



Shaping Tomorrow's  
Built Environment Today

## MINUTES

### GOVERNMENT AFFAIRS COMMITTEE

WEDNESDAY, APRIL 12, 2023  
9:30 AM – 11:00 AM EDT

*Virtual Meeting*

**Minutes Approved June 23, 2023**

#### ATTENDANCE

##### Members Present

Darryl Boyce, Chair  
Rob Hoadley  
Bassel Anbari  
Tim Wentz  
Cindy Callaway  
Mike Wolf  
Meghan McNulty  
Artorius Reyes  
Michael Genin  
Weston Hockaday  
Beth Tomlinson  
Damon McClure  
Peter Koneck-  
Wilwerding  
Tracey Jumper  
Daryl Collerman  
Timothy Theriault  
George Pantelidis  
Sonya Pouncy

##### Members Absent

Chris Phelan  
Nanette Lockwood  
RJ Hartman  
Louis Van Belle  
Douglas Cage  
Albert Sin  
Ahmed Bolbol  
Ken Fulk  
Dennis Knight

##### Guests

None

##### Staff

Alice Yates  
Emily Porcari  
Matt Young  
Jacob Karson  
Andrew Barberi

1. Call to Order, Welcome, and Roll Call - Darryl Boyce called the meeting to order at 9:32a.m., welcomed the members and asked for a Roll Call to be conducted. Alice Yates conducted the roll call and a quorum was present.

2. ASHRAE Code of Ethics – Boyce read a summary of the ASHRAE Code of Ethics Commitment.
3. Review of Agenda - Boyce reviewed the agenda; two items were added to “Other Items” section of the agenda:
  - a. GAC SY23-24 Planning Session (Rob Hoadley)
  - b. Subject Matter Experts for GOEs (Meghan McNulty)
4. Approval of Minutes from February 3, 2023 Meeting

**MOTION:** To approve the attached Minutes of the February 3, 2023 Meeting. Motion made by George Pantelidis and Seconded by Sonya Pouncy.

**MOTION PASSED:** Approved By Voice Vote (CNV). No Objections.
5. Update on Action Items – Alice Yates reviewed the Action Items table and noted that 3 items were open. (see Attachment) Boyce asked for updates on those items; all are moving forward.
6. Subcommittee Reports and MBO Status Reports – The MBO Status table is provided in the Attachment.
  - a. Executive Subcommittee – Boyce reported that this MBO is essentially complete, but the resource manual needs to be updated, and asked the Rules Subcommittee to take that assignment.

**MBO #2:** Increase effectiveness of volunteer members through formalizing the GAC member mentorship program through small groups.

**Action Item:** Rules Subcommittee to include Mentorship program in the Resource Manual. Due Date: By next Rules Subcommittee Meeting.
  - b. Policy and Programs Subcommittee - Nanette Lockwood was not in attendance, so staff liaison Matt Young reported on the status of the MBOs assigned to the subcommittee.
    - i. MBO Status

**MBO #4:** Decarbonization: establish clear lines of communication between the GAC and the TFBD.

**MBO #6:** Establish a GAC Advisory Board made up of senior staff from various government bodies; this group would advise ASHRAE on what technical resources they need.
    - ii. PPIB Documents for GAC Review – Boyce asked that each PPIB be considered separately for approval.

PPIBs to Approve - (see Attachments)

- i. Building Decarbonization - Approved By Voice Vote (CNV). No Objections.
  - ii. Building Energy Benchmarking - Approved By Voice Vote (CNV). No Objections.
  - iii. Climate Change and the Built Environment - Approved By Voice Vote (CNV). No Objections.
  - iv. Consensus Standards- Expert Solutions to Meet Global Needs - Approved By Voice Vote (CNV). No Objections.
  - v. Environmental Tobacco Smoke And Electronic Nicotine Delivery Systems - Approved By Voice Vote (CNV). No Objections.
  - vi. Indoor Air Quality - Approved By Voice Vote (CNV). No Objections, but editorial change suggested by Rob Hoadley will be addressed so that liters is included in addition to gallons.
  - vii. Refrigerants and Their Responsible Use - Approved By Voice Vote (CNV). No Objections.
  - viii. Resiliency in the Built Environment - Approved By Voice Vote (CNV). No Objections.
  - ix. STEM Education & Workforce - Approved By Voice Vote (CNV). No Objections.
  - x. Indoor Carbon Dioxide, Ventilation and IAQ - Approved By Voice Vote (CNV). No Objections.
- c. Member Mobilization Subcommittee - Tim Theriault reported on the status of Government Outreach Events (See Attachment); staff noted that **only 39 forms have been submitted** and asked RVCs to encourage their Chapter Chairs and others organizing GOEs to please submit GOE reports. There was discussion concerning whether bonus PAOE could be offered to chapters that submit GOE reports in a timely fashion.
- i. MBO Status Update – Theriault reported on the status of the MBOs assigned to his subcommittee.  
  
**MBO #1:** Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.  
  
**MBO #8:** Review and revise the RVC reporting requirements for the Winter and Annual meetings.
- d. Global Affairs Subcommittee - George Pantelidis reported on the status of the MBOs assigned to his subcommittee.

**MBO #3:** Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.

**MBO #5:** Work with International Standards Task Force to facilitate sharing of information to avoid duplication of efforts, including through the tracking and adoption of ASHRAE standards and guidelines around the world.

- e. Rules Subcommittee - Rob Hoadley reported the subcommittee met on April 6 and reviewed 4 items:
  - i. PowerPoint Presentations created by Sheila Hayter and Meghan McNulty on the Nominating Subcommittee's responsibilities. The subcommittee considered including in the Resource Manual, but it was decided to include these presentations instead on Basecamp in the Nominating Subcommittee folder.
  - ii. How to revise the GOE reporting of "global, federal, local/subnational" – is being further considered by MMSC and Global Affairs
  - iii. Revisions to the RVC reporting form were considered, and will be discussed further.
  - iv. Greater international representation on GAC – The Rules Subcommittee discussed changing the ROB so that there would be greater non-North American representation on the GAC.
  - v. Onboarding and training of RVCs – This is being added to the Resource Manual.
- f. Nominating Subcommittee - Meghan McNulty reported that the work of this subcommittee is complete.

#### 14. Reports

- a. ExO Report - Ken Fulk was not in attendance.
- b. Communications Coordinator Report - Sonya Pouncy reported that several website changes are being discussed with staff and should be implemented by June.

**MBO #7:** Improve the effectiveness of the Government Affairs Website (in cooperation with the PPSC and the MMSC)
- c. Technology Council Representative Report - Chris Phelan was not in attendance.
- d. Members Council Representative Report - Bassel Anbari reported that a motion was approved at the Winter Meeting whereby ExOs will be non-voting members, and the Standing Committee Chairs will be voting members; this change is intended to streamline the council. In addition, Anbari reported that the Handbook Online and a Certification Program Study Guide of the individual's choosing are two new choices as benefits of membership. IT staff are programming these changes, and the two

additional choices are now available at join and renewal. A full report is provided in the Attachment.

- e. Pub-Ed Council Representative Report - Cindy Callaway reported that ALI will be offering 10 courses during Tampa, including some on Certifications, and an “Intro to Decarb” course. Several addenda are out for review, including addenda to Standards 34, 55, 90.1, 62.1/62.2.

15. Other Business – Boyce asked for reports on the items below.

- a. Staff information on funding and other resources – Because Nanette Lockwood was not in attendance, Boyce asked for a report from Alice Yates. Yates noted that Lockwood was concerned that members may not be well informed about the billions of dollars being made available through the Infrastructure Act (IIJA) and the Inflation Reduction Act (IRA). Yates explained that reports on these programs are provided in the Government Affairs Update, as well as in a one-pager on Basecamp (Key Resources Folder). Yates asked if anyone needed more or different information about these programs to please let her know or to email [GovAffairs@ashrae.org](mailto:GovAffairs@ashrae.org)
- b. GAC SY23-24 Planning Session - Rob Hoadley reported that a planning meeting will be scheduled in May, and Hoadley asked for input by all RVCs on the GOE goals for next year. Hoadley explained the following items will be discussed during the planning meeting:
  - Proposed MBOs for New Society Year (23-24)
  - Government Outreach Events: Goals for SY 2023-24
  - Proposed Public Policy Priorities for New Society Year (23-24)
  - Subcommittee Member Assignments for SY 2023-24
- c. Subject Matter Experts for GOEs - Meghan McNulty reported that a “side project” is moving forward to provide a recommendation on a new program to establish a set list of SMEs for GOEs. A proposal will be developed for consideration at the Annual Meeting.

16. Review of New Action Items added at this meeting – Yates reviewed the new action items from this meeting (see Attachment).

