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

Voting Committee Members Present:
Mr. Steve Tredinnick 2021-06-30
Mr. Michael Calabrese 2022-06-30
Mr. Daniel Pyewell 2022-06-30

New Incoming Voting Committee Members:
None

1. The 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. Handouts Distributed
   A. None

3. 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.
      iv. District cooling Guide was issued, version 2. In 2024 there will be a new release.

   B. Program: Tim Anderson (Chair), not present.
      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 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 dessert?
            (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 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?
   (1) Ken Shultz from Trane is knowledgeable and may be approached by Bill Ryan.

C. Research: Jay Eldridge (Chair), Not Present at this meeting.
   i. None

4. 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 Molnar 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.

5. Meeting Adjourned at 1:45 pm.

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

TC 6.02 District Energy
Subcommittee Meeting
Sunday, 2019-06-23, Kansas City, MO

Attendance List
## TC 6.2: Subcommittee Meeting - Sign-in Sheet

**Meeting Info:** Programs, Research, Handbook  
**Location:** Kansas City Convention Center, Room 2215C  
**Date:** 1:00-3:00pm on 2019-06-23

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>E-mail</th>
<th>Member (Voting, Corresponding, or Guest?)</th>
<th>YEA Member? (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Calcarrée</td>
<td>Burns Engineering</td>
<td><a href="mailto:mcalcarr@burnsequip.com">mcalcarr@burnsequip.com</a></td>
<td>Secretary</td>
<td>NO</td>
</tr>
<tr>
<td>Staci Tredinnick</td>
<td>Burns &amp; McDonnell</td>
<td><a href="mailto:stredinn@burnsequip.com">stredinn@burnsequip.com</a></td>
<td>Handbook Chair</td>
<td>NO</td>
</tr>
<tr>
<td>Gary Philips</td>
<td>GWA Research</td>
<td><a href="mailto:garyg@gwareresearch.com">garyg@gwareresearch.com</a></td>
<td>CM</td>
<td>NO</td>
</tr>
<tr>
<td>Dan Pyrofilli</td>
<td>Tonn Engineering</td>
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<td>VM</td>
<td>NO</td>
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<tr>
<td>Bill Ryan</td>
<td>UIC</td>
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<td>CM</td>
<td>NO</td>
</tr>
<tr>
<td>Elizabeth (Betsie) Goll</td>
<td>FPLS</td>
<td><a href="mailto:elizabeth.goll@fpl.com">elizabeth.goll@fpl.com</a></td>
<td>CM</td>
<td>NO</td>
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<tr>
<td>Heather Sharif</td>
<td>ITW</td>
<td><a href="mailto:hsharif@itwinsulation.com">hsharif@itwinsulation.com</a></td>
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<tr>
<td>Jim Young</td>
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<td><a href="mailto:jyoung@itwinsulation.com">jyoung@itwinsulation.com</a></td>
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</tr>
<tr>
<td>John Molnar</td>
<td>CoEng Advisors</td>
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<td>CM</td>
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<td>Name</td>
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<td>YEA Member? (Yes/No)</td>
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<tr>
<td>Dawen Lu</td>
<td>Lu &amp; Smith Egn.</td>
<td><a href="mailto:dLu6838@gmail.com">dLu6838@gmail.com</a></td>
<td>Section Head</td>
<td>No</td>
</tr>
</tbody>
</table>
(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 **2019-06-23**

**TC/TG/MTG/TRG TITLE District Energy**

DATE OF MEETING **3:00-5:00pm on 2019-06-23**  LOCATION Kansas City Convention Center, Room 2215C

<table>
<thead>
<tr>
<th>MEMBERS PRESENT</th>
<th>YEAR APPTD</th>
<th>MEMBERS ABSENT</th>
<th>YEAR APPTD</th>
<th>EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE</th>
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</thead>
<tbody>
<tr>
<td>Alan Neely (Remote)</td>
<td>2017</td>
<td>Jessica Mangler</td>
<td>2017</td>
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<tr>
<td>Steve Tredinnick</td>
<td>2017</td>
<td>Geoffrey Bares</td>
<td>2016</td>
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</tr>
<tr>
<td>Michael Calabrese</td>
<td>2018</td>
<td>Scott Murray</td>
<td>2017</td>
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<tr>
<td>Jay Eldridge</td>
<td>2018</td>
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<tr>
<td>Daniel Pyewell</td>
<td>2018</td>
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<tr>
<td>Tim Anderson (Remote)</td>
<td>2018</td>
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</tbody>
</table>

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

TAC Section Head: Mr. 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

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.
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:
Steve Tredinnick 2021-06-30
Michael Calabrese 2022-06-30
Daniel Pyewell 2022-06-30

New Incoming Voting Committee Members:
None

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
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
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 differed.

6. Announcements by Chair:
   A. CEC call for reviewers: Orlando 2020 Winter Meeting and others. Contact Tiffany Cox (tcox@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
      iii. District Cooling Guide was issued, version 2. In 2024 there will be the next release.
   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 dessert?
            (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.
      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
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   (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)
   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 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
2019 ASHRAE Annual Conference

TC 6.02 District Energy
Main Meeting
Sunday, 2019-06-23, Kansas City, MO
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
   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 (TC 6.02 Secretary – Michael Calabrese)

6. Announcements by Chair:
A. CEC Call for Reviewers: 2020 Winter Meeting and others. Contact Tiffany Cox (tcox@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 dessert?
         (2) Alan- Chilled water insulation used in district energy applications (Orlando is an ideal place to give this presentation)
   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, 23 June 2019, 1:00 - 3:00 pm, Kansas City Convention Center, Room 2215C
TC 6.02 Program - Sunday, 23 June 2019, 1:00 - 3:00 pm, Kansas City Convention Center, Room 2215C
TC 6.02 Research - Sunday, 23 June 2019, 1:00 - 3:00 pm, Kansas City Convention Center, Room 2215C
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:

