



MINUTES

DRAFT

TECHNICAL COMMITTEE 6.2, DISTRICT ENERGY

2020 Winter Meeting

February 2, 2020

Note: These draft minutes have not been approved and not the official, approved record until approved by the Technical Committee.



1791 Tullie Circle, N.E./Atlanta, GA 30329

404-636-8400

DRAFT

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. 6.2 DATE 2020-02-03

TC/TG/MTG/TRG TITLE District Energy

DATE OF MEETING 2020-02-02 LOCATION Orlando, FLA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Alan Neely (Chair)	2017-07-01	Scott Murray	2017-07-01	Dawen Lu (Section Head)
Jessica Mangler (Vice Chair)	2017-07-01			Gary Phetteplace
Michael Calabrese (Secretary)	2018-07-01			Dragos Paraschiv
Steve Tredinnick (Handbook)	2017-07-01			Richard Sweetser
Tim Anderson (Programs)	2018-07-01			
Daniel Pyewell (Webmaster)	2018-07-01			
Mohamed Eltaieb Ibrahim Alagaa (VM)	2019-07-01			
Geoff Barnes (VM)	2016-07-01			
Elizabeth Goll (VM)	2019-07-01			
Jay Eldridge (Non-VM, Research)	2018-07-01			

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

TAC Section Head: Dawen Lu	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



Shaping Tomorrow's
Built Environment Today

TC Sign-in Sheet

Meeting Info: TC 6.2 District Energy

Date: February 2nd 2020

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
Alan Neely	Owens Corning - Foamglas Insulation	Alan.neely@owenscorning.com	Voting - Chair	No
MICHAEL CALABRESE	BURNS	mcalabrese@burns-group.com	✓ none	No
Alan Neely				
Michael Thuma	Ashken	AQR aa a hotmail.com	✓	No
Alaa A. Olama	UN RTOC member	alaaolama@gmail.com	X	No
RICH SWEETSER	EXACT PARTNERS	rsweets@exactpartners.com	Conn	No
Jim Young	Johns Manville	jim.youngjr@jm.com	CM	No
Heather Sharif	Johns Manville	heather.sharif@jm.com	CM	No
JAY ELDRIDGE	DAIKIN	JAY.ELDRIDGE@DAIKINAPPLIED.COM	CN	No
Geoff Bares	Enwave Chicago	geoff.bares@enwave.com	VM	N

YEA Member

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
S. DAVID DORAK	UNIVERSITY OF MAINE	sdorak@maine.edu	CM	No
Norshvarman, Manisagar	Burns Engineering	nmanisagar@burns-grp.com	CM	Yes
Jing Wang	University of Colorado Boulder	jing.wang@colorado.edu	Guest	No
Mohammadhasan Fathollahzadeh	Colorado School of Mining	mfathollahzadeh@mines.edu	Guest	Yes
Harrison Kesling	Wiley Wilson	hkesling@wileywilson.com	Guest	Yes
BEN McEwen	Humboldt College	ben.a.mcewen@gmail.com	Guest	Yes
Mathieu Rondeau	Energy in	mathieu.rondeau@energi.com	Guest	No
Ranjith Narasimhamurthy	UC Davis	ranmurthy@ucdavis.edu	Guest	No
NEMAT LOFFI	ENERGY FACILITY ENG.	service@penmhvac.com	CM	No
David Autrey	Perception Hydronics	dave@perceptionhydronics.com	Guest	No

Provisional
Corresponding
Member

Corresponding
Member

Provisional
Corresponding
Member

Provisional
Corresponding
Member

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
Dawen Lu	Lu+S Engineers	dLu6838@gmail.com	Section 6	No
Art Giesler	PERMAPIPE	ART.GIESLER@ART.NET	Corresponding Member	NO
Betsy Goll	FPLS	clizabeth.goll@FPL.ca	voting	NO
JESSICA MANGLER	AEI	jmangler@gmail.com	Vice Chair Voting	Y
Daniel Pyewell	Tanco Engr.	dpyewell@tancoeng.com	Voting	No
Steve Snyder	JCI	Steven.C.snyder@jci.com	Guest	Y
Alec Cusick	Owens Corning	alec.cusick@owenscorning.com	Corresponding	No Provisional Corresponding Member YEA Member
PATRICK VILLAUME	PATTERSON-KELLEY	PATRICK.VILLAUME@SPX.COM	Guest	Y
Daryl Stauffer	Johnson Controls	daryl.stauffer@jci.com	Guest	N
Tim Anderson	Applied Engineering	tanderson@appliedes.com	Programs chair	N

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
JEFF GATLIN	ARAMARK HEALTHCARE/ ST. JUDE CHILDREN'S RESEARCH HOSP.	jeff.gatlin.pe@gmail.com	Corresponding	No
Ryan Lime	Johnson Controls	ryanlime@gmail.com	Corresponding	No
Steve Tredinnick	Burns & McDonnell	stutred@gmail.com	Voting - Handbook	N
Gary Phetteplace	GWA Research	garyp@gwaresearch.com	Correspond.	N
DRAGOS PARASCHIV	Heidelberg College	dragos@paraschiv.ro	C.M	N

Provisional
Corresponding
Member

TC/TG/TRG Activity Feedback Form

Version: 19-D4

Please provide feedback on your TC/TG/TRG activities and return this form by **Tuesday night 9:00 pm** to your Section Head by email or drop off a printed copy in the Section Head's mailbox folder outside the ASHRAE Headquarters Room.

Include activities performed since the last TC meeting (e.g. any letter ballots, submissions to RAC, award nominations, etc.)

PLEASE DO NOT LEAVE NUMERIC CELLS EMPTY. ENTER 0 IN CELLS IF THERE IS NO COUNT.

TC#	6.2		Committee Name:		District Energy									
			Chair:		Alan Neely									
Meeting was Held (City)														
Orlando			(Day)		Sunday			(Date)		2/2/2020				
Membership														
				Quorum Established (Yes/No)				YES						
				Number Present		Remote Participants		Total on Committee Roster						
Voting Members (excluding Non-Quorum Members)				9		0		10						
Non-Quorum Members				1		0		1						
Corresponding Members				10		0		73						
Provisional Members				5		0		27						
Visitors/Guests				7		0								
All members/guests who are ALSO YEA members				9		0		27						
Handbook Responsibilities														
Total Number of Chapters				2		Total Number of Standards				0				
Chapter(s) approved at this meeting				0		# Standards recommended				0				
Special Publications (last six months)				0		Title(s): N/A								
Program Activities (For This Meeting)														
Total # of Forums			Total # of Seminars			Total # of Debates			Total # of Paper Sessions					
Submitted*	Accepted*	Co-sponsored**	Submitted*	Accepted*	Co-sponsored**	Submitted*	Accepted*	Co-sponsored**	Submitted*	Accepted*	Co-sponsored**			
0	0	0	0	0	0	0	0	0	0	0	0			
Other Presentations														
TC Research Results			0			Other Papers***			0					
Current Research Activities (active)														
# of new/revised RTARs submitted			0			Minutes completed on time?			YES					
# of other active RTARs			0			Agenda distributed on time?			YES					
# of new/revised Work Statements submitted			0			Did Chair attend training?			NO					
# of other active Work Statements			0			Did Vice Chair attend?			NO					
# of active TRPs			0			Did Program Chair attend training?			YES					
# of active RPs			0			Did Handbook Chair attend training?			YES					
# of RPs completed & approved at this meeting			0			Did Research Chair attend breakfast?			YES					
Problems getting RTAR/WS approved?			NO											
Other Technical Activities														
# FAQs updated this meeting			0			# of Other Nominations: Hightower, Research, Fellow, etc.			0					
# New members added to roster			0			Specify Award :			0					
Any Concerns or requests for the Technical Activities Committee? (Please type in space below, use Alt+Enter to drop to a new line)														

