



**WHPA Existing Buildings Energy Efficiency Action Plan Committee (EBEE)  
Teleconference Summary Minutes  
Thursday, June 15, 2017 (Scheduled for 9:00 – 10:30am PDT)**

**Call to Order**

Per Co-Chair request, WHPA Staff (Wendy Worrell) started the [audio recording](#) and called the meeting to order at 9:04 am PDT.

**Roll Call**

The following 22 participants attended the meeting with a quorum (6+) of voting (Exploratory Working Group - EWG) members.

P = Present at meeting A = Absent from meeting; if proxy has been assigned it will be noted below. EWG members are the designated voting panel of the Existing Buildings Energy Efficiency Action Planning Committee.				
<b>CEC Advisors (Non-Voting)</b>				
CEC (California Energy Commission)	Bill	Dietrich+	Government (Other than CPUC)	A
CEC (California Energy Commission)	Brian	Samuelson+	Government (Other than CPUC)	P (first 60 min)
CEC (California Energy Commission)	Tav	Commins	Government (Other than CPUC)	P (first 60 min)
<b>EBEE Voting Members (EWG - Exploratory Working Group)</b>				
Air-Tro	Robert	Helbing	Contractor (Nonresidential)	P
Charles Segerstrom Consultant	Charles	Segerstrom	Industry Consultants	P
Honeywell E&ES (Energy & Environmental Solutions)	Mike	Lawing	Controls (Manufacturer or Distributor)	A
IHACI (Institute of Heating and Air Conditioning Industries)	Bob	Wiseman	Contractor Association	P
Indio Cooling & Heating Supply	Tim	Mann	Distributor	P (Co-Chair)
Daniel Jones Consulting	Daniel	Jones	Energy Efficiency Program Consultant	P
SynergyNexGen	Barbara	Hernesman	Energy Efficiency Program Consultant	P (Co-Chair)
Tre'Laine Associates	Pepper	Hunziker	Energy Efficiency Program Consultant	P (first 60 min)
Valley Contractors Exchange	Kate	Leyden	Contractor Association	P
<b>EBEE Non-Voting Members ("Community Committee")</b>				
AMS (American Mechanical Services)	Marc	Pickett	Contractor (Nonresidential)	P (first 60 min)
BMA Mechanical+	Dustin	Lane	Other Stakeholder	P
CalCERTS, Inc.	Shelby	Gatlin	Certifying Body	P
EGIA	Andre	Christian	Contractor Association	P (first 60 min)
Goodman Manufacturing	Aniruddh	Roy	HVAC Manufacturer	P
SCE (Southern California Edison)	Bach	Tsan	California IOU	P (first 60 min)
<b>EBEE Guests (Non-Voting)</b>				
CALBO (California Building Officials)	Bob	Barks	Codes & Standards Official (Association or Jurisdiction)	P (first 60 min) (Compliance Chair)
Janell Jacks Consulting**	Janell	Jacks+	Other Stakeholder	P
SCE (Southern California Edison Company)	Jose	Buendia+	California IOU	P
Stone Energy Associates**	Nehemiah	Stone+	Energy Efficiency Program Consultant	P (Speaker)
Susan Davison Consulting**	Susan	Davison+	Other Stakeholder	P (17 min)
<b>WHPA Staff</b>				
InfoPlast	Wendy	Worrell	Other Stakeholder	P (Host/Scribe)

\*\* Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA; <sup>(P)</sup> after last name = Member/Registrant is Pending Approval from the WHPA Executive Committee

**AGENDA**

WHPA Staff email distributed the following agenda to the roster prior to the meeting.

**GENERAL REMINDERS**

- Adherence to the WHPA **Code of Conduct** is required.
- Disclose any potential conflicts of interest as it relates to meeting content, particularly prior to any votes that may occur.
- Identify yourself prior to speaking, clarifying the organization on whose behalf you are speaking, or if you are making a personal comment.
- Mute yourself when not speaking. (\*6 will take you on and off mute.)

**AGENDA ITEMS (includes 10 minutes of overage time for use as needed):**

- 1) **Roll Call of Voting Members** – WHPA Staff (Wendy Worrell) – 5 min



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- 2) **Co-Chairs' Opening Comments** – Co-Chairs (Barbara Hernesman & Tim Mann) – 10 min
  - a. Agenda Overview
  - b. Review Request - Stakeholder Engagement Feedback Loop Process for EBEE-AP 1.9 Sub-Strategies Framework
- 3) **Community Outreach and Education Presentation: “Whole Building/Systems Approaches to Comprehensive Energy Efficiency in the Multifamily Sector”** – Nehemiah Stone (Stone Energy Associates) – 60 min
  - a. Presentation Emphasizing how HVAC Plays into the Paradigm (30-40 min)
  - b. Discussion/Q&A (20 min) – *High Level of Meeting Participant Engagement Expected*
  - c. Next Steps and/or Suggested Action Items for EBEE-EWG (by Nehemiah Stone)
- 4) **Scheduling** – WHPA Staff (Wendy Worrell) – 5 min
  - a. Third Thursdays of Each Month: Next is July 20th from 9:00 a.m. - 10:30 a.m. PDT
  - b. Agenda TBD
- 5) **Adjournment** by 10:30am PDT – Co-Chairs (Barbara Hernesman and Tim Mann)