- 110th Annual Conference & Trade Show
  June 24-27, 2019 – Pittsburgh, Pennsylvania
- 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

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
2019 ASHRAE Annual Conference

TC 6.02 District Energy
Main Meeting
Sunday, 2019-06-23, Kansas City, MO

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<tbody>
<tr>
<td>Michael Calabrese</td>
<td>Burns Engineering</td>
<td><a href="mailto:mealabrese@burns-eng.com">mealabrese@burns-eng.com</a></td>
<td>Secretary (VM)</td>
<td>No</td>
</tr>
<tr>
<td>Steve Tedmick</td>
<td>Burns &amp; McDonnell</td>
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<td>Handbook (VM)</td>
<td>No</td>
</tr>
<tr>
<td>Gary Petteplace</td>
<td>GWA Research, Inc.</td>
<td><a href="mailto:garyp@gwa-research.com">garyp@gwa-research.com</a></td>
<td>CM</td>
<td>No</td>
</tr>
<tr>
<td>Jay Eldridge</td>
<td>Daikin Applied</td>
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<tr>
<td>Patrick Villaume</td>
<td>Patterson-Kelley</td>
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<td>G</td>
<td>Y</td>
</tr>
<tr>
<td>Drew Turner</td>
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<td>Guest</td>
<td>N</td>
</tr>
<tr>
<td>Ben Levee</td>
<td>Seattle City Light</td>
<td><a href="mailto:ben.levie@seattle.gov">ben.levie@seattle.gov</a></td>
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</tr>
<tr>
<td>Trey Bueh</td>
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<td><a href="mailto:trey.bueh@braetlet.com">trey.bueh@braetlet.com</a></td>
<td>Guest</td>
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<tr>
<td>Margaret Phillips</td>
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<td>margaret.phillips@p&amp;g.com</td>
<td>Guest</td>
<td>Y</td>
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<tr>
<td>John Karakash</td>
<td>Resource Professionals Group LLC</td>
<td><a href="mailto:JTPK@resourceprofessionalsgroup.com">JTPK@resourceprofessionalsgroup.com</a></td>
<td>Guest - app for corr.</td>
<td>N</td>
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</tbody>
</table>
## TC 6.2 District Energy Meeting Sign-in Sheet

**Meeting Info:** Main Committee  Location: Kansas City Convention Center, Room 2215C  Date: 3:00-5:00pm on 2019-06-23

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Michael Langton</td>
<td>Professor</td>
<td><a href="mailto:mlangton@langtonenergy.com">mlangton@langtonenergy.com</a></td>
<td>CM</td>
<td>Y</td>
</tr>
<tr>
<td>Wm Ryan</td>
<td>VICE</td>
<td><a href="mailto:wryan@vice.edu">wryan@vice.edu</a></td>
<td>CM</td>
<td>N</td>
</tr>
<tr>
<td>Mohamed Ibrahim</td>
<td>Director</td>
<td><a href="mailto:AQRAH@hotmail.com">AQRAH@hotmail.com</a></td>
<td>CM</td>
<td>Y</td>
</tr>
<tr>
<td>Name</td>
<td>Affiliation</td>
<td>E-mail</td>
<td>Member (Voting, Corresponding, or Guest?)</td>
<td>YEA Member? (Yes/No)</td>
</tr>
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<tr>
<td>Mohamed Ebrah</td>
<td>DCPro Engineering</td>
<td><a href="mailto:AQRAlk@hotmail.com">AQRAlk@hotmail.com</a></td>
<td>Corresponding</td>
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<tr>
<td>Daniel R. Pyerell</td>
<td><a href="mailto:Dpyerell@tancoeng.com">Dpyerell@tancoeng.com</a></td>
<td>Tanco Engineering</td>
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<tr>
<td>John Mohar</td>
<td>CoEng Advisors</td>
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<tr>
<td>Elizabeth (Betsy) Goll</td>
<td>FPLS</td>
<td><a href="mailto:elizabeth.goll@fpl.com">elizabeth.goll@fpl.com</a></td>
<td>CM</td>
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<tr>
<td>Jim Young</td>
<td>ITW</td>
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<td>CM</td>
<td>N</td>
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<tr>
<td>Heather Sharif</td>
<td>ITW</td>
<td><a href="mailto:hsharif@itw-insulation.com">hsharif@itw-insulation.com</a></td>
<td>CM</td>
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<tr>
<td>Dragoș Paraschiv</td>
<td>Humber College</td>
<td><a href="mailto:dragos@paraschiv.ca">dragos@paraschiv.ca</a></td>
<td>EOM</td>
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<tr>
<td>Daryl Stauffer</td>
<td>Johnson Controls</td>
<td><a href="mailto:daryl.stauffer@jci.com">daryl.stauffer@jci.com</a></td>
<td>CM</td>
<td>No</td>
</tr>
</tbody>
</table>
ATTACHMENT

CONTACTS LISTED BELOW HAVE REQUESTED INFORMATION ABOUT JOINING TC 6.02 AND BECOMING A VOTING MEMBER

Drew Turner

Michael Langton, ASHRAE Member #2024455

Elizabeth (Betsy) Goll, ASHRAE Member #5059903

Mohamed Ibrahim, ASHRAE Member #8149396

John Molnar, ASHRAE Member #8133771

Gary Phetters, ASHRAE Member #580344
2019 ASHRAE Annual Conference

TC 6.02 District Energy
Sunday, 2019-06-23, Kansas City, MO

TC 6.02 Roster
2019-05-31
Chair
8074057 064 Voting
Term in Position: 07/01/2017 to 06/30/2019
Term on Committee: 07/01/2007 to 06/30/2019
Mr Robert (Alan) Neely
9013 Willow Springs Ln
Conroe, TX 77302-3453
Pittsburgh Corning
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
2469 55th Ave SW
Unit B
Seattle, WA  98116
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
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Drexel Hill, PA  19026-3501
Phone: (215)979-7700 Fax: (215)405-2510 (7780)
Email: MCalabrese@burns-group.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
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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 Indus 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
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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
CB&I (Chicago Bridge & Iron)
2002 Basalt Ct
Loveland, CO  80538-5593
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Email: punxpyewe79@yahoo.com

