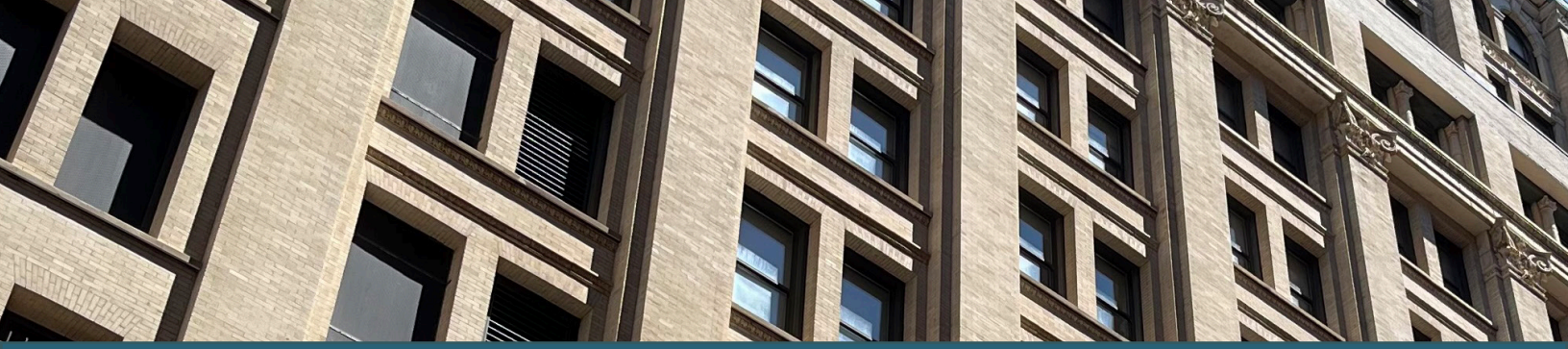

POLICY PAPER / May 2026

Zero-Emission Equipment Standards

A Strategy for Tackling New York Buildings' Pollution at the Source

Guarini Center
on Environmental, Energy
& Land Use Law

NEW YORK UNIVERSITY SCHOOL OF LAW

POLICY PAPER

Zero-Emission Equipment Standards: A Strategy for Tackling New York Buildings' Pollution at the Source

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Contents

I. Introduction

Zero-emission standards for appliances and equipment used in residential and commercial buildings (ZE standards) are an emerging policy tool for reducing concentrations of local and regional air pollutants caused by the on-site burning of fossil fuels, as well as for mitigating buildings' contributions to global climate change. In simplest terms, a ZE standard is a legal mandate that appliances of a given type (typically, space and water heating equipment) emit no amount of a targeted air pollutant—such as nitrogen oxides (NOx) or carbon dioxide (CO_2)—into ambient air while performing their intended work; this requirement generally is meant to be enforced at the time of new appliances' sale or installation.[1]

Although ZE standards are a relatively new phenomenon, several state and local jurisdictions have adopted them or are considering them. In 2023, California's Bay Area Air Quality Management District (BAAQMD) voted to adopt the first ZE standards in the United States, regulating new natural gas-fired furnaces, boilers, and water heaters in support of the air district's ongoing efforts to reduce severe concentrations of health-harming NOx, ozone, and particulate matter (PM) in the San Francisco Bay area.[2] Following in BAAQMD's footsteps, the South Coast Air Quality Management District (SCAQMD) adopted ZE standards for certain types of water heating equipment in 2024;[3] it also has been developing standards for other water heating equipment, as well as space heating equipment, to address local and regional air pollution and these appliances' climate impacts.[4] Meanwhile, in June 2024, Maryland Governor Wes Moore directed Maryland's Department of the Environment to develop ZE standards for heating equipment in the state.[5] In addition, the California Air Resources Board (CARB) has been developing its own ZE standards policy.[6]

ZE standards were first proposed for New York in 2022, as one of the suite of measures in the state's Climate Scoping Plan for decarbonizing the state's economy.[7] Governor Kathy Hochul subsequently called on the Legislature to prohibit future sales of fossil fuel-fired heating equipment in her 2023 State of the State address,[8] and she was one of ten governors who committed their states to explore adopting ZE standards for space and water heating equipment in a 2023 US Climate Alliance pledge. [9] No further action on ZE standards has been taken to date, however, even though the state is not on track to meet its legal obligation to reduce its greenhouse gas (GHG) emissions by 40% from 1990 levels by 2030, pursuant to the 2019 Climate Leadership and Community Protection Act (CLCPA).[10]

Given the CLCPA's clear timeline for action, and the urgency of addressing both the climate crisis and persistent local air quality issues in the state, this brief seeks to reanimate the discussion of ZE standards in New York. As explained in Part II below, while state regulators prioritized developing an economy-wide cap-and-invest program (New York Cap-and-Invest, or "NYCI"), initial modeling of that program's potential effects suggested that the state would need to take additional actions—including directly regulating point sources of GHG emissions in the state—to achieve GHG emissions reductions consistent with the CLCPA's mandates. New York largely has put NYCI program development on hold, further amplifying the need for targeted steps, such as ZE standards, to tackle the state's GHG emissions. ZE standards also could be critical for improving air quality in the New York City metropolitan area, so that New York City and surrounding communities can improve their compliance with federal emissions control mandates for ozone and other pollutants.

Part III reviews the two ZE standards policies that have been developed so far in California, as living models for potential regulations in New York; we also discuss some of the possible alternative approaches that have been proposed. Part IV then explores the legal authority for New York's Department

of Environmental Conservation (DEC) to promulgate ZE standards under current law.[11] We find that state law provides ample authority for DEC to implement ZE standards, and that federal law does not limit DEC's ability to deploy such regulations, notwithstanding arguments that have been raised in litigation under the federal Energy Policy and Conservation Act (EPCA). The brief concludes by highlighting other factors that New York should consider if it pursues ZE standards to help decarbonize the state's building stock.

II. Policy Background: New York's Regional Air Quality Problems and Climate Obligations

Emissions from New York buildings' on-site use of fossil fuels are significant contributors to local, regional, and global air pollution problems. Despite over fifty years of local and regional policy efforts, New York City, Westchester County, Rockland County, and Nassau and Suffolk counties on Long Island—as well as adjacent areas in New Jersey and Connecticut—continue to suffer from ozone levels above federally-set national ambient air quality standards (NAAQSs).[12] Buildings contribute significantly to this ongoing problem, principally through their use of fossil fuels like fuel oil and natural gas in boilers, furnaces, and water heaters to meet occupants' space and water heating needs.[13] Moreover, emissions attributable to buildings are the largest source-category of GHG emissions in New York, at approximately 28% percent of the state's total GHG footprint.[14] Of these GHG emissions, more than half are the result of on-site fossil fuel burning, principally for space and water heating.[15]

Drastically reducing buildings' on-site emissions is needed both to protect New Yorkers' health, as well as to achieve progress toward the state's climate commitments. NOx, PM, and ozone attributable to the use of fossil fuel-fired appliances contribute to myriad health problems when mixed in outdoor air—including decreased lung function, asthma, strokes, and premature death.[16] Low-income communities and communities of color face particularly acute air pollution burdens and associated health impacts from localized air pollution.[17] Emissions from appliances like natural gas and propane stoves additionally cause *indoor* air quality degradation that has been linked to greater incidence of childhood asthma,[18] and research has demonstrated that fossil fuel appliances can leach toxic chemicals like benzene (a known carcinogen) even when turned off.[19] Finally, as the state's 2022 Scoping Plan has detailed, there is no viable path for achieving the GHG reduction mandates of the CLCPA without addressing New York buildings' on-site emissions.[20]

At the state level, New York has taken several steps since it adopted the CLCPA in 2019 that directly or indirectly aim to tackle buildings' on-site emissions:

- In 2022, the Legislature directed the New York State Research and Development Authority (NYSERDA) to set appliance and equipment efficiency standards for a range of products in support of the state's climate obligations, some of which will reduce on-site emissions from buildings by decreasing certain appliances' fossil fuel consumption.[21] These appliance efficiency rules went into effect in June 2023.[22]

- Also in 2022, the state adopted the Utility Thermal Energy Network and Jobs Act, which directed New York's utility regulator—the Public Service Commission (PSC)—to develop regulations for the development of utility-scale thermal energy networks that can be used to decarbonize buildings' heating and cooling processes.[23] The PSC adopted initial rules in 2024.[24]

- In 2023, the state passed the All-Electric Buildings Act, which mandated that the State Building Code Council adopt rules to ensure that most newly constructed buildings will be built without fossil fuel infrastructure or appliances.[25] The State Building Code Council duly adopted conforming changes to the state's building and energy codes in July 2025,[26] while the PSC initiated a proceeding to address limited exemptions from the act's requirements related to electrical grid constraints.[27] The state, however, has delayed implementation of the new building and energy code provisions pending resolution of litigation alleging that they are preempted under federal law by EPCA.[28]

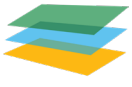
- In 2025, the PSC extended and expanded funding for NYSERDA and utility programs that support building efficiency upgrades and electrification, building on the PSC's prior New Efficiency: New York efficiency and electrification initiative.[29]

- Also in 2025, the state adopted legislation to end the so-called "100 foot rule" for natural gas line extensions for residential gas utility customers, which would remove an effective subsidy for natural gas service for new residential customers.[30]

- And finally, beginning in 2023, DEC and NYSERDA took steps to develop New York Cap-and-Invest (NYCI), an economy-wide cap-and-trade program that would set a declining cap on New York's GHG emissions and require fossil fuel distributors and major emitters of GHGs to acquire allowances for their shares of those emissions (thus incentivizing their transition to lower-emitting activities), as well as generate revenue that could be invested directly in building decarbonization and other GHG-reduction priorities.[31]

While these measures promise progress on building emissions, on their own they are insufficient to meet the CLCPA's emissions reductions mandates. And although further action is needed, the state has yet to implement significant portions of the policy program detailed in the Scoping Plan.[32] Furthermore, rollout of most of the NYCI program has been paused,[33] with the state proceeding only to issue the program's emissions reporting rule.[34] These delays and regulatory gaps have led a coalition of advocates to sue the state for failing to promulgate a comprehensive suite of GHG-reduction regulations by the CLCPA's statutory deadline for such action; while the state trial court granted plaintiffs' petition for relief and ordered the state to promulgate the regulations by February 6, 2026,[35] that decision has been stayed pending resolution of the state's appeal to the Appellate Division.[36]

Even if NYCI ultimately were to be implemented as originally envisioned by DEC and NYSERDA, it appears likely that the state still could not achieve compliance with the CLCPA's emissions limits. DEC and NYSERDA's modeling of their 2024 NYCI proposal suggested that emissions in 2030 from economic sectors with NYCI compliance obligations would be up to 17% greater than the ostensible limits for those sectors.[37] In addition, within the buildings sector, NYCI's relative effectiveness at transitioning consumers from natural gas to electricity appeared to be lower than its effectiveness at transitioning them away from delivered fuels (i.e., heating oil and propane), in part because consumer electricity costs remained relatively higher than consumer natural gas costs.[38] Moreover, while DEC and NYSERDA's NYCI modeling suggested that the program would have positive health impacts, particularly for New York's designated disadvantaged communities (DACs),[39] the agencies did not specify whether or how those gains would be related to progress toward attainment of federal air quality standards in the greater New York City area, which has a particularly high concentration of DACs.[40]



Given the shortcomings of the 2024 outline for NYCI in driving emissions reductions consistent with the CLCPA's legally-binding emissions limits, and New York's delay in rolling out even an imperfect program, New York will need to consider deploying additional policies—and will need to do so soon. Since the buildings that exist today will remain the majority of the state's building stock beyond the CLCPA's 2050 deadline,[41] policies that focus on achieving emissions reductions from existing buildings should be among the policies the state pursues. ZE standards are one such legal tool—and besides helping to achieve reductions of climate-harming GHGs, they also likely will produce substantial co-benefits with respect to other forms of air pollution, such as NOx and ozone.[42] California has produced several models for how to design these standards, which we discuss in detail in the following section.