* Include only sessions which your TC initiated

** Sessions which were initiated by another TC

*** Papers from TC in sessions not sponsored by TC

ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Chair
8074057 064 Voting

Term in Position: 07/01/2017 to 06/30/2020

Term on Committee: 07/01/2007 to 06/30/2020

Mr Robert (Alan) Neely

9013 Willow Springs Ln

Conroe, TX 77302-3453

Owens Corning - Foamglas Insulation

Phone: (281)432-9864 Fax: (281)465-9186

Email: alan.neely@owenscorning.com

Vice Chair
8089391 054 Voting

Term in Position: 07/01/2017 to 06/30/2020

Term on Committee: 07/01/2015 to 06/30/2020

Ms Jessica A Mangler, PE YEA

2469 55th Ave SW Unit B

Seattle, WA 98116-2209

Affiliated Engineers, Inc.

Phone: (417)489-9055 Fax:

Email: jmangler@gmail.com

Secretary
8116870 021 Voting

Term in Position: 07/01/2018 to 06/30/2022

Term on Committee: 09/07/2016 to 06/30/2022

Mr Michael Calabrese, PE

319 Cheswold Rd

Drexel Hill, PA 19026-3501

Phone: (215)979-7700 Fax: (215)405-2510
(7780)

Email: MCalabrese.Philly.ASHRAE@gmail.com

Handbook Subcommittee Chair
1081787 049 Voting

Term in Position: 07/01/2017 to 06/30/2021

Term on Committee: 07/01/2017 to 06/30/2021

Mr Steven M Tredinnick, PE

1431 Opus Pl Ste 400

Downers Grove, IL 60515-1164

Burns & McDonnell

Phone: (608)287-4753 Fax:

Email: stevetred@gmail.com

Program Subcommittee Chair
3026670 043 Voting

Term in Position: 07/01/2018 to 06/30/2022

Term on Committee: 07/01/2014 to 06/30/2022

Mr Timothy M Anderson

Applied Engineering Services

5975 Cast Ck Pkwy N Dr Ste 300

Indianapolis, IN 46250-4346

Phone: (317)810-4141 Fax: (317)810-4140
(182)

Email: tanderson@applied-e-s.com

Research Subcommittee Chair
7974058 052 Non-voting

Term in Position: 07/01/2018 to

Term on Committee: 07/01/2007 to 06/30/2018

Mr Jay Eldridge

Daikin Applied

13600 Indust Pk Blvd

Minneapolis, MN 55441-3743

Phone: (763)553-5424 Fax: (763)557-4916

Email: jay.eldridge@daikinapplied.com

MTG.ASEC - VOTING MEMBER
580344 152 Non-voting

Term in Position: 07/01/2016 to

Term on Committee: 07/01/2010 to 06/30/2016

Dr Gary E Phetteplace, PE

GWA Research LLC

7 Masa Morey Ln

Lyme, NH 03768-3424

Phone: (603)795-4920 Fax:

Email: garyp@gwaresearch.com

Webmaster
8297570 073 Voting

Term in Position: 07/01/2018 to 06/30/2022

Term on Committee: 02/09/2017 to 06/30/2022

Mr Daniel Richard Pyewell

Tanco Engineering

2002 Basalt Ct

Loveland, CO 80538-5593

Phone: 970-776-4227 Fax:

Email: punxpyewe79@yahoo.com

ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Member
8149396 175 Voting

Term in Position: 07/01/2019 to 06/30/2023

Term on Committee: 07/01/2016 to 06/30/2023

**Mr Mohamed Eltaieb
Ibrahim Alagraa**

Dc Pro Engineering

Sharjah -Buhirah off2507 Al Durah
P.O.Box 22851

Sahrjah, 22851 UNITED ARAB EMIRATES

Phone: 0506557612 Fax: 0665566881

Email: aqraa@hotmail.com

Member
8141681 049 Voting

Term in Position: 07/01/2016 to 06/30/2020

Term on Committee: 07/01/2010 to 06/30/2020

Mr Geoffrey Bares

Enwave Chicago

200 W Jackson Blvd Ste 1310

Chicago, IL 60606-6941

Phone: (312)377-1793 Fax: (815)439-6595

Email: geoff.bares@enwave.com

Member
5059903 104 Voting

Term in Position: 07/01/2019 to 06/30/2023

Term on Committee: 06/25/2018 to 06/30/2023

Ms Elizabeth A Goll

2005 N Hibiscus Dr

North Miami, FL 33181-2351

Florida Power & Light

Phone: (305)552-4893 Fax: (305)899-2272

Email: elizabeth.goll@fpl.com

Member
8300539 075 Voting

Term in Position: 07/01/2017 to 06/30/2021

Term on Committee: 10/13/2016 to 06/30/2021

Mr Scott T Murray YEA

Clearway Energy

2152 Howard St

Omaha, NE 68102-2455

Phone: (402) 515-4589 Fax:

Email: scott.murray@clearwayenergy.com

Provisional Corresponding Member

8378907 182 Non-voting

Term in Position: 08/19/2019 to 08/19/2021

Term on Committee: 08/19/2019 to 08/19/2021

**Mr Mohamed Hany
Abokersh Eng** YEA

Department of Mechanical Engineering, Universitat
Rovira i Virgili

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Campus Sescelades

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Provisional Corresponding Member

8369237 016 Non-voting

Term in Position: 10/29/2019 to 10/29/2021

Term on Committee: 10/29/2019 to 10/29/2021

Mr Adewumi Dada YEA
Adepoju

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Provisional Corresponding Member

8299861 999 Non-voting

Term in Position: 01/28/2018 to 01/28/2020

Term on Committee: 01/28/2018 to 01/28/2020

Mr Hyeunguk Ahn YEA

555 Pierce St Apt 438

Albany, CA 94706-1006

Phone: 18145718076 Fax:

Email: wook01230@gmail.com

Provisional Corresponding Member

8382941 032 Non-voting

Term in Position: 11/19/2019 to 11/19/2021

Term on Committee: 11/19/2019 to 11/19/2021

Mr Daniel Almeida YEA

1537 Deerfield Pt

Alpharetta, GA 30004-8955

SWEP North America, Inc.

