

Technical Committee Meeting Minutes  
Technical Committee, TC 1.10 Combined Heat and Power Systems  
Tuesday, 2021-01-26, Remote Zoom (Chicago, IL)

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TC 1.10 Combined Heat and Power Systems – Committee Meeting

Tuesday, 2:30 pm – 4:00 pm, Remote Zoom (Chicago, IL)

<https://ashrae-org.zoom.us/j/95042606268?pwd=K0VnWXIyVE93Qml6QWFrM1NWbFFDdz09>

Present:

Position	Term	Name	Position	Name
Chair (VM)	2022-06-30	Blake Ellis	IDEA liaison	John Andrepont
Vice Chair (Nom-VM)	2022-06-30	Geoff Barnes	DOE liaison	Richard Sweetser
Secretary-Webmaster (VM)	2022-06-30	Michael Calabrese		
Program Subcommittee Chair (VM)	2024-06-30	Gearoid Foley		
Handbook Subcommittee Chair (VM)	2022-06-30	Dragos Paraschiv		
Research Subcommittee Chair (Non-VM)	2022-06-30	Farzin Rad		
VM	2022-06-30	Dharam Punwani		

1. The Chair (Blake Ellis) Called to Order at 2:30 pm
2. ASHRAE Code of Ethics Commitment – Announced by TC Chair (Blake Ellis)

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. Review of Current Voting Members and TC officers, Quorum is NOT achieved.
    - i. Ref. Manual of Procedures – 3.33, 2.13, 2.14 & 2.15
  - C. Recruiting of new members and officers for this technical committee (TC 1.10) was discussed.
4. Michael Calabrese (Secretary) discussed the Mission 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. Sub-Committee Reports:

### A. Programs: Gearoid Foley (Sub-Committee Chair).

- i. Because of the virtual format, the Seminar is an online video. Two approved speakers from the seminar will be recorded but the uploading to the was successful and approved by society. Feedback to follow.
- ii. Summer 2021 Conference Program
  - (1) Proposal for Track 7: Future Proofing – Renewable, Regenerative and Resilient. A proposal was presented for "Future Proofing Buildings and Industry with Renewable, Regenerative and Resilient Combined Heat and Power Systems". Chair is Andy Cochrane. Speakers are Richard Sweetser, Gearoid Foley and Blake Ellis. The title wording, quantity of presenters and the order were discussed. "Future Proofing the Built Environment with Industry with Renewable, Regenerative and Resilient Combined Heat and Power Systems" was final.
  - (2) Dragos Paraschiv will Chair the program.
  - (3) TC 8.3 is interested in cutting edge topics such as Hydrogen and other new technologies. Suggestions were made to improve efficiency and thresholds for project funding.

## 6. Chairman's Overview and Report

### A. TC Chair breakfast - The chair provided an update on the TC mergers, Hightower Awards.

- i. Interim TC meetings should be announced and listed on the TC website.
- ii. The 2019-2024 ASHRAE Strategic plan was reviewed.
- iii. Tech council report was reviewed, and lean assessments will be annual.
- iv. Technology Council MBOs are to continue the Epidemic Task Force (ETF) work and Integrating Carbon as a metric.
- v. The Virtual conference will be February 9<sup>th</sup>, 2021. 2021 Annual conference tracks were listed and this TCs focus will be on track 7.
- vi. The Refrigeration and Environmental Health committees are being reorganized.
- vii. An ETF update was provided on statements, recommendations, and their membership.
- viii. The chair reviewed the session reports and updates. Research Advisory Panel, Research Administration Committee (RAC), Residential Buildings Committee were included.

## 7. Sub-Committee Reports:

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

- i. Chapters 7 and 8 of the HVAC Systems and Equipment Volume have been published in the 2020 edition. Chapter 7 is titled "Combined Heat and Power Systems" and Chapter 8 is titled "Combustion Turbine Inlet Cooling".
- ii. Updates to include Chapter 8: With the completion of the Combustion Turbine Inlet Cooling (CTIC) Design Guide, the chapter will be reviewed to add design guide references and possibly integrate new content.
- iii. There are annual revisions to the "Electronic" Handbook. The print volume is published every 4 years.

### B. Website: Michael Calabrese (Webmaster)

- i. Website is up to date.
- ii. Meetings minutes (for this meeting), and handout documents will be posted on the website.
- iii. A virtual meeting announcement for 2021 Annual will be available on the webpage.

### C. Honors and Awards: Annette Dwyer (Sub-Committee Chair)

- i. The Distinguished and Exceptional Service award applications are due by 5/1/2021.
- ii. TC 1.10 members should keep their bio up to date.