17. Next Committee Meeting – Boyce stated that the next GAC meeting will be in Tampa:

**GAC Meeting at the Annual Conference**

**Friday, June 23**

**1:00 p.m. – 5:00 p.m. EDT**

**Tampa, Florida – JW Marriott – Meeting Room 4(2)**

18. Adjourn – Boyce adjourned the meeting at 10:36 a.m. EDT.

*Minutes Respectfully Submitted by Alice Yates, Staff Liaison.*



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**DRAFT MINUTES**  
**GOVERNMENT AFFAIRS COMMITTEE**  
**FRIDAY, FEBRUARY 3, 2023**  
**1:00 PM – 5:00 PM**  
**Winter Meeting – Atlanta, GA**

**ATTENDANCE**

**Members Present**

Darryl Boyce-Chair  
Robert Hoadley-Vice  
Chair\*  
Bassel Anbari  
Cindy Callaway  
Christopher Phelan  
Tim Wentz  
Mike Wolf\*  
Meghan McNulty  
Nanette Lockwood  
Artorius Reyes  
Michael Genin\*  
RJ Hartman  
Weston Hockaday  
Louis Van Belle  
Beth Tomlinson\*  
Jessica Gardner  
Damon McClure\*  
Peter Koneck-Wilwerding  
Tracey Jumper\*  
Daryl Collerman  
Tim Theriault  
Albert Sin  
George Pantelidis  
Ahmed Bolbol  
Sonya Pouncy  
Ken Fulk  
Dennis Knight

**Members Absent**

None

**Guests**

Sarah Dodge, AIA  
Doug Tucker, Mitsubishi  
Ron Gagnon, DRC Region II  
Adrianne Mitani, OVC GAC  
Chair  
Darryl Deangers, Ebreon  
Peter Luttik Emerson  
Mariel Meegan, Gala  
Engineering  
Lionel Davis  
Arturo Thur De Koos, Fujitsu  
Donald Weekes, EHC  
Andy Persily, NIST  
Ron Jarnagin  
Farooq Mehboob, ASHRAE  
President  
Jonathan Smith  
Doug Cochrane, GAC  
Liaison to Building EQ  
Emily Toto, ASHRAE  
Madison Schultz, ASHRAE  
Julia Timberman  
Larry Kouma, Johnson  
Controls  
Samantha Slater, AHRI  
Don Davis, BOMA  
Chad Smith  
Kishor Khankari  
Steve Comstock, UNEP

**Staff**

Alice Yates  
Emily Porcari  
Matt Young  
Jacob Karson  
Andrew Barberi \*

*\*Indicates Remote Participation*

1. Call to Order, Welcome, and Roll Call - Darryl Boyce called the meeting to order at 1:01 p.m., welcomed the members and asked for a Roll Call to be conducted. Jacob Karson conducted the roll call and a quorum was present.
2. Guest Introductions – Boyce asked the guests to introduce themselves.
3. ASHRAE Code of Ethics – Boyce read a summary of the ASHRAE Code of Ethics Commitment.
4. ASHRAE Commitment to Care Statement – Boyce pointed out the Commitment to Care Statement provided as an attachment to the agenda.
5. ASHRAE Simplified Rules of Order – Boyce reminded members that the meeting would be conducted under ASHRAE’s Simplified Rules of Order, which was provided as an attachment to the agenda.
6. Review of Agenda – Boyce reviewed the agenda. Nanette Lockwood asked if there could be a discussion of how staff can better liaise with all of GAC on resources available, especially with respect to funding availability. Boyce asked that subject be added to the Agenda under “Other Business.”
7. Approval of Minutes from November 7, 2022 Meeting – Boyce reviewed the Minutes from the fall meeting and asked they be approved.

**MOTION:** To approve the Minutes of the October 24, 2022 Meeting. Motion made by Sonya Pouncy and Seconded by Meghan McNulty.

**MOTION PASSED:** Approved By Voice Vote (CNV). No Objections.

8. Update on Action Items - Alice Yates reviewed the Action Items table and noted that only one item was open. (see Attachment)
9. Report from ASHRAE Government Affairs Office – Staff from the Washington Office (Alice Yates, Emily Porcari, Matt Young, and Jacob Karson) provided a presentation on the “Government Outlook and Opportunities for Engagement” (see Attachment)
10. Subcommittee Reports and MBO Status Reports – The MBO Status table is provided in the Attachment.
  - a. Executive Subcommittee – Boyce reported that he has reached out to all of the members, and the program is “alive and well.”

**MBO #2:** Increase effectiveness of volunteer members through formalizing the GAC member mentorship program through small groups.
  - b. Policy and Programs Subcommittee - Nanette Lockwood reported that Darryl Boyce has contacted Kent Peterson, Chair of the TFBD, to ask that a GAC liaison be

included at TFBD meetings. For MBO #6, an advisory board has been established and meetings have been held and are scheduled.

i. MBO Status

**MBO #4:** Decarbonization: establish clear lines of communication between the GAC and the TFBD.

**MBO #6:** Establish a GAC Advisory Board made up of senior staff from various government bodies; this group would advise ASHRAE on what technical resources they need.

ii. PPIB Documents for GAC Review (See Attachments)

- i. PPIB Status Table – Lockwood reviewed the status of the 12 PPIBs this subcommittee has been managing; all have been reviewed and edits and recommendations are being made. PPIBs requests for approval should be made at the Spring 2023 GAC meeting.
- ii. PPIB on Building Electrification – Lockwood stated this was a new PPIB and is important for addressing policies and legislation concerning building electrification.

**MOTION:** To approve the PPIB on Building Electrification. Motion made by Meghan McNulty and Seconded by Sonya Pouncy.

**MOTION PASSED:** Approved By Voice Vote (CNV). No Objections.

- iii. Proposed Change to the ROB on PPIB Format – Lockwood reviewed the proposed change to the ROB concerning the format of PPIBs; the vote will be taken up during the Rules Subcommittee report.

- c. Member Mobilization Subcommittee - Tim Theriault reviewed the goals, targets and progress for Government Outreach Events (See Attachment); he also reported on the status of the MBOs assigned to his subcommittee (see status table).

**MBO #1:** Increase the participation of ASHRAE members in Government Outreach Events and other advocacy opportunities by hosting promotional GAC meetings, webinars, and other events to non-GAC ASHRAE members to increase awareness about the GAC.

**MBO #8:** Review and revise the RVC reporting requirements for the Winter and Annual meetings.

- d. Global Affairs Subcommittee - George Pantelidis reported that the Global Affairs Subcommittee has met 3 times. They conducted again a survey developed last year to identify country- or region-specific events attended by government officials that could be targeted for the purpose of outreach and advocacy. For MBO #5, Pantelidis reported that a Working Group has been established with the goal of interacting with chapters. He also noted that the Task Force may be transformed into a Standing Committee, and this could happen during the Winter Meeting. Pantelidis also



reported that Global Affairs recommends extending the deadline for submitting a plan on financial assistance for International Outreach Events. The vote will be taken during the Rules Subcommittee report.

**MBO #3:** Build the foundation of a consistent global government engagement program by planning and identifying country- or region-specific events attended by government officials for the purpose of outreach and advocacy.

**MBO #5:** Work with International Standards Task Force to facilitate sharing of information to avoid duplication of efforts, including through the tracking and adoption of ASHRAE standards and guidelines around the world.

- e. Rules Subcommittee - Rob Hoadley report that this subcommittee has considered two changes to GAC governing documents which the Rules Subcommittee has approved. Hoadley asks the GAC to approve.

- i. ROB Change: PPIB Documents Note on Date

**MOTION:** That the ROB revision per the Attachment be recommended to Members Council for Approval. Motion seconded by Sonya Pouncy.

**MOTION PASSED:** Approved By Voice Vote (CNV). No Objections.

- ii. Resource Manual – Section T: Changing Deadline for Plan on Financial Assistance for International Outreach Events

**MOTION:** That the Resource Manual be changed per the Attachment. Motion seconded by Collerman.

**MOTION PASSED:** Approved By Voice Vote (CNV). No Objections.

- f. Nominating Subcommittee - Meghan McNulty reported that the subcommittee met at the Winter Conference and has made recommendations for the Chair and Vice Chair of GAC for SY23-24; the subcommittee will meet again in April.

- 11. Motion Referred from RAL CRC – Boyce referred members to CRC Motion #54 from the Mumbai Chapter. There was considerable discussion, including that a Regional GAC Award can already be provided by Regions, and it was noted that this is already happening in Regions XI and II. Boyce pointed out that Motion 54 is about providing these Regional awards at the Society-level. Pouncy recommended that Regions and Chapters be educated further about the GAC Society award that already exists as well as the option that Regions may create their own Regional GAC awards.

**Mumbai Chapter - Motion 54 (10/12/2022):** That GAC Committee consider instituting an award at each Region for an individual member for Outstanding Work in Government Affairs in their respective Regions. The award to be instituted from Society Year 23-24, to be presented at the respective CRCs.

**MOTION:** That GAC recommend against approving Motion 54, and instead promote the GAC Society award and provide information to the Regions that Regional GAC awards may also be created. Motion made by Tim Theriault and Seconded by Bassel Anbari.