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ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Provisional Corresponding Member

8162561 020 Non-voting

Term in Position: 10/17/2019 to 10/17/2021

Term on Committee: 10/17/2019 to 10/17/2021

Mr Jayson F Bursill YEA

3-528 Hilson Ave

Ottawa, ON K1Z 6C8 CANADA

Phone: 6045566973 Fax:

Email: jayson.bursill@gmail.com

Provisional Corresponding Member

8376526 042 Non-voting

Term in Position: 09/23/2019 to 09/23/2021

Term on Committee: 09/23/2019 to 09/23/2021

Mr Alec Cusick YEA

Owens Corning

1 Owens Corning Pkwy

Toledo, OH 43659-1000

Phone: Fax:

Email: alec.cusick@owenscorning.com

Provisional Corresponding Member

8256493 084 Non-voting

Term in Position: 01/21/2018 to 01/21/2020

Term on Committee: 01/21/2018 to 01/21/2020

Charlotte Wan Dean YEA

232 Newport Ave Apt A

Long Beach, CA 90803-5947

P2S Engineering

Phone: (562)497-2999 Fax:

Email: charlotte.dean@p2sinc.com

Provisional Corresponding Member

8264693 118 Non-voting

Term in Position: 01/24/2018 to 01/24/2020

Term on Committee: 01/24/2018 to 01/24/2020

Dr S. David Dvorak

University of Maine

119 Boardman Hall

University of Maine

Orono, ME 04469-5711

Phone: (207)581-2338 Fax: (207)581-2113

Email: dvorak@maine.edu

Provisional Corresponding Member

8349284 161 Non-voting

Term in Position: 08/08/2019 to 08/08/2021

Term on Committee: 08/08/2019 to 08/08/2021

Dr Mohamed S El-Morsi
PhD

The American University in Cairo

Dept. of Mechanical Engineering

AUC Avenue P.O. Box 74

Cairo, 11835 EGYPT

Phone: 0201008763487 Fax:

Email: melmorsi@aucegypt.edu

Provisional Corresponding Member

5143086 056 Non-voting

Term in Position: 07/18/2019 to 07/18/2021

Term on Committee: 07/18/2019 to 07/18/2021

Mr Jeff Gatlin PE

2585 School St

Hernando, MS 38632-2217

Aramark| St. Jude Children's Research Hospital

Phone: (901)237-3378 Fax: (901) 595-3106

Email: jeff.gatlin.pe@gmail.com

Provisional Corresponding Member

5138571 999 Non-voting

Term in Position: 06/26/2018 to 06/26/2020

Term on Committee: 06/26/2018 to 06/26/2020

Mr Frederic Genest

Natural Resources Canada - CanmetENERGY

1615 Lionel-Boulet Blvd

Varenes, QC J3X 1S6 CANADA

Phone: (450) 652-3214 Fax:

Email: frederic.genest2@canada.ca

Provisional Corresponding Member

8320250 073 Non-voting

Term in Position: 01/18/2019 to 01/18/2021

Term on Committee: 01/18/2019 to 01/18/2021

Karl W. Heine YEA

7761 Teller St

Arvada, CO 80003-2226

Colorado School of Mines

Phone: (307)751-0250 Fax:

Email: kheine@mines.edu

ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Provisional Corresponding Member

8266380 175 Non-voting

Term in Position: 05/02/2019 to 05/02/2021

Term on Committee: 05/02/2019 to 05/02/2021

Mr Farhan Juratli

Nakheel

The Gardens Jebel Ali
P.O. Box 17777

Dubai, UNITED ARAB EMIRATES

Phone: 509402997 Fax:

Email: Farhan.Juratli@nakheel.com

Provisional Corresponding Member

8309636 106 Non-voting

Term in Position: 12/16/2019 to 12/16/2021

Term on Committee: 12/16/2019 to 12/16/2021

Mr Harrison F Kesling YEA

5540 Centerview Drive, Ste 405

Raleigh, NC 27606

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Provisional Corresponding Member

8319082 071 Non-voting

Term in Position: 07/03/2018 to 07/03/2020

Term on Committee: 07/03/2018 to 07/03/2020

Joshua Kirlin YEA

PO Box 1597

Van Horn, TX 79855-1597

Phone: 260-452-6716 Fax:

Email: josh@kirl.in

Provisional Corresponding Member

8358777 074 Non-voting

Term in Position: 05/07/2019 to 05/07/2021

Term on Committee: 05/07/2019 to 05/07/2021

Steven Klekas YEA

The University of Utah

1795 E South Cmps Dr RM 222

Salt Lake City, UT 84112-9449

Phone: 801-674-8387 Fax:

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Provisional Corresponding Member

8127696 084 Non-voting

Term in Position: 01/23/2018 to 01/23/2020

Term on Committee: 01/23/2018 to 01/23/2020

Mr David Klug YEA

P2S Engineering

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Provisional Corresponding Member

8281901 021 Non-voting

Term in Position: 09/17/2018 to 09/17/2020

Term on Committee: 09/17/2018 to 09/17/2020

Noreshvarman Manisagar YEA

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Provisional Corresponding Member

8316947 175 Non-voting

Term in Position: 11/26/2019 to 11/26/2021

Term on Committee: 11/26/2019 to 11/26/2021

**Mr Mohammed Murtaza, YEA
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Cubic Engineering Consultancy

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Provisional Corresponding Member

8285300 025 Non-voting

Term in Position: 06/08/2018 to 06/08/2020

Term on Committee: 06/08/2018 to 06/08/2020

Mihir Nandkeolyar YEA

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ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Provisional Corresponding Member

8260029 067 Non-voting

Term in Position: 10/04/2019 to 10/04/2021

Term on Committee: 10/04/2019 to 10/04/2021

Mr Malik Notta

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Email: malik@notta.net

Provisional Corresponding Member

8237023 999 Non-voting

Term in Position: 09/25/2018 to 09/25/2020

Term on Committee: 09/25/2018 to 09/25/2020

Margaret Peterson YEA

P2S Engineering

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Provisional Corresponding Member

8067217 008 Non-voting

Term in Position: 03/09/2018 to 03/09/2020

Term on Committee: 03/09/2018 to 03/09/2020

Mr Sergio Sadaba

8454 SE 63rd St

Mercer Island, WA 98040-4925

Stantec

Phone: (206) 485-5706 Fax: 3122

Email: sergio.sadaba@gmail.com

Provisional Corresponding Member

8355770 064 Non-voting

Term in Position: 01/25/2019 to 01/25/2021

Term on Committee: 01/25/2019 to 01/25/2021

Mrs Heather A Sharif YEA

ITW Insulation Systems

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Ste 1 Bldg 7

Houston, TX 77022-4150

Phone: (713) 696-5649 Fax:

Email: hsharif@itwinsulation.com

Provisional Corresponding Member

8360588 004 Non-voting

Term in Position: 09/16/2019 to 09/16/2021

Term on Committee: 09/16/2019 to 09/16/2021

Mr Justin Simko YEA

4 Windaway Rd

Bethel, CT 06801-1610

van Zelm Engineers

Phone: (860)284-5064 Fax:
(317)

