

Technical Committee Meeting Minutes
Technical Committee, TC 1.10 Combined Heat and Power Systems
Friday, 2022-06-28, Hybrid Webex (Toronto, Canada)

TC 1.10 Combined Heat and Power Systems – Committee Meeting

Tuesday, 1:00 pm – 3:00 pm, Sheraton Centre Toronto, Room Elgin 2 & Hybrid Webex (Toronto, Canada)

<https://ashrae.webex.com/wbxmjs/joinservice/sites/ashrae/meeting/download/eee3f41fe9714483ba2cad8906c3a227?siteurl=ashrae&MTID=mdf9e301f94c82523fb0aaef2b11deb16>

Meeting number: 2331 182 6884 Password: TC1.10

Chairs and Voting Members:

Name	Position	Term	Voting Status	Present
Blake Ellis	Chair	2021-2022	Voting	No
Geoff Bares	Vice-Chair	2021-2022	Non-Voting	Yes
Michael Calabrese	Secretary/Webmaster	2021-2022	Voting	Yes
Dragos Paraschiv	Handbook Subcommittee Chair	2021-2025	Voting	Yes
Gearoid Foley	Programs Subcommittee Chair	2020-2024	Voting	Yes
Farzin Rad	Research Subcommittee Chair	2021-2025	Voting	Yes
Isaac Mandereka Ahmad Abuheiba	Standards Subcommittee Chair	2021-2022	Non-Voting	Yes
-	Membership Subcommittee Chair	2021-2022		-
-	Honors and Awards Subcommittee Chair	2021-2022		-
Marija Todorovic	Member Non-Quorum	2021-2022	-	
Dharam Punwani	-	2019-2023	Voting	
Dan Pywell	-	2021-2022	Voting	

Non-Voting Members/Guests: For complete attendance list, see sign-in sheet.

Name	Position	Present
Cory Metzger	TAC Section Head	Yes
Richard Sweetser	DOE liaison	Yes
Bill Ryan	TC 8.3, Programs Chair	Yes
Tim Anderson	TC 6.2, Programs Chair	Yes

1. The Vice Chair (Geoff Bares) Called to Order at 1:02 pm
2. ASHRAE Code of Ethics Commitment – Announced by TC Vice Chair (Geoff Bares)

In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, integrity and respect for others, and we shall avoid all real or perceived conflicts of interest. (see full code of ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)

3. Introductions / Attendees
 - A. Name, company/location, & position on committee. Roll call.
 - B. Quorum has been established with at least 5 voting members present.
 - C. Introduction to ASHRAE Liaisons

- i. Section Head report, Cory Metzger. Updates to the TC roster, message the section head for them to "submit". Activities reports are due tonight. Questioned if there is anything that TAC can assist the TC with? None.
- D. Review of Current Voting Members, TC officers and Quorum.
 - i. Ref. Manual of Procedures – 3.33, 2.13, 2.14 & 2.15

4. The secretary (Michael Calabrese) discussed the Purpose Statement

Technical Committee (TC) 1.10 is concerned with combined heat and power (CHP) systems, their cycles and components including heat recovery, combustion turbine inlet cooling (CTIC), energy conversion and system integration. The systems provide both power (electric and/or mechanical) and thermal energy (heating and/or cooling) and are variously known as cogeneration systems; trigeneration systems; combined heat and power (CHP); and combined cooling, heating and power (CCHP) systems.

5. Meeting Minutes from the 2022 Hybrid (Las Vegas, NV) Winter Meeting

- A. Copies of the draft minutes of the 2022 Winter meeting, were distributed to the membership via email.
 - i. Chair reviewed the minutes.
 - ii. A motion to approve the meeting minutes of the 2022 Hybrid Winter Meeting.
 - iii. Motion by Dharam Punwani-VM, second by Farzin Rad-VM, all Yea, no Nay. Motion passed, unanimously.