III. ZE Standards in California: Models for New York Action

California's regional air quality districts have been leaders in developing and implementing ZE standards. The Bay Area Air Quality District (BAAQMD)—which regulates many stationary sources of localized air pollutants in the San Francisco Bay area—adopted the first ZE standards in the United States in March 2023, for NOx emissions from natural gas-fired furnaces, boilers, and water heaters.[43] The Los Angeles-area South Coast Air Quality Management District (SCAQMD) has followed suit, enacting zero-NOx emission rules for certain types natural gas-fired of water heating equipment.[44] The air districts' actions are a response, in part, to their continued struggle to ensure that their air basins meet state and federal air quality standards.[45] ZE standards also support progress toward California's net-zero GHG climate goal.[46] Together, BAAQMD's and SCAQMD's enacted ZE standards offer living models for ZE standards in New York. In addition, New York might find still other templates for action in the zero-NOx emission rules SCAQMD proposed for other natural gas-fired water heating equipment and natural gas-fired space heating appliances,[47] and the zero-GHG emission program for space and water heating equipment that the California Air Resources Board (CARB) is developing for state-wide implementation.[48] These programs and proposals are described in turn below.[49]

a. BAAQMD Zero-NOx Regulations for Space and Water Heating Equipment

BAAQMD has regulated the NOx emissions from certain space heating and water heating equipment since 1983 and 1992, respectively, and its rules for these appliances "have included a NOx emissions standard expressed as nanograms of NOx per joule of useful heat (ng/joule) delivered by the [covered] appliance."[50] As amended in 2023, BAAQMD's zero-NOx rules apply to the manufacture, sale, and installation of natural gas-fired furnaces, boilers, and water heating equipment of sizes that typically serve one- and two-family residences, as well as natural gas boilers and water heating equipment with capacity to serve many commercial and multifamily buildings. The rules are summarized in Table 1 below:

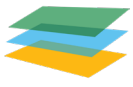


Table 1[51]

Equipment Type	Pre-2023 NOx Emission Standard	Interim Ultra-Low NOx Standard	Zero-NOx Standard
Storage tank water heaters with rated heat input capacities of ≤ 75,000 BTU/hr	10 ng NO_2/J	*No change*	0.0 ng NO_2/J, beginning January 1, 2027
Furnaces with rated heat input capacities of < 175,000 BTU/hr	40 ng NO_2/J	14 ng NO_2/J, *beginning January 1, 2024*[52]	0.0 ng NO_2/J, beginning January 1, 2029
Boilers & water heaters with rated heat input capacities 75,001 – 2,000,000 BTU/hr	14 ng NO_2/J[53]	*No change*	0.0 ng NO_2/J, beginning January 1, 2031

BAAQMD's 2023 zero-NOx rule amendments do not outright ban the manufacture, sale, or installation of natural gas-fired furnaces, boilers, and water heating equipment, nor do they require existing covered natural gas-fired equipment to be replaced before the end of their useful lives. Rather, once the applicable emission limits go into effect, natural gas appliances still may be manufactured, sold, and installed in the San Francisco Bay Area if they are equipped with technologies that allow them to achieve the NOx standard set by the rules.[54] Given current technological availability, however, BAAQMD's rules strongly favor the sale and installation of electric heat pump water and space heating equipment when new systems are set up and existing systems are replaced.[55]

Recognizing that heat pump technology in appliances is evolving, and that its widespread adoption in the Bay Area may have cost, infrastructure, labor, and equity implications, BAAQMD created an Implementation Working Group (IWG) to monitor potential implementation issues and to make recommendations to the air district's Board of Directors for bolstering the rules' success; the IWG delivered a series of reports to BAAQMD's Board of Directors on the water heater rule in October 2024,[56] and has now begun studying the space heating rule.[57] Building on the IWG's study of the water heating rule, BAAQMD currently is considering further amendments to the water heater rule that could introduce limited flexibility measures to account for affordability, product availability, and site capacity constraints identified through the IWG process.[58]

b. SCAQMD Zero-NOx Regulations for Certain Water Heating Equipment

In parallel to BAAQMD, SCAQMD developed ZE rules for NOx emissions from certain sizes of water heating equipment, boilers, and process heaters that are intended to help improve the air quality of the Los Angeles metropolitan area.[59] While BAAQMD deployed a fairly simple policy model for driving down NOx emissions in the San Francisco Bay Area, SCAQMD's rule reflects a more complex approach.

SCAQMD's zero-NOx limits were adopted in June 2024, through amendments to its rule governing NOx pollution by natural gas-fired water heaters, boilers, and commercial and industrial process heaters with rated heat input capacities greater than or equal to 75,000 BTU/hr and less than or equal to 2,000,000 BTU/hr, as well as pool water heaters.[60] Similar to the 2023 BAAQMD ZE rules, the SCAQMD zero-NOx limits for these types of water heating equipment set quantitative restrictions on covered appliances' NOx outputs and will phase in between 2026 and 2033 according to the type and size of appliance.[61] Like BAAQMD's rules, SCAQMD's rule applies to the manufacture, sale, and installation of covered equipment.[62] Current commercial technological availability means that only electricity-powered units satisfy the rule's requirements at the present time, although natural gas-fired appliances are not forbidden *per se*.[63] To ensure a smooth transition to NOx-free models of covered equipment, SCAQMD has committed to a cost and technology readiness "check-in" in 2027.[64]

In other respects, however, SCAQMD's ZE rule amendments for pool heaters and medium-scale water heating equipment are different from those adopted by BAAQMD:

- First, SCAQMD chose to vary the effective dates of covered appliances' zero-NOx limits depending on whether appliance units are to be installed in existing buildings or newly constructed ones. For example, instantaneous water heaters rated between 75,000 BTU/hr and 200,000 BTU/hr must comply with zero-NOx requirements beginning in 2026 if they are being installed in new construction. However, equipment of the same size must comply with the zero-NOx limit only in 2029 if they are being installed in *existing* buildings.[65]

- In addition, for covered appliances that are not located in residential buildings,[66] or that are not operated by qualifying small businesses,[67] SCAQMD will require existing pieces of equipment to be replaced when they reach designated "unit ages" that are calculated from the time the appliances were manufactured—which may be before those appliances burn out.[68]

- Finally, and again unlike the BAAQMD rules, the SCAQMD ZE rule amendments explicitly provide alternative compliance pathways for appliance owners and operators under certain circumstances, such as when electricity supply upgrades are needed in order to install zero-NOx equipment or multiple non-compliant units may need to be replaced in a short timeframe.[69]

SCAQMD's departures from BAAQMD's approach reflect its attempt to tailor its rule's impact to different situations upfront, to ensure their steady roll-out and consequent emissions reductions. For New York's purposes, the most interesting innovation by SCAQMD is the use of designated "unit ages" as the trigger for equipment replacement by some consumers. This acts as a safeguard against lagging adoption of zero-NOx-compliant technology by consumers who have the financial and operational resources to undertake such conversions, but might be tempted to try to operate their current equipment beyond the appliances' expected useful lives. This demonstrates one way that New York could strengthen its regulatory signals and shape consumer expectations of the future equipment market.

c. Other Approaches: SCAQMD Proposed Zero-NOx Space and Water Heating Rules, and CARB Proposed Zero-GHG Space and Water Heating Emissions Program

Rules like the ones above are not the only approaches that have been developed in California, although so far they are the only ones to have been adopted and to have moved into implementation. New York additionally might consider regulations that rely on escalating and enforceable zero-NOx or zero-GHG equipment sales targets, like the zero-NOx sales targets that SCAQMD proposed for furnaces with rated heat input capacities under 175,000 BTU/hr and water heaters with rated heat input capacities under 75,000 BTU/hr, and the zero-GHG equipment sales credit program that CARB has proposed for statewide application. These program models have been intended to offer greater flexibility for consumers and appliance sellers than the rules that BAAQMD and SCAQMD already have adopted, although they would slow the pace of NOx and GHG emissions reductions and thereby delay realization of the climate and public health benefits that wide-scale adoption zero-emission technologies can deliver.

SCAQMD originally envisioned its rules for smaller-scale space and water heating appliances (generally of the type often found in residential buildings) as taking a similar approach to the one it had pursued for medium- to larger-scale water heating equipment.[70] In light of stakeholder feedback, however, SCAQMD revised its approach. While retaining a baseline rule structure that would require manufacturers to sell—and building owners and operators to install—only zero-NOx appliances after particular effective dates, SCAQMD also proposed to offer appliance manufacturers an alternative compliance option under which they would be subject to escalating targets for selling zero-NOx appliances, with the aim of having zero-NOx compliant units constitute 90% of smaller-scale space and water heating units sold and installed in the Los Angeles region by 2036.[71] To incentivize manufacturers to reach SCAQMD's targets when they opted into the alternative compliance mechanism, manufacturers would have been required to pay mitigation fees for each NOx-emitting unit sold in the region, as well as additional fees for each NOx-emitting unit sold in excess of the applicable target.[72] These fees then would have funded a zero-NOx equipment incentives program for consumers in the area under SCAQMD's jurisdiction.[73] SCAQMD acknowledged that adoption of the ramping sales approach would create a slower transition to zero-NOx appliances.[74] Although potentially popular with consumers, this would delay the full realization of the program's emissions reduction potential, thereby allowing the varied and multiple harms of covered appliances' emissions to continue to accrue and compound with each unabated ton of pollution.[75] However, SCAQMD believed that the slower increase in residential-scale zero-NOx space and water heating technologies' installation offered certain benefits, including accommodating further technology developments and creating time to meet the additional demand for electricity expected to result from the adoption of non-fossil fuel burning appliances.[76] Ultimately, in June 2025 SCAQMD's Board of Directors voted not to adopt the space and water heating rule proposals and sent them back to staff for further development,[77] which remains ongoing.

While BAAQMD and SCAQMD have been pursuing their respective ZE standards initiatives, CARB has been developing a statewide ZE program for space and water heating appliances that would be based on those appliances' GHG emissions (instead of their NOx outputs).[78] CARB debuted its current concept for a rule proposal at a public workshop in December 2025.[79] Under this proposal, manufacturers of covered space and water heating equipment would be subject to a declining, market-wide cap on sales of GHG-emitting equipment between 2030 and 2045; while the exact levels remain to be determined, CARB has been considering limiting GHG-emitting space heating equipment to as

low as 10% of total space heating equipment sales in 2045, or permitting emitting equipment to be up to 30% of sales in the same year.[80] To incentivize greater zero-GHG equipment sales by manufacturers, and to provide them with additional flexibility, CARB also has proposed to pair the declining sales cap with a credit trading program: manufacturers could earn credits through their non-emitting equipment sales, or by donating non-emitting equipment to equitable decarbonization programs, or by taking other CARB-approved actions, and then bank the credits for future use or trade them to manufacturers seeking to mitigate penalties for excess emitting equipment sales.[81] Through this cap-and-trade scheme, CARB is seeking to avoid having to develop and enforce a detailed framework for site- or consumer-specific exemptions.[82] CARB anticipates that the program could achieve emissions reductions of between 27 and 69 MMT of CO2 equivalent (CO2e), and 23,000 tons of NOx reductions; however, space and water heating equipment still would emit 10–15 MMT CO2e annually in 2045, as well as 10–20 tons of NOx per day, under this program framework.[83] As local policy advocates have pointed out, these outcomes would be inconsistent with CARB's 2022 State Plan for the SIP, as well as California's plans to achieve carbon neutrality.[84]

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As demonstrated by ZE policy development in California, there are a range of ways for DEC to address GHG and NOx emissions from polluting building equipment, with greater or lesser in-built policy complexity and flexibility. DEC will need to analyze the proper balance for New York, taking account of such factors as the levels of emissions reductions necessary to meet the department's state and federal legal obligations (including the CLCPA's 2030 and 2050 emission reduction mandates), different local climate conditions around the state, state building stock characteristics, potential electric system impacts, and affordability concerns. The next section explores the sources of legal authority for DEC to begin ZE standards development work and addresses certain potential federal legal constraints that could shape how that work is done.

IV. The Legal Authority for New York to Undertake ZE Standards

While the policy basis for ZE standards in New York is clear, and BAAQMD and SCAQMD provide models for ZE standards on which New York could draw for its own program, New York regulators would need to be sure of their legal authority to act before they could develop plans for phasing out the state's fossil fuel building equipment. State regulators' legal authority depends, on the one hand, on what existing state law permits, and, on the other, on what federal law has not removed from the scope of state regulation. This second issue, in turn, primarily depends on the scope of two federal statutes—namely, the Clean Air Act and the Energy Policy and Conservation Act (EPCA).