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<table>
<thead>
<tr>
<th>Member</th>
<th>Term in Position:</th>
<th>Term on Committee:</th>
<th>Voting</th>
<th>Provisional Corresponding Member</th>
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</thead>
<tbody>
<tr>
<td>Mr Geoffrey Bares</td>
<td>07/01/2016 to 06/30/2020</td>
<td>07/01/2010 to 06/30/2020</td>
<td>Voting</td>
<td>8275822 to 06/30/2020</td>
</tr>
<tr>
<td>Enwave Chicago</td>
<td>200 W Jackson Blvd Ste 1310</td>
<td>Chicago, IL 60606-6941</td>
<td>Phone: (312)377-1793 Fax: (815)439-6595 Email: <a href="mailto:geoff.bares@enwave.com">geoff.bares@enwave.com</a></td>
<td></td>
</tr>
<tr>
<td>8141681</td>
<td>049</td>
<td><strong>ABSENT</strong></td>
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<td>Member</td>
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<td>Mr Scott T Murray</td>
<td>07/01/2017 to 06/30/2021</td>
<td>10/13/2016 to 06/30/2021</td>
<td>YEA</td>
<td>8256493 to 06/30/2020</td>
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<tr>
<td>Clearway Energy</td>
<td>2152 Howard St</td>
<td>Omaha, NE 68102-2455</td>
<td>Phone: 402-515-4589 Fax:</td>
<td>Email: <a href="mailto:scott.murray@clearwayenergy.com">scott.murray@clearwayenergy.com</a></td>
</tr>
<tr>
<td>8300539</td>
<td>075</td>
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<td>Mr Hyeunguk Ahn</td>
<td>01/28/2018 to 01/28/2020</td>
<td>01/28/2018 to 01/28/2020</td>
<td>YEA</td>
<td>8299861 to 06/30/2020</td>
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<tr>
<td>265 Blue Course Dr Apt 26A</td>
<td>State College, PA 16803-2859</td>
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<td>Email: <a href="mailto:wook01230@gmail.com">wook01230@gmail.com</a></td>
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<tr>
<td>8163134</td>
<td>022</td>
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<tr>
<td>Mr Joseph Catrambone</td>
<td>07/06/2017 to 07/06/2019</td>
<td>07/06/2017 to 07/06/2019</td>
<td>Non-voting</td>
<td>5138571 to 06/26/2020</td>
</tr>
<tr>
<td>Johnson Controls</td>
<td>5000 Renaissance Dr</td>
<td>New Freedom, PA 17349-8979</td>
<td>Phone: (717)771-7734 Fax:</td>
<td>Email: <a href="mailto:joseph.a.catrambone@jci.com">joseph.a.catrambone@jci.com</a></td>
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<tr>
<td>tk1sc</td>
<td>15231 Laguna Canyon RD Ste 100</td>
<td>Irvine, CA 92618-7714</td>
<td>Phone: 949-751-5868 Fax:</td>
<td>Email: <a href="mailto:jchavez75@gmail.com">jchavez75@gmail.com</a></td>
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<td>01/21/2018 to 01/21/2020</td>
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<tr>
<td>P2S Engineering</td>
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<tr>
<td>Dr S. David Dvorak</td>
<td>01/24/2018 to 01/24/2020</td>
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<td>University of Maine</td>
<td>119 Boardman Hall</td>
<td>University of Maine</td>
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<td>Phone: (207)581-2338 Fax: (207)581-2113 Email: <a href="mailto:dvorak@maine.edu">dvorak@maine.edu</a></td>
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<td>Mr Frederic Genest</td>
<td>06/26/2018 to 06/26/2020</td>
<td>06/26/2018 to 06/26/2020</td>
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<tr>
<td>Natural Resources Canada - CanmetENERGY</td>
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<th>Term on Committee:</th>
<th>Phone:</th>
<th>Fax:</th>
<th>Email:</th>
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<tbody>
<tr>
<td>Ms Elizabeth A Goll</td>
<td>06/25/2018 to 06/25/2020</td>
<td></td>
<td>(305)552-4893</td>
<td>(305)899-2272</td>
<td><a href="mailto:elizabeth.goll@fpl.com">elizabeth.goll@fpl.com</a></td>
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<tr>
<td>Mr Sayani Sri Haribabu</td>
<td>10/19/2017 to 10/19/2019</td>
<td></td>
<td>9831045229</td>
<td>914424985075</td>
<td><a href="mailto:sayanihari@yahoo.com">sayanihari@yahoo.com</a></td>
</tr>
<tr>
<td>Karl W. Heine</td>
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<td>(307) 751-0250</td>
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<tr>
<td>Mr Farhan Juratli</td>
<td>05/02/2019 to 05/02/2021</td>
<td></td>
<td>509402997</td>
<td></td>
<td><a href="mailto:Farhan.Juratli@nakheel.com">Farhan.Juratli@nakheel.com</a></td>
</tr>
<tr>
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<tr>
<td>Steven Klekas</td>
<td>05/07/2019 to 05/07/2021</td>
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<td>Mr David Klug</td>
<td>01/23/2018 to 01/23/2020</td>
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<tr>
<td>Noreshvarman Manisagar</td>
<td>09/17/2018 to 09/17/2020</td>
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<tr>
<td>Mihir Nandkeolyar</td>
<td>06/08/2018 to 06/08/2020</td>
<td>06/08/2018 to 06/08/2020</td>
<td>Saurabh Kalra</td>
<td>06/14/2017 to 06/14/2019</td>
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<tr>
<td>1909 Bank St</td>
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<td>Dr. Lei Wang, PhD</td>
<td>01/26/2018 to 01/26/2020</td>
<td>01/26/2018 to 01/26/2020</td>
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<td>Phone: (419)508-3059 Fax: (419)508-3059</td>
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<td>100 Cumberland Vly Ave</td>
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<tr>
<td>Email: <a href="mailto:mihir.nandkeolyar@jci.com">mihir.nandkeolyar@jci.com</a></td>
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<td></td>
<td>Phone: (717)765-2480 Fax: XXXXXXXXXX</td>
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<tr>
<td>Margaret Peterson</td>
<td>09/25/2018 to 09/25/2020</td>
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<td>Mr. Daryl M Stauffer</td>
<td>01/26/2018 to 01/26/2020</td>
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<tr>
<td>5000 E Spring St Bth FL</td>
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<td>College Station, TX 77845-2044</td>
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<tr>
<td>Phone: (612)275-7552</td>
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<td>Texas A&amp;M University</td>
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<td>03/09/2018 to 03/09/2020</td>
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<td>Dr. Duan Wu</td>
<td>07/02/2017 to 07/02/2019</td>
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<tr>
<td>3872 W Mercer Way</td>
<td></td>
<td></td>
<td>17 Firth Road (AC3)</td>
<td></td>
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<tr>
<td>Mercer Island, WA 98040-3356</td>
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<tr>
<td>Stanton</td>
<td></td>
<td></td>
<td>Livingston, EH54 5DJ UNITED KINGDOM</td>
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</tr>
<tr>
<td>Phone: (206)485-5706 Fax: 3122</td>
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<tr>
<td>Email: <a href="mailto:sergio.sadaba@gmail.com">sergio.sadaba@gmail.com</a></td>
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<td>Email: <a href="mailto:d.wu@uk.merce.mee.com">d.wu@uk.merce.mee.com</a></td>
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<td>Mrs Heather A Sharif</td>
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<td>Mr. Mohamed Eltaiieb</td>
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<tr>
<td>ITW Insulation Systems</td>
<td></td>
<td></td>
<td>Ibrahim Alagraw</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1370 E 40th St Ste 1 Bldg 7</td>
<td></td>
<td></td>
<td>Dc Pro Engineering</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houston, TX 77022-4150</td>
<td></td>
<td></td>
<td>Sharjah - Buhirah of2507 Al Durah</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone: (713)696-5649</td>
<td></td>
<td></td>
<td>P.O.Box 22851</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email: <a href="mailto:hsharif@itwinsulation.com">hsharif@itwinsulation.com</a></td>
<td></td>
<td></td>
<td>Sahrajah, 22851 UNITED ARAB EMIRATES</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phone: 0506557612 Fax: 066566881</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:aqraa@hotmail.com">aqraa@hotmail.com</a></td>
<td></td>
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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  
Unit 2, 26 Arndt Road  
Pascoe Vale 3044 , Victoria  AUSTRALIA  
Direct Energy Australia  
Phone:  +61 448 458  Fax:  704  
Email:  m.ali@consultant.com