### D. Research: Farzin Rad (Sub-Committee Chair)

- i. Fuel Cells for Building Applications
  - (1) The proposed change topics have been drafted.
  - (2) Communicating with the editor of the ASHRAE special Publication (Cindy Michaels).
- ii. Collaboration with TC 8.3 Absorption and Heat Operated Machines

- (1) RTR 1842, Design and Building of CHP Buildings. Development of co-gen tools for building designers (eQuest). Investigate the status of comments and approvals. It was understood that a work statement was generated.
- (2) The discussion on the usage of Thermal storage and absorption technology used together. The members agreed that Energy Storage could be the research topic for which may be the Cogen committee 1.10 or Thermal Storage committee 6.9 can be contacted for a joint statement. They will approach other TCs to check this possibility.
- iii. Home Micro-Grid Systems. Composed of Micro Combined Heat and Power unit coupled with cold climate heat pumps (CC-ASHP).

**iv. Motion to approve RTARs**

- (1) Discussion on Site vs Source and Greenhouse Gas Emissions
  - (a) Motion by Farzan Rad, second by Gearoid Foley, all Yea, no Nay. **Motion passed, 4-0-0.**

**v. The CTIC Design Guide has been approved for publication.**

- (1) Dharam Punwani stated manuscript is under review and may not be completed for one year (submitted in February 2020).

**E. Programs (discussion extended beyond 5-A): Gearoid Foley (Sub-Committee Chair).**

- i. Gearoid reviewed the order and titles of the presentations. Regenerative & Resilient CHP will have a case study, titled Hybrid Microgrid (CHP, PV and Storage).
- ii. Motion for to approve the outline for the Annual 2021 conference Seminar
  - (a) Motion by Gearoid Foley, second by Blake Ellis, all Yea, no Nay. **Motion passed, 4-0-0.**

**F. Membership:**

- i. This TC has seven (7) voting members and one (1) member, non-quorum [Marija Todorovic].
- ii. Chair reported that there are 1 voting member is rolling off after the summer 2021 meeting. New voting member will be Farzin Rad.

**G. Standards:**

- i. David Kalensky, Subcommittee Chair will no longer be available to chair. Blake Ellis to contact potential members for the new Subcommittee Chair.

**8. Old Business-**

- A. Copies of the draft minutes of the 2020 Annual meeting, were made available through the TC 1.10 website.
  - i. An electronic copy was distributed to the voting members, prior to this meeting.
  - ii. Dharam Punwani made a motion to **approve the meeting minutes** of the 2020 Annual Virtual Meeting.
  - iii. Motion by Dharam Punwani, second by Michael Calabrese, all Yea, no Nay. **Motion passed, 4-0-0.**

**9. New Business**

- i. Annual review and vote on status of TC 1.10 remaining a tech committee.
- B. Voting for **TC to remain:** Motion by Gearoid Foley, second by Dharam Punwani, all Yea, no Nay. **Motion passed, 4-0-0**

**10. Visitors and Liaison Reports/Information from other Committee Representatives**

- A. IDEA: John Andrepont provided a report, dated 2021-01-09
  - i. The updated IDEA liaison report be available on the TC webpage.
  - ii. This document lists the upcoming IDEA conference dates. John discussed the upcoming Campus Energy (Virtual) Conference and several additional upcoming IDEA conferences
- B. DOE: Richard Sweetser
  - i. Update was provided. Suggestions were made to become a member of the CHP alliance, [www.chpalliance.org](http://www.chpalliance.org)
  - ii. DOE CHP e-catalog discussion and website reference was provided [www.chp.ecatalog.lbl.gov](http://www.chp.ecatalog.lbl.gov)
  - iii. Alok Kumar asked if there a CHP comparison tool available. Richard Sweetser noted that NREL will have a new tool release soon to help with economic viability. REopt - Renewable Energy Integration & Optimization. The screening tool will also include Microgrids.

**11. Upcoming Subcommittee and Committee Meetings**

- A. Chair announced that there will be an online Subcommittee meeting prior to the Annual Meeting.
- B. The main committee meeting (June 28, 2021, 1:30pm-3pm OR 5:30pm-7pm EST).

**12. Adjourn**

- A. Announcement by TC Chair (Blake Ellis) to close this session at 4:00 pm.
- B. Dharam Punwani made a **motion to end the meeting**, seconded by Gearoid Foley, all Yea, no Nay. 4-0-0.

Submitted by,  
Michael Calabrese  
TC 1.10 Secretary  
2021-01-26

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

TC 1.10 Handbook - Monday, 1:30 pm – 2:30 pm, Remote Zoom  
TC 1.10 Program - Monday, 1:30 pm – 2:30 pm, Remote Zoom  
TC 1.10 Research - Monday, 1:30 pm – 2:30 pm, Remote Zoom