[50] In sum, twenty-four states have adopted such preemption laws as of June 2022.[51]

Some localities also face uncertain progress due to federal preemption concerns. Like state preemptions, federal preemption concerns can diminish the strength of electrification efforts or prevent them entirely.[52] Federal preemption is a risk even when state legislatures and PUCs, like in California, support city-building electrification efforts through supplemental incentive programs. In *California Restaurant Association v. City of Berkeley*, a three-judge panel on the Ninth Circuit struck down Berkeley's natural gas infrastructure ban in April 2023.53 The Ninth Circuit held that under the Energy Policy and Conservation Act (EPCA), Congress expressly preempted the city's ban as regulating "energy use" under the statute.[54]

B. Hurdles to Local Building Electrification

Localities wishing to regulate building electrification face a set of hurdles that collectively threaten decarbonization progress. While the granularity of local regulation varies, city and municipal governments generally confront a high-level pattern of regulatory speed bumps that require additional policy support to alleviate.

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48. *Austin Climate Equity Plan*, THE CITY OF AUSTIN, https://www.austintexas.gov/page/austin-climate-equity-plan (last visited Sept. 25, 2024).

49. *Support Building Electrification in the Austin Climate Equity Plan*, ACTION NETWORK, https://actionnetwork.org/letters/support-building-electrification-in-austin-climate-plan (last visited Sept. 25, 2024); Erin Douglas, *Texas Gov. Greg Abbott Signs Law to Bar City Climate Plans from Banning Natural Gas as Fuel Source*, THE TEXAS TRIBUNE (May 18, 2021), https://www.texastribune.org/2021/05/18/texas-natural-gas-bans-climate-plans/; *A Texas Takedown of Natural Gas Bans*, TEXANS FOR NATURAL GAS (Feb. 2, 2023), https://www.texansfornaturalgas.com/a_texas_takedown_of_natural_gas_bans.

50. *See* Chris Marr, *Also Bigger in Texas: The State's Preemption of Local Ordinances*, BLOOMBERG LAW (May 30, 2023), https://news.bloomberglaw.com/daily-labor-report/also-bigger-in-texas-the-states-preemption-of-local-ordinances.

51. Alejandra Mejia Cunningham, *Gas Interests Threaten Local Authority*, NATURAL RESOURCES DEFENSE COUNCIL (Jan. 19, 2021), https://www.nrdc.org/bio/alejandra-mejia-cunningham/gas-interests-threaten-local-authority.

52. *See e.g.*, Iaconangelo, *supra* note 36.

53. Cal. Rest. Ass'n v. City of Berkeley, 65 F.4th 1045, 1056 (9th Cir. 2023).

54. *Id.* at 1049-51; *see also* Energy Policy and Conservation Act, 42 U.S.C. § 6201 (1975).

1. A Case Study: California Restaurant Association v. City of Berkeley

Berkeley's building electrification regulation and its resulting opposition is an illustrative study for analyzing challenges faced by local governments. In *California Restaurant Association v. City of Berkeley*, plaintiff California Restaurant Association (CRA) successfully appealed a federal preemption declaratory judgment against defendant Berkeley. The court found that CRA alleged sufficient Article III standing, in contrast to the City of Berkeley's challenge that the prospective harm alleged by CRA was not sufficient to establish an injury-in-fact.[55] Federal preemption prevailed, despite opposition by the federal agency tasked with promulgating the preempting statute.[56]

Berkeley was a first mover for building electrification,[57] and the outcome of *California Restaurant Association* was highly publicized. Overturning building electrification laws in a notably liberal city situated within an environmentally progressive state stirred unease.[58] The case flipped the district court's EPCA interpretation on its head. It shrunk the traditional scope of local government power, where "states and localities expressly maintain control over the local distribution of natural gas."[59] A Berkeley City Council member who authored the natural gas ban, Kate Harrison, called the ruling "a movement that can't be stopped."[60] She believed the court "conflated a 1970s regulation about the efficiency of appliances with what kind of materials can come into our house," arguing that Berkeley's ordinance "did not change appliances, [it] changed the source of fuel that can come into new buildings."[61]

In response to the Ninth Circuit's ruling, Berkeley petitioned for a rehearing en banc, a request which received formal support from other interested parties.[62] Berkeley's petition alleged that the three-judge panel misinterpreted EPCA's preemption provision, particularly the definition of "energy use" under the provision.63 The Ninth Circuit justified preemption by pointing to a primary aim of EPCA, "the end-user's ability to use installed covered products at their

55. *Cal. Rest. Ass'n*, 65 F.4th at 1,049.

56. *See generally* Brief for the U.S. as Amicus Curiae in Support of Petition for Rehearing, *Cal. Rest. Ass'n*, 65 F.4th at 1056 (Case No. 21-16278, Docket No. 33). The administrative agency tasked with enforcing EPCA, the U.S. Department of Energy, along with the Department of Justice, ultimately supported Berkeley's argument by way of an amicus brief from the Biden Administration. *See generally id.*

57. Bob Egelko, *Court strikes down Berkeley's first-in-the-nation ban on natural gas in new construction*, SAN FRANCISCO CHRONICLE (Apr. 17, 2023), https://www.sfchronicle.com/politics/article/ninth-circuit-berkeley-natural-gas-ban-17902110.php.

58. *See* Janie Har, *Court tosses Berkeley gas ban, but wider impact is unclear*, AP NEWS (Apr. 18, 2023), https://apnews.com/article/berkeley-california-natural-gas-ban-overturned-court3546acbaec5db011c89a610baa42cebc.

59. *See* Cal. Rest. Ass'n v. City of Berkeley, 547 F.Supp.3d 878, 892 (N.D. Cal. 2021), *abrogated by Cal Res. Ass'n*, 65 F.4th 1,045.

60. Har, *supra* note 58.

61. *Id.*

62. *See generally* Defendant-Appellee City of Berkeley's Petition for Rehearing en banc, Cal. Rest. Ass'n, 65 F.4th (4:19-cv-07668-YGR).

63. *Id.* at 13-14.

intended final destinations." But Berkeley argued that its ordinance did not directly concern the topic of "energy use" in the limited preemption provision (defined as "the quantity of energy directly consumed by a consumer product at point of use, determined in accordance with test procedures").[64] Instead, Berkeley alleged that its ordinance regulated the placement of natural gas piping to protect residents from the adverse health impacts of natural gas exposure in confined spaces. Such a public health measure is not synonymous with regulating consumer appliance design.[65]

While the court's holding in *California Restaurant Association* is contentious, the attention given to the case is often misdirected. The specific EPCA preemption upheld here is unlikely to resurface in most other U.S. localities instituting natural gas limitations in buildings.[66] However, the case exemplifies broader concerns for local governments looking to electrify and decarbonize the residential and commercial building sector. This Note elaborates upon these concerns, occasionally drawing details from *California Restaurant Association* to exemplify risks that future regulatory solutions should aim to address.

2. Federal and State Preemption Barriers

First, localities struggle to implement and uphold building electrification regulations because federal preemption law is unclear and litigation is likely. Legal standards around federal preemption are not bright-line rules with easy-to-predict outcomes. When Congress does not clearly spell out a federally preempted topic in a statute, determining preemption can be complex. [67]

The federal preemption doctrine derives from the Supremacy Clause of the U.S. Constitution, which holds that federal law is "the supreme Law of the

64. *Id.*; *see also* 42 U.S.C. § 6291(4).

65. Defendant-Appellee City of Berkeley's Petition for Rehearing en banc, *supra* note 62, at 11-13.

66. *Cf.* DiChristopher, *What striking down Berkeley's gas ban means*, *supra* note 38. Most local regulation does not root its authority in police powers and/or lies outside the Ninth Circuit's purview. *See id.* Additionally, local building electrification regulations that root their authority in building codes can try to qualify for the building code savings clause to preemption in EPCA. *See* Amy Turner, *Inflation Reduction Act: Implementation Gaps for Local Governments & How to Close Them*, SABIN CENTER FOR CLIMATE CHANGE LAW (May 25, 2023), https://blogs.law.columbia.edu/climatechange/2023/05/25/inflation-reduction-act-implementation-gaps-for-local-governments-how-to-close-them/.

67. If a statute does not expressly preempt an issue, then determining preemption becomes less straightforward. There are two types of non-express preemption that might apply: conflict preemption and field preemption. Conflict preemption occurs when a state regulation conflicts with a federal law, such that "compliance with both federal and state regulations is a physical impossibility." Fla. Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 142-143 (1963); Scott Hempling, REGULATING PUBLIC UTILITY PERFORMANCE: THE LAW OF MARKET STRUCTURE, PRICING, AND JURISDICTION 441-42 (Am. Bar Ass'n, 2nd ed. 2021). Courts also find conflict where state jurisdiction "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." Hines v. Davidowitz, 312 U.S. 52, 67 (1941). On the other hand, field preemption occurs when a "scheme of federal regulation . . . [is] so pervasive as to make reasonable the inference that Congress left no room for the states to supplement it." Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947); Hempling, REGULATING PUBLIC UTILITY PERFORMANCE 436-437. Notably, even the line between express preemption and non-express preemption can be blurred by judges, like in *CRA v. City of Berkeley*. *See* Part II(B)(1).

Land."[68] When a local law conflicts with a federal law on the same topic, the federal law supersedes its local counterpart.[69] Determining whether federal preemption applies often requires a nuanced assessment to see if there is truly a conflict between federal and state laws.[70] Consequently, courts leverage various statutory interpretation techniques to analyze federal statutes for preemption scope.[71]

In theory, courts have a default presumption against federal preemption when statutory language is ambiguous.[72] But in practice, such a presumption is defunct because judges wield immense discretionary power when weighing preemption by picking and choosing how to use the tools of statutory construction.[73] Some take a purposive approach, leveraging the historical context at the time Congress drafted a statute—and similar clues on the law's purpose—to arrive at a determination.[74] Other judges use a textualist approach, focusing on the plain meaning of a statute's text.[75]

This variety of judicial strategies on statutory construction makes federal preemption outcomes hard to predict. Local government officials cannot accurately assess preemption litigation risks when judges themselves often differ in assessing preemption. Therefore, local governments face immense challenges when crafting electrification policies compatible with federal regulation.

