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90.1 Standing Standards Project Committee

c/o ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.)

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January 27, 2025

Re: Proposed Addendum bi to ANSI/ASHRAE/IES Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings (This addendum modifies the metric from energy cost to site energy when determining compliance with the Appendix G Performance Rating Method.)

ASHRAE 90.1 Standing Standards Project Committee:

These comments are filed by the American Gas Association (“AGA”) in response to the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (“ASHRAE”) request for public comment on Addendum: BSR/ASHRAE/IES Addendum bi (“Addendum bi”) to ANSI/ASHRAE/IES Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings (“ASHRAE 90.1”).

AGA, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 78 million residential, commercial, and industrial natural gas customers in the U.S., of which 95 percent – more than 74 million customers – receive their gas from AGA members. AGA advocates for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies,

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and industry associates. Today, natural gas meets more than one-third of the United States' energy needs.¹

As discussed in more detail below, AGA has grave concerns that Addendum bi contradicts ASHRAE 90.1's stated purpose of energy efficiency, violates the independent and unbiased requirements established for voluntary standard developers, is anticompetitive, and is preempted by federal and state laws.

Appendix A includes Addendum bi. AGA does not support approval of Addendum bi and recommends its disapproval.

ASHRAE 90.1

ASHRAE 90.1 is an *energy code* that belongs to the larger family of *building codes*. Broadly, *building codes* protect public health, safety, and general welfare in the construction and occupancy of buildings. *Building codes*, among other topics, may address structure, parking and traffic, rules to minimize the risk of fire, installation methodologies, and requirements for specific use.² An *energy code* is a type of *building code* that addresses all parts of the building that consume energy or contribute to the consumption of energy.³

The Energy Conservation and Production Act ("ECPA"), which directs the federal Department of Energy and the states to review ASHRAE 90.1, makes clear that the purpose of incorporating the standard into the statute is to provide for "voluntary performance standards for . . . buildings *which are designed to achieve the maximum practicable improvements in energy efficiency.*"⁴ ASHRAE 90.1's scope is thus limited, by statute, to promoting "improvements in energy efficiency."

¹ For more information, please visit www.aga.org.

² Congressional Research Service, *Building Codes, Standards, and Regulations: Frequently Asked Questions* (Updated November 22, 2023).

³ Listoken, D, Hattis D, *Building Codes and Housing*, Cityscape: A Journal of Policy Development and Research, Vo. 8, No. 1 (2005) U.S. Dept. of Housing and Urban Development, Office of Policy Development and Research.

⁴ 42 U.S.C. § 6831(b)(2) (emphasis added).

Addendum bi contravenes the originally stated scope, mission and objective of ASHRAE 90.1, which was intended to be fuel neutral.

Greenhouse Gas Reduction Measures, Electric-Ready Requirements, and Full Fuel Cycle Analysis

The “EPA has determined that source energy is the most equitable unit of evaluation for comparing different buildings to each other. Source energy represents the total amount of raw fuel that is required to operate the building. It incorporates all transmission, delivery, and production losses. By taking all energy use into account, the score provides a complete assessment of energy efficiency in a building.”⁵ *Appliance efficiency* and *energy consumption* must be measured at the site, but when *comparing* energy sources or evaluating the *cost*, source energy and full fuel cycle analysis must be used.

Full-fuel-cycle energy is the total energy consumed by an appliance, system, or building. It includes energy consumed in the extraction, processing, and transport of primary fuels such as coal, oil, natural gas; energy losses in thermal combustion in power-generation plants and the energy associated with electric generation from hydroelectric power plants, wind, solar, and other sources; and energy losses in transmission and distribution to the building site. Full-fuel-cycle, therefore, includes the total energy consumption and energy saving of end-use energy decisions.

In 2011, the DOE issued a “Statement of Policy for Adopting Full-Fuel-Cycle Analyses into Energy Conservation Standards Program,” which states that DOE will use full-fuel-cycle measures of energy use and emissions when evaluating energy conservation standards for appliances, following the recommendation of the National Academy of Sciences.⁶ By the same logic, full-fuel-cycle analysis should be applied to the GHG emission reduction resources. This approach aligns with the ASHRAE Board of Directors publicly stated goal that “all new and

⁵ See

https://www.energystar.gov/buildings/benchmark/understand_metrics/source_site_difference.

⁶ 76 Fed. Reg. 51281 (Aug. 18, 2011).

existing [buildings] must have *net zero GHG emissions across their whole life cycles*" by 2050.⁷

Decreasing only on-site conventional fuel-generated energy consumption of buildings would not increase the overall energy efficiency of the buildings and would not result in a reduction of GHG emissions. Exchanging conventional fuel-generated energy for reliance on the electric grid, which may still be generating energy with conventional fuels, does not necessarily lead to a reduction in GHG emissions. As ASHRAE's own Board has recognized, any attempts to include GHG emission reductions in Standard 90.1 must be measured on a full fuel cycle analysis.