This section addresses both of these sets of legal questions. For simplicity, this brief assumes that regulations by DEC would resemble those that have been adopted by BAAQMD for space and water heating equipment. Under New York law, it appears that DEC has adequate authority under the state's existing pollution control and climate statutes to create and enforce ZE standards. Furthermore, federal law—notwithstanding the Ninth Circuit's decision in *California Restaurant Association v. City of Berkeley*—poses no obstacle to DEC's taking action: neither the

Clean Air Act nor EPCA preempts DEC's authority to regulate appliances' emissions impacts, improve the state's air quality, and reduce the state's contribution to climate change.

a. State Law Authority

DEC is the state agency with primary authority and responsibility for managing sources of air pollution throughout New York, among other environmental issues.[85] As explained in detail below, New York state law clearly grants DEC ample authority to regulate both NOx and GHG emissions from a diverse array of stationary sources around the state, placing the agency in the best position among state government divisions to regulate emissions from consumer appliances and industrial equipment.[86] As a result, DEC could pursue either a NOx-focused or GHG-focused approach when developing ZE standards.

New York's Environmental Conservation Law empowers DEC to "[f]ormulate, adopt and promulgate . . . rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the state as shall or may be affected by air pollution," and directs DEC to "prescribe[e] for [designated] areas (1) the degree of air pollution or air contamination that may be permitted therein, [and] (2) the extent to which air contaminants may be emitted to the air by any air contamination source . . . ."[87] This statutory language provides an adequate basis for DEC to regulate either NOx or GHG emissions from appliances and industrial equipment, as both NOx and CO_2 comfortably fall within the statute's definitions of "air pollution" or "air contaminant."[88] Indeed, many major NOx sources already are regulated pursuant to this authority,[89] and DEC has regulated CO_2 emissions from the electric power sector pursuant to the same statutory language.[90] To date, DEC regulations of localized pollutants and GHGs have focused primarily on industrial-scale combustion sources (such as power plant turbines), but certain smaller types of units—namely, outdoor wood-fired boilers—also have been the subject of DEC rules.[91]

Additionally, provisions added to the Environmental Conservation Law by the CLCPA provide a specific basis for DEC to act on appliances' GHG emissions. These provisions designate DEC as the agency with primary responsibility for setting regulations that will "ensure compliance with the statewide emissions reduction limits."[92] They charge DEC not only with "[e]nsur[ing] that the aggregate emissions of greenhouse gases from greenhouse gas emission sources will not exceed the statewide greenhouse gas emissions limits,"[93] but also with taking an approach guided by the state's Scoping Plan,[94] and—in particular—with promulgating "measures to reduce emissions from greenhouse gas emission sources that have a cumulatively significant impact on statewide greenhouse gas emissions, *such as . . . boilers or furnaces that burn oil or natural gas*."[95] Given the CLCPA's directions to DEC both to follow the Scoping Plan and to act on the cumulative impacts of smaller-scale sources like boilers and furnaces, DEC thus has adequate authority under the Environmental Conservation Law to address the climate impacts of fossil fuel-fired appliances and equipment in homes, apartment buildings, and commercial buildings.

b. Clean Air Act

While DEC's authority to regulate a broad array of air emissions arises under state law, federal law, too, plays a role in shaping how DEC uses its powers. The first aspect of federal law that is relevant to New York's development of ZE standards is the Clean Air Act, which organizes the nation's response to many aspects of local and regional air pollution, as well as climate change.[96]

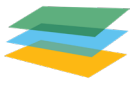
The Clean Air Act places states at the forefront of regulating emissions from existing stationary sources and preserves certain authority for them to regulate new stationary sources.[97] This approach recognizes states' historic leadership in the field of environmental regulation and broad "police power" authority:[98] before the federal government began to take a robust role in addressing air pollution during the second half of the 20th century, state agencies and local governments adopted many regulations and programs to protect public health and welfare from the effects of smog, particulate matter, and other hazards.[99]

Under the Clean Air Act, the federal Environmental Protection Agency (EPA) is responsible for identifying pollutants that should be regulated to protect public health and welfare (so-called criteria pollutants) and then setting national ambient air quality standards (NAAQSs) that represent maximum allowable concentrations of those pollutants in outdoor air.[100] States, meanwhile, have primary responsibility for developing plans for achieving the NAAQSs (known as state implementation plans, or SIPs), and they are free to utilize whatever regulatory tools they deem best for managing stationary sources of pollutants, so long as those tools meet certain minimum criteria.[101] States and localities expressly retain authority to take more aggressive action to abate stationary sources of air pollution than may be required by the Clean Air Act and EPA regulations. The statute provides that:

> Except as otherwise provided . . . nothing in this chapter shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce (1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution; except that if an emission standard or limitation is in effect under an applicable implementation plan or under section 7411 [pertaining to new stationary sources of criteria pollutants] or section 7412 [pertaining to hazardous air pollutants] of this title, such State or political subdivision may not adopt or enforce any emission standard or limitation which is less stringent than the standard or limitation under such plan or section.[102]

States and localities furthermore retain authority under the Clean Air Act to regulate stationary source emissions of air pollutants (such as carbon dioxide) that are not subject to NAAQSs.[103] In short, the Clean Air Act is the floor—but not the ceiling—for state and local action with respect to pollution from stationary sources.

Consistent with the foregoing framework, DEC already has promulgated many regulations for managing criteria pollutants (or their precursors) attributable to diverse stationary sources,[104] and DEC has taken several important steps to regulate non-criteria pollutant GHGs.[105] If DEC were to develop and implement ZE standards like those adopted by BAAQMD, such action would be in keeping with Congress's express purposes for the Clean Air Act. ZE standards, broadly speaking, would be consistent both with the state's obligation to attain NAAQSs in all areas of the state, as well as with the state's retained authority to go beyond the Clean Air Act's air quality minimums in areas that already have achieved them. New York and other states long have regulated commercial and residential-scale combustion equipment that relies on wood for fuel,[106] and there are several precedents for low and ultra-low NOx standards for fossil fuel-fired appliances in Texas, Utah, California.[107] Furthermore, if EPA in the future were to regulate emissions from the appliances and equipment covered by New York's ZE standards, those regulations would not preclude New York from maintaining its own standards, so long as those standards were stricter than the federal government's.[108] Thus, the Clean Air Act does not impose any substantive obstacle to DEC's adoption of ZE standards.



c. EPCA

DEC additionally must consider the Energy Policy and Conservation Act (EPCA) when developing ZE standards. EPCA regulates the energy efficiency of many common appliances and pieces of commercial and industrial equipment, including appliances that have been the subject of ZE standards to-date.[109] EPCA also has express preemption provisions that effectively prohibits certain types of state regulations pertaining to EPCA-regulated appliances. These preemption provisions have been used by litigants to challenge several state and local laws addressing fossil fuel use in buildings, including SCAQMD's zero-NOx rule for larger-scale water heating equipment.[110] As a result, New York must account for the potential legal risks posed by EPCA's preemption provisions when developing ZE standards. However, as described below, there are strong arguments supporting ZE standards' consistency with—and validity under—EPCA's preemption framework.

EPCA emerged as part of the nation's response to the oil supply shocks of the early 1970s.[111] Among Congress's goals in passing the act was to increase the nation's energy security against future energy supply risks, in part by promoting energy efficiency—*i.e.*, by reducing individuals' and businesses' demand for limited energy resources.[112] In support of this goal, EPCA (following several sets of statutory amendments) sets national "energy conservation standards" for many common consumer appliances and pieces of commercial or industrial equipment, including central air conditioners and heat pumps, water heaters and furnaces, pool heaters, clothes dryers, consumer kitchen ranges and ovens, and commercial HVAC equipment.[113] These standards are based either on maximum "quantit[ies] of energy directly consumed by . . . consumer product[s] at point of use" (i.e., "energy use"),[114] or minimum "ratio[s] of the useful output[s] of services from . . . consumer product[s] to the energy use of such product[s]" (i.e., "energy efficiency"),[115] as measured through a federal appliance testing program.

EPCA's model of federal-state relations is different from the one embodied in the Clean Air Act, in that it generally favors a predominant role for the federal government—rather than states—in regulating the efficiency of so-called "covered products" and "covered equipment,"[116] among other areas of energy-related policy.[117] Thus, while setting national energy conservation standards for covered products and covered equipment, EPCA also contains preemption provisions that restrict states' ability to regulate the same appliances' levels of energy intensiveness.[118] In relevant part, EPCA provides that:

> Except as [otherwise] provided . . . effective on the effective date of an energy conservation standard established in or prescribed under . . . this title for any covered product, no State regulation concerning the energy efficiency, energy use, or water use of such covered product shall be effective with respect to such product . . . .[119]

This language is meant to ensure that efficiency standards for covered appliances are nationally uniform, in most instances, thereby simplifying those products' manufacturing and marketing.[120]

Some state and local regulations that can directly or indirectly influence the energy performance levels to which appliances are designed still can escape preemption, however. For example, EPCA explicitly allows state and local governments to set efficiency-based procurement regulations, and to regulate the energy efficiency of newly constructed buildings through qualifying building codes for new construction.[121] Furthermore, state and local legal provisions that do not "concern" the "energy use" or "energy efficiency" of covered products or covered equipment are beyond the scope of EPCA preemption,[122] leaving states and localities their full freedom of legislative and regulatory action in this respect.

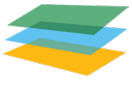
Courts for many years seldom considered how to apply EPCA's preemption provisions regarding appliance energy efficiency, since little litigation raised claims related to them.[123] And more generally, the different federal frameworks for regulating air pollution from stationary sources and for regulating appliance energy efficiency historically have coexisted without notable friction.[124] Thus, it was unprecedented when a panel of the Ninth Circuit held in *California Restaurant Association v. City of Berkeley* (*CRA*) that EPCA preempted Berkeley's pioneering ordinance generally forbidding the installation of gas piping in newly constructed buildings.[125] The Ninth Circuit panel reached this conclusion notwithstanding the differences between policies targeting the emissions of stationary sources (which, substantively, was the effect of Berkeley's ordinance) and policies regulating appliances' levels of energy performance.[126] In the wake of *CRA*, several legal challenges have been filed arguing that EPCA preempts other subnational policies intended to reduce buildings' climate and local air pollution impacts, in addition to the case that was brought against SCAQMD's zero-NOx rule for certain water heating equipment.[127]

By its own terms, though, *CRA* does not apply to ZE standards—including those that have been adopted by SCAQMD, as a California federal district court recently held in *Rinnai America Corp. v. South Coast Air Quality Mgmt. Dist.* [128] The *CRA* panel explicitly limited the scope of its preemption holding to "building code" provisions that make one source of energy entirely unavailable to appliances contained in a structure.[129] However, ZE standards are not among the kinds of regulations that previously have been included within state and local building codes.[130] A ZE standard does not regulate the design of a structure, nor that structure's performance against certain constraints (such as total energy consumption, occupants' thermal requirements, fire safety, and security in the face of natural hazards).[131] Indeed, there is no case law of which we are aware that suggests that courts ever have characterized prior appliance emissions regulations as being building code provisions. Thus, a ZE standard is not clearly within the class of regulations to which *CRA* applies of its own force.[132] As relevant for efforts to establish ZE standards in New York, it also should be noted that Ninth Circuit case law only has persuasive value in the Second Circuit,[133] which is the relevant appellate circuit for federal litigation as to New York's policies, and the Second Circuit has yet to adopt either *CRA*'s holding or reasoning as its own.