The same concerns can arise with state preemptions. Statutory construction similarly allows state court judges broad discretion, and research suggests that state courts tend to hold "anti-city disposition[s]."[76] However, in the case of building electrification, many state preemptions are reactive to local regulatory attempts. For example, Texas passed HB 884, which prohibits building permit regulations that can "deny a permit application based on the type of utility service provided to the project."[77] HB 884's text specifically notes that the statute "[relates] to local government regulations based on utility service type" and therefore clearly admits its purpose of restricting building electrification attempts like those in Austin.[78] State courts are likely to find state statutory language like this unambiguous because such statutes clearly aim to prevent natural gas bans

68. U.S. CONST., art. VI; *see also* BRYAN L. ADKINS ET AL., FEDERAL PREEMPTION: A LEGAL PRIMER 1 (Cong. Rsch. Serv., updated 2023), https://sgp.fas.org/crs/misc/R45825.pdf.

69. ADKINS ET AL., *supra* note 68, at 2-3.

70. *Id.* at 3-4.

71. *Id.*

72. *Id.* at 4-6.

73. Josh Zaharoff, *The Efficiency of Energy Efficiency: Improving Preemption of Local Energy Conservation Programs*, 37 N.Y.U. Rev. L. & Soc. Change 783, 792-93 (2013); *see generally* George Horvath, *Avoiding the Preemption Muddle: Reading Professor Bickel and Judge Garland* (Social Science Research Network, 2016), https://dx.doi.org/10.2139/ssrn.2838945.

74. *Statutory Interpretation: Theories, Tools, and Trends* 10-18 (Cong. Rsch. Serv., updated 2018), https://crsreports.congress.gov/product/pdf/R/R45153/2#:~:text=While%20purposivists%20argue%20that%20courts,gather%20evidence%20of%20statutory%20meaning.

75. *Id.*

76. *To Save a City: A Localist Canon of Construction*, 136 HARV. L. REV. 1200, 1207 (2023).

77. H.B. 884, 87th Leg., Reg. Sess. (Tx. 2021).

78. *Id*.

and similar efforts. Regardless, both state and federal preemption risks disadvantage localities trying to electrify buildings.

3. Industry Incentives to Litigate and Lobby

Beyond the complexities of preemption law, some parties have incentives to litigate and undermine localities' building electrification efforts. The fossil fuel industry is a critical opponent to building electrification, as its business model depends on nonrenewable energy reliance. While some fossil fuel companies are beginning to diversify their investments into the renewable space, their overarching business strategies still suggest that they are highly dependent on non-renewable investments.[79] Thus, fossil fuel players often seek to protect their profits by litigating against energy transition regulation.[80]

Additionally, fossil fuel corporations have a sizable wallet to fund legal preemption challenges against localities. In *California Restaurant Association*, the fossil fuel industry played a key role in financing the litigation to preempt Berkeley's natural gas ban.[81] SoCalGas, the largest natural gas utility in the United States, began paying immense sums to Reichman Jorgensen, the law firm representing CRA, around the onset of litigation.[82] The California Public Utilities Commission later forced SoCalGas to admit that it "funneled more than $1 million of customer money to pay for legal services by Reichman Jorgensen that included work on federal preemption of local laws to limit gas, the very issue at the heart of the CRA litigation."[83] Fossil fuel companies pushing such litigation costs onto customers indicates the lengths such companies are willing to go to oppose natural gas bans.[84]

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79. *See, e.g.*, Sam Meredith, *Big Oil rakes in record profit haul of nearly $200 billion, fueling calls for higher taxes*, CNBC, https://www.cnbc.com/2023/02/08/big-oil-rakes-in-record-annual-profit-fueling-calls-for-higher-taxes.html, (last updated Feb. 8, 2023).

80. *See, e.g.*, Chris McGreal, *How Exxon is using an unusual law to intimidate critics over its climate denial*, THE GUARDIAN (Jan. 18, 2022), https://www.theguardian.com/environment/2022/jan/18/exxon-texas-courts-critics-climate-crimes; Nydia Gutierrez, *Earthjustice Statement: Fossil Fuel Industry-led Lawsuit Aims to Dismantle New York's Nation-leading All-Electric New Buildings Law*, EARTHJUSTICE (Oct. 12, 2023), https://earthjustice.org/press/2023/earthjustice-statement-fossil-fuel-industry-led-lawsuit-aims-to-dismantle-new-yorks-nation-leading-all-electric-new-buildings-law; Tom DiChristopher, *SoCalGas sues California Energy Commission to block 'anti-natural gas policy'*, S&P Global (Aug. 5, 2020), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/socalgas-sues-california-energy-commission-to-block-anti-natural-gas-policy-59758122.

81. For background, *see supra* Part II(B)(1); *see generally Cal. Rest. Ass'n*, 65 F.4th.

82. *California should examine SoCalGas ties to lawsuit against Berkeley's natural gas ban*, CAL MATTERS (May 2, 2023), https://calmatters.org/commentary/2023/05/california-socalgas-berkeley-natural-gas/.

83. *Id.*; Administrative Law Judge's Ruling Granting California Environmental Justice Alliance's Motion to Compel at 1-4, Application of Southern California Gas Company (U904G) for Authority, Among Other Things, to Update its Gas Revenue Requirement and Base Rates Effective on January 1, 2024 (2023) (No. 22-05-015), Cal. Pub. Util. Comm'n. Apr. 11, 2023.

84. *SoCalGas ties to lawsuit*, *supra* note 82.

In the modern U.S. political climate, fossil fuel lobbies and conservative pundits frequently walk hand-in-hand.[85] Political polarization and lobbying efforts are obstacles for local government, spreading misinformation about emerging electrification regulation to strike fear into and mislead voters. Research suggests that fossil fuel-funded fronts spread key misconceptions about building electrification regulation.[86] Such groups falsely claim that electrification regulation will limit consumer choice, thus jeopardizing democratic and free market values.[87] But in fact, many building dwellers never have a choice for building hook-ups or appliances in the first place. Renters and building owners who do not construct their dwellings from scratch typically inherit the infrastructure choices of the original property developers. As previously noted, retrofitting to electrify an existing building is almost certainly cost-prohibitive.[88]

Misleading narratives propelled by fossil fuel funding also capitalize on stakeholder emotions. Building electrification is not an inherently evocative topic. It's quite the opposite. But the fossil fuel industry crafts false panic by focusing public relations campaigns on nostalgia for appliances like the gas stove.[89] Unlike, for example, a gas heater, the gas stove evokes memories of pan-fried food and cultural cooking traditions. Grabbing people's hearts by their stomachs, the fossil fuel industry misinforms consumers that local governments want to rip their beloved gas stoves from their kitchens.[90] Yet gas stoves are a

85. *See e.g.*, David Gelles, *How Republicans Are 'Weaponizing' Public Office Against Climate Action*, N.Y. TIMES (Aug. 5, 2022), https://www.nytimes.com/2022/08/05/climate/republican-treasurers-climate-change.html.

86. *See Sasan Saadat et al., Rhetoric vs. Reality: The Myth of "Renewable Natural Gas" for Building* 17-24 (Earth Justice & Sierra Club 2020), https://earthjustice.org/wp-content/uploads/report_building-decarbonization-2020.pdf.

87. *See, e.g.*, *Court's Rejection of Berkeley Gas Ban a Resounding Consumer Victory*, CONSUMER ENERGY ALL. (Apr. 18, 2023), https://consumerenergyalliance.org/2023/04/courts-rejection-of-berkeley-gas-ban-a-resounding-consumer-victory/; Stephen Kent, *The 'Save Our Gas Stoves Act' Is About Protecting Your Consumer Choice in the Kitchen*, CONSUMER CHOICE CENTER (June 6, 2023), https://consumerchoicecenter.org/the-save-our-gas-stoves-act-is-about-protecting-your-consumer-choice-in-the-kitchen/; Kenneth W. Costello, *Why Kill Natural Gas?*, CATO INSTITUTE (2022), https://www.cato.org/regulation/spring-2022/why-kill-natural-gas; Sarah Montalbano, *Natural Gas Hookup Ban Restricts Consumer Choice*, REAL CLEAR ENERGY (May 14, 2023), https://www.realclearenergy.org/articles/2023/05/14/natural_gas_hookup_ban_restricts_consumer_choice_899352.html.

88. *Supra* Part I.

89. Payne, *supra* note 3, at 705.

90. *See* Rebecca Leber, *How the Fossil Fuel Industry Convinced Americans to Love Gas Stoves*, MOTHER JONES (June 17, 2021), https://www.motherjones.com/environment/2021/06/how-the-fossil-fuel-industry-convinced-americans-to-love-gas-stoves/. In early 2020, Californians for Balanced Energy Solutions—purportedly a front for SoCalGas, the U.S.'s largest gas utility—hired a public relations firm to create a NextDoor alias. *Id.* This alias, 'Wilson Truong' deceptively presented as a Fox Hills neighborhood member on NextDoor to voice resistance to Culver City's plans to integrate electric-preferred regulation into building codes. *Id.* The alias wrote a misleading NextDoor post titled "Culver City banning gas stoves?" and expressed that "I thought it was bogus, but I received a newsletter from the city about public hearings to discuss it…Will it pass???!!! I used an electric stove but it never cooked as well as a gas stove so I ended up switching back." *Id.* Note how the alias inaccurately conflates the proposed electric-preferred policy with a ban on gas stoves. *See id.*

key cause of indoor air pollution and research links gas stoves to adverse respiratory health risks.[91] Additionally, in practice, not all localities outright ban gas stoves.[92] And if they incentivize the adoption of electric stoves, it typically only applies to new building developments.[93] But many local stakeholders fall prey to emotion, buying into the industry's misleading narratives.[94] Ultimately, industry's influence can aggravate partisan politics and undercut local progress.[95]

Moreover, state preemptions of natural gas bans often originate from the powerful influence of fossil fuel lobbies. In Colorado, a fossil fuel advocacy group successfully revived a ballot measure to prohibit local natural gas bans in August 2023.[96] The advocacy group Protect Colorado received plentiful funding from the state's leading oil and gas producers, including Chevron, Occidental Petroleum, and PDC Energy.[97] Beyond Colorado, successful prohibitions appear to be guided by the American Gas Association (AGA) preemption strategy and funded by related AGA member lobbying. States with such prohibitions include Oklahoma, Louisiana, Texas, and Indiana, among others.[98] Effectively, fossil fuel players can overturn existing local regulations altogether using the power of their pockets.