ASHRAE Must Follow Due Process Principles Fundamental to Proper Model Consensus Code Development

ASHRAE is an American National Standards Institute (“ANSI”) accredited standard development organization (“SDO”) that develops technical and specialized standards. Under both ANSI requirements and federal guidelines, a voluntary consensus standard or code making body is defined by the following attributes:

- (i) “Openness
- (ii) Balance of interest
- (iii) Due process
- (iv) An appeals process
- (v) Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties . . .”^{8,9}

⁷ *ASHRAE Position Document on Building Decarbonization*, June 26, 2022, at 2 (emphasis added).

⁸ Off. Mgt. Budget, Circular A-119: Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 81 Fed. Reg. 4,673 (2016). Available at https://www.whitehouse.gov/wp-content/uploads/2020/07/revised_circular_a-119_as_of_1_22.pdf.

⁹ ANSI *Essential Requirements: Due Process Requirements for American National Standards* (January 2024). Available at:

These principles are the basic structural requirements for a standard or code to be incorporated into federal law.¹⁰ They are also essential requirements for an ANSI certified SDO.¹¹

In conflict with OMB A-119's and the ANSI Essential Requirements "balance" test, ASHRAE has repeatedly departed from the ANSI SDO tenet that it be an unbiased administrator of code and standard development processes by taking policy positions unrelated to energy efficiency and unilaterally requiring that those policy positions be implemented through ASHRAE's administrator activities:

- "ASHRAE Applauds National Definition of Zero Emissions Building" (June 6, 2024)¹²
- "ASHRAE Press Releases Supporting ASHRAE's Reaffirmed Commitment to GHG Reduction within the Global Build Environment"¹³
 - "ASHRAE Expands Commitment to Reduce Greenhouse Gas Emissions by Releasing Building Performance Standards Guide and Redesigned Decarbonization Webpage" (Feb. 3, 2024)
 - "ASHRAE and Building Industry Organizations Assume Leadership Role in Global Decarbonization Efforts" (Nov. 8, 2022)
 - "ASHRAE and the International Code Council to Co-sponsor Whole Life Carbon Approach Standards (Aug. 30, 2022)
 - "2022 Building Performance Analysis Conference to Focus on Better Buildings, Less Carbon" (Jul. 15, 2022)

https://share.ansi.org/Shared%20Documents/About%20ANSI/Current_Versions_Proc_Docs_for_Website/ER_Pro_current.pdf.

¹⁰ See 42 U.S.C. § 6832(14) (defining "voluntary building energy code," including those developed by ASHRAE, to be those updated "through a consensus process among interested persons").

¹¹ *Id.* at FN 6, 7.

¹² Available at <https://www.ashrae.org/about/news/2024/ashrae-applauds-the-national-definition-of-a-zero-emissions-building>.

¹³ Available at <https://www.ashrae.org/about/ashrae-reaffirms-net-zero-energy-goals>.

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- “ASHRAE Commits to Broad Building Decarbonization Initiatives in New Position Document” (July 12, 2022)

Each of these press releases demonstrate a clear bias against specific energy sources and a commitment to eliminate the use of natural gas in commercial buildings through ASHRAE 90.1.

Indeed, ASHRAE makes its intent to impose its policy preferences through Addendum bi clear in the Public Review Draft on which this letter comments. In the Foreword of that document, ASHRAE states:

*Use of site energy as the metric better supports ASHRAE and SSPC goals of net zero operational energy emission buildings.*¹⁴ [PLEASE PROVIDE URL]

(Emphasis in original.)

ASHRAE is well aware that it is prohibited by law and ANSI procedures from endorsing products and designs. The Public Review Draft states:

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedures, or design, and ASHRAE expressly disclaims such.¹⁵

Yet, by not considering the emissions from source to site, including extraction, processing, and transport of primary energy forms such as coal, oil, natural gas, and nuclear fuel, energy consumed in conversion to electricity in power-generation plants, and energy consumed in transmission, and distribution to the building site, ASHRAE is intentionally biasing the ASHRAE 90.1 in favor on one energy source over another and thus cannot be fuel neutral as originally intended.

ASHRAE must not be used as a conduit to affect policy change inconsistent with the energy saving goal of an *energy code* and must avoid becoming or even the appearance of being a biased forum.

¹⁴ Available at: [PLEASE PROVIDE URL]

¹⁵ *Id.*

The inclusion of Addendum bi is an obstacle to the accomplishment and execution of the original purpose of ASHRAE 90.1, in violation of A-119's principles, ANSI *Essential Requirements*, and the federal statutes by which ASHRAE 90.1 is incorporated into law.