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:  07/01/2015  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 Ste 500  
Nashville, TN 37204-3623  
Phone:  (615)346-3520  Fax:  (615)346-3550  
Email:  bailen@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 Andrepong  
The Cool Solutions Company  
5007 Lincoln Ave Ste 201  
Lisle, IL 60532-4187  
Phone:  (630)353-9690  Fax:  (630)353-9691  
Email:  coolsolutionsco@aol.com

Corresponding Member  
32406  022  Non-voting  
Term in Position:  07/01/1990  to  
Term on Committee:  07/01/1993  to  06/30/2006  
Prof William P Bahnfleth,  
PhD, PE  
The Pennsylvania State University  
104 Engineering Unit A  
University Park, PA 16802-1416  
Phone:  (814)863-2076  Fax:  (814)863-4789  
Email:  wbahnfleth@psu.edu

Corresponding Member  
8220596  034  Non-voting  
Term in Position:  03/10/2017  to  
Term on Committee:  03/10/2017  to  
Kanwar Bajaj  
University of Florida  
11 Tindall Rd  
Middletown, NJ 07748-2717  
Phone:  (732)241-7978  Fax:  
Email:  kbajaj@ufl.edu

Corresponding Member  
8180715  064  Non-voting  
Term in Position:  07/01/2012  to  
Term on Committee:  10/17/2011  to  06/30/2012  
Mr Jack Robert Blundell  
ITW Insulation Systems  
1370 E 40th St Bldg 7 Ste 1  
Houston, TX 77022-4150  
Phone:  (713)696-5639  Fax:  (713)691-7492  
Email:  jblundell@itwinsulation.com