4. Local Government Resource Scarcity Impedes Regulatory Outcomes

Conversely, although local governments have the most to gain from litigating against preemption challenges, they are usually too resource-scarce to do so. Unlike higher levels of government, local governments generally lack adequate financial and labor resources. They also cannot easily offset excess

91. *E.g.*, Hiroko Tabuchi, *Study Compares Gas Stove Pollution to Secondhand Cigarette Smoke*, N.Y. TIMES (June 17, 2023), https://www.nytimes.com/2023/06/17/climate/gas-stoves-benzene-cigarettes.html#:~:text=The%20News,according%20to%20a%20new%20study.

92. Louis-Prescott & Golden, *supra* note 8.

93. *Id.*

94. *Cf.* Leber, *supra* note 90. The history of gas industry persuasion and emotional appeal, particularly for gas stoves, dates back to the 1930s. *See id.* And the tactic appears to work: "The prevalence of gas stoves in new single-family American homes climbed from less than 30 percent during the 1970s to about 50 percent in 2019." *Id.*

95. *See id.*

96. Sam Brasch, *Fossil fuel advocates revive ballot measure to prohibit local gas bans in Colorado*, CPR NEWS (Aug. 30, 2023), https://www.cpr.org/2023/08/30/fossil-fuel-advocates-stop-natural-gas-ban-2024-ballot-measure/.

97. *Id.*

98. *See* THE U.S. POWER SECTOR AND CLIMATE POLICY 28 (InfluenceMap, 2022), https://influencemap.org/site/data/000/018/U.S._Power_Sector_Report_Final_April2022.pdf. To clarify, the AGA appears to only directly lobby for federal policy action, not state preemption challenges. *See id.* at 22. But AGA provides guidance for its members to lobby for state preemption. *Id.* at 21. Additionally, fossil fuel lobbies here include energy utilities reliant on fossil fuels and/or with fossil fuel assets. *See generally id.*; *see also* Ella Nilson, *Cities Tried to Cut Natural Gas from New Homes. The GOP and Gas Lobby Preemptively Quashed Their Effort*, CNN (Feb. 17, 2022), https://www.cnn.com/2022/02/17/politics/natural-gas-ban-preemptive-laws-gop-climate/index.html.

administrative costs onto their constituents.[99] Funding sources include property, sales, and income taxes; parking charges and other fines; interest; and state and federal government grants.[100] Funds subsequently allocated to civil litigation defense often compete against and are constrained by more pressing expenditure obligations and agency departmental financing.[101] Meanwhile, their opponents receive steadfast funding from fossil fuel corporations that tap into consumer wallets to cover litigation bills.[102] In this context, localities lack the means to fight a fair legal battle against powerful corporations.

a. Resource Scarcity Creates Litigation Overdeterrence

Local governments' litigation challenges for building electrification appear to mirror local conundrums in the Takings Clause literature. Takings Clause jurisprudence derives its authority from the Fifth Amendment of the U.S. Constitution, which holds that private property "[shall not] be taken for public use, without just compensation."[103] This provides the government authority to seize private property for public use, as long as the "taking" involves a payment of "just compensation" to the former property owner.[104] It also provides the basis for local governments to request exactions from local developers.[105] Essentially, when a local developer's project on private property negatively impacts the public in some form, the local government may demand a payment or public benefit to offset the impact.[106] Takings Clause disputes are therefore a tug-of-war between local government authority and private property rights.[107]

Early Supreme Court jurisprudence on the Takings Clause favored local government discretion, but by 1982, the Supreme Court adjusted its approach. Court outcomes began to favor private property rights when *Nollan v. California Coastal Commission* shifted the burden of proof to local governments to show an essential nexus between their demanded exaction and the development's impact.[108] Subsequent jurisprudence further required local governments to demonstrate exactions as "roughly proportional" to the corresponding

99. *See* Daniella Barrow, *Resource Shortage Is a Major Challenge to Net Zero*, LOC. GOVERNANCE CHRON. (Nov. 8, 2023), https://www.lgcplus.com/services/regeneration-and-planning/resource-shortage-is-a-major-challenge-to-net-zero-08-11-2023/.

100. Joanna C. Schwartz, *How Governments Pay: Lawsuits, Budgets, and Police Reform*, 63 UCLA L. REV. 1,144, 1,161 (2016).

101. *Id.*; *See generally* Christopher J. Tyson, *The Impact of Municipal Fiscal Crisis on Equitable Development*, 48 FORDHAM URB. L.J. 883 (2021).

102. *See* Isabella Kaminski, *Fossil Fuel Companies Paying Top Law Firms Millions to 'Dodge Responsibility'*, THE GUARDIAN (Oct. 9, 2021), https://www.theguardian.com/environment/2021/oct/09/fossil-fuel-companies-law-firms.

103. U.S. CONST. amend. V.

104. *See* Ann Carlson & Daniel Pollak, *Takings on the Ground: How the Supreme Court's Takings Jurisprudence Affects Local Land Use Decisions*, 35 U.C. DAVIS L. REV. 103, 107-08 (2002).

105. *See id.* at 108-112.

106. *See id.*

107. *See id.* at 113.

108. *See id.* at 107, 113; Nollan v. Cal. Coastal Comm'n, 483 U.S. 825, 837 (1987).

development impact.[109] As a result, local government exactions have increasingly faced legal challenges by private property owners,[110] effectively deterring local governments from seeking exactions altogether.[111]

Takings Clause literature suggests that resource constraints drive local governments to be risk averse. Local governments with limited finances will try to avoid takings litigation because of difficult-to-prove proportionality and unpredictable outcomes.[112] Consequently, this risk aversion means that "the prospect of a large takings judgment may over-deter them from acting."[113]

Similarly, local governments seeking to electrify their buildings face strong deterrents due to litigation risks. Just as local governments shy away from exercising their constitutional takings right because litigation challenges are frequent and financially risky, local governments may shy away from building electrification policies if preemption litigation is near inevitable and costly. Risk-averse and financially constrained local governments feel they cannot afford the risk of an unclear litigation outcome, especially when their adversaries have deep pockets. Current preemption hurdles hurt local electrification regulation from the outset and may altogether deter certain localities from acting.

b. Unpredictable Article III Standing Compounds Litigation Overdeterrence

Compounding preemption litigation risks, local governments may be over-deterred by the unpredictable Article III standing doctrine. Article III standing—as articulated by the Supreme Court in *Lujan v. Defenders of Wildlife*—creates a complex threshold for plaintiffs to plead an injury-in-fact, among other hurdles.[114] Plaintiffs must show an "actual or imminent" injury, which is purportedly not satisfied by indefinite future intentions.[115] Subsequent cases clarified the necessity for the harm to be both concrete and particularized.[116] But despite these seemingly specific requirements, Article III standing is largely up to the overseeing judge's interpretation and discretion.

While Article III standing requirements should theoretically filter out frivolous litigation claims, in practice, courts inconsistently apply this standard.[117] Building electrification litigation is no exception. For example, the

109. Carlson & Pollak, *supra* note 104, at 105.

110. *See id*. at 113; *see generally* Christopher Serkin, *Big Differences for Small Governments: Local Governments and the Takings Clause*, 81 NYU L. REV. 1624 (2006).

111. *See* Carlson & Pollak, *supra* note 104, at 113; Serkin, *supra* note 110, at 1625-33.

112. *See* Carlson & Pollak, *supra* note 104, at 113.

113. Serkin, *supra* note 110, at 1625.

114. *See* Lujan v. Defs. of Wildlife, 504 U.S. 555, 560-61 (1992) (holding that Article III standing requires a plaintiff to plead an actual or imminent injury-in-fact, as well as demonstrate causation and redressability).

115. *Id.* at 564.

116. *See* Spokeo, Inc. v. Robins, 578 U.S. 330, 334 (2016); *see also* TransUnion LLC v. Ramirez, 594 U.S. 413, 423 (2021).

117. *See, e.g.*, Annefloor J. de Groot, *No [Concrete] Harm, No Foul? Article III Standing in the Context of Consumer Financial Protection Laws*, 56 GA. L. REV. 819, 854-55 (2022); Christina Behan,

Ninth Circuit in *California Restaurant Association* affirmed Article III standing, despite Berkeley's objection that CRA's alleged prospective economic harm was not sufficient to establish an injury-in-fact. CRA members failed to demonstrate any tangible impacts of the city's regulation on properties or building construction. Instead, they relied on abstract future business aspirations to build gas-powered restaurants in Berkeley. This contrasts with Article III standing jurisprudence as developed and applied in *Lujan*. In *Lujan*, the plaintiffs were denied Article III standing for an Endangered Species Act claim alleging an ecosystem or vocational nexus to injury for future travel to a geographic site.[118] Although vague future plans to travel did not allow for an injury-in-fact to Article III standing in *Lujan*, in *California Restaurant Association*, the court held that restaurant entrepreneurs' vague future development plans did allow for such injury-in-fact.[119]

Article III standing heightens the risk of costly litigation for local governments because they cannot accurately predict which lawsuits will be heard in court. This increases local governments' risk aversion and over-deters cities from instituting strong building electrification efforts altogether.

c. Regulatory Lobbying Faces Funding and Conflict Constraints

Local governments' resource limitations also constrain their lobbying power. When laying the groundwork for building electrification and other decarbonization goals, local governments can benefit from lobbying the state and federal governments to adopt complementary legislation. However, research suggests that municipalities frequently hire the same lobbying firms that service their fossil fuel opponents.[120] For example, when the City of Baltimore sued Exxon Mobil for climate change damages in 2018, both parties employed the same lobbying firm for contrasting energy lobbying objectives.[121]

Conflicts of interest are particularly concerning in this context because fossil fuel businesses have deep pockets to employ the same lobbying firm to a greater degree.[122] When lobbyists work for two clients with opposing aims and drastically different revenue outlooks, they may be tempted to favor the richer client's interests because it makes practical business sense. Although lobbyists do not usually represent opposing parties in the same specific piece of legislation, they lack strong regulatory oversight beyond baseline disclosure

Leaving Class Action Plaintiffs with Too Many Legs to Stand on: The Inconsistent Application of Article III Standing Requirements in Data Breach Cases, 46 FLA. ST. U. L. REV. 169, 174-77 (2018); Morgan Beirne, *The Injury in Receiving a Text Message*, 43 SETON HALL LEGIS. J. 315, 325-26 (2019); Evan Tsen Lee & Josephine Mason Ellis, *The Standing Doctrine's Dirty Little Secret*, 107 NW. U. L. REV. 169, 187-203 (2012).

118. *See Lujan*, 504 U.S. at 576-78.

119. *Id*. at 564.