Adhering to Due Process Code Development Principles Helps Avoid Improper Conduct by Market Participants

Codes and standards that fail to follow due process principles during their development result in an unbalanced voting process and lack of deliberation that cannot ensure transparency and openness. This, in turn, results in policy-driven guidance inconsistent with the stated scope and intent of the code or standard. It also may result in market restraints and economic burdens on underrepresented market participants and consumers.¹⁶

Codes, while only advisory, have a powerful economic influence, many of them being incorporated by reference in federal regulations and state and local laws. Codes, therefore, have immense power to do good but also have the power to frustrate competition in the marketplace.

ASHRAE 90.1 is incorporated into federal law and may be adopted by states and municipalities as legislation. Adoption may also be automatic, e.g., incorporated by reference as amended. All parties are aware that influencing the substance of

¹⁶ Non-governmental code development forums have a long history of being manipulated in pursuit of anticompetitive gains: *See, Allied Tube & Conduit Corporation v. Indian Head, Inc.*, 486 U.S. 492 (1988) (code committee members' efforts to influence the efforts of a private standard setting organization were determined to be anti-competitive); *American Soc'y of Mechanical Eng'rs, Inc. v. Hydrolevel Corp.*, 456 U.S. 556 (1982) (code development organization committee leadership advanced their economic interests by fraud and anti-competitive activity); *Radiant Burners, Inc. v. Peoples Gas Light and Coke Company*, 364 U.S. 656, (1961) (a standard that limits the marketability of a product in interstate commerce may be anticompetitive if not based on objective standards particularly when those standards are influenced by other market participants).

the code leads directly and predictably to market effects. Therefore, a proper antitrust audit and compliance program is essential.

The effect of the inclusion of provisions that are biased against certain energy sources may have an anticompetitive effect. Without such inclusion, individual builders, utilities, and other stakeholders throughout the United States would make independent, market-driven decisions to determine a building's energy sources.

Promotion of specific fuel types, energy sources, or energy pathways within the ASHRAE 90.1 base code or appendices is in conflict with ASHRAE 90.1's energy savings purposes, may be anticompetitive, and is adverse to federal policy which integrates the ASHRAE 90.1 as an *energy code*, which has the purpose of energy efficiency, into the federal regulatory framework to conserve energy.

Codes and standards-making activities can facilitate commerce and increase efficiency by increasing consumer information. However, those activities also can deprive consumers of the opportunity to make independent market decisions and inflict serious injury on competitors.

Addendum bi is Preempted by Federal and State Law

Biasing energy use analysis to site analysis alone is not only inconsistent with ASHRAE's responsibilities as an ANSI-accredited SDO and potentially anticompetitive, but also defeats substantive policies at the federal and state level which are indispensable to well-functioning energy markets, lowering greenhouse gas emissions, and addressing climate change.

Addendum bi will allow proposals to ASHRAE 90.1 that may eliminate or discourage the demand for gas appliances and thus the use of natural gas, even if the use of that fuel results in higher energy efficiency or lower greenhouse gas emissions from source to site. Such action is barred by the federal Energy Policy Conservation Act and express state legislation ensuring access to natural gas and state utility regulation.

The standard may not do indirectly what it is barred from doing directly. Knowing that direct regulation of appliances or energy sources is prohibited, it may not incorporate energy analysis, i.e. site only analysis, that is biased against certain energy sources.

Addendum bi Will Result in Code Provisions in Violation of the Energy Policy Conservation Act

Promulgating site analysis over source-to-site analysis that may eliminate energy sources is in conflict with the DOE's delegated authority to develop federal "minimum" efficiency standards for products "covered" by the Energy Policy Conservation Act of 1975 and its amendments (collectively, "EPCA").¹⁷

EPCA's energy efficiency and use regulations apply to "covered products." EPCA defines "covered products" for consumers as the types of products listed in Section 6292 of the Act.¹⁸ Section 6292 in turn lists 19 types of defined covered products, including, for example, "water heaters" and "furnaces."¹⁹ Section 6295 sets out the energy conservation standards for these covered products.

The express preemption in EPCA's consumer product regulations states that:

effective on the effective date of an energy conservation standard established in or prescribed . . . 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 unless the regulation falls within certain enumerated exceptions.²⁰

"Energy use" is defined as "the quantity of energy directly consumed by a consumer product at point of use" ²¹ "Energy" is defined as

¹⁷ Energy Policy Conservation Act of 1975 (Pub.L. 94-163, 89 Stat. 871).

¹⁸ 42 U.S.C. § 6291(2).

¹⁹ *Id.* § 6292(a).

²⁰ *Id.* § 6297(c).

²¹ *Id.* § 6291(4).

