



1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400

TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No.: TC 6.2

DATE: June 26, 2017

TC/TG/MTG/TRG TITLE: District Energy

DATE OF MEETING: June 25, 2017

LOCATION: Long Beach, CA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Jay Eldridge	6/30/2014	Lawrence Markel	6/30/2015	Steve Tredinnick
Drew Overmiller	6/30/2013	Chris Paraskevakos	6/30/2013	Gary Phetteplace
Steve Severini	6/30/2013	John Andrepont	6/30/2013	Dan Pyewell
Alan Neely	6/30/2016			Art Giesler
Geoffrey Bares	6/30/2016			John Molnar
Jessica Mangler	6/30/2016			Jim Young
				Verle Williams
				Daryl Stauffer
				Stephen Kazim
				Michael Langton
				William Ryan



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MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE

DISTRIBUTION: *All Members of TC/TG/MTG/TRG plus the following:*

TAC Section Head:	SHx@ashrae.net Where x is the section number
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net



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ACTIVITIES SHEET
ASHRAE TC 6.2 DISTRICT ENERGY
Sunday, January 29, 2017 Las Vegas, NV

Chairman: Drew Overmiller
Vice-Chair: Alan Neely
Secretary: Steve Severini

TC 6.2 Meeting Schedule:

Location Past 3 Meetings	Location Next 3 Meetings
Long Beach, CA June 2017	Chicago, IL January 2018
Las Vegas, NV January 2017	Houston, TX June 2018
St Louis, MO June 2016	Atlanta, GA January 2019

TC 6.2 Sub-Committees:

Committee	Chair
Handbook	Steve Tredinnick
Membership	John Andrepont
Program	Tim Anderson
Research	Jay Eldridge
Standards	(open)
ALI Coordinator	Chris Paraskevakos
Webmaster	Jessica Mangler

Research Projects

None current.

Technical Papers from Sponsored Research:

None current



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ACTIVITIES SHEET (Continued)
ASHRAE TC 6.2 DISTRICT ENERGY
Sunday, January 29, 2017 Las Vegas, NV

TC 6.2 SPONSORED SEMINARS, FORUMS, AND WORKSHOPS (Past three years and this meeting)

Year	Location	Topic
2014, January	New York	<i>Seminars 6, 16, and 17:</i> Efficient Technologies That Are Also Economically Sustainable, Parts 1, 2 and 3: District Energy and Complementary Options. (co-sponsored with TC 1.10 Cogeneration Systems and TC 6.9 Thermal Storage)
2014, June	Seattle	<i>Workshop 11:</i> Achieving High Delta-T: Keys to High Performance District Energy Systems
2015, January	Chicago	None
2015, June	Atlanta	None
2016, January	Orlando	<i>Seminar 47:</i> The Campus Planning Question: To Centralize Energy or Decentralize?
2016, June	St. Louis	<i>Forum 4:</i> To Centralize or Decentralize a Thermal Energy System: The Great Debate Continues
2017, January	Las Vegas	<i>Seminar 22:</i> The Past Present and Future of Combined Heat and Power in Mission Critical Facilities
2017, June	Long Beach	None

TC 6.2 SPONSORED TECHNICAL PAPER SESSIONS AND CONFERENCE PAPER SESSIONS (Past three years and this meeting)

Year	Location	Topic
2014, June	Seattle	<i>Technical Paper Session 5:</i> Theoretical and Real World Application of Energy Saving Techniques (co-sponsored with TC 6.05 Radiant Heating and Cooling)
2015, January	Chicago	None
2015, June	Atlanta	None
2016, January	Orlando	None
2016, June	St. Louis	None
2017, January	Las Vegas	None
2017, June	Long Beach	None



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Journal Publications: (Past three years)

1. Tredinnick, S., Wade, D., Phetteplace, G. July 2015. "District Energy Enters the 21st Century".



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Voting is recorded in a format (In Favor – Against – Abstentions) and is based on voting members present.