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<table>
<thead>
<tr>
<th>Corresponding Member</th>
<th>Corresponding Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Bryson Borzini</td>
<td>Mr Kenneth R Collier</td>
</tr>
<tr>
<td>610 Harrison St</td>
<td>Pittsburgh Corning Corp</td>
</tr>
<tr>
<td>Santa Clara, CA 95050-4314</td>
<td>800 Presque Isle Dr</td>
</tr>
<tr>
<td>Silicon Valley Mechanical</td>
<td>Pittsburgh, PA 15239-2799</td>
</tr>
<tr>
<td>Phone: (831)277-4746</td>
<td>Phone: (724)327-6100</td>
</tr>
<tr>
<td>Fax:</td>
<td>Fax: (724)327-5890</td>
</tr>
<tr>
<td>Email: <a href="mailto:bborzini@gmail.com">bborzini@gmail.com</a></td>
<td>Email: <a href="mailto:ken_collier@pghcorning.com">ken_collier@pghcorning.com</a></td>
</tr>
</tbody>
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<thead>
<tr>
<th>Corresponding Member</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mr Raymond Boulter</td>
<td>Mr Kashyap Desai</td>
</tr>
<tr>
<td>1814 Dumas St</td>
<td>395 Cresthaven Dr</td>
</tr>
<tr>
<td>Orléans, ON K1C 1N4 CANADA</td>
<td>Nepean, ON K2G 6Z4 CANADA</td>
</tr>
<tr>
<td>Phone: (613)943-0951</td>
<td>Phone: 6138524000</td>
</tr>
<tr>
<td>Fax:</td>
<td>Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:raymond.boulter@canada.ca">raymond.boulter@canada.ca</a></td>
<td>Email: <a href="mailto:kashyapdesai@gmail.com">kashyapdesai@gmail.com</a></td>
</tr>
</tbody>
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<thead>
<tr>
<th>Corresponding Member</th>
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<tbody>
<tr>
<td>Ms Heather L Buckberry, PE</td>
<td>Mr Blake E Ellis, PE</td>
</tr>
<tr>
<td>1827 Hickory Glen Rd</td>
<td>6029 W 124th Ter</td>
</tr>
<tr>
<td>Knoxville, TN 37932-1949</td>
<td>Overland Park, KS 66209-2781</td>
</tr>
<tr>
<td>Oak Ridge National Laboratory</td>
<td>Burns &amp; McDonnell</td>
</tr>
<tr>
<td>Phone:</td>
<td>Phone:</td>
</tr>
<tr>
<td>Fax:</td>
<td>Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:hbuckberry@comcast.net">hbuckberry@comcast.net</a></td>
<td>Email: <a href="mailto:blakeashrae@gmail.com">blakeashrae@gmail.com</a></td>
</tr>
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<table>
<thead>
<tr>
<th>Corresponding Member</th>
<th>Corresponding Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Michael P Case</td>
<td>Mr Amr Adel Galal</td>
</tr>
<tr>
<td>US Army ERDC</td>
<td>SIEMENS</td>
</tr>
<tr>
<td>2559 County Road 100 E</td>
<td>The Galleries, Building No. 2, P. O. Box 2154</td>
</tr>
<tr>
<td>Mahomet, IL 61853-9745</td>
<td>Dubai, UNITED ARAB EMIRATES</td>
</tr>
<tr>
<td>Phone: (217)373-7259</td>
<td>Phone: 552002471</td>
</tr>
<tr>
<td>Fax: (217)373-7222</td>
<td>Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:michael.p.case@usace.army.mil">michael.p.case@usace.army.mil</a></td>
<td>Email: <a href="mailto:amr.galal@siemens.com">amr.galal@siemens.com</a></td>
</tr>
</tbody>
</table>
### Corresponding Member

**259862** 070 Non-voting

Term in Position: 07/01/2015 to 06/30/2015

**Mr Arthur L Giesler**

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**2817/239-2234**
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Fax:
Email:
Art.Giesler@att.net
Colleyville, TX  76034-2031
Corresponding Member
259862 070 Non-voting
Term on Committee: 04/29/2014 to 06/30/2015

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**7981029** 062 Non-voting

Term in Position: 06/26/2016 to 06/30/2016

**Mr David L Handwork, PE**

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**8131299** 049 Non-voting

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**Mr Paul E Glanville**

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**8001394** 009 Non-voting

Term in Position: 07/01/2015 to 06/30/2015

**Mr Matthew T Goss**

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Email: gossmt@cdmsmith.com

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**5194913** 008 Non-voting

Term in Position: 07/01/2015 to 06/30/2015

**Mr Yanzheng Guan, PhD**

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ARUP
Phone: (212)593-0486  Fax:
Email: don.guan@gmail.com

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**8204394** 086 Non-voting

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

**Mr Jon Heitzinger**

Northern Arizona University
530 E. Pine Knoll Dr.
Flagstaff, AZ  86011-0001
Phone: (928)523-6895  Fax:
Email: Jonathan.Hetzinger@nau.edu

---

**8121818** 105 Non-voting

Term in Position: 07/01/2012 to 06/30/2012

**Mr Nathan L Ho**

P2S Engineering
5000 E Spring St Ste 8
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Phone: (562)497-2999  Fax:
Email: nathan.ho@p2sinc.com

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<tr>
<th>Corresponding Member</th>
<th>Term in Position</th>
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<tbody>
<tr>
<td>Mr Charles J Hofstetter, Jr</td>
<td>07/01/2016 to</td>
<td></td>
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<tr>
<td>Karpinski Engineering</td>
<td>3135 Euclid Ave Ste 200</td>
<td>Cleveland, OH 44115-2524</td>
<td>Phone: (440)823-8270 Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:joehofstetter@hotmail.com">joehofstetter@hotmail.com</a></td>
<td></td>
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<td>Mr John D Jackson, PE</td>
<td>01/29/2017 to</td>
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<tr>
<td>University of Florida</td>
<td>PO Box 117700</td>
<td>Gainesville, FL 32611-7735</td>
<td>Phone: (352)294-0816 Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:dustin.jackson@ufl.edu">dustin.jackson@ufl.edu</a></td>
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<tr>
<td>Mr Stephen P Kazim</td>
<td>06/26/2017 to</td>
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<tr>
<td>1360 Redondo Ave Apt 104</td>
<td>Long Beach, CA 90804-2880</td>
<td>P2S Engineering</td>
<td>Phone: (714)496-3323 Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:stephen.kazim@p2sinc.com">stephen.kazim@p2sinc.com</a></td>
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<tbody>
<tr>
<td>Mr Michael J Langton, PE</td>
<td>07/01/2015 to</td>
<td></td>
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<tr>
<td>Enhanced Professional Services, LLC</td>
<td>18725 Stewart Hill Dr</td>
<td>Montgomery, TX 77356-2870</td>
<td>Phone: (832) 867-7149 Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:mlangton@langtonenergy.com">mlangton@langtonenergy.com</a></td>
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<tbody>
<tr>
<td>Mr John Lau</td>
<td>07/01/2015 to</td>
<td></td>
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</tr>
<tr>
<td>Baltimore Aircoil Company</td>
<td>7600 Dorsey Run Rd</td>
<td>Jessup, MD 20794-9328</td>
<td>Phone: (410)799-6522 Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:jlau@baltimoreaircoil.com">jlau@baltimoreaircoil.com</a></td>
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<tbody>
<tr>
<td>Mr Ryan S Lime</td>
<td>07/01/2015 to</td>
<td></td>
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</tr>
<tr>
<td>STELLAR ENERGY</td>
<td>105 Shady Bluff Ct</td>
<td>Saint Augustine, FL 32084-6562</td>
<td>Phone: (904)687-8264 Fax:</td>
</tr>
<tr>
<td>Email: <a href="mailto:ryanlime@gmail.com">ryanlime@gmail.com</a></td>
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## Corresponding Member