“electricity, or fossil fuels.”²²

Thus, EPCA’s consumer standards preempt state and local regulations concerning the quantity of electricity or fossil fuels consumed by appliances (including water heaters and furnaces) which are regularly sold to individuals. Similarly, EPCA also governs the energy efficiency and energy use of certain commercial and industrial appliances.²³

“Energy use,” for the purposes of the industrial standards, is defined as “the quantity of energy directly consumed by an article of industrial equipment at the point of use. . . .”²⁴ The definition of “energy” refers back to the definition in the consumer standards in Section 6291: energy is “electricity, or fossil fuels.”²⁵

A standard that is not fuel neutral and which includes a performance standard based on a biased site analysis effectively eliminates fuel sources. The U.S. Court of Appeals for the Ninth Circuit has held that building codes cannot, directly or indirectly, prohibit the use of natural gas as energy for covered products.²⁶ And the Ninth Circuit may soon not be alone: across the country, gas-restricting building codes are being challenged as violating EPCA.²⁷

As a result, EPCA preempts any application by states or municipalities of the proposed site analysis provisions of ASHRAE 90.1 or the proposals which it would permit, because these sections concern the quantity of fossil fuels consumed by EPCA-covered gas space and water heating appliances which are regularly sold for residential, commercial, and industrial use. *At a minimum,*

²² *Id.* § 6291(3).

²³ *Id.* § 6311-17.

²⁴ *Id.* § 6311(4).

²⁵ *Id.* §§6311(7), 6291(3).

²⁶ *California Restaurant Ass'n v. City of Berkeley*, 89 F.4th 1094, 1107 (9th Cir. 2024).

²⁷ *E.g., Mulhern Gas Co., Inc. et al. v. Robert J. Rodriguez et al*, No. 1:23-cv-1267 (N.D.N.Y. 2023); *Rivera v. Anderson*, No. 2:24-cv-00677-KKE (W.D. Wa. 2024); *Colo. Apartment Ass'n et al. v. Ryan*, No. 1:24-cv-01093 (D. Colo. 2024); *Restaurant Law Center, et al. v. City and County of Denver*, No. 1:24-cv-01862 (D. Colo. 2024); *Nat'l Ass'n of Home Builders v. District of Columbia*, No. 1:24-cv-02942-ACR (D.D.C. 2024) and *Nat'l Ass'n of Home Builders v. Montgomery County*, No. 8:24-cv-03024-PX (D. Md. 2024).

states and municipalities will incur lost resources spent defending adoption of the proposed site analysis provisions of ASHRAE 90.1 against a preemption challenge.

Commercial businesses and residential consumers must be able to maintain their right to choose efficient, affordable, and reliable direct use of natural gas as an energy source for their home or business. Site analysis provisions may prioritize one energy source over another. This places jurisdictions that may adopt the ASHRAE 90.1 in violation of the EPCA.

Addendum bi Will Result in Code Provisions in Violation of State Energy Choice Legislation

Twenty-six states have passed legislation to protect the right of consumers to receive access to natural gas and natural gas utility service.²⁸ These laws are expressed in variety of ways:

²⁸ [Ala. Act 2021-336](#), H.B. 446, Reg. Sess. (2021); [Ariz. Rev. Stat. Ch. 3](#), H.B. 2686, 54th Leg., 2d Reg. Sess. (2020); [Ark. Act 308](#), S.B. 137, 93rd Gen. Assemb., Reg. Sess. (2021); [Fla. Stat. Ch. 2021-150](#), H.B. 919, 123rd Leg., Reg. Sess. (2021); [Ga. Act 254](#), H.B. 150, 156th Gen. Assemb., Reg. Sess. (2021); [Idaho Sess. Laws ch. 55](#), H.B. 106, 67th Leg., Reg. Sess. (2023); [Ind. Pub. L. No. 180-2021](#), H.E.A. 1191, 122nd Gen. Assemb., 1st Reg. Sess. (2021); [Iowa H.F. 555](#), 89th Gen. Assemb., Reg. Sess. (2021); [Ky. Acts ch. 120](#), H.B. 207, 2021 Reg. Sess.; [Kan. Stat. Ann. ch. 1092](#), S.B. 24, 2021 Reg. Sess.; [La. Act No. 46](#), S.B. 492, 2020 Reg. Sess.; [Miss. Laws Ch. 345](#), H.B. 632, 2021 Reg. Sess.; [Mo. H.B. 488](#), 101st Gen. Assemb., 1st Reg. Sess. (2021); [Mont. Code Ann. § 7-1-111](#), S.B. 208, 68th Leg., Reg. Sess. (2023); [Neb. Leg. L.B. 867](#), 108th Leg., 2d Sess. (2024); [N.H. Laws Ch. 224](#), S.B. 86-FN, 2021 Reg. Sess.; [N.C. Sess. Laws 2023-58](#), H.B. 130, Gen. Assemb., Reg. Sess. (2023); [N.D. Cent. Code Ch. 11-10, H.B. 1234](#), 68th Leg. Assemb., Reg. Sess. (2023); [Ohio Rev. Code Ann. §§ 4933.40-4933.42](#), Sub. H.B. 201, 134th Gen. Assemb., Reg. Sess. (2021); [Okla. Sess. Laws Ch. 309](#), H.B. 3619 (2020); [Pa. S.B. 143](#), 2023-2024 Reg. Sess., Printer's No. 388; [S.D. Codified Laws Ch. 6-1](#), S.B. 174, 98th Leg. Sess. (2023); [Tenn. Pub. Acts Ch. 591](#), H.B. 1838, 111th Gen. Assemb., Reg. Sess. (2020); [Tex. H.B. 17](#), 87th Leg., R.S., ch. 594, § 1, 2021 Tex. Gen. Laws 594; [Utah Laws Ch. 15](#), H.B. 17. (2021); [W. Va. Code Ch. 75](#), H.B. 2842, Reg. Sess. (2021); [Wyo. Sess. Laws ch. 70](#), S.F. 152. (2021).