Moreover, taking a fair look at the statute's text, it is apparent that EPCA's preemptive scope is not meant to sweep so far as to include emissions regulations like ZE standards. As noted above, in relevant part EPCA preempts state regulations "concerning the energy efficiency [or] energy use" of covered products or equipment. ZE standards, as they have been formulated to date, plainly are not regulations pertaining to "energy efficiency," within that term's statutory meaning: they do not prescribe any particular level of useful outputs by the appliances they regulate, but rather seek to guarantee that any work by regulated appliances occurs without causing emissions impacts that threaten public health and the environment. And although ZE standards regulate how fossil fuels may be burned if they are used, ZE standards are not regulations of "energy use" in the sense that EPCA uses that phrase. As a New York federal district court recently explained in a case concerning New York City's local law restricting the burning of fossil fuels in newly constructed buildings, the phrase "energy use" refers only to "a fixed value, determined using administratively prescribed testing procedures . . . that represents the amount of energy a product consumes under typical conditions."[134] ZE standards do not attempt to regulate "energy use" in this specialized sense: rather than addressing the quantities of energy covered appliances are designed to *consume*, as measured through federally set testing procedures, ZE standards instead target a side effect of appliances' use—namely, the pollutants they emit when they are put into service.[135]

But what of the fact that ZE standards may, functionally, make fossil fuel-consuming appliances unavailable to residential and commercial consumers in most circumstances?[136] As the New York district court has explained with respect to New York City's regulation of fossil fuel burning in new construction, the definition of "energy use" does not connote anything about "the actual use of covered products, nor does it grant consumers an absolute right to use such products."[137] Many state and local laws already make fossil fuel consuming appliances unavailable in particular locations, often for health and safety reasons.[138] Other provisions of EPCA also do not suggest that states and local governments must permit fossil fuel appliances to remain available in every locality that currently can support them: the statute only reflects that particular types or classes of appliances cannot be made unavailable because of their *efficiency* characteristics.[139] And as the California district court noted in *Rinnai America Corp.*, neither the text nor the legislative history of EPCA suggests "that Congress ever intended or even contemplated that the EPCA would preempt emission regulations designed to combat air pollution," since although "EPCA specifically preempts building codes concerning energy use unless certain exemptions are met, it fails to mention air pollution regulations, despite the fact that the [Clean Air Act] had been in place for many years at the time the EPCA was enacted and amended."[140]

Finally, to the extent that EPCA's use of the term "concerning" broadens the class of regulations subject to its preemption bar, ZE standards still remain beyond it.[141] In the Second Circuit, the test for "concerning," for EPCA appliance efficiency preemption purposes, likely mirrors the test for relatedness applied in *Metropolitan Taxicab Board of Trade v. City of New York*,[142] a case concerning the preemptive scope of EPCA's motor vehicle fuel efficiency provisions. There, Second Circuit stated the principal test for determining "whether a [challenged] law relates to a preempted subject matter requires examining whether the challenged law contains a 'reference' to the preempted subject matter or makes the existence of the preempted subject matter 'essential to the law's operation.'"[143] ZE standards, like those enacted by BAAQMD, do not meet either prong of this test. These ZE standards do not refer to appliances' energy use or energy efficiency, as those terms are defined in EPCA, in any substantive way: at most, they simply assume that appliances needing to comply with the emissions standards *already* comply with federal efficiency standards.[144] Nor are appliances' EPCA-measured energy use or efficiency "essential" to the standards' operation. The regulations of covered appliances' emissions exist in parallel to any applicable efficiency regulations, without interfering with their operation.[145] And unlike the motor vehicle regulations that Second Circuit found preempted in *Metropolitan Taxicab*, where hybrid vehicle status was found to be purely a proxy for higher fuel efficiency,[146] ZE status is not a proxy for higher efficiency and thus not an indirect attempt to raise appliances' efficiency above federal minimums.[147] Thus, ZE standards reasonably should not be found preempted by EPCA.[148]



V. Other Policy Considerations for Successful Deployment of ZE Standards

ZE standards have the potential to be a transformative tool in reducing criteria pollutant concentrations in New York's air and mitigating New York buildings' climate impacts. Fully realizing that potential, however, also requires the state to take several other steps, some of which themselves involve further legislative, regulatory, or programmatic development. Among other actions, New York should:

- Increase efforts to decarbonize the state's electricity supply, consistent with the CLCPA's requirement of a zero-emission state electricity grid by 2040[149] —otherwise, on a source energy basis, ZE standards cannot not fully eliminate the criteria pollutant and GHG emissions impacts of building energy consumption;[150]

- Ensure that there is sufficient grid capacity for building systems' electrification in response to ZE standards—since electricity-powered appliances (particularly heat pumps) are likely to be the predominant means of meeting ZE regulations, electricity consumption in New York will increase (especially in winter),[151] and while some regions of the state appear to be better positioned than others in the near term,[152] full implementation of ZE standards likely will require additional electricity supply infrastructure;[153]

- Expand existing programs for increasing building energy efficiency, and adopt additional policies to support building efficiency gains, to moderate the demand on the state's electricity grid caused by building systems' electrification in response to ZE standards;

- Develop and implement policies and programs to manage building occupants' space and water heating needs when current fossil fuel systems fail before systems capable of complying with ZE standards can be installed;

- Adopt policies and programs for an orderly transition away from natural gas networks, to mitigate the affordability impacts later-electrifying gas utility customers may face as gas networks' user bases decline in response to ZE standards;[154]

- Expand existing programs and adopt additional policies both to reduce the costs of adopting electric equipment, and to support such equipment's affordable operation through time;

- Adopt policies and programs to address particular obstacles to electrification and fulfill specialized needs in DACs—the CLCPA requires the state not to leave historically neglected communities behind as it decarbonizes its economy;[155]

- Adopt policies and programs tailored to the needs of buildings in the state's affordable housing stock—the state should not implement ZE standards in a manner that either leaves its affordable housing stock to decay or causes it to cease being affordable to current and future occupants; and,

- Support the expansion of the workforce needed to install and maintain heat pumps across the state's building stock, both in order to mitigate possible costs related to labor shortages and to ensure systems' reliability and occupants' comfort and well-being.

VI. Conclusion

ZE standards are a promising tool for addressing buildings' multifaceted pollution impacts at the source, leveraging prior precedents for air pollution control regulation. The 2022 Scoping Plan was unequivocal that New York's response to climate change, and its implementation of the CLCPA, must draw on an array of tools across all sectors of the state's economy; tackling the GHG emissions of buildings' fossil fuel-fired appliances and equipment is an essential part of that regulatory program. Furthermore, interventions that shift buildings away from on-site sources of combustion are needed to continue the state's progress in reducing communities' exposures to localized pollutants like NOx, PM, and ozone, in order to protect public health. Reducing concentrations of localized pollutants is especially important in the state's DACs, which historically have suffered the burdens of greater cumulative pollution impacts and worse health outcomes than other communities. With enacted models for ZE regulations in California, and further ZE policy development work occurring elsewhere, DEC should take swift action on ZE standards for New York, to fulfill both its specific legal obligations under the CLCPA and under the federal Clean Air Act to control GHG and localized pollutant emissions, and its general mission to protect and advance environmental quality for New York's residents.

VII. Endnotes

1 *See* Emily Levin, Leah Louis-Prescott & Raphael Breit, Zero-Emission Heating Equipment Standards: A New Tool in the Policy Toolbox 3–4, 2024 ACEEE Summer Study on Energy Efficiency in Buildings.

2 News Release, Bay Area Air Quality Mgmt. Dist., Air District Strengthens Building Appliance Rules to Reduce Harmful NOx Emissions, Protect Air Quality & Public Health (Mar. 15, 2023); Bay Area Air Quality Mgmt. Dist. Reg. 9, R. 4: Nitrogen Oxides from Natural Gas-Fired Furnaces (Mar. 15, 2023); Bay Area Air Quality Mgmt. Dist. Reg. 9, R. 6: Natural Gas-Fired Boilers and Water Heaters (Mar. 15., 2023).

3 S. Coast Air Quality Mgmt. Dist. R. 1146.2, Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters (as amended Jun. 7, 2024).

4 *See generally Proposed Amended Rules (PAR) 1111 and 1121*, S. Coast Air Quality Mgmt. Dist., https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121 (last visited Apr. 7, 2026).

5 Exec. Order. 01.01.2024.19, § C.2, 51-13 Md. Reg. 641 (June 28, 2024).

6 *Zero-Emission Space and Water Heater Standards*, Cal. Air Res. Bd., https://ww2.arb.ca.gov/our-work/programs/zero-emission-space-and-water-heater-standards (last visited Apr. 7, 2026).

7 N.Y. State Climate Action Council, Scoping Plan: Full Report 180, 187–190 (2022).

8 Marie J. French, *Hochul Backs Eventual Ban on Gas Furnaces and Stoves in New Buildings*, Politico (Jan. 13, 2023, 12:54 PM).

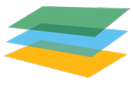
9 Press Release, U.S. Climate All., U.S. Climate Alliance Announces New Commitments to Decarbonize Buildings Across America, Quadruple Heat Pump Installations by 2030 (Sept. 21, 2023).

10 *See* Climate Act Dashboard, N.Y. State Climate Act, https://climate.ny.gov/dashboard (last updated Jan. 8, 2026). The CLCPA further provides that the state must reduce its GHG emissions by 85% from 1990 levels by 2050, and that regulations "to ensure compliance with" both the 2030 and 2050 emission limits were to have been promulgated by January 1, 2024. N.Y. Env't Conserv. Law §§ 75-0107(1), 75-0109(1).

11 ZE standards also could be adopted in New York pursuant to action by the State Legislature. It is fairly common for the Legislature to pass laws that direct state agencies to take specific actions, even when those agencies may already have general authority to adopt the same or similar policies. There may be advantages to agency action at the Legislature's direction: among other things, it may provide insulation against future rule roll-backs as governors change; it may allow agency policy changes to be paired with budgetary allocations that directly support program implementation; and it may provide additional legal support in the event of lawsuits (such as suits contending that agency action is in excess of Legislative delegations under the doctrine of *Boreali v. Axelrod*, 71 N.Y.2d 1 (1987)). This issue brief focuses on action by DEC using its existing authority, however, in light of both the Legislature's reluctance to act on Governor Hochul's 2023 State of the State proposal and Governor Hochul's 2023 US Climate Alliance pledge.

12 *Green Book: Current Nonattainment Counties for All Criteria Pollutants*, U.S. Env't Prot. Agency, https://www3.epa.gov/airquality/greenbook/ancl.html (last updated Feb. 28, 2026). New York County—*i.e.*, the New York City borough of Manhattan—additionally has failed to attain standards for PM 10. *Id.*

13 Sierra Club, New York's Unexpected Summer Building Pollution 2–4 (2024); Sonoma Technology, Ozone Impacts from Building Combustion Sources on Nonattainment Areas in New York (2024). *See also* NESCAUM & OTC, Residential Building Electrification in the Northeast and Mid-Atlantic: Criteria Pollutant and Greenhouse Gas Reduction Potential 9–10 (2025) (reflecting that, in the Northeast region, "onsite fuel combustion in residential buildings was responsible for 10% of total NOx emissions . . . in 2020," and "[a]n additional 7% of NOx emissions resulted from fuel combustion in commercial and institutional buildings," and that "83% of residential building NOx is from natural gas, fuel oil, and propane combustion for space heating").



14 *See* N.Y. Dep't of Env't Conserv., 2025 Statewide GHG Emissions Report: Summary Report vii tbl. ES.3.

15 *See id.* (reflecting that on-site combustion of fossil fuels in residences and commercial buildings produces 16% of the state's GHG emissions, which is more than twice the contribution of fossil fuel burning by the state's power plants, and slightly less than the amount directly produced by motor vehicles). For information on building systems' GHG impacts by systems' end uses, see NYSERDA, The Future of Buildings: New York's Carbon Neutral Buildings Roadmap 28, 32, 34, 35 (2022) (reflecting greatest share of on-site combustion emissions as arising from space and water heating systems in residential and commercial buildings).

16 For an overview of the health impacts of pollution from household appliances, see Amneh Minkara, Annika Larson & Barbara Gottlieb, The Outdoor Pollution Is Coming from Inside the House: National Building Pollution Report 10 (2025). Negative health outcomes from fossil fuel combustion not only accrue close to where the combustion occurs, but also downwind from emission sources, including across state lines. Research suggests that buildings' relative contributions to the premature mortality associated with this cross-state air pollution has increased over time, as emissions from electricity generation have been reduced. *See* Irene C. Dedoussi, Sebastian D. Eastham, Erwan Monier & Steven R. H. Barrett, *Premature Mortality Related to United States Cross-State Air Pollution*, 578 Nature 261 (2020).

17 Minkara, Larson & Gottlieb, *supra* n.16, at 11. *See also* Jim Dennison, Leah Louis-Prescott & Talor Gruenwald, How Air Agencies Can Help End Fossil Fuel Pollution from Buildings 8–10 (2021).