120. Dharna Noor, *As Some US Cities Confront the Climate Crisis, Their Lobbyists Work for Big Oil*, GUARDIAN (July 6, 2023), https://www.theguardian.com/us-news/2023/jul/06/climate-fossil-fuel-lobbyist-baltimore-bay-area-charleston.

121. *Id*.

122. *Id*.

requirements.[123] Perhaps even more concerning, there are few legal safeguards to monitor and ensure that lobbyists do not share one client's private information with an opponent.[124]

d. Resource Scarcity Intrinsically Deters Regulation

Even devoid of litigation and lobbying challenges, resource scarcity alone could drive some local governments to forgo building electrification policies. Voluntary policy instruments like electrification subsidies and tax incentives are less likely to face preemption litigation allegations from industry opponents.[125] Yet, these voluntary measures require local funds to produce their financial incentive mechanisms. When localities are cash-strapped, voluntary measures to encourage building electrification may be financially infeasible.[126]

Given these constraints, local governments have limited means to create and defend their building electrification policy objectives.[127] Local governments cannot solve these issues on their own. So how can the United States alleviate local litigation burdens and bolster building decarbonization moving forward?

C. The Need for a New Federal Building Electrification Policy

The federal government is well-positioned to support and accelerate local electrification efforts. Congressional action could streamline the building electrification movement by creating a federal backstop for policy objectives. A federal approach could also alleviate local barriers by superseding state preemptions and other regional opposition to electrification.[128]

To date, the federal government has not taken sufficient action to electrify the commercial and residential building sectors. The federal government's past efforts to decarbonize buildings have been limited in scope, with varying degrees of success. Still, these limited federal efforts provide a starting point for understanding how the United States can develop a national building electrification policy.

123. *Id*.
124. *Id*.
125. *Infra* Part III(A).
126. *See* Barrow, *supra* note 99.
127. Currently, some localities are banding together to litigate against fossil fuel companies for climate change damages more broadly in state court. But generally, cities are not in the position to encourage litigation because they do not have the geographic reach or resources to make this a successful strategy. *See* Lawrence Hurley, *Supreme Court Deals Blow to Oil Companies by Turning Away Climate Cases*, NBC NEWS (Apr. 24, 2023), https://www.nbcnews.com/politics/supreme-court/supreme-court-rejects-oil-companies-appeals-climate-change-disputes-rcna49823.
128. Sarah J. Fox, *How the Biden Administration Can Empower Local Climate Action*, 51 URB. L. 203, 203-05 (2021).

1. Existing Federal Programs Lack Infrastructure Focus

Some federal government actions relate to educational efforts under the Environmental Protection Agency (EPA)'s State and Local Climate and Energy Program. This program provides state, local, and tribal governments with "free tools, data and technical expertise about energy strategies, including energy efficiency, renewable energy, and other emerging technologies."[129] Various localities' programs serve as case studies for building energy efficiency guidance resources.[130] These educational efforts from the federal government can be helpful resources for localities that often have few avenues to invest in research themselves.[131] But educational resources alone do not alleviate preemption litigation risks or substitute for an overarching federal approach to guide building electrification.

Most prominent federal actions in the building electrification space primarily focus on energy efficiency for building appliances. These include the EPA's Energy Star program, which provides voluntary, government-backed labeling options that educate consumers on energy-efficient appliances and related building systems.[132] These also include the Light Bulb Efficiency Standards of 2007, which Congress passed under President George W. Bush. The standards mandated a staged phase-out of inefficient incandescent lights, a policy that the Trump administration staunchly opposed and delayed until the Biden administration reversed course and completed the phase-out in 2023.[133]

Congress embedded another federal push for appliance efficiency into the Inflation Reduction Act of 2022. Among other climate-related incentives, the Inflation Reduction Act established a residential energy rebate program that incentivizes stakeholders to buy qualified high-efficiency appliances for residential dwellings.[134] Interestingly, the rebate program also funds contractor training grants, an educational nudge to try to sway decision-makers.[135]

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129. *Energy Resources for State, Local, and Tribal Governments*, EPA, https://www.epa.gov/statelocalenergy (last updated Mar. 26, 2024).

130. *Id.*

131. *Cf. How Much Funding do State and Local Governments Receive from the Federal Government?*, PETER G. PETERSON FOUND. (Apr. 11, 2024), https://www.pgpf.org/blog/2023/07/how-much-funding-do-state-and-local-governments-receive-from-the-federal-government#:~:text=Each%20year%2C%20the%20federal%20government,security%2C%20education%2C%20and%20infrastructure (estimating about 17 percent of local and state government revenues stem from federal grants); *see generally Policy Basics: Federal Aid to State and Local Governments*, CTR. ON BUDGET & POL'Y PRIORITIES (Apr. 19, 2018), https://www.cbpp.org/research/federal-aid-to-state-and-local-governments; *see also* Megan Randall et al., *Federal Aid to Local Governments*, URBAN INST. (Sept. 2016), https://www.urban.org/sites/default/files/2016/09/07/2016.09.07_state_of_cities_fact_sheet.pdf.

132. *See Energy Star*, EPA, https://www.energystar.gov/ (last visited Dec. 14, 2023).

133. Hiroko Tabuchi, *It's Official: Stores Can No Longer Sell Most Incandescent Lights*, N.Y. TIMES (Aug. 1, 2023), https://www.nytimes.com/2023/08/01/climate/incandescent-light-bulb-ban-leds.html.

134. *Inflation Reduction Act Residential Energy Rebate Programs*, CAL. ENERGY COMM'N, https://www.energy.ca.gov/programs-and-topics/programs/inflation-reduction-act-residential-energy-rebate-programs-california#:~:text=The%20federal%20Inflation%20Reduction%20Act,pumps%20for%20space%20heating%2Fcooling (last visited Dec. 14, 2023).

135. *See id.*

Like the Inflation Reduction Act, the Bipartisan Infrastructure Law of 2021, also known as the Infrastructure Investment and Jobs Act, supports energy efficiency development in buildings.[136] It financially supports state implementation of new building energy codes and provides additional funds for energy audits and retrofitting.[137] The law also facilitates related vocational training and academic educational programs on building decarbonization.[138] Primarily, the Department of Energy maintains implementation authority for these programs.[139]

But like the federal actions before them, the Inflation Reduction Act and the Bipartisan Infrastructure Law do not go far enough to incentivize electric infrastructure in new homes and buildings. Though appliance efficiency and energy code upgrades are critical in reducing the building sector's carbon footprint, efficient systems cannot be installed in buildings without the electric wiring to connect them to the energy grid. True progress toward efficient appliance adoption—and, in effect, sector-wide decarbonization—requires building incentives or mandates for installing electric hookups and deterrents for installing natural gas infrastructure.

2. Emerging Federal Initiatives Signal Electrification Opportunity

For the reasons stated above, the most recent government action on this issue is perhaps the most lucrative. In December 2022, the Biden Administration revived a decades-old attempt at electrifying federal government buildings. This culminated in the Climate Smart Buildings Initiative and the corresponding Federal Building Performance Standard. The initiative aims to modernize federal buildings and reduce their greenhouse gas footprint by leveraging public-private partnerships.[140] The performance standard—promulgated by the Biden Administration and provisions of the Inflation Reduction Act—requires government agencies occupying federal buildings "to cut energy use and electrify equipment and appliances to achieve zero Scope 1 emissions in 30 percent of the building space owned by the Federal government by square

136. *See generally* Infrastructure Investment and Jobs Act, Pub. L. No. 117-58 (2022).

137. Tom DiChristopher, *Gas Ban Monitor: Calif. Count Reaches 50 as West Coast Movement Grows*, S&P GLOBAL (Nov. 23, 2021), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/gas-ban-monitor-calif-count-reaches-50-as-west-coast-movement-grows-67732585.

138. *Id.*

139. *See* DOE Establishes Bipartisan Infrastructure Law's $225 Million for Improved Building Codes, U.S. DEP'T ENERGY (Apr. 12, 2022), https://www.energy.gov/articles/doe-establishes-bipartisan-infrastructure-laws-225-million-improved-building-codes.

140. *FACT SHEET: White House Takes Action on Climate by Accelerating Energy Efficiency Projects Across Federal Government*, WHITE HOUSE (Aug. 3, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/03/fact-sheet-white-house-takes-action-on-climate-by-accelerating-energy-efficiency-projects-across-federal-government/; *Climate Smart Buildings Initiative*, FED. ENERGY MGMT. PROGRAM, https://www.energy.gov/femp/climate-smart-buildings-initiative (last visited Sept. 27, 2024).

footage by 2030."[141] Concurrently, the Biden Administration launched an initiative to legally define a "zero emission" building, which will provide useful and much-needed clarity for developers, regulators, and consumers alike.[142]

Congress initially passed this electrification program into law more than fifteen years ago using command-and-control style objectives, but the law faced major delays in implementation after being held up in the Department of Energy (DOE) rulemaking process.[143] The program only applies to federally owned buildings and remains in the early stages of rollout. Nevertheless, it is the most promising federal effort to electrify buildings thus far. First, the program signals that the Biden Administration was open to prioritizing building electrification in its energy transition policy agenda. Second, some program elements can be repurposed to develop a comprehensive federal building electrification policy. Its methods for establishing the performance standard could be transposed to fit a federal policy scheme and other building electrification research by the DOE could be leveraged as useful institutional knowledge for a future federal program design.

Ultimately, current federal efforts to decarbonize the building sector hold promise but fail to address the root of the issue on a nationwide scale. There is a clear gap to be filled at the federal level to support widespread building electrification. In the wake of the bipartisan passage of the Inflation Reduction Act and rapid technological advances in clean energy systems, Congress should pass a building electrification policy.

III. STRATEGIES FOR REGULATING BUILDING ELECTRIFICATION THROUGH CONGRESS

To be politically feasible and practical for implementation, a federal building electrification policy should focus on establishing incentives instead of mandates or other means of authoritative control. Moreover, these federal incentives should encompass both short-term and long-term strategies for electrifying new buildings. The strategies suggested below leverage existing examples of successful local government regulatory mechanisms. They additionally aim to draw upon federal agency resources and institutional knowledge. Finally, these strategies reflect upon the legal challenges faced by

141. *Federal Building Performance Standard*, OFF. FED. CHIEF SUSTAINABILITY OFFICER, https://www.sustainability.gov/federalbuildingstandard.html (last visited Sept. 27, 2024). Scope 1 emissions are GHG emissions derived directly from point-sources "controlled or owned by an organization." *Scope 1 and Scope 2 Inventory Guidance*, EPA, https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventoryguidance#:~:text=Scope%201%20emissions%20are%20direct,boilers%2C%20furnaces%2C%20vehicles) (last updated Mar. 8, 2024).