Email: justinsimko12@gmail.com

Provisional Corresponding Member

8149011 148 Non-voting

Term in Position: 06/23/2019 to 06/23/2021

Term on Committee: 06/23/2019 to 06/23/2021

Mr Drew Turner

Danfoss-Turbocor

1526 Savannah Dr

Pueblo, CO 81005-3533

Phone: (850)879-3334 Fax:

Email: drew.turner@danfoss.com

Provisional Corresponding Member

8188490 064 Non-voting

Term in Position: 01/26/2018 to 01/26/2020

Term on Committee: 01/26/2018 to 01/26/2020

Dr Lei Wang, PhD

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College Station, TX 77845-2004

Texas A&M University

Phone: (979)422-2831 Fax:

Email: leiwanghello@gmail.com

Corresponding Member

8131646 174 Non-voting

Term in Position: 07/01/2015 to

Term on Committee: 06/24/2014 to 06/30/2015

Mr Muhammad Ali

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Direct Energy Australia

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704

Email: m.ali@consultant.com

ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Corresponding Member

8119140 175 Non-voting

Term in Position: 07/01/2015 to

Term on Committee: 07/06/2013 to 06/30/2015

Mr Hassan F Ali Younes

Griffin Consultants

office 131/132, matloob building
street 22 A, Safa 1

Dubai, UNITED ARAB EMIRATES

Phone: 0097156115080 Fax:
4

Email: hassan@griffin-consultants.com

Corresponding Member

8207271 160 Non-voting

Term in Position: 07/01/2016 to

Term on Committee: 02/22/2015 to 06/30/2016

Mr HAMZA AL-KHATEEB

Saudi Aramco

P.O.BOX 18579
Almidra Bldg.

DHAHRAN, 31311 SAUDI ARABIA

Phone: 0536064937 Fax:

Email: hamzaalkhateeb@hotmail.com

Corresponding Member

1051512 088 Non-voting

Term in Position: 07/01/2012 to

Term on Committee: 07/01/2008 to 06/30/2012

Ms Burkley M Allen, PE

I C Thomasson Assoc Inc

2950 Kraft Dr

Nashville, TN 37204-3623

Phone: (615)346-3520 Fax: (615)346-3550

Email: ballen@icthomasson.com

Corresponding Member

2027398 049 Non-voting

Term in Position: 07/01/2017 to

Term on Committee: 07/01/1997 to 06/30/2017

Mr John S Andrepont

The Cool Solutions Company

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Term in Position: 07/01/1990 to

Term on Committee: 07/01/1993 to 06/30/2006

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ASHRAE Roster

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As of Any Date

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Term in Position: 07/13/2016 to

Term on Committee: to

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ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

Corresponding Member

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Term on Committee: 08/21/2014 to 06/30/2015

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ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

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ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

As of Any Date

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Term on Committee: 07/01/1997 to 06/30/2003

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Term on Committee: 07/01/1989 to 06/30/2006

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Term in Position: 07/01/2008 to

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Term on Committee: 07/01/1988 to 06/30/2013

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DISTRICT ENERGY-T-TAC-TC06.02**As of Any Date**

Corresponding Member

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Term in Position: 07/01/2010 to

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ASHRAE Roster

DISTRICT ENERGY-T-TAC-TC06.02

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ASHRAE Roster

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As of Any Date

TAC Chairman

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Term in Position: 07/01/2019 to 06/30/2020

Term on Committee: 07/01/2019 to 06/30/2020

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Section Head

5194915 028 Non-voting

Term in Position: 07/01/2017 to 06/30/2021

Term on Committee: 07/01/2017 to 06/30/2021

Mr Dawen Lu, PE

4604 Sadler Grove Way

Glen Allen, VA 23060-6179

Lu + Smith Engineers PLLC

Phone: (804) 519-9306 Fax: (804) 925-2600

Email: dlu6838@gmail.com

Staff Liaison

8001543 650 Non-voting

Term in Position: 07/01/2019 to

Term on Committee: to

Mr Steven J Hammerling

ASHRAE

1791 Tullie Cir NE

Atlanta, GA 30329-2398

Phone: (404) 636-8400 Fax: (404) 321-5478

Email: shammerling@ashrae.org

2020 HB SYSTEMS & EQUIPMENT

3032713 004 Non-voting

Term in Position: 07/01/2016 to 06/30/2020

Term on Committee: 07/01/2012 to 06/30/2020

Mr Michael P Patton

22 Willow Brook Dr

Glastonbury, CT 06033-1055

Griswold Water Systems

Phone: (860) 805-8594 Fax:

Email: mpatton888@msn.com

Research Liaison

8079187 211 Non-voting

Term in Position: 07/01/2017 to 06/30/2021

Term on Committee: 07/01/2017 to 06/30/2021

Omar A Abdelaziz, PhD

20 Kassassin St., Apt. 3

Agouzah, Giza 12411 EGYPT

Oak Ridge National Laboratory

Phone: (865) 387-0725 Fax: (865) 574-9338

Email: omar.abdel.aziz@gmail.com

2020 ASHRAE Winter Conference

TC 6.02 District Energy

Main Meeting

Sunday, 2020-02-02, Orlando, FL

Agenda: TC 6.2 District Energy Sunday, February 2nd, 2020 in Orlando, FL

Cosponsoring None

TC 6.2 Main Committee Meeting

Sunday, February 2nd, 2020 3:00 pm – 5:00 pm, Hilton Orlando, L, Room Lake Mizell B

TC 6.2 Programs, Research, Handbook

Sunday, February 2nd, 2020 1:00 pm – 3:00 pm, , Hilton Orlando, L, Room Lake Mizell B

Voting Committee Members

Mr. Alan Neely	6/30/2020	Mr. Michael Calabrese	6/30/2022
Mr. Geoffrey Bares	6/30/2020	Mr. Steve Tredinnick	6/30/2021
Ms. Jessica Mangler	6/30/2020	Mr. Timothy Anderson	6/30/2022
Mr. Scott Murray	6/30/2021		
Mr. Daniel Pyewell	6/30/2022		

New Incoming Voting Committee Members

Ms. Elizabeth Goll 6/30/2023

1. Call to Order: (TC Chairman- Alan Neely)

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.