**MOTION PASSED:** Approved By Voice Vote (CNV); 1 oppose; 0 abstentions.

12. Government Affairs Award Nomination - Tim Theriault conducted this portion of the meeting in Executive Session.

13. Reports from Regional Vice Chairs – RVCs provided reports from their regions (See Attachments) – 5 minutes per report

- |  |                                 |
|--|---------------------------------|
| 1. RAL – Ahmed Bolbol                      | 8. Region VIII – Damon McClure  |
| 2. Region XIV – George Pantelidis          | 9. Region VII – Jess Gardner    |
| 3. Region XIII – Albert Sin                | 10. Region VI – Beth Tomlinson  |
| 4. Region XII – Tim Theriault              | 11. Region V – Louis Van Belle  |
| 5. Region XI – Daryl Collerman             | 12. Region IV – Weston Hockaday |
| 6. Region X – Tracey Jumper                | 13. Region III – RJ Hartman     |
| 7. Region IX – Peter Koneck-<br>Wilwerding | 14. Region II – Michael Genin   |
|  | 15. Region I – Artorius Reyes   |

14. GAC PHOTO – Photos of the committee was taken; the photos are available on Basecamp.

15. Reports

- a. ExO Report - Ken Fulk provided the ExO report (see Attachment)
- b. Communications Coordinator Report - Sonya Pouncy provided the Communications Coordinator report (see Attachment)

**MB0 #7:** Improve the effectiveness of the Government Affairs Website (in cooperation with the PPSC and the MMSC)

- c. Technology Council Representative Report - Chris Phelan provided the Tech Council Report, and referred to Emily Toto to provide an overview of the Codes Interaction Subcommittee (see Attachment)
- d. Members Council Representative Report - Bassel Anbari provided a report from Members Council (see Attachment)
- e. Pub-Ed Council Representative Report - Cindy Callaway provided a report from Pub-Ed (see Attachment)

16. Reports from Committee Liaisons

- a. Building EQ Committee - Daryl Collerman provided a report (see Attachment)

- b. Environmental Health Committee - Meghan McNulty and Don Weekes reported that the EHC has experts that can speak to chapters and possibly government officials. The EHC also has “emerging issue briefs,” including a new one concerning dogs in the office. Every month in the *Journal*, they offer an article on environmental health that may be of interest to the GAC. The EHC will be meeting on Feb. 6, and McNulty will provide more information after that meeting.
- c. International Standards Task Force – Pantelidis provided an update on the International Standards Task Force, which may become a Standing Committee.
- d. Codes Interaction Subcommittee - Mike Wolf reported on code activity in Wisconsin.
- e. Refrigeration Technology Committee for Comfort, Process, and Cold-Chain (REF-CPCC) – Lockwood reported that the REF-CPCC meeting is tomorrow, so there is nothing to report at this time.
- f. Residential Building Committee – Boyce reported the meeting is on Sunday, so there is nothing new to report.

#### 17. Guest Reports

- a. AHRI - Samantha Slater, Senior Vice President of Government Affairs provided a report (see Attachment). AHRI is doing everything it can to get building codes to use A2Ls, and it’s critical to do this by 2024. AHRI has a 27 state campaign and will be hiring resources in 27 states, either on a legislative or regulatory pathway.
- b. AIA - Sarah Dodge, Senior Vice President of Advocacy & Relationships reported the AIA is focusing on climate and equity in the built environment. AIA also wants to coordinate more with ASHRAE about the 2023 COP in Dubai. At the AIA leadership summit in 2 weeks, they will be advocating for the Resilient America Act. AIA is pleased that ASHRAE also supported the change to the 179D tax credit in the Inflation Reduction Act.
- c. BOMA - Don Davis, Vice President, Advocacy and Codes reported that BOMA supports the Airborne Act, and is concerned about building electrification because of the limits on the grid – BOMA is not opposed to electrification, but is looking to electrification where it makes sense. They also support the Small Business Energy Efficiency Act (\$10.5 million in capital to make upgrades). Davis also announced that BOMA will be holding a “Decarbonization Symposium” in Washington, DC on March 15; ASHRAE will be represented on one of the panels.
- d. UNEP - Steve Comstock, Senior Consultant, OzonAction Partnerships, United Nations Environment Programme provided a report (see Attachment). Other Business (Boyce)
- e. DOE Schools Pilot Partnership - Sonya Pouncy provided a report (see Attachment).
- f. Staff information on funding and other resources – because of time constraints, Nanette Lockwood asked that this matter addressed at the next GAC meeting. Review of New Action Items added at this meeting (Yates)

18. Next Committee Conference Call – Boyce stated that the next meeting will be scheduled for the Spring.
19. Adjournment – Boyce adjourned the meeting at 5:35 p.m.

*Minutes Respectfully Submitted by Alice Yates, Staff Liaison.*



**ACTION ITEMS**  
**GOVERNMENT AFFAIRS COMMITTEE**  
**SY 2022-2023**

**Last Updated: April 11, 2023**

#	Action	Assigned To	Due Date	Status	C/O
<i>Added at 06-24-2022 meeting</i>					
1	Review whether the presentation on roles and responsibilities for the nominating subcommittee should be added to the GAC Reference Manual.	Rules Subcommittee	Next Rules Subcommittee Meeting	Was discussed at Rules SC meeting on April 6; the presentation will be posted on Basecamp in the Nominating Subcommittee folder, rather than added to the Resource Manual.	C
<i>Added at 11-07-2022 meeting</i>					
2	Develop Fact Sheet on key programs from IRA and the BIL, along with websites that have more detailed information.	Staff	Winter 2023 Meeting	Matt Young prepared these factsheets and distributed to GAC members via email on December 16 <sup>th</sup> , 2022. Documents are also posted to Basecamp in the Key Resources folder.	C
3	Work with the Marketing Team to collect statistics on use of the Gov Affairs website (and various pages within it). This information will help inform website changes.	Staff	Before December Meeting with Marketing.	Staff worked with Marketing to obtain statistics; these were used to inform the meeting on website redesign with the Communications Coordinator.	C
4	Set up dinner in Atlanta – to be held Friday night, February 3.	Staff	Mid-December	Venue identified, menu developed, payment system arranged.	C

#	Action	Assigned To	Due Date	Status	C/O
5	Inquire with the Building EQ Committee concerning its timeline for incorporating carbon into the tool.	Staff working with Daryl Collerman	Winter 2023 Meeting	<p>Per a discussion with Building EQ staff, Daryl Collerman, and Gov Affairs staff, the Building EQ carbon metric is currently live for operational carbon emissions. BEQ will consider how to incorporate embodied carbon once more information on that is available from the TFBD.</p> <p>The BEQ Committee is working on an updated version of the BEQ “fact sheet” that will include the carbon information; this updated fact sheet will be used for GOEs once it’s finalized and available.</p>	C
<i>Added at 02-03-2023 meeting</i>					
6	Structure a Government Affairs award at the Regional Level, and potentially include language to Resource Manual; consider how to improve communication to Regions and Chapters about the Society GAC award.	Member Mobilization	GAC Spring Meeting	The Member Mobilization Subcommittee will consider criteria for an optional regional-level award based on regions that already have such an award and will share their recommendations at the June Annual meeting.	O
7	Send criteria on your Regional GA Awards to member mobilization SC so that they can structure a consistent approach	All RVCs with GA Regional Awards	Feb. 28	Member Mobilization will be reaching out to RVCs that already have a regional award before the June meeting.	O
8	Determine which parts of North Dakota (if any) are included in Region VI	Staff	ASAP	Yates sent email to RVCs for Regions VI and IX on 4/7.	C
9	Send GAC Award Recommendation to Honors & Awards	Staff	ASAP	Emily Porcari emailed recommendation to staff liaison of Honors and Awards on Feb. 5.	C
10	Investigate with web team why a nomination to the GAC couldn’t be found on the website.	Ken	ASAP	This issue has been corrected.	C

#	Action	Assigned To	Due Date	Status	C/O
11	Continue the discussion on ways to better coordinate and collaborate between the CIS and GAC.	CIS & GAC	Spring / Summer		O
12					



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## BUILDING ENERGY BENCHMARKING, ASSESSMENTS, AND PERFORMANCE TARGETS

### THE ISSUE

Heating, ventilation, air conditioning, and refrigeration (HVAC&R) account for 61% of commercial building site energy use.<sup>1</sup> While new buildings have realized improved energy performance, existing buildings represent the greatest opportunity for energy and Greenhouse Gas (GHG) emissions reductions. Improving the energy performance of existing buildings requires a robust database of building energy data. Without understanding a building's true performance, identifying effective improvements in energy efficiency is challenging. As the saying goes, "you can't manage what you don't measure."

To address this concern, building energy benchmarking has become a critical tool for quantifying and evaluating building operational energy use patterns. Benchmarking data can inform public policies that focus on the most effective ways to reduce energy use in a city or state's building stock. Benchmarking data can also be used to develop local energy and GHG emissions performance targets appropriate to local climate and building types.

Over 40 U.S. and Canadian cities have building energy benchmarking programs.<sup>2</sup> Some jurisdictions require actions beyond benchmarking, such as performing energy assessments (audits, tune-ups, or retrocommissioning) or meeting performance targets (maximum energy use or GHG emissions). Cities such as Boston, Denver, New York City, Vancouver, and Washington DC have set aggressive GHG emissions reduction goals for existing buildings that will require accurate benchmarking to determine emissions and energy savings.

### ASHRAE's ROLE

ASHRAE develops standards, guidance and educational resources informed by robust data on the actual energy performance of buildings, and shares evidence-based best practices and technical information with professionals across the building sector. To achieve a carbon neutral world, ASHRAE is also leading the way in converting energy to carbon in selected standards. ASHRAE's tools and resources include:

- Benchmarking:
  - **ASHRAE Standard 105** *Standard Methods of Determining, Expressing, and Comparing Building Energy Performance and Greenhouse Gas Emissions* provides a method for determining and comparing building energy performance and greenhouse gas emissions.
  - **ASHRAE Standard 214** *Standard for Determining and Expressing Building Energy Performance in a Rating Program* provides uniformity in the building energy labeling and disclosure process.