- Ensuring access to utility services,
- Establishing a right to energy access,
- Prohibiting discrimination based on energy source, and/or
- Prohibiting limits on the sale, distribution of, or access to natural gas.

States that have passed these energy choice statutes or similar legislation include: Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Kansas, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Utah, West Virginia, and Wyoming.

These pieces of legislation would limit, if not eliminate, the ability of these states or municipalities within them to adopt ASHRAE 90.1 with the proposed Addendum. For example, Texas's law, H.B. 17, prohibits "banning, limiting, restricting, [or] discriminating against" types or sources of energy.²⁹ In 2023, in part to avoid conflicts with H.B. 17, 82% of voters in El Paso, Texas rejected a measure that would have set ambitious "renewable energy goals" that aimed to exclude access to certain energy sources and left natural gas and other fuels behind.³⁰ Like those in El Paso, residents and policy makers in the twenty-six states listed above will not be able to reconcile a building code that indirectly restricts natural gas use with a statute that mandates access to that resource.

²⁹ Tex. Util. Code § 181.903(b) (effective May 18, 2021).

³⁰ Diego Mendoza-Moyers, EL PASO MATTERS, *El Paso Voters Soundly Reject Proposition K Climate Charter*, May 6, 2023, <https://elpasomatters.org/2023/05/06/proposition-k-election-results-el-paso-climate-charter-may-6/>.

Moreover, a national consensus code developed under the due process principles noted above cannot be either reasonable or consensus based if it is in conflict with legislation and the express public policy of twenty-six of the fifty states.

Addendum bi would aim to achieve indirectly what these states have explicitly prohibited.

Addendum bi Will Result in Code Provisions in Violation of State Utility Regulation

Most states regulate utilities through a public service commission (“PSC”), which is authorized to administer the regulatory scheme designed by the legislature to ensure that public utilities provide safe, reliable, non-discriminatory service at reasonable cost. Statutes creating Public Service Commissions set forth a clear legislative policy to place the regulation of public utilities under state control for the public good.

When exercising this authority, the PSC balances the public’s needs for access to reliable, efficient and reasonable service (i.e., for gas, electric, water) against the utility’s need for sufficient revenue to meet to cost of furnishing service and to earn a reasonable rate of return on their investment to serve the community. The public utility “is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public.”³¹

Utility rates are set forth in tariffs which are approved by the PSC of the state in which the utility is located. The ratemaking process is an inclusive process wherein consumer advocates and the public have an opportunity to participate and comment on how utilities run their systems.

³¹ *Bluefield Waterworks & Imp. Co. v. Pub. Serv. Comm’n of W. Va.*, 262 U.S. 679, 692 (1923).; *see also* *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S., 591, 603 (1944) (well-established law provides that a utility has the right to recover its reasonable operating expenses and to earn a reasonable rate of return on its invested capital).

Two goals of the regulatory compact are to ensure that customers have access to reliable and affordable service, and that utilities are able to continue to provide that service at reasonable cost.

On the flip side of the regulatory compact is the right of customers to demand gas service. Put simply, "public utilities . . . are under a state statutory duty to serve the public."³² Gas utilities' duty to serve is mandatory: if customers ask for it, "the [utilities] must comply."³³

Inclusion of Addendum bi is in conflict with and would thwart the regulatory compact and the utilities' duty to serve. The customers' right to receive service from utilities that provide a gas energy source. This would eliminate or reduce the utilities' number of customers. The dwindling number of customers able to receive service would in turn diminish the utility's rate base outside of the PSC rate making process.

Ultimately, if Addendum bi is adopted, states will be left in an impossible situation: update their codes to meet the revised Standard 90.1 and undermine the regulatory compact and the duty to serve *or* uphold the regulatory compact and duty to serve while potentially violating the mandates of ECPA.

ECPA, the regulatory compact, and the duty to serve can exist harmoniously as written. But the proposed Addendum would upset that balance.