2. Agenda & Attendance Handouts - (TC Chairman- Alan Neely)

3. ASHRAE Code of Ethics Commitment – (TC Chairman – Alan Neely)

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 interests. (See full Code of Ethics: <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)

4. Membership (Alan Neely)

- A. Members & Guests Introductions and Sign In
- B. Establish a Quarum, Review of Current Voting Members and TC 6.2 Officers (Ref. Manual of Procedures – 3.2.2, 2.13, 2.14 & 2.15)
- C. Discuss recruiting new members and officers for this Technical Committee (TC 6.02)

5. Approval of Minutes from 13th January 2019 meeting in Atlanta, Georgia and Approval of the minutes from from June 23rd 2019 meeting in Kansas City (TC 6.02 Secretary – Michael Calabrese)

6. Announcements by Chair:

HANDOUT

- A. CEC Call for Reviewers: 2020 Annual Meeting and others. Contact Tiffany Cox (tcx@ashrae.org) and copy TC Chair & Vice Chair (TC Chairman- Alan Neely)

7. Visitors & Liaison Reports/Information from other Committee Representatives

- A. DOE- Richard Sweetser
- B. IDEA- John Andrepont- Attached

8. Sub-Committee Reports:

- A. Handbook: Steve Tredinnick (Chair)
- B. Membership: John Andrepont (Chair)
- C. Program: Tim Anderson (Chair)
 - i. Ideas:
 - (1) Mohammed- How does one air condition an open roof Soccer Stadium in the middle of the desert?
 - (2) Alan- Chilled water insulation used in district energy applications (Austin is an ideal place to give this presentation)
 - (3) TC6.8 (Geothermal Heat Pumps and Energy Recovery) as if there is any interest in co-sponsoring a program in Austin. To cover district condenser loops as an avenue to help cities and campuses do net zero/carbon neutral districts. They would submit it to track 8 : Zero Energy Buildings and Communities: Opportunities and Challenges. They would like to include info on wastewater heat recovery and district geothermal as well as how it allows for flexibility at the building level (WSHPs, water to water HPs, water cooled vrf, etc.).
- D. Standards: Open
- E. Webmaster: Dan Pyewell (Chair)
- F. Research: Jay Eldridge (Chair)

9. Old Business-

10. New Business-

- A. TC Reorganization?

11. Meeting Adjourn (5pm)

Subcommittee Meetings - Day, Date, Times, & Location Prior to TC 6.2 Meeting:

TC 6.02 Handbook - Sunday, February 2nd, 2020 1:00 pm – 3:00 pm, Hilton Orlando, L, Room Lake Mizell B
TC 6.02 Program - Sunday, February 2nd, 2020 1:00 pm – 3:00 pm, Hilton Orlando, L, Room Lake Mizell B
TC 6.02 Research - Sunday, February 2nd, 2020 1:00 pm – 3:00 pm, Hilton Orlando, L, Room Lake Mizell B

HANDOUT

January 9, 2020

HANDOUT

IDEA Liaison Report to ASHRAE TC 6.2 and TC 1.10

Prepared by: John Andrepont (+1-630-353-9690 / CoolSolutionsCo@aol.com)

The International District Energy Association (IDEA) is an industry association of >2,300 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.

IDEA publishes a quarterly magazine, entitled *District Energy*.

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.

Upcoming IDEA conferences include:

- 33rd Annual Campus Energy Conference, Workshops & Trade Show
February 10-14, 2020 – Denver, Colorado
- 111th Annual Conference & Trade Show
June 22-25, 2020 – Washington, D.C.
- 34th Annual Campus Energy Conference, Workshops & Trade Show
February 16-19, 2021 – San Francisco, CA
- 112th Annual Conference & Trade Show
June 14-17, 2021 – Austin, Texas

For further information on IDEA, contact:

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

tel: 508-366-9339

fax: 508-366-0019

e-mail: rob.idea@districtenergy.org

website: www.districtenergy.org

Update on TC Reorganization, 11/2019

With multiple new Section Heads (SHs) on TAC this year, we thought it was a good idea to give you a little history, an update, and possible future steps in the efforts of the TC Reorganization.

History

The direction to look at the TC structure can from the 2014 strategic plan. Based on a survey of TC chair and vice-chairs, we found the following issues were important to our members:

- We are working in silos; too specific; need wider perspective
- We need to better manage stagnant TCs and membership
- Takes too long to change things; get discouraged
- We are not maintaining industry leadership
- We need to do a better job of sharing best practices

By taking on this reorganization, we hope to accomplish many things, including:

- Increase opportunity for collaboration for programs & research
- Increase opportunity for workshops for Handbook
- Increase meeting efficiency and increase effectiveness of members' volunteer time

We asked our SHs to discuss restructuring the TCs- this could include merging some TCs or creating a new TC organizational structure for example. As with major change anywhere, some TCs took this as an opportunity for real change and some dug in their heels.

Update

So we have taken a look at other small changes to the processes in place, in an effort to seek collaboration and meeting efficiency.

TC Breakfast: In Kansas City, we rolled out a joint breakfast for the first time. The reasons for this were many, including a more efficient way of getting important information in everyone's hands and increasing collaboration. Overall this effort was well-received, with a couple details to work out. In Orlando we will have larger tables and a bigger room, offering less background noise and enough room for everyone to have a seat at the table. This format has been very successful for RAC, so it is not a new concept.

Large Meeting Room for small meetings:

In Orlando, we are working with staff to offer a large meeting room (similar to Atlanta, if you remember) which will be setup with many round tables. We need a "catchy" name for this (taking ideas now), which will be a large member lounge of sorts. There will also be a quiet area if members need to get work done. Smaller TCs or subcommittees (10 people or less) will be encouraged to utilize this area instead of taking up multiple meeting rooms, and/or cancelling last minute. This will most likely continue in future meetings, depending on feedback in Orlando.

TC Mergers: Many TCs are looking into restructuring. We really want this process to be from within, and not necessarily top-down. TAC is here to assist, but not dictate. That being stated, TAC may need to take a more proactive approach, if there is evidence of an unwillingness on the part of Functional Groups to consider change. The first round of change needs to be wrapping up in Orlando, so staff (Tara) has time to update rosters as part of the regular timeline.

HANDOUT

Sub-Committee Meeting Minutes
Technical Committee, TC 6.02 District Energy
Sunday, 2019-06-23, Kansas City, MO

TC 6.02 District Energy – Sub-Committee Meeting
Sunday, 1:00 pm – 3:00 pm, KCCC, Room 2215C

Voting Committee Members Present:	Telephone Participants:	
Mr. Steve Tredinnick 2021-06-30	Mr. Alan Neely (partial)	2019-06-30
Mr. Michael Calabrese 2022-06-30	Mr. Tim Anderson (partial)	2022-06-30
Mr. Daniel Pyewell 2022-06-30	Mr. Jay Eldridge (late)	2018-06-30

New Incoming Voting Committee Members:
None

1. The Acting Chair (Steve Tredinnick) Called to Order

Technical Committee (TC) 6.02 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.

2. Roll Call:

- A. Only three (3) voting members present therefore quorum not met. Later, Alan Neely and Tim Anderson joined via telephone, but not items required voting.

3. Atlanta Meeting Minutes:

- A. Meeting minutes are still in draft form and need to be completed by the Chair. Then they can be voted on. Since quorum not attained in Kansas City, they should be voted on at the 2020 Winter Conference in Orlando, FLA

4. Handouts Distributed

- A. None

5. Sub-Committee Discussion:

- A. Handbook: Steve Tredinnick (Chair)
- i. Chapter 12 and Chapter 15 were submitted to the Society and they were voted on by the TC in Atlanta
 - ii. Galley proof will be sent to review, between July 2019 and February 2020.
 - iii. Will be released in the Handbook in Spring 2020. In 2024 there will be a new release.
 - iv. District Cooling Guide was issued, version 2.

HANDOUT

- v. Elizabeth (Betsy) Goll volunteered to be Vice Chair of Handbook committee and take over chair for as of July 1, 2020.