142. Maxine Joselow, *White House Defines 'Zero-Emission' Buildings, Hoping More Get Built*, WASH. POST (Sept. 28, 2022), https://www.washingtonpost.com/climate-solutions/2023/09/28/zero-emission-buildings-biden/?nid=top_pb_signin&arcId=DUFJU2H2KVDGNO76X5LA66QISU.

143. *Cf.* Jeff Brady, *A 15-Year-Old Law Would End Fossil Fuels in Federal Buildings, But It's on Hold*, NPR (Apr. 16, 2023), https://www.npr.org/2023/04/10/1164652146/part-of-a-law-to-have-federal-buildings-stop-using-natural-gas-was-never-impleme.

local governments and hurdles experienced by tangential federal regulation, attempting to identify a path of least resistance for implementation.

A. Prioritize Incentive-Based Policy Instruments

For building electrification, incentive-based instruments, or economic "carrots," should be prioritized over command-and-control style policies, or economic "sticks." Research shows that incentive-based instruments usually prove more politically pragmatic than mandates or bans.[144] Particularly for matters of energy policy, "stick" mechanisms face staunch criticism for eliciting outsized consumer dissatisfaction and often leading to enforcement evasion issues.[145] From a behavioral economics lens, this makes logical sense.[146] People do not enjoy being told what to do. It's just not very palatable.[147]

In theory, electric-preferred and mandate-focused regulation should be fast-acting and efficient to implement. But in practice, such local building electrification regulations face more opposition and litigatory challenges than incentive-based policies, in effect delaying or thwarting implementation. Berkeley's natural gas ban exemplifies this.[148] For electric-preferred policies in particular, federal regulation reflecting these mechanisms may be counterproductive because many states already are instituting nuanced and region-specific systems for implementing electric-preferred provisions.[149] These include, for example, additional efficiency or renewable requirements for new construction with natural gas.150 Federal policies in this command-and-control vein also would not alleviate localities' challenges related to resource constraints because economic "sticks" tend to be more costly than their "carrot" counterparts.151

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144. *See* Brian Galle, *The Tragedy of the Carrots: Economics & Politics in the Choice of Price Instruments*, 64 STAN. L. REV. 797, 808-09 (2012).

145. Nathan Richardson, *Social License to Regulate: Consumer-Producer Collusion and Related Policy Risks for Consumer-Facing Regulation*, 86 U. CIN. L. REV. 153, 162-66 (2018).

146. *See generally* Gary E. Marchant, *Complexity and Anticipatory Socio-Behavioral Assessment of Government Attempts to Induce Clean Technologies*, 61 UCLA L. REV. 1858 (2014).

147. *See generally* CHRISTINA STEINDL, ET AL., UNDERSTANDING PSYCHOLOGICAL REACTANCE (National Library of Medicine, 2015), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4675534/ (demonstrating a negative reaction is common when people perceive threats to their sense of freedom).

148. *Supra* Part II(B)(1). Berkeley also failed to pass Measure GG on the November 2024 ballot, which called for a tax on both new and existing commercial buildings at or above 15,000 square feet that use natural gas. Despite various exemptions, this proposed tax, like the preceding natural gas ban, proved to be an unpalatable mandate. *See General Election - November 05, 2024: Measure GG - City of Berkeley*, ALAMEDA CITY. REGISTRAR OF VOTERS, https://alamedacountyca.gov/rovresults/252/ (last updated Nov. 20, 2024); Severin Borenstein, *Berkeley Makes Another Run at Natural Gas*, ENERGY INST. AT HAAS (Aug. 19, 2024), https://energyathaas.wordpress.com/2024/08/19/berkeley-makes-another-run-at-natural-gas/; Iris Kwok, *Measure GG: A new tax on natural gas use in big Berkeley buildings*, BERKELEYSIDE (Oct. 4, 2024), https://www.berkeleyside.org/2024/10/04/measure-gg-a-new-tax-on-natural-gas-use-in-big-berkeley-buildings.

149. *Supra* Part II(A).

150. *Id.*

151. *Supra* Part II(B)(4).

But people are likely less resistant to influences that preserve their freedom of choice while nudging them towards certain decisions through the promise of enticing co-benefits.[152] Typically, these co-benefits, or incentives, take the form of pecuniary gifts or discounts in federal legislation.[153] There are arguments to be made that incentives also serve as a fairer solution to drive societal change.[154]

Given the historical moment, there is additional reason to believe that an incentive-based approach to building electrification may be the only way forward. Congress is more politically polarized than any other moment over the past half-century.[155] The barrier to passing legislation is high, given a sharp divide in political party ideologies and the struggle of any one party to sustain a strong majority in both the House of Representatives and the Senate. In this politically polarized climate, unsavory command-and-control style propositions for electrification regulation would not survive a congressional vote. Considering state preemptions and the fossil fuel lobby's sway on many right-leaning politicians, such a bill would be unrealistic.

However, the Inflation Reduction Act is a testament that incentive-based instruments can be successful vessels for passing climate change-conscious federal legislation. The Inflation Reduction Act stands in contrast to regulatory attempts to control climate policy that have failed at the federal level.[156] The tax credits, rebates, grants, and other incentives proved palatable enough for a few swing votes in a perpetually divided political arena. Admittedly, the bill barely passed in the House of Representatives, with Vice President Kamala Harris breaking a 50-50 tie vote.[157] It also bargained away several contradictory

152. *Id.*

153. *See* STEINDL, ET AL., *supra* note 147; *see also* Marchant, *supra* note 146.

154. *Supra* Part II(b)(4)(C); *see also* Richardson, *supra* note 145, at 197; Marchant, *supra* note 146, at 1892-94. These tools may also have the added benefit of being (or, at least appearing) more fair or equitable compared to "stick" alternatives. This is particularly important in light of the gas stove nostalgia that the natural gas industry cultivated, as such nostalgia could shift people's economic "willingness to pay." *See* Richardson, *supra* note 145, at 197; Marchant, *supra* note 146, at 1892-94.

155. Stef W. Kight, *Polarization in Congress Hits Half-Century Peak*, AXIOS (Mar 16, 2022), https://www.axios.com/2022/03/17/polarization-congress-democrats-republicans-house-senate-data; Drew Desilver, *The Polarization in Today's Congress Has Roots that Go Back Decades*, PEW RSCH. CTR. (Mar. 10, 2022), https://www.pewresearch.org/short-reads/2022/03/10/the-polarization-in-todays-congress-has-roots-that-go-back-decades/#:~:text=House%20Democrats%2C%20for%20example%2C%20moved,increase%20in%20the%20conservative%20direction.

156. *See What Is the Clean Power Plan?*, UNION CONCERNED SCIENTISTS, https://www.ucsusa.org/resources/clean-power-plan (last updated Mar. 24, 2021); *see also* Jeff Turrentine, *The Supreme Court's EPA Ruling, Explained*, NAT. RES. DEF. COUNCIL (July 7, 2022), https://www.nrdc.org/stories/supreme-courts-epa-ruling-explained.

157. Leila Fadel & Deirdre Walsh, *The Senate Passes the Inflation Reduction Act and it Moves on to the House*, NPR (Aug. 8, 2022), https://www.npr.org/2022/08/08/1116264109/the-senate-passes-the-inflation-reduction-act-and-it-moves-on-to-the-house. Recognizably, the palatability of a new energy bill largely depends on legislative election outcomes from recent cycles. In light of the November 2024 election, the balance of viewpoints in Congress have changed from that seen in the Inflation Reduction Act's passage. Former-President Trump's reelection also impacts the viability of signing a building electrification bill into law. However, energy incentives like those seen in the Inflation Reduction Act may prove agreeable to many Republican politicians because the resulting incentives largely benefit their constituents. *Infra* Part III(B)(2)(c).

concessions, allowing new oil and gas lease provisions.[158] Nevertheless, in a country where climate change denial is a political weapon, the bill was an immense step forward.[159] The incentive structures proposed through the Act serve as a quick study for how to get energy transition policies off the table and into action.

B. Establish Short-Term Incentives for Builders to Install Electric Infrastructure

Today, short-term incentives aim to sway the building and development industry. If effectively implemented, short-term federal incentives could influence market decisions during the building construction process, even in localities that lack pro-electrification regulations.

1. Targeting and Educating Infrastructure Decision-Makers

Finding the right target for short-term incentives is crucial for creating a strong building electrification policy. U.S. incentives for electric vehicles (EVs) serve as a warning that even well-intentioned energy transition incentives can have a limited impact if they target the wrong players. For example, federal subsidies for the end-users target the purchase price of EVs, but do not necessarily induce EV manufacturers to ramp up EV production or reduce fossil fuel vehicle production.[160] Similarly, a federal building electrification incentive targeting building buyers would likely be ineffective because people do not typically buy a house based on the appliances within it. Homebuyers weigh complex trade-offs, and electric appliance preference can be overlooked when affordability, geographic location, or aesthetics loom foremost in a buyer's mind.[161]

Short-term incentives for building electrification should focus on targeting infrastructure installers and developers, since these are the decision-makers that choose what to install into a building's walls. The challenge is determining which pro-electric incentives are strong enough to persuade builders who might usually install natural gas infrastructure. If the incentives are too weak or misdirected, such federal regulation could prove ineffective.

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158. Fadel & Walsh, *supra* note 157; Broadwater, *supra* note 157.

159. *See, e.g.*, Gelles, *supra* note 85; *see also The Politics of Climate*, PEW RSCH. CTR. (Oct. 4, 2016), https://www.pewresearch.org/science/2016/10/04/the-politics-of-climate-2/.

160. Kate Morgan, *Three Big Reasons Americans Haven't Rapidly Adopted EVs*, BBC (Nov. 8, 2023), https://www.bbc.com/worklife/article/20231108-three-big-reasons-americans-havent-rapidly-adopted-evs.

161. *See* Interview by J.R. Whalen with Brad Klontz, Financial Psychologist, & Tracy McLaughlin, Real-Estate Professional, *The Psychology of Homebuying*, WALL ST. J. (Apr. 28, 2023), https://www.wsj.com/podcasts/your-money-matters/the-psychology-of-homebuying/b9d3bf5f-dbb1-4728-b2e9-f0416e496519. Buyers and renters also face difficulties ascertaining the energy efficiency of their prospective homes, and even when they do not, they tend to excessively discount the future expected value of efficiency investments. Zaharoff, *supra* note 73, at 790-91.