6. Sub-Committee Reports:

A. Handbook: Dragos Paraschiv (Sub-Committee Chair)

- i. Chapters 7 and 8, due for publication 2023-2024
 - (1) Forwarded the chapters to this TC for review.
 - (2) Online portal is available to edit these documents. Please track changes for chair to review.
 - (3) Chapter 7 is due March 14, 2023 and Chapter 8 in July 27, 2023
 - (4) Reviewers for Chapter 7
 - (a) Richard Sweetser
 - (b) Gearoid Foley
 - (c) Ahmad Abuheiba
 - (d) Praveen Cheekatamaria
 - (e) Bill Kilcus
 - (f) Doug Davis
 - (g) Anthony Buschur
 - (h) Alok Kumar
 - (5) Reviewers for Chapter 8
 - (a) Geoff Bares
 - (b) Dharam Punwani
 - (6) List of Topics for revision
 - (a) Performance of reciprocating engines, fuels, renewable fuels, solar PV, microturbine, microgrids and storage
 - (7) Chair would like to have all review comments received by December 31, 2022. Chair will assemble and present at 2023 Winter Conference.
 - (8) Printed version and online versions. Online is available to edit but printed copy has a scheduled deadline.
 - (9) Richard Sweetzer commented that Decarbonization with CHP, even with conventional fuels should be included.

B. Honors and Awards: Geoff Bares, Vice Chair

- i. No awards.
- ii. Keep ASHRAE bio updated, awards available based on participation points.

C. Membership: Geoff Bares, Vice Chair

- i. Succession shown below.

	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026		
Blake Ellis	VM-Chair	VM-Chair						
Geoff Bares	NVM-VC	NVM-VC	VM-Chair	VM-Chair				
Michael Calabrese	VM-Sec	VM-Sec	VM-VC	VM-VC	VM-Chair	VM-Chair		
Ahmad AbuHeiba			VM-Sec	VM-Sec	VM-VC	VM-VC	VM-Chair	VM-Chair
Dragos Paraschiv	NVM-HB	VM-HB	VM-HB	VM-HB	VM			
Gearoid Foley	VM-Prog	VM-Prog	VM-Prog	VM-Prog	VM-Prog			
Farzin Rad	NVM-Research	VM-Research	VM-Research	VM-Research	VM-Research			
David Kalensky	VM-Standards							
Marija Todorovic	MNQ	MNQ						
John Molnar	VM							
Dharam Punwani	VM	VM	VM					
Dan Pyewell	VM	VM						
Isaac Mahderekal		NVM-Standards						
Bill Ryan			VM	VM	VM	VM		
Vik Patnaik			VM	VM	VM	VM		

- ii. 7 voting members (VM) for quorum. Will have 9 VMs at 2023 Winter meeting.
- iii. Zhiming Gao volunteered to be a VM.
- iv. New VMs are voted on at Winter meeting.
- D. Programs: Gearoid Foley (Sub-Committee Chair).
 - i. Move forward with submitting two tracks
 - ii. Also planning forum on decarbonization by thermally driven heat pumping and cooling under track 5 as well. Would like to request that TC 1.10 cosponsor the seminar and forum.
 - iii. Categories for Atlanta
 - (1) Gearoid read out the descriptions of the two tracks
 - (2) Motion by Farzin Rad-VM, second by Dharam Punwani-VM, all Yea, no Nay. Motion passed, unanimously.
 - iv. Bill Ryan – TC 8.3 Program Subcommittee Chair planning for Atlanta, a forum titled Thermally Driven Heat Pumping and Cooling to assist with decarbonization under track 5. Requesting this TC to co-sponsor
 - (1) Panelist for the forum have been selected. Additional speakers will be announced. ASHRAE does not want remote seminars, they want a hybrid meeting or in-person.
 - (2) August 9, 2022 is the deadline for submission.
 - (3) Co-sponsorship- A motion by Dragos Paraschiv-VM, second by Gearoid Foley -VM, all Yea, no Nay. Motion passed, unanimously.
 - v. Tim Anderson, TC 6.2 program subcommittee chair
 - (1) Workshop / Seminar for Atlanta 2023. Track 6 Decarbonization; Thermal Storage, CHP, Hydrogen topics.
 - (2) Tim Anderson to forward description, outline and titles for this TC for voting consideration.
 - (3) Tim Anderson requested volunteers from this TC.
- E. Research: Farzin Rad (Sub-Committee Chair)
 - i. Chair Breakfast Topics
 - (1) Budget – usually between 2.6-2.7 million a year for research. But because of COVID was reduced to 1.8 million. As a result, some elimination on research agendas has occurred.
 - ii. For this year only two board statements, two research topic acceptance requests, and 8 research projects, pending.
 - iii. Farzin Rad to forward description, for voting consideration.
 - iv. Discussion on integration on micro-CHP and battery storage for PV optimization (1.02.56)
 - v. Doug Davis and John volunteered to assist Farzin Rad
 - vi. Co-sponsor TC 8.3 cogeneration, trigeneration modeling with e-quest and/or alternate platforms.
- F. Website: Michael Calabrese (Webmaster)
 - i. Website needs to be updated with final documents, access to the website has been challenging and ASHRAE staff is aware.
 - ii. 2021-2022 Meeting minutes (for this meeting), and handout documents will be posted on the website.
 - iii. Next subcommittee meeting information will be posted.