B. Program: Tim Anderson (Chair), not present, participated via telephone.

- i. Suggested programs, by Chair Alan Neely.
 - (1) Chilled water insulation used in District Energy applications. \$20M lessons learned. High profile chilled water failures.
 - (a) The projects are Minute Maid, NRG Stadium and Lake Wood Church.
 - (2) A project in Qatar in preparation for the World Cup that has 4 football (soccer) stadiums. How does one air condition an open Soccer Stadium in the middle of the desert?
 - (a) Plant is 1000T per AHU. 80 AHUs using 100%OA. The plant is about 2 miles away (piping distribution)
- ii. Additional topics discussed were the Chicago expansion, ENWAVE, under rail tracks. ROW issues.
- iii. Suggestion programs by Elizabeth (Betsy) Goll
 - (1) Airport Plant MIA. Decommissioned air side chiller plant and introduced a 4000T chiller at CCPE plant.
 - (2) Miami-Dade GSA District cooling plant that serves American Airlines (AA) Arena. System operates a low temperature, using 35deg water and a low supply air temperature.
 - (3) Nova Southeast (SE), a Thermal Energy Storage (TES) plant. Elizabeth (Betsy) Goll will request additional information.
- iv. CEC Tracks for Winter 2020 in Orlando
 - (1) HVAC&R Fundamentals and Applications
 - (2) Systems and Equipment
 - (3) Refrigeration and Refrigerants
 - (4) Cutting Edge Approaches
 - (5) High Efficiency Design and Operation
 - (6) Big Data and Smart Controls
 - (7) Ventilation, IAQ and Air Distribution Systems
 - (8) Standards, Guidelines and Codes
- v. CEC Tracks for 2020 Annual in Austin
 - (1) Fundamentals and Applications
 - (2) HVAC&R Systems and Equipment
 - (3) Professional Development
 - (4) Research Summit
 - (5) Potential Additional Track Ideas
 - (a) Optimization and HVAC&R
 - (b) Commissioning / Continuous Commissioning / Automated Fault Detection
 - (c) Modeling Throughout the Building Life Cycle
 - (d) Hydronic System Design
 - (e) Existing Buildings
 - (f) High Performance for Energy Intensive Building Types
 - (g) Energy Efficiency and Renewables
 - (h) Energy Recovery and Cascade Systems
 - (i) Building Certification and Operating Metrics
 - (j) Ground-Coupled Systems
 - (k) Life Safety
 - (l) Indoor Air Quality
 - (6) Potential topics reviewed such as- Interactive Grid, Resilient Community
- vi. Mr. Thomas Lawrence from the University of Georgia. He is a very good speaker, he presented in Atlanta.
- vii. January 1, 2020. R123 no longer available. What will be used now?

HANDOUT

(1) Ken Shultz from Trane is knowledgeable and may be approached by Bill Ryan.

- C. Research: Jay Eldridge (Chair), Not Present at roll call, arrived late to this meeting.
i. None

6. Open Discussion

- A. TC 6.02 Webpage is current and ASHRAE IT department will be approached to repair an issue with browsers.
- B. The ASHRAE authoring portal is only accessible with Internet Explorer v10.
- C. Any Research Topic Action Request (RTAR), Jay Eldridge will be following up with other TC's for a potential joint venture.
- D. John Molnar suggested refrigerated warehouses, food temperatures. It could be beneficial for ASHRAE research to study food temperature,
 - i. Viking Cold is a vendor. This uses phase change materials.
- E. Question was asked about the Society TC reorganization. It has not effected this TC. Society will be reviewing this by the Austin meeting. This topic will be reviewed in detail at 3pm, during the main meeting.

7. Meeting Adjourned at 1:45 pm.

Submitted by,
Michael Calabrese
TC 6.02 Secretary
2019-07-02

HANDOUT

Technical Committee Meeting Minutes
TC 6.02 District Energy
Sunday, 2019-06-23, Kansas City, MO

TC 6.02 District Energy – Meeting
Sunday, 3:00 pm – 5:00 pm, KCCC, Room 2215C

Voting Committee Members Present:	Telephone Participants:	
Steve Tredinnick	2021-06-30	Alan Neely
Michael Calabrese	2022-06-30	Tim Anderson
Daniel Pyewell	2022-06-30	

2019-06-30
2022-06-30

New Incoming Voting Committee Members:
Elizabeth (Betsy) Goll, ASHRAE Member #5059903

1. The Substitute Chair (Steve Tredinnick) Called to Order and discussed -

Technical Committee (TC) 6.02 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.

2. General introductions

- A. 19 persons in the room.
- B. 2 persons on the Telephone.
- C. Handouts
 - i. TC 6.02 District Energy Meeting Agenda
 - ii. IDEA Liaison report, 2019-05-31 by John Andrepont

3. ASHRAE Code of Ethics Commitment – Announced by TC Substitute Chair (Steve Tredinnick)

In this an 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>.)

4. Membership (TC Substitute Chair (Steve Tredinnick))

- A. Members & Guests Introductions, roundtable introductions
- B. Review of Current Voting Members and TC officers
 - 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 6.02). Refer to attachment with members and their business cards.
 - i. Elizabeth (Betsy) Goll, ASHRAE Member #5059903
 - ii. Mohommed Ibrahim, ASHRAE Member #8149396
 - iii. John Molnar, ASHRAE Member #8133771
 - iv. Gary Phetteplace, ASHRAE Member #580344
 - v. Drew Turner
 - vi. Michael Langton, ASHRAE Member #2024455

HANDOUT

- D. TC Chair Alan Neely will be completing his term in 2019-06-30. He will continue as TC Chair and complete the paperwork.
- E. The TC 6.02 roster requires updating and additional Voting Members to be considered.

5. Meeting Minutes

- A. January 2019, Winter meeting in Atlanta, GA (by TC 6.02 secretary, Michael Calabrese)
 - i. Revisions were reviewed. There are a few unknown names which are to be completed.
 - ii. Vote is deferred.

6. Announcements by Chair:

- A. CEC call for reviewers: Orlando 2020 Winter Meeting and others. Contact Tiffany Cox (tc Cox@ashrae.org) and copy TC Chair, Alan Neely and Vice Chair, Jessica Mangler.
- B. Remote participation meeting is an option to Vote on today's items. To be reviewed by the Chair, Alan Neely.
- C. A "Thank you" letter for employers is available from the ASHRAE president.
- D. Friday 2019-08-02 is the deadline for the Orlando submissions.
- E. Tech council is looking for nominations for the "Hightower" Award. Due to section head, Dawen Lu, by 2019-09-01.
- F. Tracks are listed for Orlando Winter 2020 and Austin Annual 2020
- G. TC reorganization was reviewed.
 - i. Mergers are still being reviewed.
 - ii. Comments by TC were received and the earliest would be at the Austin meeting.