<table>
<thead>
<tr>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
<th>Address</th>
<th>District Energy-T-TAC-TC06.02 Information</th>
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<tbody>
<tr>
<td>8167351</td>
<td>010</td>
<td>Non-voting</td>
<td>127 Saddlestone Pl Apt H, Camillus, NY 13031-1690</td>
<td>Popli Design Group, Phone: (315) 256-1362, Fax: 315.463.4540, Email: <a href="mailto:chonghuicl@gmail.com">chonghuicl@gmail.com</a></td>
</tr>
<tr>
<td>8043286</td>
<td>017</td>
<td>Non-voting</td>
<td>GEOptimize Inc., 220 Portage Avenue, Suite 1410, Winnipeg, MB R3C 0A5 CANADA, Phone: 2043182156, Fax: 0000, Email: <a href="mailto:ed@geoptimize.ca">ed@geoptimize.ca</a></td>
<td></td>
</tr>
<tr>
<td>443351</td>
<td>022</td>
<td>Non-voting</td>
<td>Eaton Corporation, 731 Summit Lake Ct, Knoxville, TN 37922-3157, Phone: (484) 336-8089, Fax:</td>
<td></td>
</tr>
<tr>
<td>453614</td>
<td>008</td>
<td>Non-voting</td>
<td>CALMAC Corp, 401 E 80th St, Apt 30A, New York, Phone: (201) 797-1511, Fax: (201) 797-1522, Email: <a href="mailto:mmaccracken@calmac.com">mmaccracken@calmac.com</a></td>
<td></td>
</tr>
<tr>
<td>204584</td>
<td>009</td>
<td>Non-voting</td>
<td>State University Construction Fund, Phone: (607) 272-0243, Fax:</td>
<td></td>
</tr>
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<tr>
<th>Corresponding Member</th>
<th>Term in Position:</th>
<th>Term on Committee:</th>
<th>Name</th>
<th>Phone</th>
<th>Fax</th>
<th>Email</th>
<th>Address</th>
<th>Term on Committee:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Timothy P McDowell</td>
<td>07/01/1997 to</td>
<td>to</td>
<td>Mid 5079390 095 Non-voting</td>
<td>(608)274-2577</td>
<td>(608)278-1475</td>
<td><a href="mailto:mcdowell@tess-inc.com">mcdowell@tess-inc.com</a></td>
<td>Lafayette, CO  80026-9396 274-2577</td>
<td>07/01/2008 to 06/30/2015</td>
</tr>
<tr>
<td>Mr John S Molnar</td>
<td>07/01/2015 to</td>
<td>to</td>
<td>Mid 5079390 095 Non-voting</td>
<td>905 320-3363</td>
<td>9053203363</td>
<td><a href="mailto:john.molnar@coengadvisors.com">john.molnar@coengadvisors.com</a></td>
<td>3365 Harvester Rd. Ste 205 5079390 095 Non-voting</td>
<td>07/01/2008 to 06/30/2019</td>
</tr>
<tr>
<td>Mr Robert G O’Brien, PE</td>
<td>07/01/2006 to</td>
<td>06/30/2006</td>
<td>Mid 5079390 095 Non-voting</td>
<td>(425)649-9426</td>
<td>(425)945-1256</td>
<td><a href="mailto:rgonu@comcast.net">rgonu@comcast.net</a></td>
<td>5019 157th Ave SE Bellevue, WA  98006-3634</td>
<td>07/01/2015 to 08/21/2014</td>
</tr>
<tr>
<td>Mr Thomas Olmsted</td>
<td>10/21/2014 to</td>
<td>06/30/2015</td>
<td>Mid 5079390 095 Non-voting</td>
<td>404-408-9571</td>
<td>404-408-9571</td>
<td><a href="mailto:tolmsted@gmail.com">tolmsted@gmail.com</a></td>
<td>3222 W McLean Ave # 2 Chicago, IL  60647-3706</td>
<td>07/01/2008 to 08/21/2014</td>
</tr>
<tr>
<td>Mr Muhammad Isa Othman</td>
<td>07/01/1997 to</td>
<td>to</td>
<td>Mid 5079390 095 Non-voting</td>
<td>60123348527</td>
<td>60123348527</td>
<td><a href="mailto:m_isa1709@yahoo.com">m_isa1709@yahoo.com</a></td>
<td>No 3 Jalan Tepuan Satv 8/4A Shan Alam Selangor, 40000 MALAYSIA</td>
<td>07/01/2008 to 06/30/2015</td>
</tr>
<tr>
<td>Mr Drew L Overmiller, PE</td>
<td>07/01/2017 to</td>
<td>06/30/2019</td>
<td>Mid 5079390 095 Non-voting</td>
<td>905 320-3363</td>
<td>9053203363</td>
<td><a href="mailto:dovermiller@burnsmcd.com">dovermiller@burnsmcd.com</a></td>
<td>9400 Ward Pkwy Kansas City, MO  64114-3319</td>
<td>07/01/2015 to 08/21/2014</td>
</tr>
<tr>
<td>Mr Brandon Oyer</td>
<td>08/21/2014 to</td>
<td>06/30/2015</td>
<td>Mid 5079390 095 Non-voting</td>
<td>(816)349-6715</td>
<td>(816)349-6715</td>
<td><a href="mailto:boyer@enwaveseattle.com">boyer@enwaveseattle.com</a></td>
<td>1325 4th Ave Ste 1440 Seattle, WA  98101-2509</td>
<td>07/01/2008 to 08/21/2014</td>
</tr>
<tr>
<td>Dr Dragos Paraschiv, P.Eng</td>
<td>07/01/2008 to</td>
<td>to</td>
<td>Mid 5079390 095 Non-voting</td>
<td>9059013913</td>
<td>9059013913</td>
<td><a href="mailto:dragos@paraschiv.ca">dragos@paraschiv.ca</a></td>
<td>2017 Waterbridge Dr. Burlington, ON L7M4G6 CANADA</td>
<td>07/01/2008 to 08/21/2014</td>
</tr>
</tbody>
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Email: frank.pucciano@schneider-electric.com