<sup>1</sup> Includes water heating; 2012 Commercial Building Energy Consumption Survey: Energy Usage Summary. U.S. Energy Information Administration, 18 March 2016, <https://www.eia.gov/consumption/commercial/reports/2012/energyusage/>

<sup>2</sup> Comparison of U.S. Commercial Building Energy Benchmarking and Transparency Policies. Institute for Market Transformation, July 2022, <https://www.imt.org/resources/comparison-of-commercial-building-benchmarking-policies/>



- **ASHRAE Standard 228P** *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance* is an in-progress standard that provides consistent method definitions of “zero net energy” and “zero net carbon” for both the design of new buildings and the operation of existing buildings.
- **ASHRAE Standard 240P** *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation* will provide a whole life carbon approach to support emissions reductions in buildings.
- Energy Audits and Assessments:
  - **ASHRAE Standard 211** *Standard for Commercial Building Energy Audits* establishes consistent practices for conducting and reporting energy audits for commercial buildings. *Referenced by ordinances in Atlanta, GA; Boulder, CO; Los Angeles, CA; New York, NY; and San Francisco, CA.*
  - **Commercial Buildings Energy Audits Reference Manual** is a reference that defines best practices for energy survey and analysis for purchasers and providers of energy audit services and serves as a reference for Standard 211.
- Building performance targets:
  - **Building Performance Standards: A Technical Resource** provides technical basis and resources to policymakers, building owners, facility managers, design professionals and ASHRAE members when developing and implementing a Building Performance Standard (BPS).
  - **ASHRAE Standard 100** *Energy Efficiency in Existing Buildings* sets energy use intensity (EUI) benchmarks for existing buildings in the commercial and residential sector and establishes methods for determining opportunities for improvement in EUI leading to compliance with the standard benchmarks. *Referenced by Washington State’s Clean Buildings Act of 2019.* Future revisions will incorporate setting GHG emissions targets.
  - **ASHRAE’s Building EQ<sup>3</sup>** program calculates a building’s energy performance in relation to other similar buildings, identifies the gap between “as designed” potential and actual performance in operation, and provides recommendations to reduce energy use. Building EQ can be used to publicly display building energy use and comply with disclosure requirements.

ASHRAE certification programs were developed to meet the industry needs of today and provide value to thousands of built-environment professionals, employers, and building owners. Certifications like Building Commissioning Professional (BCxP) and Building Energy Assessment Professional (BEAP) are recognized by the U.S. Department of Energy (DOE) as meeting the Better Buildings Workforce Guidelines (BBWG) and are used frequently by local jurisdictions to designate who is qualified to perform benchmarking and energy assessments.

### ASHRAE’s VIEW

Energy metrics that are widely accepted, robust, and validated are critical to achieving policy objectives. Standardized procedures for energy performance assessments ensure an appropriate level of rigor and scope of work. Within a building owner’s portfolio or across a city’s building stock, decision-makers need consistent language, metrics, and procedures to effectively communicate goals, evaluate potential investments, and measure success. ASHRAE remains dedicated to sharing technical resources with policymakers to support legislative and regulatory solutions that improve building energy efficiency and reduce GHG emissions.

<sup>3</sup> For more information, see <https://www.ashrae.org/technical-resources/building-eq>  
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Shaping Tomorrow's  
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## CLIMATE CHANGE AND THE BUILT ENVIRONMENT

### THE ISSUE

Worldwide concern for changes in the global climate has escalated as scientific evidence has become more definitive, linking increased concentrations of atmospheric greenhouse gases (GHGs) with global warming. As a response, ASHRAE is increasing our attention and consideration on standards, regulations, legislation and policies that involve GHGs.

When developing policy to combat climate change, it is important to consider that buildings and their heating, ventilating, air conditioning and refrigeration (HVAC&R) systems directly and indirectly contribute to GHG emissions. Buildings are responsible for more than 35% of global final energy use and nearly 40% of energy-related CO<sub>2</sub> emissions worldwide.<sup>1</sup> These emissions are associated with construction and the energy needed to operate buildings and building systems, and to a lesser extent indirectly through the release of refrigerants, if not properly managed. According to the United Nations Intergovernmental Panel on Climate Change (IPCC), “buildings offer immediately available, highly cost-effective opportunities to reduce energy demand, while contributing to meeting other key sustainable development goals including poverty alleviation, energy security and improved employment.”<sup>2</sup> Improving the energy efficiency, and the ongoing efficient performance of building systems provide a significant opportunity for climate change mitigation.

### ASHRAE's ROLE

ASHRAE is the leading source of information and research for HVAC&R systems and building performance making this issue a key area for our members. ASHRAE's members use their expertise to educate policymakers and promote the implementation of energy efficient design practices and sustainable technologies that can help reduce GHG emissions. This is done most notably through ASHRAE's wide-ranging standards development such as *Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings*, *Standard 100 Energy Efficiency in Existing Buildings*, *Standard 189.1 International Green Construction Code*, and *Standard 105 Standard Methods Of Determining, Expressing, And Comparing Building Energy Performance And Green House Gas Emissions*. ASHRAE also has an MOU with the International Codes Council to collaborate on the development of materials and resources related to quantifying GHG emissions.

ASHRAE and its partners have published several free-to-download Advanced Energy Design Guides (including Zero Energy Building Guides for K-12 Schools and Offices), which are available for free download and provide educational guidance to reduce energy consumption while achieving proper IEQ conditions.<sup>3</sup>

<sup>1</sup> United Nations Environment Programme, International Energy Agency (IEA) , and Global Alliance for Buildings and Construction (GlobalABC), “2018 Global Status Report Towards a Zero-Emission, Efficient and Resilient Buildings and Construction Sector.” .

<sup>2</sup> Lucon, Oswaldo, and Diana Ürge-Vorsatz. “AR5 Synthesis Report: Climate Change 2014.” *Chapter 9: Buildings*, United Nations Intergovernmental Panel on Climate Change, 2014, [https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc\\_wg3\\_ar5\\_chapter9.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter9.pdf).

<sup>3</sup> For more information, see [www.ashrae.org/technical-resources/aedgs](http://www.ashrae.org/technical-resources/aedgs).

ASHRAE is also in the process of developing BSR/ASHRAE Standard 228P which will set requirements for evaluating whether a building or group of buildings meets a definition of “zero energy.”

With respect to refrigerants, ASHRAE also advances the HVAC&R field by performing research on low global warming potential (GWP) refrigerants and developing safety and classification standards on refrigerants<sup>4</sup>, developing guides and a standard for designing systems that minimize energy consumption and reduce emissions of high GWP refrigerants. As part of this effort, ASHRAE supports the global phasedown of the production and consumption of refrigerants that are high-GWP HFCs, including through legislation, regulations, and policy.

### **ASHRAE's VIEW**

ASHRAE is committed to a leadership role in reducing climate change contributed to by building systems and responding to climate change experienced in the built environment. ASHRAE recommends:

- States adopt the most recent version of ANSI/ASHRAE/IES Standard 100 for existing buildings and ANSI/ASHRAE/IES Standard 90.1, which has been a benchmark for new commercial building energy performance in the United States and a key basis for codes and standards around the world for more than 40 years. The 2019 version of Standard 90.1 is about 4.3% more energy efficient than the 2016 version.
- A full evaluation of new and existing buildings' climate impacts, carbon balance, and energy performance.
- Funding for research that improves energy efficiency/utilization in HVAC&R technology to minimize GHG emissions.
- Funding for building science research leading to advanced equipment and systems, grid-interactive designs and ability to load-shift, integration of the Internet of Things (IoT), net metering, and building based energy storage systems capable of providing dispatchable energy systems.
- Promotion of carbon and energy life-cycle analysis to building owners to encourage sustainable building construction, operation and renewal.

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<sup>4</sup> For more information, see: <https://www.ashrae.org/technical-resources/bookstore/standards-15-34>



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## CONSENSUS STANDARDS: EXPERT SOLUTIONS TO MEET GLOBAL NEEDS

### THE ISSUE

Voluntary consensus technical standards developed by private organizations are essential for a productive global economy and to facilitate global commerce. Standards foster safe building technology innovation by providing a transparent baseline and needed metrics for assessing how that technology can impact building design, performance and the occupants. They are necessary for comparing technologies in the expanding global marketplace and facilitating cross-border collaboration. Governments and building codes recognize the value of voluntary consensus standards and adopt them for use in policies regulating buildings.<sup>1</sup>

Voluntary consensus technical standards are developed through the participation of qualified, interested and affected stakeholders including manufacturers, consumers, users, advocacy organizations and representatives of government and academia. Standards accreditors such as the American National Standards Institute (ANSI), the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) follow several principles such as consensus, balance, transparency, due process, and technical expertise.

Copyright protection of voluntary consensus technical standards is critical to the continued development and maintenance of standards. Governments at all levels benefit from application of standards by private organizations who rely on copyright protection in order to continue the maintenance of existing standards and development of future standards. Without copyright protection, standards development organizations will be challenged to provide the public with the benefit of rigorously research, tested and science-backed standards.

### ASHRAE's ROLE

ASHRAE develops and publishes robust technical standards; many of which are adopted directly by governments or into building codes. ASHRAE standards establish recommended practice in the areas of heating and cooling, indoor air quality, energy conservation and management, building water systems, high-performance buildings, refrigerant use and classification, and others. ASHRAE's standard development process is rigorous, and it is one of only six standards-developing organizations in the U.S. that can self-certify that its standards have followed ANSI's procedures.

ASHRAE also serves on U.S. Technical Advisory Groups (TAGS) for ISO Committees and in the role of international secretariat for ISO Technical Committees to help ensure that ASHRAE views are represented. These standards are supported by technical committees that develop publications and educational materials to assist in the application of ASHRAE standards. ASHRAE standards are developed by experts from around the globe under strict ethical and non-commercialism guidelines.