Beyond the mere magnitude of monetary benefit, incentives must be clearly marketed and logistically reasonable to request. For this reason, a short-term incentive should be coupled with educational efforts targeting these decision-makers. The Inflation Reduction Act provides helpful examples of incentive-education coupling that could be leveraged in the building space. As previously mentioned, one of the Inflation Reduction Act's provisions creates a residential energy rebate program with "carrots" to encourage localities to install reduced emission appliances in residential dwellings.[162] The program simultaneously funds related contractor training, addressing technical expertise challenges that might prevent a contractor from installing the reduced emission appliances.[163] Incentive-education coupling in this form can be integrated into an infrastructure-focused building electrification policy. Local government and industry organizations are likely best positioned to coordinate this outreach to local decision-makers.

Here, a federal building electrification policy could also leverage pre-existing educational and equity resources. These resources include the EPA's State and Local Climate and Equity Program, which could guide localities on the details of incentive options and advise them on how to successfully apply for such benefits.[164] The EPA's program already provides guidance for localities and tribal nations looking to establish energy efficiency programs, which could potentially be integrated into a more holistic toolkit.[165] A federal policy could also encourage state agency support as many state PUCs have taken action to address equity issues arising in the building energy efficiency space.[166]

2. Learning from Local and Federal Regulation

The current regulatory landscape unfolding through the Inflation Reduction Act and local electrification policies informs how these short-term incentives can look and what they should avoid.

a. Replicating Local Incentive Strategies

Local regulations provide great examples of incentive schemes for federal policy to emulate. Simply put, local governments usually know their developers and how to incentivize them.[167] When implemented at the local level, electrification rebates, expedited permitting perks, and reduced permit fee

162. *E.g.*, *Inflation Reduction Act Residential Energy Rebate Programs*, CAL. ENERGY COMM'N (last accessed Dec. 15, 2023), https://www.energy.ca.gov/programs-and-topics/programs/inflation-reduction-act-residential-energy-rebate-programs-california.

163. *Id.*

164. EPA, *supra* note 129.

165. *See id.*

166. *See, e.g.*, Angelina Lian, *Shedding Light: The Role of Public Utility Commissions in Encouraging Adoption of Energy Efficient Lighting by Low-Income Households*, 38 COLUM. J. ENV'T. L. 333, 364-374 (2013).

167. *See generally* Ki Eun Kang, *Local-Level Economic Development Conflicts: Factors that Influence Interactions with Private Land Developers*, 58 URB. AFFS. REV. 706 (2022).

incentives have comparatively limited pushback.[168] These can easily translate into federal incentives for builders that supplement other local government regulations, particularly when local governments have electric-preferred regulations. Layering local and federal nudges can help tip the scale to ensure that builders choose electric infrastructure.

For regions that lack electrification policies altogether, these federal incentives jump straight to addressing the source of market decision-making. Providing federal incentives in electrification regulatory "deserts" consequently bypasses any local or state governments influenced by fossil fuel lobbying or otherwise reluctant to act.[169] Such an incentive strategy could therefore be a beneficial starting point for federal action in such localities.

b. Leveraging Electric-Ready Regulation

A federal policy could also institute electric-ready strategies like those in cities. For example, electric pre-wiring and panel capacity provisions can be replicated at the federal level as builder incentives.[170] Congress also could pass such electric-ready policies as mandates, so that any new gas infrastructure necessitates electric infrastructure installation in tandem.

While this is a command-and-control style tool, it does not limit consumer choice like other mandates. An electric-ready policy does the opposite of limiting consumer choice; it provides building dwellers with more options for what appliances and energy sources they can use, proving more palatable than traditional mandates. For example, Menlo Park, California has a building code that requires electric stove prewiring when installing gas stoves.[171] Electric-ready regulation even holds up against the plaintiff's argument in *California Restaurant Association*, which claims federal ECPA preemption because Berkeley's natural gas ban limited consumer choice for energy use. Consequently, electric-ready regulation may serve as a middle ground for regulatory progress.

c. Mimicking the Inflation Reduction Act's Strengths

As previously discussed, the Inflation Reduction Act also provides useful examples for how to structure federal electrification incentives. The Inflation Reduction Act empowers localities in part by providing them with the financial resources to catalyze climate action, which is critical given local resource constraints.[172] Research suggests that "by 2035, the [Inflation Reduction Act]

168. San Mateo exemplifies successful implementation of such incentives. *See* Meyers, *supra* note 41.

169. *Supra* Part II(B)(3); *see, e.g.*, Gelles, *supra* note 85.

170. Brisbane, California is an example to leverage, where planned installation of gas cooking appliances in new buildings trigger electric pre-wiring with panel capacity (i.e., maximum power load capacity) and outlet installation requirements. Meyers, *supra* note 41, at 2, 8.

171. Payne, *supra* note 3, at 772.

172. *Supra* Part II(C)(1).

will be responsible for reducing greenhouse-gas emissions by 43–48 percent from 2005 levels."[173] This is a significant potential impact given that the Paris Agreement asks countries to "reduce greenhouse-gas emissions by 50–52 percent from 2005 levels by 2023."[174] Short-term incentives for building electrification could benefit from mimicking the Inflation Reduction Act's approach to embedding uncapped financial incentives into tax codes and providing direct funding to potential market actors.

Emulating this approach is particularly advantageous because there is hope that such funds will reach U.S. regions that traditionally lean conservative. A *Politico* report found that as of January 2023, "roughly two-thirds of the major projects are in districts whose Republican lawmakers opposed the Inflation Reduction Act."[175] Subsequent research confirms that the Inflation Reduction Act brings ample jobs and investment rewards into predominantly conservative congressional districts.[176] Implementing building electrification incentives to mimic Inflation Reduction Act incentives could similarly circumnavigate state or local government inaction in conservative areas, reaching building electrification decision-makers on the ground. By leveraging the Inflation Reduction Act's strategies, short-term federal incentives would help even out building electrification progress across U.S. geographies.

d. Confronting the Inflation Reduction Act's Weaknesses

However, the Inflation Reduction Act's ultimate success in reducing greenhouse gas emissions remains to be seen. Financial investment does not guarantee progress in decarbonization. Much of its success will depend on the long-term results of coordinating implementation. Some implementation challenges are already surfacing for the Inflation Reduction Act, which can inform parallel building electrification policies at the federal level.

First, federal agencies face challenges in communicating the complexities of the Inflation Reduction Act.[177] The Act has a laundry list of incentive

173. *What the Inflation Reduction Act has Achieved in its First Year*, THE ECONOMIST (Aug. 17, 2023), https://www.economist.com/the-economist-explains/2023/08/17/what-the-inflation-reduction-act-has-achieved-in-its-first-year.

174. *Id.*

175. Kelsey Tamborrino & Josh Siegel, *Big Winners from Biden's Climate Law: Republicans Who Voted Against It*, POLITICO (Jan. 23, 2023), https://www.politico.com/news/2023/01/23/red-states-are-winning-big-from-dems-climate-law-00078420.

176. H.J. Mai, *Biden's Climate Bill Brings Investments and Jobs to Many GOP Strongholds*, NPR (Aug. 18, 2023), https://www.npr.org/2023/08/18/1194562279/gop-lawmakers-opposed-bidens-climate-measure-but-its-helping-their-constituents; Saijel Kishan, *Red States to Reap the Biggest Reward from Biden's Climate Package*, BLOOMBERG (Apr. 23, 2023), https://www.bloomberg.com/graphics/2023-red-states-will-reap-the-biggest-rewards-from-biden-s-climate-package/; William S. Becker, *Red states win with Inflation Reduction Act — GOP wants to kill it anyway*, HILL (Apr. 11, 2023), https://thehill.com/opinion/campaign/3944108-red-states-win-with-inflation-reduction-act-gop-wants-to-kill-it-anyway/.

177. Turner, *supra* note 66.

provisions that overlap and contain many nuances.[178] This is a headache for those hoping to reap incentive benefits. Stakeholders will not take advantage of the Act's benefits if the agencies promulgating the programs are unclear about *how* to gain benefits.[179] Following the first year of the Inflation Reduction Act's implementation, research shows that the targets for incentive programs required more follow-up resources to support program uptake.[180] This wastes time when climate change is a time-sensitive issue.

Second, these communication issues can exacerbate equity challenges across localities.[181] Those individuals and groups with the least resources are least likely to devote time to understanding the Act's incentive acquisition process.[182] Historically disadvantaged communities appear to need more upfront funding and resources to help them assess which Inflation Reduction Act incentive provisions are most advantageous to them to pursue.[183]

A federal electrification policy that interacts with local laws and uses sophisticated incentives will likely face similar problems with communicating complex information and addressing equity concerns. For such a policy to be impactful in the implementation phase, it must rely on agencies that can quickly disseminate plain instructions for capitalizing on the incentive programs. The agencies tasked with electrification policy adoption must be meticulous about developing reference materials like guidebooks explaining programmatic details simply.[184]

Agencies also need an adequate budget to perform effective community outreach. Ideally, agency resources should be disseminated for free, with additional funding and a focus on outreach in socioeconomically disadvantaged and historically discriminated communities. For federal electrification incentives, agencies should also avoid catering their educational material to

178. Rebecca Leber, *Biden's Historic Climate Law Has a Problem*, VOX (Aug. 16, 2023), https://www.vox.com/climate/2023/8/16/23815837/inflation-reduction-act-joe-biden-impact-manufacturing-consumers.

179. *Id.*; Turner, *supra* note 66.

180. *Id.*

181. *Id.*

182. *Id.*

183. *Id.* Additionally, it is worth noting that negotiated compromises made to pass the bill into law likely disproportionately impact historically disadvantaged communities. Tony Sirna, et al., *Environmental Justice Concerns About the Inflation Reduction Act*, CITIZENS' CLIMATE LOBBY (Aug. 22, 2022), https://citizensclimatelobby.org/blog/policy/environmental-justice-concerns-about-the-inflation-reduction-act/.