1. Call to Order:

Chair Drew Overmiller called the meeting to order at 3:11 PM, and welcomed everyone. He noted that the Agenda is available on the TC6.2 website, and also distributed hard copies. He read the scope of TC 6.2 District Energy:

Technical Committee 6.2 is concerned with district energy technology and integrated systems that provide one or more forms of thermal energy or a combination of thermal energy and electric power from a central plant(s) to meet the heating, cooling, or combined thermal energy and power needs of end-users in two or more structures. The TC collects and disseminates information on regional resource planning including the design, performance, economic analysis, operation and maintenance of central plants, distribution networks, and consumer limited to materials, construction methods, heat transfer, fluid flow, and measurement. The scope of the TC includes the development and assessment of associated technologies for energy use sections.

Self-introductions were made. An attendance sheet was circulated and signed by attendees. See attached copies. The following voting member attendance was noted:

<u>Name</u>	<u>End of Term</u>	
Mr. Alan Neely	6/30/2020	Present
Mr. Geoffrey Bares	6/30/2020	Present
Ms. Jessica Mangler	6/30/2020	Present
Mr. Lawrence Markel	6/30/2019	Not Present
Mr. Jay Eldridge	6/30/2018	Present
Mr. Steve Severini	6/30/2017	Present
Mr. John Andrepont	6/30/2017	Not Present
Mr. Drew Overmiller	6/30/2017	Present
Mr. Christian Paraskevacos	6/30/2017	Not Present

With 6 of 9 voting members in attendance, a quorum is present.

2. Visitors & Reports/Information from other Committee Representatives:

No Society committee representatives were present. Harvey Sachs, Research Liaison, was present at the Handbook, Programs meeting at 1 pm. He noted several items, including that multi-TC research projects are being encouraged, as are development of Design Guides and Best Practices manuals. Also, the URP process (unsolicited research projects) is being re-introduced, which applies specifically to individuals (not TC's) that would like to conduct research.



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3. Approval of the Las Vegas January 2017 Meeting Minutes:

No corrections were noted. Alan Neely moved to approve the minutes. Second by Jessica Mangler. The motion passed with a vote of 6-0-0.

4. Announcements by Chair:

Drew noted the following items discussed at the Section 6 breakfast earlier today:

A. Section 6 Breakfast:

i. Conferences & Expositions Committee (CEC)

(1) 2017 Long Beach, CA

- **Track 1: Fundamentals and Applications**
Track Chair: Frank Schambach (frankschambach@mindspring.com)
- **Track 2: HVAC&R Systems and Equipment**
Track Chair: Jennifer E. Leach (pennst8jen@yahoo.com)
- **Track 3: Refrigeration**
Track Chair: Vikrant Aute (vikrant@umd.edu)
- **Track 4: Building Life Safety Systems**
Track Chair: Robert Alan Neely (alan_neely@pghcorning.com)
- **Track 5: Controls – Smart Building Systems and the Security Concerns as Technology Emerges**
Track Chair: Melanie Derby (derbym@ksu.edu)
- **Track 6: Commissioning – Optimizing New and Existing Buildings and their Operation**
Track Chair: Dennis Alejandro (denzjac@yahoo.com)
- **Track 7: Zero Net Energy Buildings – The International Race to 2030**
Track Chair: Jason DeGraw (jason.degraw@nrel.gov)
- **Track 8: Residential Buildings – Standards Guidelines and Codes**
Track Chair: Kimberly Pierson (kdpwildcat@gmail.com)
- **Track 9: Research Summit**
Track Chair: Ann Peratt (ann.peratt@gmail.com)

(2) 2018 Winter Chicago, IL

- (a) Conference Papers Abstracts were due March 1, 2017
- (b) Conference Papers are due July 7, 2017
- (c) Seminar, Forum, and Workshop proposals are due August 1, 2017
- (d) Program Notifications go out September 6, 2017
- (e) Website opens for presentation uploads is December 1, 2017
- (f) All presentations due online January 8, 2018