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<sup>1</sup> The National Technology Transfer and Advancement Act of 1995 (P.L. 104-113) (NTTAA) and OMB Circular A-119

## **ASHRAE's VIEW**

Use of voluntary consensus standards at all levels of government are a benefit to society. For this reason:

- Government entities should continue to support voluntary consensus standard development, use, and adoption in laws and regulations, which will protect public health and safety, improve commerce and save taxpayers money.
- Agencies should work with standards developers and industry experts to identify situations where societal interests could be addressed through the use of voluntary consensus standards.
- Governments should continue to foster and support the unique character and strengths of the public-private partnership in standards development as they pursue trade and other international agreements, regulatory harmonization and legislative and regulatory approaches.
- Governments should support policies, both domestically and internationally, which ensure the continued ownership and control of the copyrights and trademarks of standards developers.
- Agencies should increase participation in the development of voluntary consensus standards by encouraging government experts to participate through work release time and reimbursement of expenses incurred.
- Governments should regularly update regulations and policies to reference the latest versions of standards since they reflect the latest technical advances.



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## ENVIRONMENTAL TOBACCO SMOKE AND ELECTRONIC NICOTINE DELIVERY SYSTEMS

### THE ISSUE

While indoor smoking has become less common in recent years in many countries the use of Electronic Nicotine Delivery Systems (ENDS) has significantly increased. Both smoking and the use of ENDS negatively affects indoor air quality and each has inherent health risks.

Exposure to Environmental Tobacco Smoke (ETS) continues to have considerable health and cost impacts. Researchers have investigated the health and irritant effects among non-smokers exposed to tobacco smoke in indoor environments. Such exposure is also known as passive smoking and as involuntary exposure to secondhand smoke. A number of national and global health research groups and agencies have concluded, based on the preponderance of evidence, that exposure of non-smokers to tobacco smoke causes specific diseases and other adverse effects to human health, most significantly cardiovascular disease and lung cancer. No cognizant authorities have identified an acceptable level of ETS exposure to non-smokers, nor is there any guarantee that further research will identify such a level.

Simultaneously with the decline of tobacco smoking, the use of Electronic Nicotine Delivery Systems (ENDS) including vape pens, electronic cigarettes, and other device that convert nicotine into an inhalable aerosol without combustion has rapidly increased. The vapor or aerosol emitted from these devices contains varying amounts of nicotine dissolved in propylene glycol, or glycerol along with volatile compounds (VOCs).<sup>1,2</sup> Unique to the use of ENDS is the concentration and type of compounds that may deposit and remain on indoor surfaces. These deposits represent a unique source of contamination in buildings that varies depending on indoor climate, air flow, and area that may require specialized cleaning, HVAC maintenance, and other operational practices.<sup>3</sup> In addition, limited studies have been performed to evaluate the chemical reactions and health interactions that may occur between ENDS emissions and other airborne contaminants commonly found indoors.

Despite the well-documented benefits of smoking bans, many locations worldwide still lack laws and policies that provide sufficient protection. Still fewer bans include the use of ENDS. In many locations, laws and policies are only partially protective, permitting smoking and ENDS usage in certain areas of buildings or specific building types including casino, entertainment and multifamily housing.

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<sup>1</sup> Offermann 2015. F.J. Offermann, "Chemical Emissions from E-Cigarettes: Direct and Indirect Passive Exposures," *Building and Environment*, Vol. 93, Part 1, 101-105, November, 2015.

<sup>2</sup> Cooke 2015. Cooke, Andrew, MDa, et. al., "The Electronic Cigarette: The Good, the Bad, and the Ugly," *J Allergy Clin Immunol Practice*, 2015, Vol. 3, 498-505.

<sup>3</sup> Schripp 2013. Schripp, et. al., "Does e-cigarette consumption cause passive vaping?" *Indoor Air* 2013; 23: 25–31.



## **ASHRAE's ROLE**

Providing healthy and comfortable indoor environments through the management of indoor air quality is a fundamental goal of building and HVAC design and operation. ASHRAE has long been active in providing engineering technology, standards and design guidance in support of this goal. For example, ANSI/ASHRAE Standards 62.1 and 62.2 are standards that specify minimum ventilation rates and other measures in order to minimize adverse health effects for occupants. Therefore, the health effects of indoor exposure to emissions from tobacco products, and ENDS devices are relevant to ASHRAE.

## **ASHRAE's VIEW**

Exposure to ETS can be reduced through a variety of strategies, but they do not completely eliminate exposure to ETS. Only an indoor smoking ban, leading to near zero exposure, provides effective control, and bans on ETS exposure have only been recognized as effective by health authorities. Effects of secondary involuntary exposure to ENDS have not been thoroughly studied by the scientific community, in part because these devices are new, evolving, diverse and customizable. However, because ENDS have become so prevalent, indoor building components and occupants are being exposed to passive vapors. Many cognizant public health authorities argue that caution should prevail in all situations of human exposure when limited data is available about health impacts. Applying this principle to ENDS argues that involuntary exposure should be banned in order to keep exposure to airborne emissions as low as possible.

ASHRAE's mission to act for the benefit of the public encourages lawmakers, policymakers and others who exercise control over buildings, to maximize mitigation of secondary involuntary exposure from smoking and ENDS use inside and near buildings. ASHRAE also recommends:

- That building design practitioners work with their clients to define their intent, where smoking and ENDS use is still permitted, for addressing exposure in their facilities and educate and inform their clients of the limits of engineering controls in regard to both ETS and ENDS.
- That multifamily buildings have complete smoking bans and maximize mitigation of ENDS passive emissions inside and nearby in order to protect nonsmoking adults and children.
- That further research be conducted by cognizant health authorities on the health effects of involuntary exposure in the indoor environment from smoking cannabis, using hookahs, and using ENDS.



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## INDOOR AIR QUALITY

### THE ISSUE

The average adult breathes about 2,000 gallons of air each day and most Americans spend around 87% of their time inside buildings – amplifying the importance of indoor environmental quality. Specifically, the quality of the air inside our buildings has a significant impact on a person's health, performance and wellbeing. Indoor air is a significant exposure route for airborne contaminants and may contain particles and gases with impacts that range from eye and lung irritation to exposure to infectious pathogens, poisonous compounds, or carcinogens. These contaminants can impact health, comfort, well-being, learning, sleep, and work performance.

The direct connection between health and wellness encourages building designers and operators to prioritize indoor air quality (IAQ) in buildings. Cost-benefit analyses have estimated the health and economic benefits of improved IAQ to be far greater than the costs of implementing strategies that yield IAQ improvements. There are three widely accepted approaches to improving IAQ – source control, ventilation, and air cleaning. Many strategies exist within these approaches that can help achieve good IAQ efficiently and can be implemented to lower energy use and improve occupant satisfaction.

### ASHRAE's ROLE

The critical connection between IAQ and building HVAC systems has made IAQ a fundamental issue for ASHRAE and its members for more than 50 years. ASHRAE provides technical resources, coordinates and funds research, organizes conferences, and educates practitioners about IAQ.

ASHRAE developed and continues to support standards, guidelines, and other resources related to efficiently improving IAQ, such as:

- ***ANSI/ASHRAE Standard 62.1, Ventilation and Acceptable Indoor Air Quality*** – This Standard establishes ventilation and other IAQ requirements for buildings other than residential and health care. Its outdoor air ventilation rate requirements have been adopted into the International Mechanical Code and Uniform Mechanical Code, the two most common model building codes in the US. The standard is also referenced by most green commercial building programs including LEED.
- ***ANSI/ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings*** – Residential (multifamily to single family homes) ventilation requirements from this standard have been adopted into codes, including California's Title 24, and into LEED for Homes and the U.S. Environmental Protection Agency's (EPA) Indoor airPlus program.
- ***ANSI/ASHRAE/ASHE Standard 170, Ventilation of Health Care Facilities*** – Standard 170 brought together several documents used throughout North America into a single standard. It is now widely used in building codes for ventilation requirements in hospitals and other health care facilities.
- ***ANSI/ASHRAE/ICC/USGBC/IES Standard 189.1, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings*** – This Standard was developed in conjunction with U.S. Green Building Council, the

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Updated June 30, 2023



International Code Council and Illuminating Engineering Society, this standard provides IAQ requirements beyond those in Standard 62.1.

- **ASHRAE Indoor Air Quality Guide: Best Practices for Design, Construction, and Commissioning and ASHRAE Residential Indoor Air Quality Guide: Best Practices for Acquisition, Design, Construction, Maintenance and Operation** – These guides present best practices that have proven successful in building projects to achieve good IAQ.
- **2017 ASHRAE Handbook Fundamentals** – This handbook covers basic principles and data used in the HVAC&R industry including indoor air quality. The ASHRAE Technical Committees that prepare these chapters provide new information, clarify and update existing content, and reorganize chapters to make the Handbook more understandable and easier to use.
- **Damp Buildings, Human Health and HVAC Design** – This report provides a summary of what is understood about dampness-related health risks in buildings as well as suggestions for HVAC system designers that can help avoid such risks.

### ASHRAE'S VIEW

ASHRAE's view is that the provision of acceptable IAQ is an essential building service. Improved IAQ brings substantial health and economic benefits from a broad public health perspective, as well as to individual building owners and occupants.