184. For example, government agencies publish various guidelines for the residential Federal Solar Tax Credit, explaining the who, what, where, when, and how of the credit in layperson terms. Agency guidelines for this program also point people to additional, vetted resources for support and clearly indicate which government entities are also involved in the tax credit's implementation. *See Homeowner's Guide to the Federal Tax Credit for Solar Photovoltaics*, U.S. DEP'T ENERGY SOLAR ENERGY TECHS. OFF., https://www.energy.gov/eere/solar/homeowners-guide-federal-tax-credit-solar-photovoltaics (last updated March 2023); *see also Federal Solar Tax Credit Resources*, U.S. DEP'T ENERGY SOLAR ENERGY TECHS. OFF. (Sept. 8, 2022), https://www.energy.gov/eere/solar/articles/federal-solar-tax-credit-resources.

deep-pocketed developers. Small-scale contractors or local handymen should have an equal footing in understanding and accessing electrification incentives.

The DOE is likely the agency that would be most central for implementing a federal electrification policy.[185] While it has the scientific knowledge to promulgate the rules here, it is worth considering if the DOE has sufficient ties to local communities. The DOE could perhaps coordinate with the EPA to build those local relationships, leveraging the State and Local Climate and Energy Program.[186] Alternatively, the Inflation Reduction Act could help lay the groundwork for this type of climate-oriented local community outreach.

C. Establish Long-Term Incentives to Encourage Local Adoption of Robust Electrification Strategies

Short-term building electrification incentives for builders should dovetail with long-term electrification incentives for local governments, creating a rounded federal policy. Such long-term incentives are important to drive progress on building decarbonization over the coming decades. Long-term incentives also serve as a structural backbone for federal short-term incentives and local policies, drawing them into an overarching building decarbonization playbook. Additionally, long-term building electrification incentives could combat state preemption issues that currently stifle local progress. Once Congress acts to institute a long-term incentive program, it is possible that pro-electrification federal preemption could squash natural gas industry litigation challenges.

1. Inciting and Accelerating Action by Local Governments

The aim of a long-term incentive program is to incite and accelerate local government action on building electrification. Since local governments are at varying stages of regulating and deregulating electrification,[187] the United States will not benefit from a one-size-fits-all approach. It seems counterintuitive to upend some local progress with a superseding federal regulatory instrument that targets deregulating localities. But there is still a need to drive local governments to decarbonize buildings more quickly across the spectrum.

Therefore, this Note argues for a collaborative policy solution employing voluntary incentives, allowing local governments to design electrification regulations as they see fit. If localities implement effective regulations that help them attain federally established standards for electrification progress, they would be entitled to some sort of federal grant or other funding-oriented benefit.

185. The DOE is best positioned for this task given its central implementation role for the climate change provisions of the Inflation Reduction Act, the implementation of the Federal Building Initiative, and the calculation of the Federal Building Performance Standards. *Supra* Part II(C)(1)-(2).

186. EPA, *Energy Resources*, *supra* note 129.

187. *Supra* Part II(A).

a. Framing the Local-Federal Relationship

The structure of a federal building electrification program should reflect its institutional actors' relative strengths and weaknesses. So which actors are best positioned to take steps effectively, and how? As previously discussed, cities and municipalities have immense local expertise for building governance and best understand their citizens' health and economic pressure points.[188] However, local governments' resource constraints and power limitations are barriers to progress.[189] Conversely, the federal government has congressional spending power and a wide breadth and depth of authority, but it lacks the local expertise requisite for practical implementation.[190]

Cooperative federalism aligns regional and federal legal efforts by facilitating coordination between the different levels of government in their policy schemes.[191] The cooperative federalism framework can promote building electrification by leveraging both federal and local government strengths to negate their respective weaknesses.[192] Under a cooperative federalism framework for long-term incentives, localities would act as voluntary regulation creators and implementers. Meanwhile, the federal government would supply the wallet and goalposts to incite local action. Preserving and encouraging local government involvement could also foster self-determination while lessening the logistical policy roll-out burden on federal agencies.

b. Cooperative and Iterative Federalism Teachings from the Clean Air Act

Additionally, a policy modeled on cooperative federalism should be cautious to minimize regulatory tension between levels of government. Local governments have little desire to work with their federal counterparts if the relationship feels paternalistic or punitive. By learning from the shortcomings of the Clean Air Act's disciplinary compliance structure, the proposed incentive-based system may help reduce this tension.

In 1970, the Clean Air Act established a relatively successful cooperative federalism framework to address air pollution.[193] The Act sets federal standards for criteria air pollutants called NAAQS.[194] Then, states devise and implement SIPs that the federal government reviews for approval.[195] These SIPs aim to

188. *Id*.

189. *Supra* Part II(B).

190. *See* U.S. CONST. art. I, § 8, cl. 1; *see also* U.S. CONST., art. VI.

191. Robert L. Fischman, *Cooperative Federalism and Natural Resources Law*, 14 N.Y.U. ENV'T L.J. 179, 183-84 (2005).

192. *See generally*, *e.g.*, Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change*, 27 STAN. ENV'T L.J. 397 (2008); Hannah J. Wiseman, *Delegation and Dysfunction*, 35 YALE J. ON REG. 233 (2018); Thomas S. Ulen, *Economic and Public-Choice Forces in Federalism*, 6 GEO. MASON L. REV. 921 (1998).

193. *See* 42 U.S.C. §§ 7401-7671q (1970); *see also Summary of the Clean Air Act*, EPA, https://www.epa.gov/laws-regulations/summary-clean-air-act (last updated Sept. 6, 2023).

194. EPA, *Summary of the Clean Air Act*, *supra* note 193.

195. *Id.*

reduce criteria pollutants and achieve NAAQS attainment throughout regional Air Quality Control Regions (AQCRs).[196] Although this collaborative framework capitalizes on regional and federal government strengths, NAAQS nonattainment remains a problem in many AQCRs.[197]

Part of the problem for a federal agency like the EPA is that punishing a state for nonattainment inherently breeds tension between that state and the federal government.[198] In practice, both Congress and the EPA are hesitant to enforce NAAQS nonattainment penalties onto states.[199] This appears fair in certain instances because some ACQRs struggle to reach NAAQS attainment when their unique geographic conditions attract and amplify pollutant impacts.[200] But lackluster enforcement also undermines the regulatory structure's effectiveness.[201]

The long-term building electrification policy proposed in this Note could avoid this issue by substituting penalties with funding rewards.[202] Such investment into financial incentives is well within the Congressional Spending Clause power.[203] And incentives could avoid sparking federal-regional tensions or enforcement failures of the kind seen in the Clean Air Act.[204] Although such incentives would be voluntary—rather than mandatory—properly quantified monetary bait would hopefully spur local governments to act. The system could reward and encourage localities already instituting regulation, while simultaneously tempting other localities to develop their own building electrification strategies.

There also may be opportunities to incorporate iterative federalism principles into the building electrification policy. An iterative federalism scheme allows certain regional governments to have special regulatory power under federal law, such as the Clean Air Act granting California authority to establish stricter manufacturing standards for tailpipe emissions than federal law requires.[205] Since car manufacturers benefit from economies of scale, California effectively influences the national vehicle standards that manufacturers voluntarily adopt and helps amplify air emissions reductions.[206] An iterative

196. *Id.*

197. *Id.*

198. Ronald H. Rosenberg, *Cooperative Failure: An Analysis of Intergovernmental Relationships and the Problem of Air Quality Non-Attainment*, 1990 ANN. SURV. AM. L. 13, 13-14 (1991).

199. *Id.* at 31-37.

200. *See, e.g.*, *BCCA Appeal Grp. v. U.S. EPA*, 355 F.3d 817, 822-24 (5th Cir. 2003), *as amended on denial of reh'g and reh'g en banc* (Jan. 8, 2004) (demonstrating a practical issue wherein SIP ineffectiveness and NAAQs attainment failures occurred because the city of Houston faced microclimate and urban planning challenges that created a natural pollution hotspot).

201. Rosenberg, *supra* note 198.

202. Typically, incentives are more politically and psychologically palatable. *See* Galle, *supra* note 144, at 843.

203. U.S. CONST. art. I, § 8, cl. 1.

204. Rosenberg, *supra* note 198.

205. *See generally* Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009).

206. *Id.*

federalism framework like this could help building electrification leaders serve as regulatory examples to other localities looking to electrify.

To allow similar opportunities here, Congress should frame a federal building electrification policy as a floor rather than a regulatory ceiling. Express statutory language to this end would prevent federal preemption of positive decarbonization efforts by localities.[207]

2. Federally Preempting State Prohibitions on Electrification

The Commerce Clause of the U.S. Constitution provides Congress with the power to regulate building electrification since building infrastructure decisions and related real estate development activities substantially affect interstate commerce.[208] Although courts often afford local governments deference for matters of land use, federal regulation should not be controversial here.[209] Courts interpret the Commerce Clause broadly, including intrastate activities relating both directly and indirectly to interstate commerce; this includes permissible federal regulation of "commercial construction project" activities.[210] Building infrastructure decisions would fall under the commercial construction category.

Seizing federal authority on building electrification regulation could help localities combat state preemption laws by superseding them with federal preemption claims. Since an incentive-based program is voluntary in nature, Congress need not be concerned about inadvertently preempting productive local efforts to electrify because such programs can coexist. But for states that preempt natural gas bans or otherwise prohibit restrictions on natural gas infrastructure decisions, local governments can draw upon statutory congressional intent to argue federal conflict preemption of such state laws. Such state laws would run counter to the decarbonization objectives of the federal scheme, posing conflict preemption issues similar to those seen in federal preemptions of state regulation running counter to the Clean Air Act's Acid Rain program.[211] Federal preemption claims would be particularly strong if Congress adds statutory language expressly disallowing natural gas ban prohibitions.[212]

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207. *See, e.g.*, The Clean Air Act § 209, 42 U.S.C. § 7543 (1967) (enabling California to seek waivers from the EPA to set more stringent state air quality standards than the federal standards require).

208. U.S. CONST. art. I, § 8, cl. 3; *see also United States v. Lopez*, 514 U.S. 549, 559-60 (1995) (establishing that the Commerce Clause test requires courts to analyze whether the regulated activity in question "substantially affects interstate commerce").

209. *See* Kenneth Stahl, *Home Rule and State Preemption of Local Land Use Control*, AM. BAR ASS'N (Oct. 1, 2020), https://www.americanbar.org/groups/state_local_government/publications/urban_lawyer/2020/50-2/home-rule-and-state-preemption-local-land-use-control/.

210. *Rancho Viejo, LLC v. Norton*, 323 F.3d 1062, 1069 (D.C. Cir. 2003) (holding that the Commerce Clause provides Congress the ability to regulate an intrastate toad protection issue because the associated development activity implicated interstate commerce).