Conclusion

AGA respectfully requests that the 90.1 Standing Standards Project Committee consider these comments and implement Addendum bi as recommended in Appendix A to these comments.

³² *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 307 (1989).

³³ *Bd. of Pub. Util. Comm'rs v. New York Tel. Co.*, 271 U.S. 23, 31 (1926).

AGA also requests that the ASHRAE respond to these comments in writing and provide a reasoned basis for its determination that the Addendum bi has a direct tie to building energy savings that is not biased against fuel sources of energy.

Further, AGA requests that the ASHRAE Board immediately implement a written code development procedural system consistent with due process requirements and that help ensure that the process itself does not become suborned by market interested parties seeking to reach improper ends that may be both anticompetitive and in violation of federal and state laws. This would include a robust antitrust compliance program and a conflict of interest disclosure policy for the ASHRAE Board and ASHRAE 90.1 Standing Standard Project Committee members.

AGA is ready to present additional support for these comments upon request.

Dated: January 27, 2025, at Washington, District of Columbia.

Respectfully submitted,

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Appendix A – AGA Recommends Disapproval of Addendum bi to 90.1-2022:

baseline building performance: the annual ~~energy cost~~ site energy use for a *building* design intended for use as a baseline for rating above-standard design or when using the *Performance Rating Method* as an alternative path for minimum standard compliance in accordance with Section 4.2.1.1.

proposed building performance: the annual ~~energy cost~~ site energy use calculated for a *proposed design*.

Revise Section 4 as follows:

4.2 Compliance

4.2.1 Compliance Paths

4.2.1.1 New Buildings. New *buildings* shall comply with Section 4.2.2 through 4.2.5 and either the provisions of

- a. Sections 5, “Building Envelope”; 6, “Heating, Ventilating, and Air Conditioning”; 7, “Service Water Heating”; 8, “Power”; 9, “Lighting”; 10, “Other Equipment”; and 11, “Additional Efficiency Requirements,” or
- b. Section 12, “Energy Cost Budget Method,” or
- c. Normative Appendix G, “Performance Rating Method.”

When using Normative Appendix G, ~~the Performance Cost Index (PCI)~~ of for new buildings, additions to existing buildings, and/or alterations to buildings, the following requirements shall be met less than or equal to the Performance Cost Index Target (PCI_t) when calculated in accordance with the following:

The Site Performance Energy Index (PEI_{site}) shall be less than or equal to the Site Performance Energy Index Target (PEI_{site,t}) calculated in accordance with this Section. Site energy shall be determined using the site

energy conversion factors provided in Table 4.2.1- 2. Conversion factors for energy sources not included in Table 4.2.1-2 shall be approved by the rating authority.

The Site Performance Energy Index Target (PEI_{site,t}) is calculated as follows:

$$PCEI_{site,t} = [BBUECU + (BPF \times BBRECU) - PRE] / BBP$$

where

PCEI_{site,t} = Site Performance Cost Energy Index Target calculated in accordance with Section G1.2.2

BBUECU = *baseline building design unregulated site energy cost use*, the portion of the annual *site energy cost use* of a *baseline building design* that is due to *unregulated energy use*

BPF = *building performance factor* from Table 4.2.1.1. For *building area types* not listed in Table 4.2.1.1, use “All others.” Where a *building* has multiple *building area types*, the required BPF shall be equal to the area-weighted average of the *building area types* based on their *gross floor area*. Where a project includes an *existing building* and an *addition*, the required BPF shall be equal to the area-weighted average, based on the *gross floor area*, of the *existing building* BPF determined as described in Section 4.2.1.3 and the *addition* BPF from Table 4.2.1.1.

BBRECU = *baseline building design regulated site energy cost use*, the portion of the annual *site energy cost use* of a *baseline building design* that is due to *regulated energy use*

PRE = $PBP_{nre} - PBP_{pre}$

PBP = *proposed building performance*, including the reduced, annual *purchased energy cost use* associated with all *on-site renewable energy generation systems*

- PBP_{nre} = *proposed building performance* without any credit for reduced annual *energy costs* use from *on-site renewable energy generation systems*
- PBP_{pre} = *proposed building performance*, excluding any renewable *energy system* in the *proposed design* and including an *on-site renewable energy system* that meets but does not exceed the requirements of Section 10.5.1.1 modeled following the requirements for a *budget building design* in Table 12.5.1, row 15
- BBP = *baseline building performance*

~~Regulated energy cost shall be calculated by multiplying the total energy cost by the ratio of regulated energy use to total energy use for each fuel type. Unregulated energy cost shall be calculated by subtracting regulated energy cost from total energy cost.~~

When $(PBP_{pre} - PBP)/BBP > 0.05$, new *buildings*, *additions to existing buildings*, and/or *alterations to existing buildings* shall comply with the following:

$$\underline{PCEI_{site}} + [(PBP_{pre} - PBP)/BBP] - 0.05 < \underline{PCEI_{site,t}}$$

Informative Notes:

1. PBP_{nre} = *proposed building performance*, no renewable *energy*.
2. PBP_{pre} = *proposed building performance*, prescriptive renewable *energy*.
3. PRE = prescriptive renewable *energy*.
4. See Informative Appendix I for using other metrics, including *site energy*, *source energy*, and carbon emissions, in conjunction with the Normative Appendix G *Performance Rating Method* when approved by the *rating authority*.