Therefore, ASHRAE recommends that:

- Achieving and maintaining good IAQ should be included in all decisions (including policy decisions) that affect the design and operation of buildings and HVAC systems, including efforts to improve building energy efficiency, sustainability and resiliency.
- The importance of IAQ and the fundamentals of achieving good IAQ through building design and operation should be included in education programs for all stakeholders in built environment – from developers, owners, and operators to designers, technicians, and consultants.
- The latest versions of ASHRAE's IAQ standards should be adopted by building codes and regulations when they are updated every three years, specifically:
  - Standard 62.1-2022 for commercial buildings
  - Standard 62.2-2022 for residential buildings
  - Standard 170-2021 for healthcare buildings
- Research and standards development should be supported by the government, including consideration for a national model standard, improvement of indoor contaminant monitoring and measurement technologies, approaches to improving IAQ beyond ventilation and filtration (e.g., air cleaning), development of tools to assess the economic valuation of IAQ benefits, and improved understanding of new contaminants of concern and techniques for adding them.



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## INDOOR CARBON DIOXIDE, VENTILATION AND INDOOR AIR QUALITY

### THE ISSUE

Indoor CO<sub>2</sub> has been considered in the context of building ventilation and indoor air quality (IAQ) for centuries. Most of these discussions have focused on how CO<sub>2</sub> concentrations relate to occupant perceptions of IAQ, and the use of CO<sub>2</sub> to evaluate ventilation rates. While these topics have been studied for decades, misinterpretation of CO<sub>2</sub> concentration as an indicator of IAQ and ventilation is common in the HVAC industry, IAQ research community, and the public.

In addition, recent research has studied the impacts of CO<sub>2</sub> on human performance at commonly observed indoor concentrations. indoor CO<sub>2</sub> monitoring has also been promoted as a ventilation indicator in the context of managing the risks of airborne disease transmission. Also, concerns have long existed regarding the accuracy of indoor CO<sub>2</sub> concentration measurements, which are now more common due to the availability and more widespread application of less expensive sensors. Given all of these factors, as well as increasing calls to monitor CO<sub>2</sub> in buildings, ASHRAE is working to clarify the use of indoor CO<sub>2</sub> measurements as a tool to help improve IAQ and building ventilation.

### ASHRAE's ROLE

ASHRAE has long been active in providing engineering technology, standards and design guidance to support the goal of providing healthy and comfortable indoor environments in an energy-efficient manner. For decades, these efforts have focused on providing effective ventilation in buildings, designing and operating ventilation systems and managing the wide range of air pollutants within buildings. For example, ANSI/ASHRAE Standards 62.1 and 62.2 are standards that specify minimum ventilation rates and other measures to support the health, comfort and productivity of building occupants; these standards do not include CO<sub>2</sub> limits.

### ASHRAE's VIEW

Monitoring indoor CO<sub>2</sub> can be a useful tool for understanding building ventilation and IAQ, supporting efforts to provide high quality indoor environments and manage the energy needed to do so. Critically, indoor CO<sub>2</sub> measurements should be understood in the context of the built environment, to ensure that they are measured and interpreted in a meaningful way. Claims that ASHRAE Standard 62.1 requires indoor CO<sub>2</sub> concentrations below a certain threshold (typically 1000 ppm) for acceptable indoor air quality are *incorrect*<sup>1</sup>. ASHRAE's IAQ Standards do not use indoor CO<sub>2</sub> values to determine acceptable indoor air quality, as IAQ is impacted by multiple factors (such as temperature, humidity, particulate matter, gas pollutants, etc.).

Because of ASHRAE's mission to act for the benefit of the public, it encourages building designers, lawmakers, policymakers and others to craft informed recommendations for the measurement of indoor CO<sub>2</sub> concentrations. To that end, ASHRAE stresses that:

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<sup>1</sup> Persily, A. 2022. *Development and application of an indoor carbon dioxide metric*. Indoor Air. Volume 32, Issue 7.

- Indoor CO<sub>2</sub> concentrations do not provide an overall indication of IAQ, but they can be a useful tool in IAQ assessments if users understand the limitations in these applications (e.g., number and activity level of occupants compared to the design capacity, length of time a space has been occupied, no combustion or other sources of CO<sub>2</sub> that could impact readings). While CO<sub>2</sub> readings below a threshold value do not assure overall acceptable IAQ, CO<sub>2</sub> readings far above expected ranges<sup>2</sup> may indicate the ventilation system is not functioning properly.
- Existing evidence for the impacts of CO<sub>2</sub> on health, well-being, learning outcomes and work performance is inconsistent and does not currently justify changes to ventilation and IAQ standards, regulations, and guidelines.<sup>3</sup> However, CO<sub>2</sub> can be used to verify if ventilation system performance meets existing IAQ standards, regulations, and guidelines.
- The use of indoor CO<sub>2</sub> measurements to evaluate the risk of airborne disease transmission must account for the type of space and its occupancy and the differences in CO<sub>2</sub> and infectious aerosols. For example, CO<sub>2</sub> concentration is unaffected by filtration and most other air-cleaning methods that reduce infectious aerosol concentration, so it should not be used as a *direct* indicator of infection risk.
- Sensor accuracy, location and calibration are all critical for drawing meaningful inferences from measured indoor CO<sub>2</sub> concentrations.
- Programs or requirements to monitor CO<sub>2</sub> in buildings, when conducted with an understanding of their technical basis, can be helpful, but monitoring CO<sub>2</sub> without such understanding can lead to confusion on the part of building occupants and the public.

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<sup>2</sup> *Ibid.*

<sup>3</sup> In a 2010 study by J.M. Logue, T.E. McKone, M.H. Sherman, and B.C. Singer of the Berkeley National Laboratory titled, Hazard Assessment of Chemical Air Contaminants Measured in Residents, fifteen pollutants were identified as contaminants of concern for chronic health effects in a large fraction of homes. Nine pollutants were identified as priority hazards: acetaldehyde; acrolein; benzene; 1,3-butadiene; 1,4-dichlorobenzene; formaldehyde; naphthalene; nitrogen dioxide; and PM<sub>2.5</sub>. Activity-based emissions are shown to pose potential acute health hazards for PM<sub>2.5</sub>, formaldehyde, CO, chloroform, and NO<sub>2</sub>.



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## **BUILDING DECARBONIZATION**

### **THE ISSUE**

Buildings provide many benefits to society but have a significant worldwide environmental impact due to their greenhouse gas emissions (GHGs). The building industry accounts for roughly 40 percent of global GHGs and the global building stock is expected to double by 2060 due to urbanization, population growth, and related economic trends. The standard metric used to quantify GHGs is carbon dioxide equivalent (CO<sub>2</sub>-eq). Using a common metric helps evaluate different sources of GHGs in terms of their potential to impact the atmosphere—also referred to as their global warming potential. As governmental bodies and jurisdictions across the planet confront climate change, the term “decarbonization” is used to describe practices or policies that reduce GHG emissions. Building decarbonization encompasses a building’s entire life cycle, including building design, construction, operation, occupancy, and end of life.

Many governmental bodies and jurisdictions are requiring new buildings to be low carbon or net-zero energy in the near-term and other policies are requiring retrofits of existing building stock in the medium to long term to decarbonize. Some decarbonization policies also advance building electrification when coupled with a renewable electricity source or other low-carbon technologies. Decarbonization efforts will require large public sector and private sector investments while at the same time creating jobs and business opportunities in the HVAC&R, construction materials, and design sectors.

### **ASHRAE's ROLE**

ASHRAE stands at the forefront in supplying standards, guidance and education for the design, manufacturing, installation, and operation of building systems. With respect to building decarbonization, ASHRAE’s historical focus has been on energy efficiency, which has resulted in significant GHG emission reductions. ASHRAE is expanding its technical resources, education and training and other initiatives so that they address building decarbonization. ASHRAE’s Task Force for Building Decarbonization is advancing numerous efforts and updates that can be found at [www.ashrae.org/decarb](http://www.ashrae.org/decarb)

ASHRAE’s consensus-based standards with potential reference to carbon include:<sup>1</sup>

- Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*
- Standard 90.2, *Energy-Efficient Design of Low-Rise Residential Buildings*
- Standard 100, *Energy Efficiency in Existing Buildings*
- Standard 105-2021, *Standard Methods for Determining, Expressing and Comparing Building Energy Performance and Greenhouse Gas Emissions*
- Standard 189.1, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings*
- Standard 189.3, *Design, Construction, and Operation of Sustainable High-Performance Health Care Facilities*

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<sup>1</sup> The most up-to-date list can be found at: <https://www.ashrae.org/about/tfbd-technical-resources>

- Proposed Standard 228P, *Standard Method of Evaluating Zero Net Energy and Zero Net Carbon Building Performance*
- Proposed Standard 240P, *Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation*

### **ASHRAE's VIEW**

ASHRAE's position is that eliminating GHG emissions from the built environment is essential to addressing climate change. To do this, it is ASHRAE's position that:

- Decarbonization of buildings and their systems must be based on a holistic analysis including healthy, safe, and comfortable environments; energy efficiency; environmental impacts; sustainability; operational security; and economics.
- By 2030, the global built environment must at least halve its 2015 GHG emissions, whereby:
  - all new buildings are net-zero GHG emissions in operation,
  - widespread energy efficiency retrofit of existing assets are well underway, and
  - embodied carbon of new construction is reduced by at least 40 percent.
- By 2050, at the latest, all new and existing assets must be net zero GHG emissions across the whole building life cycle.
- Building decarbonization provides benefits beyond reducing GHGs, including reduced indoor and outdoor air pollution, improved energy savings, improved community health and wellbeing, enhanced social responsibility, and increased property valuation.
- Operational energy-related GHG emissions can be reduced by implementing efficiency measures and building electrification; improving O&M; using low-GWP refrigerants and minimizing refrigerant volume while maintaining energy efficiency; improving refrigerant management; and increasing use of renewable energy sources both on site and off site, energy storage, and building-grid integration.
- Building design and operations should be able to respond to real-time carbon signals from the power grid to reduce GHG emissions.
- Increasing stringency and enforcement of energy codes are critical for decarbonization.
- Whole-building life-cycle assessment must be considered in future building codes to reduce embodied and operational GHG emissions related to buildings and their HVAC&R systems.
- Building performance standards (BPS) should be considered as a policy tool for existing building decarbonization.
- Decarbonization policies must consider and mitigate impacts on disadvantaged communities and less-developed nations.