7. Visitors and Liaison Reports/Information from other Committee Representatives

- A. IDEA – John Andrepont (non-present, provided report to Chair)
 - i. See the 2019-05-31 report attached to the agenda handout and available on the TC webpage.
 - ii. ASHRAE and IDEA now have an agreement between the groups.
 - (1) Blake Ellis is the liaison between ASHRAE and IDEA.
 - (2) Conferences with IDEA may conflict, such as this conference, simultaneously with IDEA in Pittsburgh, PA.
 - (3) IDEA Campus meeting is typically at the time of the ASHRAE annual meeting

8. Sub-Committee Reports:

- A. Handbook: Steve Tredinnick (Chair)
 - i. Chapter 12 and Chapter 15 was approved in Atlanta and have been submitted to the Society
 - ii. Will be released in the new edition of the Handbook in Spring 2020. In 2024 there will be the new release
 - iii. District Cooling Guide was issued, version 2.
 - iv. Elizabeth (Betsy) Goll volunteered to be Vice Chair of Handbook committee and take over chair for as of July 1, 2020.
- B. Membership: John Andrepont (Chair), not present
 - i. None
- C. Program: Tim Anderson (Chair), by Telephone.
 - i. Suggested programs, by Chair Alan Neely. Suggested for the 2020 Winter meeting in Orlando.
 - (1) Chilled water insulation used in District Energy applications. \$20M lessons learned. High profile chilled water failures.
 - (a) The projects are Minute Maid, NRG Stadium and Lake Wood Church.
 - (2) A project in Dubai in preparation for the World Cup that has 4 football (soccer) stadiums. How does one air condition an open Soccer Stadium in the middle of the desert?
 - (a) Plant is 1000T per AHU. 80 AHUs using 100%OA. The plant is about 2 miles away (piping distribution)
 - ii. May be able to combine topics into one presentation.
 - (1) Alan and Mohammed to provide detailed information to Tim Anderson, for program review.

HANDOUT

- iii. CEC Tracks for Winter 2020 in Orlando
 - (1) HVAC&R Fundamentals and Applications
 - (2) Systems and Equipment
 - (3) Refrigeration and Refrigerants
 - (4) Cutting Edge Approaches
 - (5) High Efficiency Design and Operation
 - (6) Big Data and Smart Controls
 - (7) Ventilation, IAQ and Air Distribution Systems
 - (8) Standards, Guidelines and Codes
- iv. CEC Tracks for 2020 Annual in Austin
 - (1) Fundamentals and Applications
 - (2) HVAC&R Systems and Equipment
 - (3) Professional Development
 - (4) Research Summit
 - (5) Potential Additional Track Ideas
 - (a) Optimization and HVAC&R
 - (b) Commissioning / Continuous Commissioning / Automated Fault Detection
 - (c) Modeling Throughout the Building Life Cycle
 - (d) Hydronic System Design
 - (e) Existing Buildings
 - (f) High Performance for Energy Intensive Building Types
 - (g) Energy Efficiency and Renewables
 - (h) Energy Recovery and Cascade Systems
 - (i) Building Certification and Operating Metrics
 - (j) Ground-Coupled Systems
 - (k) Life Safety
 - (l) Indoor Air Quality
 - (6) Potential topics reviewed such as- Interactive Grid, Resilient Community
- v. Refrigerant. January 1, 2020. R123 no longer available. What will be used now?
 - (1) TC 8.2 Centrifugal Machines joint venture
 - (2) Potential Speakers
 - (a) Thomas Lawrence, University of Georgia. He presented in Atlanta.
 - (b) Juan (UTA) may be able to present as well.
 - (3) UTA Campus is off-grid. Their energy is cheapest in the world and they sell back to Austin.
 - (4) Austin Energy Texas Facilities Commission. Robert Bush to volunteer to coordinate and assist Alan.
 - (5) ENWAVE Chicago expansion under rail tracks. Right of way issues.
- vi. Suggestions by Elizabeth Goll.
 - (1) Airport Plant MIA. Decommissioned an air side chiller plant and introduced a 4000T chiller at CCPE plant.
 - (2) Miami-Dade GSA District cooling plant that serves American Airlines Arena. The systems uses 35degF water and low temperature air distribution.
 - (3) Nova SE, a Thermal Energy Storage (TES) plant. Not much information is known. Elizabeth Goll will get more information to present to this TC.
- vii. John Karakash, had a program about 2 years ago, TC 8.3 Absorption and Heat Operated Machines and TC 6.9 Thermal Storage.
 - (1) Educational Subcommittee of TC 7.3 Operation and Maintenance Management
 - (a) Educational training or a forum at the 2020 Winter conference in Orlando on Lessons Learned.
 - (2) Topics should be "Nightmare Stories"

D. Standards: Open

i. NONE

E. Webmaster: Dan Pyewell (Chair)

HANDOUT

- i. IT will be approached to fix an issue with browsers.
- F. Research: Jay Eldridge (Chair)
 - i. The District Cooling guide was discussed. RP 1762 a review meeting is scheduled for Monday 2019-06-24. TC 1.10 Combined Heat and Power Systems, is co-sponsoring.
 - ii. Jay Eldridge expressed a desire to have a replacement as Chair. Gary Phetteplace volunteered.

9. Old Business-

- A. None

10. New Business-

- A. Mention of the newest District Energy, version 2, is in the ASHRAE bookstore now.
- B. Overview of TCs potentially combining and being synergized.

11. Meeting Adjourned at 4:03 pm.

- A. Announcement by Substitute Chair (Steve Tredinnick) to close this session.

Submitted by,
Michael Calabrese
TC 6.02 Secretary
2019-07-02

Subcommittee Meetings - Day, Date, Times, & Location Prior to TC 6.02 Meeting:

TC 6.02 Handbook - Sunday, 1:00 pm – 3:00 pm, KCCC, Room 2215C

TC 6.02 Program - Sunday, 1:00 pm – 3:00 pm, KCCC, Room 2215C

TC 6.02 Research - Sunday, 1:00 pm – 3:00 pm, KCCC, Room 2215C

HANDOUT

Technical Committee Meeting Minutes
TC 6.02 District Energy
Sunday, 2020-02-02, Orlando, FL

TC 6.02 District Energy – Meeting

Sunday, 3:00 pm – 5:00 pm, Hilton Orlando, Lake Mitzell B

Voting Committee Members Present:

Mr. Alan Neely	2020-06-30	Ms. Jessica Mangler	2020-06-30
Mr. Steve Tredinnick	2021-06-30	Mr. Tim Anderson	2022-06-30
Mr. Michael Calabrese	2022-06-30	Mr. Geoff Barnes	2022-06-30
Mr. Daniel Pyewell	2022-06-30	Mr. Jay Eldridge	2018-06-30
Mr. Scott Murray		Mr. Mohommed Ibrahim	2023-06-30
Ms. Elizabeth (Betsy) Goll	2023-06-30		

1. The Chair (Alan Neely) Called to Order at 2:59pm and discussed -

Technical Committee (TC) 6.02 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.

2. General introductions

A. 33 persons in the room.

B. Handouts

- i. TC 6.02 District Energy Meeting Agenda
- ii. 2019 Winter Conference, Atlanta Draft Meeting Minutes
- iii. 2019 Annual Conference, Kansas City Draft Meeting Minutes
- iv. IDEA Liaison report, 2020-01-09 by John Andrepont

C. Review of Current Voting Members and TC officers, Quorum is met.

3. ASHRAE Code of Ethics Commitment – Announced by TC Chair (Alan Neely)

In this an 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>.)