Table 4.2.1.1 Building Performance Factor (BPF)

Building Area Type	Climate Zone																			
	0A	0B	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8	

Multifamily	0.69	0.68	0.71	0.70	0.72	0.72	0.71	0.76	0.63	0.69	0.76	0.71	0.66	0.72	0.71	0.65	0.67	0.65	0.67
Healthcare/hospital	0.69	0.69	0.70	0.68	0.67	0.65	0.65	0.66	0.64	0.64	0.66	0.63	0.67	0.65	0.65	0.66	0.67	0.68	0.70
Hotel/motel	0.66	0.66	0.69	0.65	0.65	0.64	0.64	0.65	0.65	0.63	0.65	0.63	0.62	0.63	0.62	0.61	0.62	0.59	0.58
Office	0.54	0.54	0.53	0.52	0.52	0.52	0.50	0.54	0.48	0.48	0.53	0.48	0.49	0.52	0.48	0.48	0.49	0.46	0.48
Restaurant	0.62	0.59	0.57	0.57	0.57	0.53	0.57	0.53	0.51	0.55	0.54	0.54	0.57	0.56	0.55	0.59	0.58	0.61	0.64
Retail	0.51	0.49	0.48	0.48	0.44	0.43	0.43	0.43	0.44	0.42	0.43	0.46	0.43	0.42	0.47	0.43	0.43	0.41	0.44
School	0.52	0.57	0.57	0.56	0.52	0.53	0.52	0.49	0.50	0.46	0.47	0.47	0.47	0.46	0.46	0.46	0.44	0.45	0.45
Warehouse	0.26	0.26	0.22	0.25	0.21	0.22	0.25	0.21	0.19	0.25	0.22	0.22	0.28	0.24	0.22	0.31	0.28	0.29	0.32
All others	0.62	0.60	0.62	0.59	0.55	0.51	0.53	0.52	0.55	0.53	0.52	0.55	0.53	0.53	0.56	0.54	0.54	0.54	0.54

Building Area Type	Climate Zone																		
	0A	0B	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
Multifamily	0.72	0.71	0.75	0.73	0.76	0.76	0.77	0.75	0.70	0.61	0.71	0.64	0.56	0.63	0.63	0.54	0.57	0.54	0.56
Healthcare/hospital	0.67	0.66	0.68	0.65	0.65	0.61	0.62	0.64	0.63	0.62	0.63	0.61	0.65	0.63	0.68	0.64	0.68	0.69	0.71
Hotel/motel	0.69	0.69	0.72	0.68	0.69	0.68	0.69	0.70	0.71	0.65	0.69	0.68	0.63	0.66	0.67	0.60	0.64	0.59	0.58
Office	0.54	0.54	0.53	0.52	0.52	0.52	0.50	0.54	0.47	0.47	0.52	0.48	0.49	0.52	0.49	0.48	0.50	0.43	0.46
Restaurant	0.64	0.61	0.60	0.59	0.60	0.57	0.61	0.62	0.61	0.66	0.65	0.66	0.69	0.69	0.68	0.71	0.71	0.72	0.74
Retail	0.51	0.49	0.48	0.48	0.44	0.43	0.43	0.44	0.44	0.47	0.45	0.50	0.52	0.47	0.52	0.52	0.50	0.48	0.49
School	0.52	0.57	0.57	0.56	0.52	0.53	0.53	0.52	0.55	0.42	0.49	0.53	0.44	0.50	0.51	0.43	0.42	0.42	0.44
Warehouse	0.26	0.26	0.22	0.25	0.21	0.22	0.25	0.21	0.18	0.38	0.27	0.31	0.46	0.37	0.31	0.49	0.42	0.43	0.47
All others	0.63	0.62	0.65	0.61	0.56	0.53	0.55	0.55	0.59	0.55	0.55	0.58	0.57	0.57	0.61	0.57	0.57	0.56	0.58

Table 4.2.1-2 Site Energy Conversion Factors

<u>Building Project Energy Source</u>	<u>Units</u>	<u>Site energy Btu/unit</u>
Electricity	kWh	3,412
Natural Gas	Therm	100,000
Propane	Therm	100,000
Distillate fuel oil	Gallon	137,600
District Chilled Water	Ton	12,000
District Steam*	Pound	1,150
District Hot Water	Therm	100,000

*Saturated steam at 1 atmosphere (14.696 psia)

For the Appendix G revisions that follow, note that revisions to Section G2.4.2 were previously proposed in Addendum ar, which has not yet been published. The changes proposed here are intended to supersede the current standard as well the language previously introduced in Addendum ar.