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## REFRIGERANTS AND THEIR RESPONSIBLE USE

### THE ISSUE

Choosing a refrigerant for a given HVAC&R application has become increasingly complex due to direct and indirect environmental impacts, performance, cost-effectiveness and safety for employees and the public. Following the implementation of the Kigali Amendment to the Montreal Protocol in 2019, the use of lower global warming potential (GWP) refrigerants began to replace today's high GWP refrigerants. Many of the lower GWP refrigerants are mildly flammable, which required the updating of common codes and standards.

### ASHRAE's ROLE

With its technical expertise, ASHRAE plays a key role in guiding the selection and analysis of new refrigerants, and the potential environmental and societal consequences of their use. ASHRAE contributed to successfully phasing out the use of ozone depleting refrigerants and is already contributing to reducing the use of high GWP refrigerants. ASHRAE develops voluntary technical standards and guidelines governing the classification, application, and use of refrigerants, which are referenced by various codes and regulations, globally.

As lower GWP refrigerants become prevalent, ASHRAE commits to ensure their safe classification and application in residential, commercial and industrial uses as prescribed by the *Standard 34 – 2022, Designation and Classification of Refrigerants*, the *ASHRAE Standard 15 – 2022, Safety Standard for Refrigeration Systems*, and the *ASHRAE Standard 15.2 – 2022, Safety Standard for Refrigeration Systems in Residential Applications*. Significant updates to these standards were based on a \$5.2 million research program, with contributions from DOE (\$3 million), ASHRAE (\$1.2 million) and AHRI (\$1 million), as part of ASHRAE's commitment to support climate change mitigation.

### ASHRAE's VIEW

ASHRAE supports the classification and use of refrigerants based on safety, performance and environmental impact. As the transition to more climate-friendly alternatives continues, ASHRAE supports reducing emissions from high GWP refrigerants through research, education, and improvements to design, installation, operation, maintenance, and decommissioning of equipment in accordance with applicable standards and policies.

ASHRAE supports the global phasedown of the production and consumption of high GWP refrigerants and encourages the adoption of the latest standards in order to enable use of the new lower GWP refrigerants. ASHRAE continues to update related standards to reflect the newest low GWP refrigerants and solutions.

Furthermore, used refrigerants should be safely recovered for reuse, recycle, reclamation or destruction during service or at the end of the equipment life. Refrigerant inventory and management programs should be implemented to closely track refrigerant use.





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## RESILIENCY IN THE BUILT ENVIRONMENT

### THE ISSUE

Resiliency in the built environment is a complex subject that involves many disciplines. The National Institute of Building Sciences (NIBS) Coalition on Resiliency, which includes ASHRAE and 38 other organizations, has defined resiliency as “the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events or threats.” These events or threats may be financial, political, environmental, as well as disaster, conflict, cyber, climate, or health-related. Its recent prominence is in part due to increasing concerns over the adequacy of responses to natural or climate-related events around the world, as well as recognition that many such events are likely to increase in frequency and severity.<sup>1</sup> According to the National Oceanic and Atmospheric Administration (NOAA), the U.S. has sustained 341 weather and climate disasters since 1980 where overall damages/costs reached or exceeded \$1 billion (including CPI adjustment to 2022). The total cost of these 341 events exceeds \$2.475 trillion.<sup>2</sup>

Strengthening the built environment is vital to protecting the public when natural and human-induced events occur. Buildings often serve as the first line of defense and as a result, the built environment and engineered systems in buildings must become more resilient in how they are designed and operated in order to protect the public. A building's ability to recover and be available to occupants following such an event, can have widespread economic and health implications. Additionally, as the built environment becomes more interconnected and operations shift towards automation, building systems will see increased vulnerability to cyber threats.

### ASHRAE's ROLE

It is ASHRAE's position that building design and operation must consider resiliency as part of an overall risk assessment and planning approach, and that major new efforts in research, education, standards and guidelines, and guidance documents are required to increase building resiliency. Building resiliency is of such importance that it has been identified as one of four key initiatives in the 2019-2024 ASHRAE Strategic Plan.

ASHRAE also has partnered with CIBSE to release a Joint Position Document on Resiliency in the Built Environment.<sup>3</sup> The two societies are committed to taking a leadership role with respect to building resiliency. ASHRAE will be developing and adopting designs, materials, components, systems, and processes that minimize the adverse impacts of extreme events and environmental changes over time.

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<sup>1</sup> IPCC. 2014. Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Geneva, Switzerland: Intergovernmental Panel on Climate Change. [www.ipcc.ch/report/ar5/](http://www.ipcc.ch/report/ar5/).

<sup>2</sup> “Billion-Dollar Weather and Climate Disasters: Overview.” National Climatic Data Center, National Oceanic and Atmospheric Administration, <https://www.ncei.noaa.gov/access/billions/>.

<sup>3</sup> ASHRAE & CIBSE. Position Document on Resiliency in the Built Environment”.  
<https://www.ashrae.org/about/position-documents>

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## ASHRAE's VIEW

Investing in building resiliency is crucial to saving lives, protecting public property, and reducing the financial strain of post-disaster recovery. For these reasons, ASHRAE sees the need for policy setting entities world-wide to encourage sound, balanced, and innovative actions to address long-range resiliency issues and the specific technical concerns associated with them.

When it comes to strengthening the built environment, building codes and standards, such as those developed by ASHRAE, make our communities more sustainable, more efficient and more resilient. According to a 2018 study released by NIBS, by adopting the most recent building codes, there is an impressive cost-benefit ratio ranging from \$4—12 for every \$1 invested towards hazard mitigation. Unfortunately, most jurisdictions have not yet adopted the most recent standards and codes that are based on the latest research and technological innovation. Legislators and other government officials should examine the best ways to assist these jurisdictions with the adoption, implementation and enforcement of the most recent building energy efficiency codes and standards. This will help prevent future destruction and improve the resilience of the built environment. ASHRAE is committed to being a resource for government with respect to building codes and standards, and will continue to publish and maintain consensus-based building standards, guidelines, and Design Guides.

ASHRAE also holds the following positions with respect to resiliency in the built environment:

- Resiliency is an important societal, economical and technical issue that has a major impact on the built environment as well as how engineered building systems are designed and operated.
- Technical solutions to these challenges are needed. These solutions will include research, standard and guideline development, and the production of educational material.
- Policy setting entities need to encourage sound, balanced, and innovative actions to address the broad issues of resiliency and the specific technical concerns associated with them.
- Built environments need to be developed which are both resilient and sustainable.

Additionally, ASHRAE recommends that additional and continuing research be conducted with the intent to guide resilient infrastructure, building systems and community designs. ASHRAE aims to continue collaborating on building resiliency research opportunities with external organizations, national and international government agencies, and foundations. This is in addition to the over \$10 million in ongoing research projects currently funded by ASHRAE.





Shaping Tomorrow's  
Built Environment Today

## STEM EDUCATION AND HVAC&R WORKFORCE

### THE ISSUE

Commitment to a solid education in science, technology, engineering and mathematics (STEM) to develop the future supply of technicians, engineers and scientists is critical to our future well-being and standard of living. Even students pursuing non-STEM specialties need basic knowledge of scientific and technological applications for effective participation in the workforce, success in their personal lives and responsible citizenship.

Moreover, there has been increased growth in jobs related to STEM that need to be filled. The U.S. Bureau of Labor Statistics projects that employment in architecture and engineering occupations is expected to grow 4% from 2021 to 2031, with a median annual wage of \$79,840 compared to \$45,760, the median wage across all occupations.<sup>1</sup> Additionally, about 168,500 openings for construction employment are projected each year on average over the next decade.<sup>2</sup>

The HVAC&R workforce in North America remains a male-dominated employment sector; the share of female workers in engineering and architecture is 14 percent<sup>3</sup> and 5.9 percent of HVAC&R Technicians.<sup>4</sup> Additionally, people of color remain under-represented in the engineering of buildings and HVAC&R sectors; 70.1 percent of the HVAC&R workforce is white.<sup>5</sup>

### ASHRAE's ROLE

As professionals focused on design, construction, operation and maintenance of buildings and infrastructure, and as educators of future generations of engineers and the HVAC&R workforce, our members also recognize the importance of mentoring and helping students learn about STEM careers, which is why our members are active in their local communities and in national programs, bringing exciting science and engineering programs to students. ASHRAE is actively engaged in the Solar Decathlon, National Engineers Week and other STEM education efforts worldwide, including through its 440 active student branches.

ASHRAE is also a member of the National STEM Education Coalition, which supports new and innovative initiatives that help improve the content, knowledge, skills and professional development of the K-12 STEM teacher workforce, and informal educators. ASHRAE is dedicated to ensuring quality STEM programs for teachers and students all around the world by encouraging its members to get involved with their local school systems.<sup>6</sup>

ASHRAE's Board of Directors has committed to promoting diversity and inclusion in all levels of the society. This includes efforts to promote STEM education and training to children, schools, and educators, in a way that will attract, train, and retain more women, disabled, LGBTQ, and people of all socioeconomic and ethnic backgrounds to engineering education and employment.