Mr Dharam V Punwani
Avalon Consulting Inc
427 Prairie Knoll Dr
Naperville, IL  60565-4152
Phone: (630)983-0883  Fax: (630)357-1004
Email: dpunwani@avalonconsulting.com

Mr PJ Qvarnstrom
17 Cocheset Path
West Yarmouth, MA  02673-2559
Swep
Phone: (512)427-3600  Fax: (512)427-3699
Email: schrecengostrandy@stanleygroup.com

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Corresponding Member
8196617  206  Non-voting
Term in Position:  02/24/2016  to  
Term on Committee:  to  
Mr Hessam Seifi
DC PRO Engineering
Office 2507, Al Durrah Tower
Buheirah Corniche, P.O. Box 22851
Sharjah,  22851 UNITED ARAB EMIRATES
Phone:  0501142287  Fax:  
Email:  hessam_seifi@hotmail.com

Corresponding Member
8218253  064  Non-voting
Term in Position:  07/01/2015  to  
Term on Committee:  09/17/2013  to  06/30/2015
Mr Eren Selcen, PE
Houston Airport System
HAS IDHQ Building
111 Standifler St.
Humble, TX  77338
Phone:  (281)233-1605  Fax:  (281)233-1830
Email:  eren.selcen@houstontx.gov

Corresponding Member
2027360  032  Non-voting
Term in Position:  07/01/2018  to  
Term on Committee:  07/01/2009  to  06/30/2018
Mr Steven C Severini
Newcomb & Boyd
303 Ptree Ctr Ave NE Ste 525
Atlanta, GA  30303
Phone:  (404)730-8400  Fax:  (404)730-8401
Email:  sseverini@newcomb-boyd.com

Corresponding Member
8161970  191  Non-voting
Term in Position:  07/01/2015  to  
Term on Committee:  08/16/2014  to  06/30/2015
Mr Elangovan Shanmugam
Ws Atkins
3 Ali Asker Road
10th Floor Safina Tower
Bangalore, Karnataka  560052 INDIA
Phone:  9902466499  Fax:  
Email:  elangovan.shanmugam@atkinsglobal.com

Corresponding Member
685827  052  Non-voting
Term in Position:  07/01/2010  to  
Term on Committee:  07/01/1995  to  06/30/2010
Mr Alexander H Sleiman
76 Kellogg Blvd W
Saint Paul, MN  55102-1611
Dist Energy St Paul Inc
Phone:  (651)730-6921  Fax:  none
Email:  alex.sleiman@districtenergy.com

Corresponding Member
8043552  049  Non-voting
Term in Position:  07/01/2010  to  
Term on Committee:  to  
Mr Steve N Spentzas
120 E Liberty Dr Ste 290
Wheaton, IL  60187-5457
Phone:  (630)212-7739  Fax:  
Email:  steve.spentzas@siemens.com

Corresponding Member
2007547  043  Non-voting
Term in Position:  07/01/2015  to  
Term on Committee:  07/01/2001  to  06/30/2015
Mr Francis L St John
Applied Engineering Services Inc
5975 Cast Ck Pkwy N Dr Ste 300
Indianapolis, IN  46250-4346
Phone:  (317)502-3859  Fax:  (317)810-4140
Email:  fstjohn@applied-e-s.com

Corresponding Member
5125884  010  Non-voting
Term in Position:  07/01/2008  to  
Term on Committee:  to  
Mr Michael Stark
167 Woodstream Cir
Mooresville, NC  28117-7498
Carrier Corporation
Phone:  7048404747  Fax:  (860)998-2690
Email:  mike.stark@carrier.utc.com