4. New Business-

A. Guest - Dr. Alexander Zhivov from the USACE discussed and reviewed...

- i. IEA EBC Annex 73, Energy Master Planning for Resilient Public Communities Guide, Appendix E, Best Practices of Energy System Architecture.
- ii. TC 7.6 would like a Co-Sponsor. Concept is for "system architecture". Resilience and reliability type of guide. Net-Zero Planner is the tool. They would like for TC 6.2 to review this guide as well. Their intent is to publish an ASHRAE Guide.

- iii. Dr. Zhivov is to contact the Chair to request TC 6.2 review
- iv. TC 6.2 to co-sponsor and review the USACE Guide. Steve Tredinnick, Jessica Mangler and (1) Motion by Jessica Mangler, 2nd by Steve Tredinnick, All 7-0-0
- B. Update on the November 2019, TC re-organization by Section 6 Head, Dawen Lu
 - i. The TC must review the status annually, add to agenda
 - ii. Format has changed to a large TC and then breakout into Sections.

5. Meeting Minutes

- A. January 2019, Winter meeting in Atlanta, GA
 - i. Minor modifications, approved by vote. Motion by Geoff Barnes, 2nd by Betsy Goll, All 7-0-0
- B. June 2019, Annual meeting in Kansas City, MO
 - i. Minor modifications, approved with modification Motion by Steve Tredinnick, 2nd by Geoff Barnes, All 6-0-1

6. Announcements by Chair:

- A. CEC call for reviewers: Austin 2020 Annual Meeting and others. Contact Tiffany Cox (tc Cox@ashrae.org) and copy TC Chair, Alan Neely and Vice Chair, Jessica Mangler.
- B. TC reorganization was reviewed.
 - i. Mergers are still being reviewed.
 - ii. Comments by TC were received and the earliest would be at the Austin meeting.

7. Membership

- A. Members & Guests Introductions, roundtable introductions
- B. Review of Current Voting Members and TC officers
 - 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 6.02).
 - i. Alec Cusick, ASHRAE Member #8376526
 - ii. Gary Phetteplace, ASHRAE Member #580344
 - iii. Nemat Lotfi, ASHRAE Member #443351

8. Visitors and Liaison Reports/Information from other Committee Representatives

- A. DOE: Richard Sweetser
 - i. IDEA/DOE are collaborating on some District Energy.
 - ii. Decarbonization is not being Federally mandated. Some states do have legislation. NY was used as an example. NYSERDA has NO CHP program but will be starting a District Energy Program
 - iii. Thermal energy via heat pumps.
 - iv. E-Catalog CHP at Lawrence Berkley Labs, Seminar #46 on Tuesday
 - v. David Dvorak spoke about the Northeast area activity.
- B. IDEA: John Andrepont
 - i. See the 2020-01-09 report attached to the agenda handout and available on the TC webpage.

9. Sub-Committee Reports:

- A. Handbook: Steve Tredinnick (Chair)
 - i. Chapter 12 and Chapter 15 were submitted to the Society and they were voted on by the TC in Atlanta
 - ii. Galley proof received for Chapter 15. Waiting on Society for Chapter 12 Galley Proof.
 - iii. June 2020 Elizabeth (Betsy) Goll will take over as Chair.
- B. Membership: John Andrepont (Chair), not present
 - i. Chair requested a volunteer for future.
 - (1) Alec Cusick, Provisional Corresponding Member #8376526, volunteered
- C. Program: Tim Anderson (Chair)
 - i. Chicago 2021 deadline is August 10th 2020.
 - ii. Suggested programs, by Chair.

- (1) Mohammed reviewed his project A project in Qatar in preparation for the 2022 World Cup that has 4 football (soccer) stadiums. How does one air condition an open Soccer Stadium in the middle of the desert?
 - (a) Plant is 1000T per AHU. 80 AHUs using 100%OA. The plant is about 1.5 miles away (piping distribution)
- (2) Retrofit projects (Minute maid park) R&R insulation. Lessons learned on large unique projects. It may be better suited for TC 1.8 and possibly joint venture. Alan to review with TC chair.
- (3) Tim Anderson mentioned a potential Enwave tour in Chicago.
- (4) TC 6.8 – Geothermal, they would be open to team for a program in Chicago. Several good examples could be offered for carbon neutral or net zero. District condenser water system using geothermal. Denver Enwave has a large project that is being presented at IDEA in Denver, week of February 10th 2020.

iii. CEC Tracks for 2020 Annual in Austin

- (1) Fundamentals and Applications
- (2) HVAC&R Systems and Equipment
- (3) Research Summit
- (4) Professional Development
- (5) Grid-Interactive Efficient Built Environment
- (6) Multifamily and Residential buildings
- (7) Resilient Buildings and Communities
- (8) Zero Energy Buildings and Communities, Opportunities and Challenges
- (9) (Mini-Track) Building Myths

D. Standards:

- i. NONE

E. Webmaster: Dan Pyewell (Chair)

- i. Updated website with the current versions of the approved and draft MM.

F. Research: Jay Eldridge (Chair)

- i. Concluding The Turbine Inlet Design Guide. Sponsoring TC 1.10 Chair (Dragos Paraschiv) discussed the versions of the publication and the technical content has been reviewed. The author will be presenting at an ASHRAE conference after the book is published. Newer technology, examples and case studies.
- ii. The District Cooling guide was discussed. The District Cooling Ready, Building, Design and Demonstration. A new owners guide for district cooling, examples, cost, building types will be reviewed.
 - (1) Gary wrote it and discussed that the project should be discussed at a later date. The current funding by Empower is status is unknown. Tabled until details can be provided.
- iii. Jay Eldridge would like to step down as the Research Chair. Geoff Barnes will assume the research chair role.

10.Old Business-

- A. None

11.New Business

- A. The passing of TC 6.2 former Secretary, Steve Severini in August of 2019 was announced
- B. Review of the 2020-01-13 email "Share your thoughts..." for a survey from ASHRAE. The TC 6.2 Section head, Dawen Lu requests that everyone respond.

12.Meeting Adjourned at 4:05 pm.

- A. Motion by Geoff Barnes, 2nd by Tim Anderson, all in favor – 7-0-0
- B. Announcement by TC Chair (Alan Neely) to close this session.

Submitted by,
Michael Calabrese
TC 6.02 Secretary
2020-02-03

Subcommittee Meetings - Day, Date, Times, & Location Prior to TC 6.02 Meeting:

TC 6.02 Handbook - Sunday, 1:00 pm – 3:00 pm, Hilton Orlando, Lake Mitzell B

TC 6.02 Program - Sunday, 1:00 pm – 3:00 pm, Hilton Orlando, Lake Mitzell B

TC 6.02 Research - Sunday, 1:00 pm – 3:00 pm, Hilton Orlando, Lake Mitzell B

DRAFT