<sup>1</sup> U.S. Bureau of Labor Statistics. 2022. Occupational Outlook Handbook: Architecture and Engineering Occupations.

<sup>2</sup> U.S. Bureau of Labor Statistics. 2022. Occupational Outlook Handbook: Construction Laborers and Helpers.

<sup>3</sup> U.S. Bureau of Labor Statistics. 2017. Women in architecture and engineering occupation in 2016.

<sup>4</sup> Zippia, 2022. Heating and Cooling Technician Demographics and Statistics in the US. <https://www.zippia.com/heating-and-cooling-technician-jobs/demographics/>.

<sup>5</sup> *Ibid.*

<sup>6</sup> For more information, see <https://www.ashrae.org/communities/student-zone/k-12-activities>.

ASHRAE also supports strengthening the broader HVAC&R workforce, including technicians who install and maintain HVAC&R equipment as well as distributors, contractors, and facility operators and managers. The HVAC&R and buildings industry has been facing a serious shortage of skilled trade employees for several years and has more recently been exacerbated by the overall shortage of U.S. workers. Unfortunately, there is a broadening skills gap as well due to several factors, including: the retirement of the baby boomers, advancements in technology that require new skills, increased job competition in the global marketplace, failure to cultivate and retain skilled talent, a societal focus only on four-year degree programs to the exclusion of technical and technological education, and a lack of emphasis on the necessary skill sets for advanced manufacturing. Of these, the last two are most critical to ensuring innovative, high efficiency products are able to be manufactured and installed properly. Community colleges, training programs, internships, apprenticeships and certification programs can strengthen the pipeline for the HVAC&R workforce.

### **ASHRAE's VIEW**

Future generations need to possess the skills and critical competencies necessary to be successful in a highly competitive, global and technologically sophisticated economy. We must work cooperatively to ensure that students receive the STEM training essential for future success.

ASHRAE encourages policymakers to implement the following recommendations:

- Increase government funded research to improve teaching and learning of STEM concepts and critical thinking skills.
- Recruit, train and retain qualified STEM teachers through the development of programs recognizing educators who excel in STEM education and incentives, that encourage the best and brightest scientists, engineers, technologists, and technicians to act as role models and teachers, to pave the way for future generations.
- Foster partnerships among educational institutions, industry and non-profit organizations and their members to introduce students of all backgrounds to STEM career opportunities, including those careers that do not necessarily require a university degree.
- Support and encourage students who choose to enroll in community college, or other career and technical education programs, that prepare and qualify individuals for careers as HVACR technologists, technicians, facility operators, and buildings managers by providing these students with affordable tuition options.
- Create opportunities and incentives for women and those of diverse backgrounds to pursue STEM coursework and careers.
- Encourage diversity in STEM education and the HVAC&R workforce.

## TRACKING GOVERNMENT OUTREACH EVENTS SY 2022-2023

### PROGRESS CHART

	Target	Held	Scheduled	Planned	Delta
City/Local	57	3	0	2	-52
State	28	22	0	9	4
Federal	13	26	0	8	21
Global	28	16	0	4	-8
In-Person		38			
Virtual		29			
<b>Total</b>	<b>125</b>	<b>67</b>	<b>0</b>	<b>23</b>	<b>-35</b>

Note: Totals may not add up due to rounding

Note: Delta assumes that **ALL** planned and scheduled events are held (negative indicates that we are behind the goal).

	Number of Attendees (ASHRAE Members)	Number of Meetings
<b>SY22-23 SUMMARY TOTALS (to date):</b>		
Local	3	3
State	80	65
Federal	52	24
Global	180	18
<b>TOTAL:</b>	<b>315</b>	<b>110</b>

### In Comparison

	Number of Attendees (ASHRAE Members)	Number of Meetings	Total Number of Events
<b>SY21-22 SUMMARY TOTALS:</b>			
Local	72	44	21
State	103	98	39
Federal	16	15	9
Global	343	60	44
<b>TOTAL:</b>	<b>534</b>	<b>217</b>	<b>113</b>

## Members Council Report to GAC meeting April 12, 2023

Most of the Council's work since the Winter Conference is a follow-up to the Conference. For example, during the Winter Conference, the Board approved two motions that affect the work of the Council and its reporting Committees:

- A- The Handbook Online and a Certification Program Study Guide of the individual's choosing are two new choices for the benefit of membership. IT programming these changes has been undertaken, and the two additional choices are now available at join and renewal.
- B- Beginning SY 2023-24, the Chairs of the Committees that report to the Members Council will be voting members of the Council, and the assigned Executive Officers (ExOs) will be nonvoting members. This change is intended to streamline operations while maintaining direct links among the Council, its reporting Committees, and the Board of Directors.

**Below are the activities in the Region at Large since the winter meeting. I am sure RAL RVC (Ahmed Bellbol) will cover these events**

- C- Excom meeting in Egypt organized by three Egyptian chapters. Meeting with the Egypt Minister of Environment and the team
- D- Acrex HVAC & R Feb 15-17 RAL arranged a side meeting during Acrex
- E- Developing Economy Conference Mumbai India May 10-11, 2023. The conference theme is "Decarbonizing and Sustaining Growth of Healthcare and Residential Infrastructure in Emerging and Future Markets



**ACTION ITEMS**  
**GOVERNMENT AFFAIRS COMMITTEE**  
**SY 2022-2023**

**Last Updated: April 17, 2023**

#	Action	Assigned To	Due Date	Status	C/O
<i>Added at 06-24-2022 meeting</i>					
1	Review whether the presentation on roles and responsibilities for the nominating subcommittee should be added to the GAC Reference Manual.	Rules Subcommittee	Next Rules Subcommittee Meeting	Was discussed at Rules SC meeting on April 6; the presentation will be posted on Basecamp in the Nominating Subcommittee folder, rather than added to the Resource Manual.	C
<i>Added at 11-07-2022 meeting</i>					
2	Develop Fact Sheet on key programs from IRA and the BIL, along with websites that have more detailed information.	Staff	Winter 2023 Meeting	Matt Young prepared these factsheets and distributed to GAC members via email on December 16 <sup>th</sup> , 2022. Documents are also posted to Basecamp in the Key Resources folder.	C
3	Work with the Marketing Team to collect statistics on use of the Gov Affairs website (and various pages within it). This information will help inform website changes.	Staff	Before December Meeting with Marketing.	Staff worked with Marketing to obtain statistics; these were used to inform the meeting on website redesign with the Communications Coordinator.	C
4	Set up dinner in Atlanta – to be held Friday night, February 3.	Staff	Mid-December	Venue identified, menu developed, payment system arranged.	C

#	Action	Assigned To	Due Date	Status	C/O
5	Inquire with the Building EQ Committee concerning its timeline for incorporating carbon into the tool.	Staff working with Daryl Collerman	Winter 2023 Meeting	<p>Per a discussion with Building EQ staff, Daryl Collerman, and Gov Affairs staff, the Building EQ carbon metric is currently live for operational carbon emissions. BEQ will consider how to incorporate embodied carbon once more information on that is available from the TFBD.</p> <p>The BEQ Committee is working on an updated version of the BEQ “fact sheet” that will include the carbon information; this updated fact sheet will be used for GOEs once it’s finalized and available.</p>	C
<i>Added at 02-03-2023 meeting</i>					
6	Structure a Government Affairs award at the Regional Level, and potentially include language to Resource Manual; consider how to improve communication to Regions and Chapters about the Society GAC award.	Member Mobilization	GAC Spring Meeting	The Member Mobilization Subcommittee will consider criteria for an optional regional-level award based on regions that already have such an award and will share their recommendations at the June Annual meeting.	O
7	Send criteria on your Regional GA Awards to member mobilization SC so that they can structure a consistent approach	All RVCs with GA Regional Awards	Feb. 28	Member Mobilization will be reaching out to RVCs that already have a regional award before the June meeting.	O
8	Determine which parts of North Dakota (if any) are included in Region VI	Staff	ASAP	Yates sent email to RVCs for Regions VI and IX on 4/7.	C
9	Send GAC Award Recommendation to Honors & Awards	Staff	ASAP	Emily Porcari emailed recommendation to staff liaison of Honors and Awards on Feb. 5.	C

#	Action	Assigned To	Due Date	Status	C/O
10	Investigate with web team why a nomination to the GAC couldn't be found on the website.	Ken	ASAP	This issue has been corrected.	C
11	Continue the discussion on ways to better coordinate and collaborate between the CIS and GAC.	CIS & GAC Executive Subcommittee	Spring / Summer	Ongoing	O
<i>Added at 04-12-2023 meeting</i>					
12	Draft new section for the Resource Manual on the GAC Mentorship Program.	Rules Subcommittee	Annual Meeting		
13	Consider recommending PAOE bonus points for getting in the GOE forms in a timely fashion.	Incoming GAC Chair	Summer		
14	Send email to RVCs requesting examples of chapter activity to include on the Advocacy Toolkit page of the website.	Communications Coordinator	Mid-May	Email sent on April 13.	C
15	Ask if Decarb training courses can be added to the decarb webpage ( <a href="http://www.ashrae.org/decarb">www.ashrae.org/decarb</a> )	Cindy Calloway			
16	Provide list of individuals to staff for the SY23-24 planning meeting.	Rob Hoadley	ASAP	Discussed on April 17; Hoadley wants to invite the Executive Subcommittee members	C
17	Provide input on the GOE goals for SY23-24.	All RVCs			
18	Organize GAC dinner for Tampa meeting for Friday, June 23	Tim Theriault			
19					