Normative Appendix G

Performance Rating Method

G1.2.2 Performance Rating Calculation. The performance of the *proposed design* is calculated in accordance with provisions of this appendix using the following formula:

$$\text{Site Performance Cost-Energy Index} = \text{Proposed building performance} / \text{Baseline building performance}$$

Both the *proposed building performance* and the *baseline building performance* shall include all end-use load components within and associated with the *property* when calculating the ~~Performance Cost Index~~ Site Performance Energy Index.

Exception to G1.2.2: Energy used to recharge or refuel vehicles that are used for off-*site* transportation purposes shall not be modeled in the *baseline building performance* or the *proposed building performance*.

Informative Notes:

1. Neither the *proposed building performance* nor the *baseline building performance* are predictions of actual *energy* consumption ~~or costs~~ for the *proposed design* after construction. Actual experience will differ from these calculations due to variations such as occupancy, *building* operation and maintenance, weather, *energy* use not covered by this procedure, ~~changes in energy rates between design of the building and occupancy,~~ and the precision of the calculation tool.

2. See Informative Appendix I for using other metrics, including ~~site energy~~, source energy, and carbon emissions, in conjunction with the Normative Appendix G *Performance Rating Method* when approved by the *rating authority*.

...

G1.3.2 Application Documentation. The following documentation shall be submitted to the *rating authority*:

- a. The *simulation program* used, the version of the *simulation program*, and the results of the *energy analysis*, including the calculated values for baseline *building unregulated energy cost use* (BBUECU), baseline *building regulated energy cost use* (BBRECU), *building performance factor* (BPF), *baseline building performance*, the *proposed building performance*, Site Performance Cost Energy Index (PCEI_{site}), and Site Performance Cost Energy Index Target (PCEI_{site,t}).

...

~~n. Purchased energy rates used in the simulations.~~

~~o.n. An explanation of any error messages noted in the *simulation program* output.~~

...

G2.4 Renewable, and Recovered, and Purchased Energy.

G2.4.1 On-Site Renewable Energy and Site-Recovered Energy. *Site-recovered energy shall not be considered purchased energy and shall be subtracted from the proposed design energy consumption prior to calculating the proposed building performance. On-site renewable energy shall be subtracted from the proposed design energy consumption prior to calculating the proposed building performance, provided that the building owner*

- a. owns the *on-site renewable energy system* or
- b. has signed a lease agreement for the *on-site renewable energy system* for at least 15 years or
has signed a contractual agreement to purchase *energy* generated by the *on-site renewable energy system* for at least 15 years.

G2.4.2 Annual Energy Costs. On-Site Electricity Generation Systems. ~~The *design energy cost* and *baseline energy cost* shall be determined using either actual rates for *purchased energy* or state average *energy prices* published by U.S. DOE's Energy Information Administration (EIA) for commercial *building* customers, but rates from different sources may not be mixed in the same project. Where *on-site renewable energy* or *site-recovered energy* is used, the *baseline building design* shall be based on the *energy source* used as the backup *energy source*, or the *baseline system energy source* in that category if no backup *energy source* has been specified, except where the *baseline energy source* is prescribed in Tables G3.1.1-2 and G3.1.1-3. Where the *proposed design* includes *onsite electricity generation systems* other than *on-site renewable energy systems*, the baseline design shall include the same generation systems excluding its *site-recovered energy*.~~

Informative Note: ~~The above provision allows users to gain credit for features that yield load management benefits. Where such features are not present, users can simply use state average unit prices from EIA, which are updated annually and readily available on EIA's website (www.eia.gov).~~

G2.5 Exceptional Calculation Methods. When the *simulation program* does not model design, material, or device of the *proposed design*, an exceptional calculation method shall be used as approved by the *rating authority*. Where there are multiple designs, materials, or devices that the *simulation program* does not model, each shall be calculated separately and exceptional savings determined for each. At no time shall the total exceptional savings constitute more than half of the difference between the *baseline building performance* and the *proposed building performance*. All applications for approval of an exceptional method shall include the following:

- a. Theoretical and empirical information verifying the method's accuracy, and step-by-step documentation of the exceptional calculation method performed, detailed enough to reproduce the results.
- b. Copies of all spreadsheets used to perform the calculations.

- c. A sensitivity analysis of *energy* consumption when each of the input parameters that are estimated is varied
- d. from half to double the value assumed.
- e. The calculations shall be performed on a time-step basis consistent with the *simulation program* used.
- f. The Site Performance Cost Index calculated with and without the exceptional calculation method.

*** AGA disapproves of the entire Addendum.**