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- **Track 1: Fundamentals and Applications**
Track Chair: Carrie Anne Crawford (carriecrawford@eeace.com)
 - **Track 2: HVAC&R Systems and Equipment**
Track Chair: Kevin Marple (kmarple@benzco.com)
 - **Track 3: Standards, Guidelines and Codes**
Track Chair: Corey Metzger (corey.metzger@resourcecece.com)
 - **Track 4: Earth, Wind & Fire**
Track Chair: Ashish Rakheja (ashish.rakheja@aeonconsultants.in)
 - **Track 5: Beyond the "L": IAQ and Air Conditions in Transportation Applications and Enclosed Vehicular Facilities**
Track Chair: Dimitris Charalambopoulos (dimitris@ashrae.gr)
 - **Track 6: Tall Buildings**
Track Chair: Leticia Neves (leneves@gmail.com)
 - **Track 7: Modeling Throughout the Building Life Cycle**
Track Chair Joseph Firrantello (j.firrantello@gmail.com)
 - **Track 8: Performance and Design of Heat Exchange Equipment under Real Field Type Conditions**
Track Chair: Vikrant Aute (vikrant@umd.edu)
 - **Track 9: Refrigerant Mini Track @ Expo**
Track Chair: Gary C. Debes (gcdebes@verizon.net)
- (3) 2018 Annual Houston, TX
- (a) Conference Papers Abstracts are due August 28, 2017
 - (b) Conference Papers are due December 8, 2017
 - (c) Seminar, Forum, Panel, Debate, and Workshop proposals are due February 9, 2018
 - (d) Website opens for presentation uploads is April 30, 2018
 - (e) All presentations due online June 1, 2018
 - **Track 1: HVAC&R Systems and Equipment:**
Track Chair: Frank Schambach (frankschambach@mindspring.com)
 - **Track 2: Fundamentals and Applications:**
Track Chair: Dennis Alejandro (denzjac@yahoo.com)
 - **Track 3: District Energy and Cogeneration Plants:**
Track Chair: Kimberly Pierson (kdpwildcat@gmail.com)
 - **Track 4: Safeguarding your HVAC&R System:**
Track Chair: Rich Rose (richr@mticontrols.com)
 - **Track 5: Residential – Modern buildings in Hot and Humid Climates:**
Track Chair: Dimitris Charalambopolous (dimitris@ashrae.gr)



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- **Track 6: Commissioning – Optimizing New & Existing Buildings and their Operation:**
Track Chair: Kevin Marple (kmarple@benzco.com)
- **Track 7: Research Summit:**
Track Chair: Melanie Derby (derbym@ksu.edu)
- **Track 8: HVAC&R Control Freaks:**
Track Chair: Gary Debes (gcdebes@verizon.net)
- **Track 9: HVAC&R Analytics (Mini-Track):**
Track Chair: Vikrant Aute (Vikrant@umd.edu)

(4) Program Statistics for Long Beach: total of 107 available slots

- (a) Conference Papers
 - (i) 151 abstracts submitted, 129 approved
 - (ii) 71 papers received
 - (iii) 20 conference papers presented
- (b) Technical Papers
 - (i) 27 received
 - (ii) 19 technical papers presented
 - (iii) 6 technical paper presentations
- (c) Seminars
 - (i) 121 submitted
 - (ii) 61 presented
- (d) Workshops
 - (i) 13 submitted
 - (ii) 9 presented
- (e) Forums
 - (i) 11 submitted
 - (ii) 4 presented
- (f) Debates (New)
 - (i) 4 submitted
 - (ii) 3 presented
- (g) Panel (New)
 - (i) 5 submitted
 - (ii) 2 presented

B. CEC Call for Reviewers: 2018 Winter Conference and others. Contact Tiffany Cox (tcox@ashrae.org) and copy TC Chair & Vice Chair



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5. Liaison Reports:

- A. ALI: No report.
- B. DOE: Rich Sweetser was not present. Art Giesler noted that 2019 is the 125th year of ASHRAE, and the ASHRAE Journal will be publishing an article on "history" in each edition that year. Deadline for abstracts is coming up.
- C. IDEA: John Andrepont was not present due to a conflict with the IDEA Annual Conference, but filed the following report prior to this meeting:
 - i. The International District Energy Association (IDEA) is an industry association of ~2,000 members. The membership includes: District Energy (Thermal) Utilities; Physical Plant and Utilities Personnel from University, Medical, and other District Energy Facilities; Equipment Manufacturer/Suppliers; Service Providers to the Industry; other District Heating & Cooling Associations; plus Government, Student, and other Personal members.
 - ii. IDEA publishes a quarterly magazine, entitled *District Energy*.
 - iii. IDEA has two major conferences each year (one focused on campus District Energy systems and one focused on commercial thermal utility District Energy systems), as well as smaller workshops on subjects such as marketing and thermal distribution, plus occasional regionally-focused or technology-focused conferences. Each major conference also focuses on integrating Combined Heat & Power (CHP) and Thermal Energy Storage (TES) with District Energy.
 - iv. Upcoming IDEA conferences include:
 - 108th Annual Conference & Trade Show
June 26-29, 2017 – Scottsdale, Arizona (*Note: these dates conflict with the 2017 ASHRAE Annual Meeting*)
 - Microgrid 2017
November 6-8, 2017 – Boston, Massachusetts
 - 31st Annual Campus Energy Conference, Workshops & Trade Show
March 5-9, 2018 – Baltimore, Maryland
 - 109th Annual Conference & Trade Show
June 11-14, 2018 – Vancouver, British Columbia, Canada
 - 32nd Annual Campus Energy Conference, Workshops & Trade Show
February 26-March 1, 2019 – New Orleans, Louisiana



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- v. For further information on IDEA, contact:

Rob Thornton, President
IDEA
24 Lyman Street, Suite 230
Westborough, Massachusetts 01581

tel: 508-366-9339
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website: www.districtenergy.org

- vi. Geoff Bares noted that the ASHRAE 90.1 committee reached out to IDEA to discuss interaction and possible IDEA input into future 90.1 editions, similar to how the 90.1 committee reached out to TC6.2 in Las Vegas. See "Old Business" for an update on this.

6. Sub-Committee Reports

A. Handbook: Steve Tredinnick (Chair)

TC6.2 is responsible for Chapter 12 (District Heating and Cooling) and Chapter 15 (Medium- and High-Temperature Water Heating) for the HVAC Systems and Equipment Handbook. Steve noted that the Chapter 12 content underwent an extensive update for the 2016 edition, and only minimal updates are expected for 2020. Chapter 15 edits have already begun; mostly updates in terminology. If anyone has any content they feel should be added to the chapters, please let Steve know.

The authoring portal being used by ASHRAE is working. It allows simultaneous editing of Word documents to facilitate Chapter edits. It can be accessed at authoring.ashrae.org. Anyone who is on the roster of this TC can assess documents posted by this TC.

By February 2019, we need to have Chapter revisions completed. At the June 2018 meeting, we should approve all revisions. At the January 2018 meeting, we should begin review of edits. (Note: we will need a projector at future meetings!)

B. Membership: John Andrepont (Chair – not present)

Drew noted that 4 voting members are rolling off at the end of this month. Steve Tredinnick and Scott Murray will be added as voting members. Anyone interested in



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membership should inform the TC6.2 Chair and provide their ASHRAE number in the correspondence.

- C. Programs: Tim Anderson (Chair – not present)
Long Beach June 2017 meeting (this meeting): We did not propose any presentations for Long Beach.

Chicago January 2018 meeting: We have proposed a “forum” for Track 4 “Earth, Wind & Fire”. The topic is the resilient nature of district energy systems, particularly when subjected to a natural disaster. 3 speakers are planned, and we currently have confirmation for 1 of those speaker positions.