18 Yannai Kashtan, Metta Nicholson, Colin J. Finnegan, Zutao Ouyang, Anchal Garg, Eric D. Lebel, Sebastian T. Rowland, Drew R. Michanowicz, Janet Herrera, Kari C. Nadeau & Robert B. Jackson, *Nitrogen Dioxide Exposure, Health Outcomes, and Associated Demographic Disparities Due to Gas and Propane Combustion by U.S. Stoves*, 10 Sci. Advances eadm8680 (2024); Weiwei Lin, Bert Brunekreef & Ulrike Gehring, *Meta-Analysis of the Effects of Indoor Nitrogen Dioxide and Gas Cooking on Asthma and Wheeze in Children*, 42 Int'l J. Epidemiology 1724 (2013).

19 Eric D. Lebel, Drew R. Michanowicz, Kelsey R. Bilsback, Lee Ann L. Hill, Jackson S. W. Goldman, Jeremy K. Domen, Jessie M. Jaeger, Angélica Ruiz & Seth B. C. Shonkoff, *Composition, Emissions, and Air Quality Impacts of Hazardous Air Pollutants in Unburned Natural Gas from Residential Stoves in California*, 56 Env't Sci. & Tech. 15828 (2022); Yannai S. Kashtan, Metta Nicholson, Colin Finnegan, Zutao Ouyang, Eric D. Lebel, Drew R. Michanowicz, Seth B.C. Shonkoff & Robert B. Jackson, *Gas and Propane Combustion From Stoves Emits Benzene and Increases Indoor Air Pollution*, 57 Env't Sci. & Tech. 9653 (2023).

20 N.Y.S. Climate Action Council, Scoping Plan, *supra* n.7, at 122–124.

21 2022 N.Y. Laws ch. 374. *See also* Press Release, N.Y. Off. of the Governor, Governor Hochul Signs Legislative Package to Spur Energy Efficiency, Consumer Savings, and Greenhouse Gas Emission Reductions While Supporting Prevailing Wage Measures (July 5, 2022).

22 *Appliance and Equipment Efficiency Standards*, NYSERDA, https://www3.epa.gov/airquality/greenbook/ancl.html (last visited Apr. 10, 2026).

23 2022 N.Y. Laws ch. 375.

24 Order Providing Guidance on Development of Utility Thermal Energy Network Pilot Projects, N.Y. Pub. Serv. Comm'n, Case No. 22-M-0429, Dkt. 56 (Sept. 14, 2023); Order Adopting Initial Utility Thermal Energy Network Rules, N.Y. Pub. Serv. Comm'n, Case No. 22-M-0429, Dkt. 173 (July 18, 2024). *See also* Press Release, N.Y. State Dep't of Pub. Serv., PSC Adopts Initial Utility Thermal Energy Network Rules (July 18, 2024).

25 2023 N.Y. Laws ch. 56, pt. RR. *See also* Lauren Urbanek, *New Buildings in NY to Be Electric, but the Job Is Not Done*, NRDC (May 22, 2023).

26 *See* Ry Rivard & Marie J. French, *New York Moves to Electrify Buildings*, Politico (July 28, 2025).

27 *See* Dep't of Pub. Serv. Staff White Paper to Implement the All-Electric Buildings Act, N.Y. Pub. Serv. Comm'n, Case No. 25-M-0149, Dkt. 1 (Feb. 27, 2025).

28 Stipulation & Order Settling Motion for Injunction Pending Appeal, *Mulhern Gas Co. v. Mosley*, Case No. 1:23-cv-01267 (GTS/CFH) (N.D.N.Y. No. 18, 2025), ECF No. 75.

29 Order Authorizing Low- To Moderate-Income Energy Efficiency and Building Electrification Portfolio for 2026–2030, N.Y. Pub. Serv. Comm'n, Case No. 14-M-0094, Dkt. 716 (May 15, 2025); Order Authorizing Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios for 2026-2030, N.Y. Pub. Serv. Comm'n, Case No. 14-M-0094, Dkt. 717 (May 15, 2025). *See also* Press Release, N.Y. Dep't of Pub. Serv., PSC Announces Approval of Energy Efficiency and Building Electrification Programs to Reduce Energy Costs for Consumers (May 15, 2025).

30 2025 N.Y. Laws ch. 709 § 1, *codified, in relevant part, at* N.Y. PUB. SERV. LAW § 31(4-a).

31 *See Clean Air Initiative*, https://capandinvest.ny.gov/ (last visited Apr. 13, 2026).

32 For an overview of the state's current suite of policies to mitigate GHG emissions across various economic sectors, see Elizabeth B. Stein & Erin Shortell, Inst. for Policy Integrity, The Unfinished Roadmap: Navigating New York's Disparate Climate Laws and Policies (2026).

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34 N.Y. Comp. Codes R. & Regs. tit. 6, pt. 253. *See also* Press Release, N.Y. State Dep't of Env't Conserv., DEC Finalizes Program to Track Climate Pollution Sources (Dec. 1, 2025). DEC and NYSERDA had prepared draft emissions cap and auction rules for public comment before Governor Hochul decided to proceed only with the draft emissions reporting rule in 2025. Marie J. French & Ry Rivard, *Agency Staff Completed Work on 'Cap and Invest' Draft Rules Before Delay*, Politico (Jan. 27, 2025).

35 *See* Decision and Order, Dkt. 93, *Citizen Action of New York v. N.Y.S. Dep't of Envt. Conserv.*, Index. No. 903160-25 (N.Y. Sup. Ct. (Albany), Oct. 24, 2025), *available at NYSCEF - New York State Courts Electronic Filing*, N.Y. State Unified Ct. Sys., https://iapps.courts.state.ny.us/nyscef/HomePage.

36 *See* Order, Dkt. 27, *Citizen Action of New York v. N.Y.S. Dep't of Envt. Conserv.*, No. CV-25-1957 (N.Y. App. Div. Feb. 11, 2026) (denying, in relevant part, motion to modify automatic stay of judgment of Supreme Court, Albany County), *available at NYSCEF - New York State Courts Electronic Filing*, N.Y. State Unified Ct. Sys., https://iapps.courts.state.ny.us/nyscef/HomePage.

37 *See* N.Y. State Dep't of Env't Conserv & NYSERDA, New York Cap-and-Invest (NYCI) Pre-Proposal Stakeholder Outreach: Preliminary Scenario Analyses, slides 15, 24 (Jan. 26, 2024). *See also* Guarini Ctr. on Environmental, Energy and Land Use Law and Inst. for Policy Integrity, Joint Comments to DEC and NYSERDA on New York Cap-and-Invest Program 2–3 (Mar. 15, 2024) ("Even under the strictest of the three scenarios, 2030 emissions from obligated sectors are projected to be 15% above NYCI's intended 2030 GHG emissions limit for the relevant sectors (194 MMT, vs. 169 MMT). The least strict of the scenarios would result in an even greater exceedance—a total of 197 MMT, 17% over the limit.").

38 *See* NYSERDA & N.Y. State Dep't of Env't Conserv, Pre-Proposal Analysis For New York Cap and Invest: Data Annex, Tab 2A (Feb. 21, 2024, *updated* Mar. 5, 2024). The program's weak impact on natural gas consumption would mean that not only would the direct emissions from gas-consuming appliances and equipment persist, but also that the safety hazards and climate impacts associated with gas delivery infrastructure would continue. For additional background on the hazards posed by natural gas transmission and distribution infrastructure, see, e.g., Pipeline Safety: Gas Pipeline Leak Detection and Repair, 88 Fed. Reg. 31,890, 31,910–31,912 (May 18, 2023) (describing prevalence of leaks from natural gas infrastructure and associated risks, as well as incidence of leaking infrastructure in environmental justice communities). *See also* Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review, 89 Fed. Reg. 16,820, 16,836, 16,841 (Mar. 8, 2024) (noting fossil fuel infrastructure's significant emissions of, inter alia, volatile organic compounds, and summarizing research on their negative health effects).

39 N.Y. State Dep't of Env't Conserv & NYSERDA, New York Cap-and-Invest (NYCI) Pre-Proposal Stakeholder Outreach: Preliminary Scenario Analyses, *supra* n.37, at slides 44, 48.

40 *See* N.Y. State Dep't of Env't Conserv & NYSERDA, New York State's Disadvantaged Communities Criteria Fact Sheet (Sept. 2024) (reflecting DAC concentration in and adjacent to New York City).
41 NYSERDA, Carbon Neutral Buildings Roadmap, *supra* n.15, at 16 ("More than two-thirds of the buildings projected to be in use in New York State in 2050 are already built today."). In New York City, buildings that exist today are anticipated to constitute 90% of total buildings in the city in 2050. *See* N.Y.C. Mayor's Office of Sustainability, New York City's Roadmap to 80x50 54 (2016).
42 *See* Cal. Air Res. Bd., 2022 State Strategy For The State Implementation Plan 103 (2022) (describing potential reductions in emissions of NOx and reactive organic gases if CARB adopted GHG-based ZE standards for space and water heating equipment).
43 Press Release, Bay Area Air Quality Mgmt. Dist., Air District Strengthens Building Appliance Rules to Reduce Harmful NOx Emissions, Protect Air Quality and Public Health (Mar. 15, 2023). For more about the rules in general, see *Rules 9-4 and 9-6 Building Appliances*, Bay Area Air Quality Mgmt. Dist., https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances (last updated Apr. 13, 2026).
44 Press Release, S. Coast Air Quality Mgmgt. Dist., South Coast AQMD Approves Rule to Accelerate the Transition to Zero-Emission for Building Water Heaters (June 7, 2024).
45 *See, e.g.*, Bay Area Air Quality Mgmt. Dist., Proposed Amendments to Building Appliance Rules – Regulation 9, Rule 4: Nitrogen Oxides From Fan Type Residential Central Furnaces and Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters: Final Staff Report 1–2 (Mar. 2023) [hereinafter "BAAQMD Final Staff Report"]. *See also* Bay Area Air Quality Management District, Draft Environmental Impact Report for the Proposed Amendments to Building Appliance Rules – Regulation 9: Inorganic Gaseous Pollutants, Rule 4: Nitrogen Oxides from Fan Type Residential Central Furnaces and Regulation 9: Inorganic Gaseous Pollutants, Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters ES-2 (Dec. 2022) [hereinafter "BAAQMD Draft EIR"].
46 BAAQMD Draft EIR, *supra* n.45, at ES-9 ("The proposed amendments would result in a decrease in GHG emissions over the next 24 years. This decrease exceeds the net zero threshold of significance and would assist the state in meeting its long-term GHG reduction goals extending to 2045."); Cal. Air Res. Bd., Scoping Plan for Achieving Carbon Neutrality 215 (2022) (describing "[a]dopt[ion of] a zero-emission standard for new space and water heaters sold in California beginning in 2030, as specified in the 2022 State Strategy for the State Implementation Plan" as one of the "[s]trategies for [a]chieving [s]uccess" in driving emissions reductions in buildings sector for achievement of statewide carbon neutrality by 2045).
47 *Proposed Amended Rules (PAR) 1111 and 1121*, S. Coast Air Quality Mgmt. Dist., https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121 (last visited Apr. 7, 2026).
48 *Zero-Emission Space and Water Heating Standards*, Cal. Air Res. Bd., https://ww2.arb.ca.gov/our-work/programs/zero-emission-space-and-water-heater-standards (last visited Apr. 7, 2026).
49 Regulations developed, or under development, in California are not the only precedents that New York might consider in developing its own ZE standards. Another source the state could leverage is the model rule for space and water heating equipment developed by Northeast States for Coordinated Air Use Management (NESCAUM) and the Regulatory Assistance Project (RAP). *See* NESCAUM & RAP, Model Rule: Nox and Ghg Emissions Standards for Space and Water Heaters (v. 1.0, 2024); NESCAUM, Model Rule 1.0: Nox and Ghg Emissions Standards for Space and Water Heaters Technical Support Document (v. 1.2, 2024). RAP previously had developed a ZE model rule for water heating appliances. RAP, Model Rule: Nox Standards for Water Heaters (2023).
50 BAAQMD Draft EIR, *supra* n.45, at ES-1.
51 *See generally* Bay Area Air Quality Mgmt. Dist. Reg. 9, R. 4: Nitrogen Oxides from Natural Gas-Fired Furnaces (as amended Mar. 15, 2023); Bay Area Air Quality Mgmt. Dist. Reg. 9, R. 6: Natural Gas-Fired Boilers and Water Heaters (as amended Mar. 15., 2023).