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<tr>
<th>Corresponding Member</th>
<th>8199054</th>
<th>054</th>
<th>Non-voting</th>
<th>07/01/2013 to 06/30/2013</th>
<th>Mr Rory J Stegeman, PE</th>
</tr>
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<tbody>
<tr>
<td>Term in Position:</td>
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<td>Term on Committee:</td>
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<td></td>
<td></td>
<td>11464 County Road 395</td>
</tr>
<tr>
<td>Phone: (573)301-0361</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hartsburg, MO 65039-1103</td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:Rjswolf@hotmail.com">Rjswolf@hotmail.com</a></td>
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<tr>
<th>Corresponding Member</th>
<th>2014618</th>
<th>026</th>
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<th>07/01/2007 to 06/30/2007</th>
<th>Mr Richard S Sweetser</th>
</tr>
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<tr>
<td>Term in Position:</td>
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<tr>
<td>Term on Committee:</td>
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<td>06/30/2007</td>
<td></td>
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<td>12020 Meadowville Ct</td>
</tr>
<tr>
<td>Phone: (703)707-0293</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Herndon, VA 20170-2607</td>
</tr>
<tr>
<td>Fax:</td>
<td>(703)707-9566</td>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:rsweetser@exergypartners.com">rsweetser@exergypartners.com</a></td>
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<tr>
<th>Corresponding Member</th>
<th>5073278</th>
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<th>07/01/2000 to 06/30/2000</th>
<th>Mr Robert P Thornton</th>
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<td></td>
<td>24 Lyman St Ste 230</td>
</tr>
<tr>
<td>Phone: (508)366-9339</td>
<td></td>
<td></td>
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<td></td>
<td>Westborough, MA 01581-1483</td>
</tr>
<tr>
<td>Fax:</td>
<td>(508)366-0019</td>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:rob.idea@districtenergy.org">rob.idea@districtenergy.org</a></td>
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<tr>
<th>Corresponding Member</th>
<th>749804</th>
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<th>07/01/2012 to 06/30/2012</th>
<th>Mr William J Trefz</th>
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<tr>
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<td>06/30/2012</td>
<td></td>
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<td>601 Dresher Rd Ste 275</td>
</tr>
<tr>
<td>Phone: (215)572-8115</td>
<td></td>
<td></td>
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<td></td>
<td>Horsham, PA 19044-2277</td>
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<tr>
<td>Fax:</td>
<td>(215)572-8238</td>
<td></td>
<td></td>
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<td>Email: <a href="mailto:wtrefz@wtrefz.com">wtrefz@wtrefz.com</a></td>
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<th>Corresponding Member</th>
<th>771012</th>
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<th>Mr David W Wade, PE</th>
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<tr>
<td>Term on Committee:</td>
<td>07/01/1987</td>
<td>06/30/2014</td>
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<td></td>
<td>134 South Ave SE Ste 100</td>
</tr>
<tr>
<td>Phone: (770)421-0870</td>
<td></td>
<td></td>
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<td></td>
<td>Marietta, GA 30060-2543</td>
</tr>
<tr>
<td>Fax:</td>
<td>(770)421-0885</td>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:dww@rdaeng.com">dww@rdaeng.com</a></td>
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<th>Corresponding Member</th>
<th>5223919</th>
<th>004</th>
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<th>07/01/2006 to 06/30/2006</th>
<th>Mr Timothy C Wagner</th>
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<tr>
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<tr>
<td>Term on Committee:</td>
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<td></td>
<td></td>
<td>411 Silver Ln # MS129-13</td>
</tr>
<tr>
<td>Phone: (860)610-7589</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>East Hartford, CT 06118-1127</td>
</tr>
<tr>
<td>Fax:</td>
<td>(860)660-1446</td>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:wagnertc@utrc.utc.com">wagnertc@utrc.utc.com</a></td>
</tr>
</tbody>
</table>

| Corresponding Member | 5158503   | 016  | Non-voting | 07/01/2005 to 06/30/2005 | Mr Terrence J Whitehead |
|----------------------|----------|------|------------|--------------------------| PE |
| Term in Position:    | 07/01/2005 |     |            |                          | 189 Alderwood St |
| Term on Committee:   |            |      |            |                          | Stouffville, ON L4A 5E7 CANADA |
| Phone: (905) 642-6206 |          |      |            |                          | Email: terry.whitehead2@sympatico.ca |
| Fax:                 | (905) 642-6206 |     |            |                          | |

<table>
<thead>
<tr>
<th>Corresponding Member</th>
<th>802224</th>
<th>085</th>
<th>Non-voting</th>
<th>07/01/2004 to 06/30/2005</th>
<th>Mr Verle A Williams, PE</th>
</tr>
</thead>
<tbody>
<tr>
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<td>07/01/2004</td>
<td></td>
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<td>8975 Lawrence Wik Dr Spc 459</td>
</tr>
<tr>
<td>Term on Committee:</td>
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<td>06/30/2005</td>
<td></td>
<td></td>
<td>Escondido, CA 92026-6424</td>
</tr>
<tr>
<td>Phone: (858)242-7296</td>
<td></td>
<td></td>
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<td></td>
<td>Utility Services Unlimited Inc</td>
</tr>
<tr>
<td>Fax:</td>
<td>(760)749-1409</td>
<td></td>
<td></td>
<td></td>
<td>Email: <a href="mailto:verleawilliams@gmail.com">verleawilliams@gmail.com</a></td>
</tr>
</tbody>
</table>
Corresponding Member
5175086 612 Non-voting
Term in Position: 07/01/2013 to 06/30/2013
Term on Committee: 07/01/2002 to 06/30/2013
Mr James W Young, Jr
3105 Cove Loop Rd
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Phone: (989)750-8899 Fax: 11111111111
Email: jyoung@twinsulation.com

Corresponding Member
8094751 073 Non-voting
Term in Position: 07/01/2016 to 06/30/2016
Term on Committee: 11/14/2014 to 06/30/2016
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University of Colorado Boulder
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Email: wangda.zuo@gmail.com

TAC Chairman
2028310 027 Non-voting
Term in Position: 07/01/2018 to 06/30/2019
Term on Committee: 07/01/2018 to 06/30/2019
Mr Thomas A Justice
Zene, LLC
4997 Westmoreland Dr
Williamsburg, VA 23188-1989
Phone: (919) 740-6308 Fax:
Email: justfilter@yahoo.com

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

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
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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

Staff Liaison
7966801 650 Non-voting
Term in Position: 07/19/2001 to 06/30/2002
Term on Committee: 07/19/2001 to 06/30/2002
Mr Michael R Vaughn, PE
ASHRAE
1791 Tullie Cir NE
Atlanta, GA 30329-2398
Phone: (404)636-8400 Fax: (404)321-5478
Email: MORTS@ashrae.net

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