Houston June 2018 meeting: We discussed several ideas for Track 3 “District Energy and Cogeneration”. The following is a list of potential topics:

- i. Thermal storage and cogeneration in a deregulated market.
- ii. “Got Tons?” District energy from the perspective of large scale users and owners.
- iii. Challenges of connecting buildings with low delta-T.
- iv. Users and providers report on low delta-T and other connection issues.
- v. District energy in different parts of the world (Europe and Middle East).
- vi. For designers – considerations for the design of a building connected to district energy as compared to a local stand-alone system.
- vii. Automation and operational strategies when using district energy in your building.
- viii. Dispatch strategies with cogeneration.
- ix. How to integrate new technologies into a legacy chilled water system (30 years old).
- x. Comparing district energy with 1 or 2 connected plants compared to multiple distributed chillers.

- D. Standards: TC 6.2 is not responsible for any published Standards. No discussion.

- E. Webmaster: Jessica Mangler
Our website is up-to-date with today’s agenda and past meeting minutes. Any requests for website improvements can be sent to Jessica.

- F. ALI Liaison: Chris Paraskevakos (Chair – not present)
No discussion.

- G. Research: Jay Eldridge (Chair)



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TC 1.10 Cogeneration Systems has an approved RTAR for preparing a Combustion Turbine Inlet Cooling Design Guide Update, and TC6.2 is a co-sponsor, along with TC6.9 Thermal Storage. 3 bids were received and are being evaluated during this Conference. Dragos Paraschiv from TC 1.10 is leading the effort.

7. Old Business:

SSPC 100 Update: Steve Tredinnick reported that SSPC 100 has published an Addendum that addresses the flaw in the original issuance of Standard 100 "Energy Efficiency in Existing Buildings" regarding treating district energy as "site energy". This task group is no longer meeting.

Micro-grids: Some attendees felt that "micro-grid" is a buzz word with no real definition. Micro-grid according to google is a "small-scale power grid that can operate independently or in conjunction with the area's main electrical grid". Many presentations on micro-grids fail to mention the thermal component, which is ironic because in most cases the thermal component makes the micro-grid economically justifiable.

District Energy too broad a title?: There was more discussion regarding whether "District Energy" as the name of our TC is too broad to describe our purpose. "Energy" can include photovoltaics, solar, electrical distribution, and even natural gas...all of which are not the focus of the expertise of current TC6.2 members. Our focus is the thermal aspects of district energy. Other possible names are "District Heating and Cooling" and "District Thermal Energy". There was also discussion about revising our scope statement to more strongly emphasize "thermal". We decided to hold further discussion until after the Houston meeting because Track 3 includes "District Energy" in its title, and we hope to be strong participants in that track.



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ASHRAE 90.1 collaboration with TC 6.2: Drew noted that no further discussions are planned between the mechanical subcommittee of ASHRAE 90.1 and our TC. The meeting that was held in Las Vegas was an early information-gathering type meeting. A larger, broader Liaison Session between 90.1 and several TC's is scheduled for Monday at 2:15 pm. The organizers allow only one representative from each invited TC. Drew will attend.

8. New Business

Drew mentioned that he will be rolling off as TC6.2 Chair and Alan Neely will become the Chair. We are looking for someone to be Vice Chair. If you have interest, please contact Alan or Drew. ***Post meeting note: Jessica Mangler has volunteered to be Vice Chair. She will resign her duties as Webmaster. Dan Pyewell has volunteered to take over as the TC6.2 Webmaster.***

9. Meeting Adjournment:

- Geoff Bares moved for adjournment. Second by Jessica Mangler.
- The meeting was adjourned at 4:30 pm.

Submitted by,
Steve Severini
TC 6.2 Secretary
June 26, 2017

6/25/17 TC 6.2 Meeting
Long Beach, CA

<u>Name</u>		<u>Company</u>	<u>email</u>
Steve Severini	VM	Newcomb & Boyd	sseverini@newcomb-boyd.com
DREW OVERMILLER	VM	Burns & McDonnell	dovermiller@burnsmcd.com
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Daniel Pyewell	PCM	CB&I	Daniel.Pyewell@cbi.com
Daryl Stauffer	PCM	Johnson Controls	daryl.mark.stauffer@jci.com
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