52 This standard matches the ultra-low NOx standards for furnaces that have been in place in two other California air districts. *See* BAAQMD Draft EIR, *supra* n.45, at ES-1, ES-3.
53 Boilers and water heaters with rated heat input capacities of 400,001 to 2,000,000 BTU/Hour have been subject to an alternative limit of 20 ppm NO x at 3% O2, dry, under the prior version of Rule 9-6. Bay Area Air Quality Mgmt. Dist., Reg. 9, R. 6 § 9-6-303.3–303.4.
54 BAAQMD Final Staff Report, *supra* n.45, at 2–3, 20. *See also* Bay Area Air Quality Mgmt. Dist., FAQ About Air District Appliance Rules 2 (2023).
55 *Id.*
56 *See generally Building Appliances Implementation Working Group*, Bay Area Air Quality Mgmt. Dist., https://www.baaqmd.gov/en/community-health/building-appliances-rule-implementation/building-appliances-implementation-working-group (last updated Feb. 6, 2026). *See also* Bay Area Air Quality Mgmt. Dist., Staff Report: Informational Update Regarding Regulation 9, Rule 6 (Dec. 2024).
57 Bay Area Air Quality Mgmt. Dist., Zero NOx Building Appliance Rules Implementation Working Group (IWG) Phase 2: Rule 9-4 (furnaces) Kickoff Meeting (Oct. 23, 2025).
58 *See generally* Bay Area Air Quality Mgmt. Dist., Concepts for Rule 9-6 Amendments: Affordability and Availability Considerations for Zero NOx Small Water Heaters (Oct. 2025).
59 *See generally Proposed Amended Rule 1146.2*, S. Coast Air Quality Mgmt. Dist., https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1146-2 (last visited Apr. 28, 2026).
60 S. Coast Air Quality Mgmt. Dist. R. 1146.2: Emissions of Oxides of Nitrogen From Large Water Heaters and Small Boilers and Process Heaters (June 7, 2024).
61 S. Coast Air Quality Mgmt. Dist. R. 1146.2(d)(1), tbl. 2–3.
62 S. Coast Air Quality Mgmt. Dist., June 7, 2024 Governing Board Package 2.
63 S. Coast Air Quality Mgmt. Dist., Proposed Amended Rule 1146.2 Final Staff Report 2-7–2-11 (2024) (Appendix G to June 7, 2024 SCAQMD Governing Board Package).
64 S. Coast Air Quality Mgmt. Dist., June 7, 2024 Governing Board Package, *supra* n.62, at 4.
65 S. Coast Air Quality Mgmt. Dist. R. 1146.2(d)(1), tbl. 2–3.
66 S. Coast Air Quality Mgmt. Dist. R. 1146.2(k)(4).
67 S. Coast Air Quality Mgmt. Dist. R. 1146.2(k)(5).
68 S. Coast Air Quality Mgmt. Dist. R. 1146.2(d)(3), (e). *See also* S. Coast Air Quality Mgmt. Dist., June 7, 2024 Governing Board Package, *supra* n.62, at 2.
69 *See* S. Coast Air Quality Mgmt. Dist. R. 1146.2(i). *See also* S. Coast Air Quality Mgmt. Dist., June 7, 2024 Governing Board Package, *supra* n.62, at 2–3.
70 *See* S. Coast Air Quality Mgmt. Dist., Proposed Amended Rule 1111 and Proposed Amended Rule 1121: Public Consultation 8–12 (Mar. 6, 2025). For the first and second drafts of the proposed amendments to rules 1111 and 1121, see *Proposed Amended Rules (PAR) 1111 and 1121*, S. Coast Air Quality Mgmt. Dist., https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121.
71 S. Coast Air Quality Mgmt. Dist., June 6, 2025 Governing Board Package 2.
72 *Id.* at 2, 5.
73 *Id.* at 5.
74 S. Coast Air Quality Mgmt. Dist., Proposed Amended Rule 1111 and Proposed Amended Rule 1121: Public Consultation, *supra* n.70, at 19.

75 In addition to the short- and medium-term harms of unaddressed GHG and localized pollutant emissions (for example, on individuals' exposure to ozone and exacerbation of asthma symptoms), future harms of those same emissions (particularly GHG emissions) can be significant. *See, e.g.*, Marshall Burke, Mustafa Zahid, Noah S. Diffenbaugh & Solomon Hsiang, *Quantifying Climate Loss and Damage Consistent With a Social Cost of Carbon*, 651 Nature 959 (2026) (finding, in the context of global-scale climate loss and damage resulting from GHG emissions, that "future damages from past emissions . . . are at least an order of magnitude larger than historical damages from the same emissions").

76 S. Coast Air Quality Mgmt. Dist., Proposed Amended Rule 1111 and Proposed Amended Rule 1121: Public Consultation, *supra* n.70, at 19.

77 Alejandra Reyes-Velarde, *Air Board Rejects Smog Rules Phasing Out Gas-Powered Heaters in LA Basin*, CalMatters (June 6, 2025).

78 Despite the proposed ZE policy's GHG basis, CARB's initial commitment to developing ZE standards for appliances was part of California's 2022 State Strategy for its SIP, under the federal Clean Air Act. Cal. Air Res. Bd., 2022 State Strategy for the State Implementation Plan, *supra* n.42, at 101–03.

79 Cal. Air Res. Bd., Zero-Emission Space and Water Heater Standards Public Workshop (Dec. 11, 2025).

80 *Id.* at 8–9, 11–14.

81 *Id.* at 8, 10, 15–20.

82 *Id.* at 10.

83 *Id.* at 34–35.

84 Evergreen Action *et al.*, Comments on Zero-Emission Space and Water Heater Standard December 11, 2025 Workshop 2–4 (Jan. 21, 2026) (comments filed by Tony Sirna).

85 *See generally* N.Y. Env't Conserv. Law § 3-0301(1). State law "home rule" provisions also endow New York's local governments with many powers that can be used to combat air pollution and protect natural resources. *See generally* N.Y. Mun. Home Rule Law §§ 10(1)(ii)(a)(11)–(12) (providing that cities, towns, villages, and counties shall have powers to adopt laws pertaining to "[t]he protection and enhancement of [their] physical and visual environment," and to "[t]he government, protection, order, conduct, safety, health and well-being of persons or property therein"). New York City has been particularly active in managing sources of air pollution within its borders. For example, provisions of the city's Air Pollution Control Code regulate PM emissions by commercial cook stoves and char broilers, as well as the types of fuels that may be burned by buildings' boilers. N.Y.C. Admin Code §§ 24-149.4, 24-149.5, 24-168–24-169. More recently, New York City has tackled buildings' GHG impacts through Local Law 97, its building performance standards policy for existing buildings, and Local Law 154, which effectively requires most newly constructed buildings to be all-electric. *See generally* N.Y.C. Local Law 97 of 2019; N.Y.C. Local Law 154 of 2021. While this issue brief focuses on New York State's authority to act to set ZE standards, it is in no way intended to imply that New York City (among other New York municipalities) could not also implement ZE standards if it so chose, subject to applicable limits under state and federal law.

86 DEC is not the only New York state agency with regulatory authority pertaining to fossil fuel-consuming appliances—NYSERDA, too, has the power to set standards for how certain appliances and equipment function, pursuant to the Advanced Building Codes, Appliance and Equipment Efficiency Standards Act ("Efficiency Act"). *See* 2022 N.Y. Laws ch. 374. However, NYSERDA's Efficiency Act authority does not appear to be sufficient for the agency to propose ZE standards like those that have been adopted by BAAQMD. Fundamentally, the Efficiency Act grants NYSERDA authority in a different regulatory domain from air pollution—namely, the area of energy efficiency. *See generally* N.Y. Energy Law §§ 16-102—16-109. Rather than permitting NYSERDA to set regulations based on emissions directly, the Efficiency Act provides that NYSERDA shall set standards based on energy consumption and performance. N.Y. Energy Law §§ 16-102(18), 16-106(1). Specifically, the act allows NYSERDA to set energy efficiency standards "*in order to* . . . reduce greenhouse gas emissions associated with energy consumption . . . ." N.Y. ENERGY LAW § 16-102(18). This language appears merely to reaffirm NYSERDA's

preexisting obligation under the CLCPA to "promulgate regulations to contribute to achieving" statewide GHG emissions reductions targets, 2019 N.Y. Laws ch. 106, § 8, rather than granting it substantively new responsibilities. Even to the extent that NYSERDA has the power to regulate appliances' energy efficiency with an eye toward reducing products' climate impacts, however, the Efficiency Act does not appear to extend NYSERDA's regulatory authority over appliance energy efficiency to the space and water heating equipment covered by the BAAQMD rules. *See* N.Y. Energy Law § 16-104(1) (providing that "The provisions of this article apply to the establishment of, . . . and enforcement of efficiency standards for the following new products which are sold, or offered for sale, leased or offered for lease, . . . or installed or offered to install in New York state *unless preempting federal appliance standards are in effect* . . . .").

87 N.Y. Env't Conserv. Law § 19-0301(1)(a)–(b).

88 "Air pollution" is "the presence in the outdoor atmosphere of one or more air contaminants in quantities, of characteristics and of a duration which are injurious to human, plant or animal life or to property or which unreasonably interfere with the comfortable enjoyment of life and property throughout the state or throughout such areas of the state as shall be affected thereby . . . ." N.Y. Env't Conserv. Law § 19-0107(3). An "air contaminant" is "a dust, fume, gas, mist, odor, smoke, vapor, pollen, noise or any combination thereof." *Id.* § 19-0107(2).

89 *See, e.g.*, N.Y. Comp. Codes R. & Regs. tit. 6, pt. 227 (setting emissions standards for industrial boilers and turbines).

90 *See* N.Y. Comp. Codes R. & Regs. tit. 6, pt. 242 (regulations establishing New York's participation in the multi-state Regional Greenhouse Gas Initiative program); XXIX (43) N.Y. Reg. 18 (Oct. 24, 2007) (citing N.Y. Env't Conserv. Law § 19-0301 as source of authority for proposed Regional Greenhouse Gas Initiative rules).

91 *See., e.g.*, N.Y. Comp. Codes R. & Regs. tit. 6, pt. 247 (regulating outdoor wood boilers).

92 N.Y. Env't Conserv. Law § 75-0109(1). DEC furthermore is directed to "work with other state agencies and authorities to promulgate regulations" that support the state's achievement of the CLCPA's emissions limits. *Id.*

93 N.Y. Env't Conserv. Law § 75-0109(2)(a).

94 N.Y. Env't Conserv. Law § 75-0109(2)(c).

95 N.Y. Env't Conserv. Law § 75-0109(2)(d) (emphasis added).

96 42 U.S.C. § 7401(c) ("A primary goal of this chapter is to encourage or otherwise promote reasonable Federal, State, and local governmental actions, consistent with the provisions of this chapter, for pollution prevention.").

97 *See generally* 42 U.S.C. §§ 7410, 7416. A "stationary source" is "generally any source of an air pollutant except those emissions resulting directly from an internal combustion engine for transportation purposes or from a nonroad engine or nonroad vehicle as defined" by the Clean Air Act. 42 U.S.C. § 7602(z).

98 "Police power" authority is "the power of the [s]tate . . . to prescribe regulations to promote the health, peace, morals, education, and good order of the people, and to legislate so as to increase the industries of the [s]tate, develop its resources, and add to its wealth and prosperity." *Barbier v. Connolly*, 113 U.S. 27, 31 (1884). *See also* 20 N.Y. Jur. 2d Const. Law § 199 (summarizing New York case law defining the state's "police power").

99 *See, e.g.*, Katrina M. Wyman & Danielle Spiegel-Feld, *The Urban Environmental Renaissance*, 108 Cal. L. Rev. 305, 312–325 (2020) (discussing history of local and state regulation of environmental quality, and emergence of federal environmental law in the 1960s and 1970s). *See also, e.g.*, Alison Gocke, *Public Utility's Potential*, 133 Yale L.J. 2773 (2024) (describing central role of New York's PSC in transitioning New York City's energy supply for buildings from synthetic/coal gas to natural gas in order to abate the city's persistent smoke pollution problems).