211. *See generally* Clean Air Mkts. Grp. v. Pataki, 338 F.3d 82 (2nd Cir. 2003) (holding that a New York state law that impeded the execution of the purposes and objectives of the federal Acid Rain Program violated the Supremacy Clause of the Constitution).

212. However, the odds of Congress passing a statute with express language to this end may be low. *See* Galle, *supra* note 144, at 843; *supra* Part III(a).

3. Avoiding the Pitfalls of "Sticky" Subsidy Externalities

Many well-intentioned incentive instruments can become counterproductive over time. This is particularly true as technology advances and scientific breakthroughs occur.[213] Therefore, federal electrification incentives should consider time limitations and other mechanisms to limit their "stickiness" from resulting in perverse policy outcomes.

Especially in the energy law realm, policymakers should heed warnings about "sticky" subsidies. Rooftop solar net-metering incentives, like those established in California and Hawaii, serve as a well-known example.[214] Such programs originally expanded renewable energy adoption through credit compensation for households that fed excess renewable power from their roofs to the grid.[215] However, rooftop solar programs became a financial liability for Public Utility Commissions over time.[216] As the National Resource Defense Council explains, "the rate design has not evolved to keep in line with the success of rooftop solar."[217] Not only this, but this program poses unintended equity issues, as the people who receive financial benefits are often more affluent homeowners.[218] Many regions that have established this "sticky" incentive are now trying to roll back their program, resulting in complaints and protests from those it benefits.[219] When subsidies do not contain an end date, they risk becoming a liability over time.

In fact, the building decarbonization space already suffers the ill effects of "sticky" subsidies. Across the United States, antiquated gas piping and hookup

213. *See generally* Elizabeth Van Heuvelen, *Subsidy Wars*, FIN. & DEV., June 2023, at 54. https://www.imf.org/en/Publications/fandd/issues/2023/06/B2B-subsidy-wars-elizabeth-van-heuvelen.

214. Tony Clark, *Hard Truths About Net Metering and the Perils of Regulatory Nihilism*, UTIL. DIVE (June 24, 2020), https://www.utilitydive.com/news/hard-truths-about-net-metering-and-the-perils-of-regulatory-nihilism/580390/; Karinna Gonzalez, *A Brief History of California's Solar Agreement, Net Energy Metering*, HAMMOND CLIMATE SOLS. FOUND. (Apr. 29, 2021), https://www.hcs.foundation/blog/a-brief-history-of-californias-solar-agreement-net-energy-metering?6431d179_page=9.

215. *Customer-Sited Renewable Energy Generation*, CAL. PUB. UTIL. COMM'N, https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/customer-generation (last visited Sept. 27, 2024).

216. THE UNINTENDED CONSEQUENCES OF NET METERING 1-4 (The Am. Consumer Inst. Ctr. for Citizen Rsch. ed., 2019), https://www.theamericanconsumer.org/wp-content/uploads/2019/08/Consumer Gram-Net-Metering.pdf.

217. *California's Rooftop Solar Net Metering Program*, NAT. RES. DEF. COUNCIL (Jan. 28, 2022), https://www.nrdc.org/bio/nrdc/californias-rooftop-solar-net-metering-program.

218. Severin Borenstein, *Rooftop Solar Inequity*, ENERGY INST. HAAS (June 1, 2021), https://energyathaas.wordpress.com/2021/06/01/rooftop-solar-inequity/.

219. Ivan Penn, *California Regulators Propose Cutting Compensation for Rooftop Solar*, N.Y. TIMES (Nov. 10, 2022), https://www.nytimes.com/2022/11/10/business/energy-environment/california-rooftop-solar-net-metering.html; Julie Cart, *California's Residential Solar Rules Overhauled After Highly Charged Debate*, CAL MATTERS (Dec. 15, 2022), https://calmatters.org/environment/2022/12/california-solar-rules-overhauled/; Sharon Udasin, *California Commission Issues Revised Proposal to Cut Paybacks to Rooftop Solar Customers*, HILL (Nov. 10, 2022), https://thehill.com/policy/equilibrium-sustainability/3729996-california-commission-issues-revised-proposal-to-cut-paybacks-to-rooftop-solar-customers/.

subsidies counteract electrification.[220] Such gas subsidies ironically originated as an effort to aid the clean energy transition at a time when coal and oil were the dominant energy inputs.[221] Only in 2022 did California become the first state to roll back such subsidies under the purview of the California Public Utilities Commission.[222] But in other regions across the United States, natural gas groups are adamant in fighting to keep these subsidies "sticky."[223] Ultimately, it is difficult to retroactively remove transitional legal incentives once they are no longer necessary and effective, so they should be implemented with caution and foresight.

Incentive expiration dates provide such safeguards, and here, long-term electrification goals could logically serve as the basis for subsidy expirations. Federal goals could model the DOE's Building Performance Standards for the Federal Buildings Program.[224] For example, the Federal Buildings Standard sets a threshold for agencies to "achieve zero scope 1 emissions in 30 percent of the building space owned by the Federal government by square footage by 2030."[225] Such year-based deadlines are a common anchoring feature in many climate change policies, and simultaneously serve as a subsidy time-limitation if applied to incentive-based programs.[226] These goals, or performance standards for receiving subsidies, could also emulate state-based electrification regulation, such as regulations from New York or Maryland.[227]

Given the DOE's institutional knowledge in formulating and monitoring similar standards for the Federal Buildings Program, the agency is well-positioned to take on the task. The EPA may also have institutional knowledge

220. ABIGAIL ALTER ET AL., OVEREXTENDED: IT'S TIME TO RETHINK SUBSIDIZED GAS LINE EXTENSIONS 5-12 (RMI ed., 2021), https://rmi.org/insight/its-time-to-rethink-subsidized-gas-line-extensions/; Laura Feinstein & Emily Moore, *It's Time to Stop Subsidizing New Gas Pipes*, SIGHTLINE INST. (Jan. 17, 2023), https://www.sightline.org/2023/01/17/its-time-to-stop-subsidizing-new-gas-pipes/.

221. *CPUC Decision Makes California First State in Country to Eliminate Natural Gas Subsidies*, CAL. PUB. UTIL. COMM'N (Sept. 15, 2022), https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-decision-makes-ca-first-state-in-country-to-eliminate-natural-gas-subsidies#:~:text=The%20subsidies%20originated%20at%20a,clean%20than%20it%20is%20today.

222. Shiloh Wallack & Angela O'Hara, *California Public Utilities Commission*, 28-FALL CAL. REG. L. REP. 73, 75-76 (2023); Kavya Balaraman, *California becomes first state to eliminate subsidies for gas line extensions amid electrification push*, UTIL. DIVE (Sept. 16, 2022), https://www.utilitydive.com/news/california-puc-gas-subsidies-electrification/632006/.

223. *See* Tom DiChristopher, *Subsidizing New Gas Utility Customers Creates Risk as Fuel's Future Dims – Study*, S&P GLOB. (Dec. 10, 2021), https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/subsidizing-new-gas-utility-customers-creates-risk-as-fuel-s-future-dims-8211-study-68016073.

224. EnergyStar also has guidelines for Building Performance standards for state and local decision-makers. *See generally* BUILDING PERFORMANCE STANDARDS: OVERVIEW FOR STATE AND LOCAL DECISION MAKERS (EPA ed., 2021), https://www.epa.gov/sites/default/files/2021-02/documents/benchmarking_building_performance_standards_section2.pdf.

225. EPA, BUILDING PERFORMANCE STANDARDS, *supra* note 224.

226. *See, e.g.*, Kelly Levin, et al., *What Does "Net-Zero Emissions" Mean? 8 Common Questions, Answered*, WORLD RES. INST. (Mar. 20, 2023), https://www.wri.org/insights/net-zero-ghg-emissions-questions-answered.

227. St. John, *supra* note 43; Markind, *supra* note 36.

through their Energy Star label work.[228] However, when assessing the practicality of such a policy, decision-makers should consider potential data development and verification challenges. Such progress and measurements may be resource-intensive and logistically challenging to calculate. For the incentive program to be successful, policymakers and agencies should integrate best practices for ensuring that local governments track data accurately and with integrity.

CONCLUSION

Natural gas pipes sealed within new building walls today exacerbate the battle against climate change tomorrow. Ultimately, building electrification regulation is low-hanging fruit that U.S. federal policymakers should capitalize upon to aid an efficient low-carbon economic transition. Many local governments have the willpower and tailored expertise to promulgate such regulations. But they need federal support to guide the decarbonization agenda, fund policy actions, and fight fossil fuel industry pushback.

Congressional action should pave the way forward. As argued in this Note, a federal building electrification policy should prioritize short-term incentives for new building infrastructure decision-makers on the ground. Simultaneously, such regulation should leverage a cooperative local-federal framework for disseminating long-term electrification incentives and preempting state prohibitions on progress.

Beyond these preliminary steps, questions remain about decarbonizing the building sector. While this Note focuses on electrifying new buildings, retrofitting existing buildings equipped with natural gas piping presents more nuanced challenges. Building electrification regulation for retrofits creates heightened financial and logistical burdens for building dwellers. Developing retrofit regulation that is effective, fair, and garners local community support is a daunting task. But this is a challenge that needs to be addressed to fully decarbonize the commercial and residential building sector.

Equity impacts of retrofit and new building regulation also deserve more thoughtful consideration. Renters account for 36 percent of American households and are more likely to be economically disadvantaged or racial and ethnic minorities.[229] Therefore, building owners could disproportionately transfer regulatory cost impacts onto disadvantaged demographics.[230] Commercial building renters could face similar vulnerabilities. Future research should analyze opportunities for building electrification regulation to better safeguard public health, reduce long-term cost of living, and decrease inequities

228. *Energy Star*, *supra* note 133.

229. Drew DeSilver, *As National Eviction Ban Expires, A Look at Who Rents and Who Owns in the U.S.*, PEW RSCH. CTR. (Aug. 2, 2021), https://www.pewresearch.org/short-reads/2021/08/02/as-national-eviction-ban-expires-a-look-at-who-rents-and-who-owns-in-the-u-s/.

230. *See id.*

in energy access.[231] Ultimately, additional research and deliberation are imperative for the U.S. to realize an equitable solution to building decarbonization.

231. *See* Mark Specht, *Why Berkeley Banned Natural Gas in New Buildings*, UNION CONCERNED SCIENTISTS (July 31, 2019), https://blog.ucsusa.org/mark-specht/why-berkeley-banned-natural-gas-in-new-buildings/.