- G. Standards: SPC 204, Ahmad Abuheiba (Sub-Committee Chair).
- i. Submitted the form that will be approved at this conference
 - ii. Start date will be sometime in July 2022.
 - iii. Note – CS 8 has reached out and said that they wanted to harmonize the CS 8 CHP test method with standard 204
 - iv. They did have a meeting with ASHRAE and they sent them the standard
 - v. Currently being reviewed

7. Chairman's Overview and Report, TC Vice Chair (Geoff Bares).

A. TC Chair breakfast

- i. Functional Groups (FG), MTG. Includes TCs, TRGs.
 - (1) Separate MOP required for the above.
- ii. Updates – must now be ASHRAE members for committee
- iii. New balance requirement – no specific group can hold a majority of voting member positions.
- iv. New Task force going full support of building decarbonization
 - (1) Been given funding to produce a number of new publications and guidelines, with aggressive publication dates.
- v. Executive committee for decarbonization task force, began in April 2022.
 - (1) Tasked to develop a plan and a budget of what they want to get accomplished. Approximate 3-year budget is \$1.3M
 - (2) Have two different subcommittees
 - (a) Operations subcommittee: to produce 6 specific guides.
 - (b) Products and Services subcommittee
 - (i) Website and social media to be utilized.
 - (ii) How decarbonization will be integrated within ASHRAE. Plan due by Winter 2023 meeting.
 - (c) Participation email to be released shortly. 6 working groups formed.
 - (d) TCs are to develop specific strategic plan, separate from ASHRAEs. Objectives to provide direction in the future. More to come.

8. Old Business-

- A. E-catalog.
- B. This TC to form a Subcommittee on decarbonization. Chair relayed this TC has volunteers, however many TCs have been onboarded.

9. New Business

- A. TC Vice Chair (Geoff Bares) announced that there will be an online Subcommittee meeting prior to the Winter Meeting in January. The main committee meeting will be in-person at the 2023 Atlanta Winter Meeting. Hybrid meetings will be offered.
- B. TC Vice Chair (Geoff Bares) recognized the Chair. Thank you to the outgoing TC Chair, Blake Ellis.

10. Adjourn

- A. Announcement by TC Vice Chair (Geoff Bares) to close this session at 2:34 pm.
- B. Motion by Dharam Punwani -VM, second by Michael Calabrese-VM, all Yea, no Nay. Motion passed.

Submitted by,
Michael Calabrese
TC 1.10 Secretary
2022-06-28

Subcommittee Meetings - Day, Date, Times, & Location Prior to TC 1.10 Meeting:

TC 1.10 Handbook, Program, Research – Wednesday 2022-06-01, 3:30 pm – 5:00 pm, Remote Teams Meeting