100 *See generally* 42 U.S.C. §§ 7408, 7409.

101 *See* 42 U.S.C. §§ 7410(a). States' plans can include regulations developed by local government entities such as cities and counties with appropriate home rule authority, or special-purpose air quality districts (such as BAAQMD and SCAQMD). *Cf.* 42 U.S.C. § 7410(a)(2)(E); *see, e.g.*, 40 C.F.R. §§ 52.70(c) Table 3 (listing city and borough codes and ordinances incorporated into Alaska SIP), 52.1470(c) Tables 2–7 (listing city and county regulations incorporated into Nevada SIP), 52.2020(c)(2)–(3) (listing Philadelphia and Allegheny County regulations incorporated into Pennsylvania SIP). States' plans for areas that have failed to attain relevant NAAQSs—known as "nonattainment areas"—are subject to additional requirements. *See* 42 U.S.C. § 7502 *et seq*. Even with this programmatic overlay, however, states remain the primary regulators of existing stationary sources of air pollution within their boundaries.

102 42 U.S.C. § 7416. *See also* 40 C.F.R. § 60.10. For further discussion of states' authority to exceed federal standards, see, e.g., Heather Dadashi, *State Air Regulations Can Go Above and Beyond National Standards*, Legal Planet (Aug. 22, 2023).

103 *See* 42 U.S.C. § 7416.

104 *See, e.g.*, N.Y. Comp. Codes R. & Regs. tit. 6, pt. 203 (regulating emissions from oil and natural gas production, storage, and transmission infrastructure to address related ozone pollution); N.Y. Comp. Codes R. & Regs. tit. 6, pt. 227 (setting NOx and PM emissions standards for industrial boilers and turbines); N.Y. Comp. Codes R. & Regs. tit. 6, pt. 235 (regulating emissions of volatile organic compounds related to diverse consumer products to reduce local ozone formation).

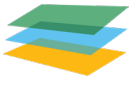
105 *See, e.g.*, N.Y. Comp. Codes R. & Regs. tit. 6, pt. 496 (setting statewide GHG emission limits for 2030 and 2050, pursuant to CLCPA); N.Y. Comp. Codes R. & Regs. tit. 6, pt. 494 (regulating phase-out of hydrofluorocarbons, due to their high global warming potential); N.Y. Comp. Codes R. & Regs. tit. 6, pt. 242 (establishing New York's participation in the multi-state Regional Greenhouse Gas Initiative program for managing power plant CO_2 emissions); N.Y. Comp. Codes R. & Regs. tit. 6, pt. 251 (setting CO_2 performance standards for new and modified electric generating facilities in the state with capacities of at least 25 megawatts).

106 *See, e.g.*, N.Y. Comp. Codes R. & Regs. tit. 6, §§ 247.5–247.6 (setting PM emission limit for residential-size and commercial-size new outdoor wood boilers, respectively); 15A N.C. Admin. Code § 2D.0504 (setting PM emission limits for wood burning indirect heat exchangers); Okla. Admin. Code § 252:100-19-10 (setting PM emission limits for "indirectly fired wood fuel-burning units" by reference to emission limits set forth at Okla. Admin. Code § 252:100 App. D).

107 30 Tex. Admin. Code § 117.3205 (2007) (setting ultra-low NOx standards for certain natural gas-fired boilers and process heaters, and low NOx standards for other natural gas-fired boilers, process heaters, and water heaters); Utah Admin Code R307-230-3 (2025) (incorporating by reference Utah Code Ann. § 15A-6-102 (setting ultra-low NOx standards for various sizes of natural gas-fired water heaters)); San Joaquin Valley Air Pollution Control Distr. R. 4902 (2009) (setting ultra-low NOx standards for natural-gas fired residential water heaters less than or equal to 75,000 Btu/hr in heat input capacity); San Joaquin Valley Air Pollution Control Dist. R. 4905 (2024) (setting ultra-low NOx standards for natural gas-fired, fan-type central furnaces with less than 175,000 Btu/hr heat input capacity); Colo. Rev. Stat. § 25-7-1504 (setting ultra-low NOx standards for certain space and water heating equipment, beginning January 1, 2026).

108 42 U.S.C. § 7416; *see also* Jack Lienke, Rachel Rothschild, Henry Engelstein & Nardos Girma, Inst. for Policy Integrity, Regulating New Fossil-Fuel Appliances Under Section 111(B) of the Clean Air Act 16 (2021).

109 *See generally* 42 U.S.C. §§ 6291–6309 (consumer appliances), §§ 6311–6317 (commercial and industrial equipment).



110 *See Rinnai America Corp. v. South Coast Air Quality Management District*, Case No. 2:24-cv-10482, 2025 WL 2427844 (C.D. Cal., July 22, 2025), *on appeal* No. 25-5129 (9th Cir., Aug. 13, 2025). Plaintiffs in *Rinnai America Corp.* based their argument on the Ninth Circuit's decision in *California Restaurant Association v. City of Berkeley*, 89 F.4th 1094 (9th Cir. 2024), reasoning that "[b]ecause NOx emissions are an inevitable byproduct of combustion," SCAQMD's rule "effectively bans the covered gas appliances," and "banning an appliance from using any energy—and thus setting its maximum energy use to zero—concerns that appliance's energy use and is therefore preempted." Pls. Mem. ISO Summary Judgment, at 1, *Rinnai America Corp. v. South Coast Air Quality Management District*, Case No. 2:24-cv-10482, Dkt. 50-1 (C.D. Cal., April 14, 2025).

111 *See* Alexandra B. Klass, *State Standards for Nationwide Products Revisited: Federalism, Green Building Codes, and Appliance Efficiency Standards*, 34 Harv. Env't. L. Rev. 335, 346–48 (2010); *see also* S. Rep. No. 100-6, at 3–4 (1987) (summarizing history of EPCA with respect to appliance standards prior to proposed legislation subsequently enacted as the National Appliance Energy Conservation Act of 1987).

112 *See* 42 U.S.C. § 6201(4). *See also* S. Conf. Rep. No. 94-516, *reprinted in* 1975 U.S.C.C.A.N. 1956, 1957; *Nat. Res. Def. Council v. Abraham*, 355 F.3d 179, 185 (2d Cir. 2004).

113 42 U.S.C. §§ 6292(a)(3)–(5), (8), (10), (11); 6295(d)–(h); 6311(1)(B)–(D), (J), (K); 6313(a).

114 42 U.S.C. § 6291(4).

115 42 U.S.C. § 6291(5).

116 42 U.S.C. §§ 6291(1)–(2) (defining "consumer product" and "covered product"), 6311(1)–(2) (defining "covered equipment" and "industrial equipment").

117 *See* 42 U.S.C. §§ 6297, 6316 (preempting certain forms of state regulation with respect to covered consumer products and covered industrial equipment, respectively, where the federal Department of Energy has set energy conservation standards for those appliances and pieces of equipment). EPCA's model of federalism, which tends to diminish state and local authority in the relevant regulatory fields, has been subject to scholarly criticism, since many of its theoretical justifications are weak. *See generally* Klass, *State Standards for Nationwide Products Revisited*, *supra* n.111.

118 *See generally* 42 U.S.C. §§ 6297(c), 6316(a)–(b).

119 42 U.S.C. § 6297(c).

120 EPCA's current preemption language as to state energy efficiency standards evidently is intended to continue the effect of the statute's prior provision generally preempting "State laws on appliance efficiency." *See* S. Rep. No. 100-6, supra n.111, at 3, 9 ("New section 327(c) states that on the effective date for each Federal energy conservation standard, that standard preempts State regulation, *as provided under current law*."). Congress's changes to EPCA's preemption regime in 1987—which included formulating the preemption language quoted herein, as well as adding or modifying related provisions—appear mainly to have been aimed at reducing the federal Department of Energy's ability to grant states waivers from preemption, thus reversing the trend toward "a growing patchwork of differing State regulations which would increasingly complicate [manufacturers'] design, production and marketing plans," which resulted from the department's liberal policy of granting states' waiver requests. *Id.* at 4; *see also id.* at 2, 9–10.

121 42 U.S.C. § 6297(c)(1), (3). States and localities also may enforce appliance efficiency regulations for which they have been granted waivers by the Department of Energy. 42 U.S.C. § 6297(c)(2).

122 *See* 42 U.S.C. § 6297(c); *see also California Rest. Ass'n v. City of Berkeley*, 89 F.4th 1094, 1103 (9th Cir. 2024) ("[T]he breadth of EPCA's preemption provision 'does not mean the sky is the limit.' . . . For instance, our holding here has nothing to say about a State or local government regulation of a utility's distribution of natural gas to premises where covered products might be used.").

123 Prior to *California Restaurant Association v. City of Berkeley*, no appellate opinion had directly addressed the possible breadth of section 6297(c)'s preemptive scope. Prior appellate precedents concerned only the scope of preemption under section 6297(a) (related to appliance labeling), and the application of two of the seven prongs of EPCA's test for exempting building code regulations from preemption. *See Air Conditioning & Refrigeration Inst. v. Energy Res. Conserv. & Dev. Comm'n*, 410 F.3d 492 (9th Cir. 2005); *Bldg. Indus. Ass'n of Washington v. Washington State Bldg. Code Council*, 683 F.3d 1144 (9th Cir. 2012). At the district court level, there only was one other relevant case, concerning a challenge to Albuquerque, New Mexico's building code. *See Air Conditioning, Heating & Refrigeration Inst. v. City of Albuquerque*, No. CIV. 08-633MV/RLP, 2008 WL 5586316 (D.N.M. Oct. 3, 2008); *Air Conditioning, Heating & Refrigeration Inst. v. City of Albuquerque*, 835 F. Supp. 2d 1133 (D.N.M. 2010).

124 By contrast, there has been tension between state and local attempts at regulating the GHG emissions impacts of motor vehicles and federal fuel efficiency standards for them. *See Metro. Taxicab Bd. of Trade v. City of New York*, 615 F.3d 152 (2d Cir. 2010) (holding that New York City regulations encouraging hybrid vehicle adoption by taxicab operators, through preferential lease caps, were preempted by federal fuel efficiency regulations pursuant to EPCA); *but see Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295, 354 (D. Vt. 2007) (Vermont regulations of new motor vehicle GHG emissions, mirroring California regulations that had been granted EPA waiver, were not preempted by EPCA, because "[n]othing in EPCA or its legislative history indicates that Congress intended to displace emission regulation by California that would have an effect on fuel economy; on the contrary, the legislative history is quite clear that Congress expected NHTSA to take such regulations into consideration."), *and Central Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151, 1176 (E.D. Cal. 2007, corrected Mar. 26, 2008) (holding EPA-approved California GHG emission standards for new motor vehicles not preempted by EPCA, and stating that "State laws that are granted waiver of preemption under the Clean Air Act that have the effect of requiring even substantial increases in average fuel economy performance are not preempted where the required increase in fuel economy is incidental to the state law's purpose of assuring protection of public health and welfare under the Clean Air Act.").

125 *California Rest. Ass'n*, 89 F.4th 1094, 1098–99 (9th Cir. 2024) This opinion amended and superseded the opinion reported as *California Rest. Ass'n v. City of Berkeley*, 65 F.4th 1045 (9th Cir. 2023).

126 *Cf. California Rest. Ass'n*, 89 F.4th at 1125–26 (Friedland, J. dissenting from denial of rehearing en banc).

127 *Ass'n of Contracting Plumbers of City of New York, Inc. v. City of New York*, No. 23-CV-11292 (RA), 2025 WL 843619 (S.D.N.Y. Mar. 18, 2025), *on appeal* No. 25-977 (2d Cir. Apr. 21, 2025); *Mulhern Gas Co. v. Mosley*, 798 F. Supp. 3d 304 (N.D.N.Y. 2025), *on appeal* No. 25-2041 (2d Cir. Aug. 25, 2025); *Rivera v. Anderson*, 2:24-cv-677, 2025 WL 606212 (W.D. Wash. Feb. 25, 2025), *on appeal* No. 25-2134 (9th Cir. Apr. 2, 2025); *Colorado Apartment Ass'n v. Ryan*, 1:24-cv-1093, 2025 WL 947531 (D. Colo. Mar. 28, 2025); *Rest. Law Ctr. v. City and County of Denver*, Case No. 24-cv-01862-PAB-KAS, 2025 WL 2652871 (D. Colo. Sept. 16, 2025); *Nat'l Ass'n of Home Builders of the United States v. Montgomery County*, Case No. 8:24-cv-3024, 2026 WL 817322 (D. Md. Mar. 25, 2026); *Nat'l Ass'n of Home Builders of the United States v. District of Columbia*, Case No. 1:24-cv-2942, 2026 WL 837674 (D.D.C. Mar. 26, 2026); *Maryland Bldg. Indus. Ass'n, Inc. v. McIlwain*, Case No. 8:25-cv-113, 2026 WL 946235 (D. Md. Apr. 2, 2026). *See also Elizabeth Condominium Ass'n, Inc. v. Montgomery County*, Case No. 8:25-cv-1019 (D. Md. Mar. 27, 2025); *Clean Energy Choice Coal., NFP v. Village of Oak Park*, Case No. 1:25-cv-4353 (N.D. Ill. Apr. 22, 2025); *United States v. City of Morgan Hill*, Case No. 5:26-cv-56 (N.D. Cal. Jan. 5, 2026); *United States v. Township of Morris*, Case No. 2:26-cv-3412 (D.N.J. Mar. 31, 2026).

128 *Rinnai America Corp. v. S. Coast Air Quality Mgmt. Dist.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *5– *7 (C.D. Cal. July 22, 2025).

129 *California Rest. Ass'n*, 89 F.4th at 1101 ("[W]e conclude EPCA preempts building codes like Berkeley's Ordinance that ban natural gas piping within new buildings. Our holding here is limited. We conclude only that EPCA applies to building codes and that Berkeley's Ordinance falls with the Act's preemptive scope."). *See also Rinnai America Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *6 ("[T] the basis for the CRA court's limited holding – and the Ninth Circuit's primary concern – was that the Berkeley building code imposed a complete physical impediment to the use of gas for covered appliances in buildings where the gas lines were already there."). The *CRA* panel characterized Berkeley's limitation on gas piping as a "building code" regulation seemingly because it regulated an aspect of internal building design and construction. *See California Rest. Ass'n*, 89 F.4th at 1098, 1101–1103. The *CRA* panel stated that the Berkeley ordinance's status as a "building code" regulation generally placed it within a category of regulations that EPCA explicitly contemplates as being preemptible, *id.* at 1101–1102, and the panel appears to have been unable to identify any grounds for exempting the regulation from EPCA's preemption bar. *Id.* at 1102–1103. Whether the *CRA* panel validly characterized Berkeley's limitation on gas piping as a "building code" regulation, however, is not clear on the face of the opinion. As a formal matter, Berkeley's gas piping regulation was enacted as an addition to Berkeley's health and safety code, not its building code. *See* Berkeley, Cal. Ord. No 7672-N.S. § 1 (2019), *codified at* Berkeley Mun. Code ch. 12.80, *repealed by* Berkeley, Cal. Ord. No. 7907-N.S. (2024).

130 *Cf. Rinnai America Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *6 ("The SCAQMD Rule is not a building code . . . .").

131 EPCA does not define "building code for new construction," unlike other key terms used in the statute such as "energy," "energy use," and "energy efficiency." *See* 42 U.S.C. § 6291. In legislation passed shortly after the initial version of EPCA was enacted, Congress defined a "building code" as "a legal instrument which is in effect in a State or unit of general purpose local government, the provisions of which must be adhered to if a building is to be considered to be in conformance with law and suitable for occupancy and use." 42 U.S.C. § 6832(3). The term "building code" generally is understood to encompass a bundle of requirements that pertain to the construction of new or newly renovated structures, rather than an individual legal provision that may affect an aspect of how a building is designed, assembled, or managed. *See, e.g.*, Congressional Research Service, Building Codes, Standards, and Regulations: Frequently Asked Questions 2–4 (2025); *see also, e.g.*, Fed. Emergency Mgmt. Agency, FEMA P-2325, Building Codes Toolkit For Homeowners And Occupants fwd. (2023) ("Building codes, in general, refer to sets of requirements governing the design, construction, alteration, maintenance and use of buildings. They specify the minimum requirements to adequately safeguard building occupants' health, safety and welfare.").

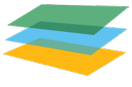
132 *See Rinnai America Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *5– *7.

133 *See, e.g., Rates Tech. Inc. v. Speakeasy, Inc.*, 685 F.3d 163, 173–74 (2d Cir. 2012) ("[O]ur court is not bound by the holdings—much less the dicta—of other federal courts of appeal.").

134 *Ass'n of Contracting Plumbers of City of New York, Inc. v. City of New York*, Case No. 23-CV-11292, 2025 WL 843619, at *4 (S.D.N.Y. Mar. 18, 2025); *see also Mulhern Gas Co. v. Mosley*, 798 F. Supp. 3d 304, 325–26 (N.D.N.Y. 2025).

135 *Rinnai Am. Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *6 ("The Rule addresses the pollution appliances emit and not their energy use. It says nothing about the quantity of gas an appliance may use. Nor does its application depend on an appliance's efficiency or energy use. To the contrary, the Rule regulates appliances' NOx emissions in order to address air pollution issues and the health risks associated with the combustion of natural gas.").

136 The district court in *Rinnai America Corp.* acknowledged this was the practical effect of SCAQMD's water heater rules. *Rinnai Am. Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *4 ("The Court agrees with Plaintiffs that the Rule, by prohibiting NOx emissions, effectively bans the use of covered gas fueled boilers and water heaters.").
137 *Ass'n of Contracting Plumbers*, Case No. 23-CV-11292, 2025 WL 843619 at *5 (citing *California Rest. Ass'n*, 89 F.4th at 1121–25 (Friedland, J. dissenting from denial of rehearing en banc)). *See also Mulhern Gas Co. v. Mosley*, 798 F. Supp. 3d at 326, 327.
138 *Ass'n of Contracting Plumbers*, Case No. 23-CV-11292, 2025 WL 843619 at * 6.
139 42 U.S.C. §§ 6295(o)(4), 6297(d)(4). *See also Mulhern Gas Co. v. Mosley*, 798 F. Supp. 3d at 327–28.
140 *Rinnai Am. Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *6.
141 Courts typically describe statutes' use of terms like "concerning," "relating to," and "regarding" as broadening the scope of preemption clauses. *See Ass'n of Contracting Plumbers*, Case No. 23-CV-11292, 2025 WL 843619 at *5.
142 *Metro. Taxicab Bd. of Trade v. City of New York*, 615 F.3d 152 (2d Cir. 2010).
143 *Metro. Taxicab Bd. of Trade*, 615 F.3d at 156. (quoting *Cal. Div. of Labor Standards Enforcement v. Dillingham Constr., N.A., Inc.*, 519 U.S. 316, 324–25 (1997)). *See also Ass'n of Contracting Plumbers*, Case No. 23-CV-11292, 2025 WL 843619, at *5–*7 (applying substantially the same test). Note that whether "concerning" has the same meaning as the phrase "related to" is not consistently explained in relevant preemption case law, and it is possible that "concerning" conveys a *narrower* scope of preemption than "related to." *Id.* at *5.
144 *See* BAAQMD Rule 9-4, § 9-4-401.3 (referencing annual fuel utilization efficiency, as determined according to federal test procedures set forth at 10 C.F.R. pt. 430, subpt. B, App. N, as part of denominator of formulas to calculate covered furnaces' NOx emission rates); BAAQMD Rule 9-6, § 9-6-601.4 (referencing recovery efficiency as measured through federal test procedures set forth at 10 C.F.R. pt. 430, subpt. B, App. E, as part of denominator of formula to calculate covered boilers' and water heaters' NOx emission rates).
145 *See Ass'n of Contracting Plumbers*, Case No. 23-CV-11292, 2025 WL 843619, at *6–*7. *Mulhern Gas Co. v. Mosley*, 798 F. Supp. 3d at 326, 327.
146 *Metro. Taxicab Bd. of Trade*, 615 F.3d at 158.
147 *Cf. Rinnai Am. Corp.*, Case No. 2:24-cv-10482, 2025 WL 2427844, at *6 ("Nor does its application depend on an appliance's efficiency or energy use. To the contrary, the Rule regulates appliances' NOx emissions in order to address air pollution issues and the health risks associated with the combustion of natural gas. The Rule does not implicate any of the issues the EPCA was intended to address – it does not create inconsistent state efficiency standards, require that consumers use appliances with higher efficiency standards, or force manufacturers to meet standards different than those set by the DOE.").
148 *See id.* at *6–*7. For similar reasons, ZE standards also should not fail the likely second test for preemption under EPCA - namely, whether they have "connections with the preempted subject matter." *Metro. Taxicab Bd. of Trade*, 615 F.3d at 157 n.4. As already explained, ZE standards regulate a different subject matter than EPCA (emissions, not efficiency), and simply assume appliances' compliance with federal efficiency standards. Thus, they do not have a clear tie to Congress's objectives for appliances under EPCA, nor do they resemble the types of state regulations Congress clearly intended to preempt. *Cf. Maryland Bldg. Indus. Ass'n, Inc. v. McIlwain*, Case No. 8:25-cv-113, 2026 WL 946235, at *12–*17 (D. Md. Apr. 2, 2026) (finding GHG emissions-based building performance standards regulation did not have "connection with" EPCA's appliance efficiency objectives, and thus was not preempted).
149 N.Y. Pub. Serv. Law § 66-p(2).



150 Recent research suggests, however, that even if electricity grids do not decarbonize to a greater degree than they have to date, wide-scale deployment of air source heat pumps (ASHPs) in residential settings nonetheless can result in net reductions of GHG emissions from residential buildings because of ASHPs' superior efficiency relative to fossil fuel-fired space heating equipment, electric resistance space heating equipment, and one-way air conditioning units. Eric J. H. Wilson, Prateek Munankarmi, Brennan D. Less, Janet L. Reyna & Stacey Rothgeb, *Heat Pumps for All? Distributions of the Costs and Benefits of Residential Air-Source Heat Pumps in the United States*, 8(4) Joule 1000 (2024); *see also NYC's Electricity Supply*, Urban Green Council, https://www.urbangreencouncil.org/what-we-do/explore-nyc-building-data-hub/nycs-electricity/ (reporting that, "even with NYC's current fossil-fuel-dominated grid, heat pump retrofits will reduce GHG emissions for most buildings"). However, "dirty" grid scenarios diminish potential GHG and co-pollutant emission reductions in New York, relative to grid scenarios that rely substantially less (or do not rely at all) on fossil fuel power plants. *See* NESCAUM & OTC, Residential Building Electrification In the Northeast and Mid-Atlantic, *supra* n.13, at 34, 36, 38–39, 43.

151 NESCAUM & OTC, Residential Building Electrification In the Northeast and Mid-Atlantic, *supra* n.13, at 31–32; NYSERDA, New York's Carbon Neutral Buildings Roadmap, *supra* n.15, at 62–63. *See also* N.Y.C. Mayor's Office of Climate & Env't Justice, PowerUp NYC: Grid Readiness: Creating A Clean, Climate Resilient, and Reliable Energy Grid 12–14 (2023) (discussing projected shift from summer to winter peak in NYC electricity demand).

152 *Grid Capacity Remains High for More Heat Pumps*, Urban Green Council, https://www.urbangreencouncil.org/what-we-do/explore-nyc-building-data-hub/grid-capacity-for-heat-pumps/ (last visited March 29, 2026).

153 NYSERDA, New York's Carbon Neutral Buildings Roadmap, *supra* n.15, at 63–64; *see also* Michael Waite & Vijay Modi, *Electricity Load Implications of Space Heating Decarbonization Pathways*, 4(2) Joule 376 (2020).

154 *See* Jaime Garibay-Rodriguez, Morgan R. Edwards, Ann F. Fink & Zeyneb Magavi, *Effects of Uncoordinated Electrification on Energy Burdens for Natural Gas Customers*, 15 Sci. Reps. 27337 (2025) (finding, within "a modeling framework to assess the affordability impacts of uncoordinated fossil fuel transitions," that "per customer costs of natural gas in Massachusetts could increase over the next 15 years by 9% with planned pipeline replacements, 43% with building electrification, and 60% under both policies (absent other policy changes)").

155 *See* N.Y. Env't Conserv. Law §§ 75-0109(3)(a), (c)–(d).

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