### Opening Comments

The Co-Chairs, Barbara Hernesman (SynergyNexGen) and Tim Mann (Indio Cooling & Heating Supply), overviewed the agenda.

Co-Chair Barbara Hernesman (SynergyNexGen) requested that prior to the next meeting, the EBEE Committee review and submit comments on the following suggested “Stakeholder Engagement Feedback Loop Process for EBEE-AP 1.9 Sub-Strategies” to WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)). (*WHPA Staff Note: The suggested framework developed by Pepper Hunziker (Tre'Laine Associates) and Susan Davison (Consultant) was emailed to the roster prior to the meeting for reference.*)

#### PROPOSED FRAMEWORK

*In reply to the Action Item assigned during the April 24, 2017 WHPA EBEE Committee meeting to the above identified Development Team, following are a few suggestions for tackling EBEE Action Plan Strategy 1.9 Sub-Strategies 1.9.1 through 1.9.6. As several of the Sub-Strategies have targeted working groups outside of the WHPA, our Committee has the opportunity to leverage the key findings and incorporate them in our final WPIII document. An easy to use template be created for acquiring the information, and as the team receives the inputs, it can be added to the landing document with a time stamp.*

- Clarify Overarching – Sub-Strategy XXX – through the HVAC lens
- Identify and engage a champion - individual who is ...
  - Actively engaged in the targeted working group, **AND**
  - Will commit to reporting back to the WHPA EBEE Committee/Co-Chairs.
    - **Consideration:** Is the champion a WHPA EBEE-EWG member or could it be an outside member who reports back?
- Sub-Strategy input reporting/ template components to include ...
  - Key players (Who is working on the Sub-Strategy? What groups, organizations, individuals?)
  - General updates
  - Process & timeline
  - Informing and/or connected documentation
  - Pertinent issues to consider
  - Recommendations
    - Overarching View (theoretical/policy/landscape)
    - Detailed View (application/in the field)
- Feedback loop with **EBEE**

**ACTION:** EBEE Members to review and submit comments on the suggested “Stakeholder Engagement Feedback Loop Process for EBEE-AP 1.9 Sub-Strategies” to WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)) prior to the July Committee meeting.



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**Community Outreach and Education Presentation: “Whole Building/Systems Approaches to Comprehensive Energy Efficiency in the Multifamily Sector”**

WHPA Staff emailed the presentation reference slides “NIS MF EE and Co-Benefits Presentation 06 2017 (002).pdf” to the roster for review prior to the meeting.

Co-Chair Barbara Hernesman (SynergyNexGen) welcomed guest speaker Nehemiah Stone with Stone Energy Associates and noted that the EBEE Committee participants are encouraged to interact during the presentation with comments and questions.

**PRESENTATION**

Nehemiah Stone (Stone Energy Associates) presented on whole building/systems approaches to comprehensive energy efficiency (EE) in the multi-family sector with emphasis on how HVAC plays into the paradigm.

Content beyond reference slide content follows:

**Slide 1: WHPA Education Series**

- Nehemiah Stone (Stone Energy Associates) used to be Chief Building Inspector for Humboldt County before joining CEC.
- His primary focus is on Multifamily EE.
- He has been working on code issues and research and program design “all along”.
- He was one of the first to focus on the importance of multifamily, but can point to other experts for some of the technical areas.

**Slide 3: Why Energy Efficiency for MF?**

- In the 90’s, Utilities were required to pass through generation costs once they got rid of the “stranded assets”, which put a huge impact on renter expenses. There were low income households paying 70% of their income for energy at that time, aside from housing expenses, which was a significant energy cost spike.

**Slide 4: Indigenous Coastal & Plains Housing**

- The graphics represent that multifamily housing has been around for a very long time, with the only energy used being from wood and other items that burn.

**Slide 5: Oldest Existing Multifamily Complex in America**

- The graphic is an example of the oldest existing multifamily complex in America, which made good use of thermal mass, shading, and solar orientation.

**Slide 6: State Goals**

- California is committed to the greenhouse gas (GHG) reduction goals by 2050, which is not very far for the slow rate of progress currently be made.
- As it was not possible to get to zero net energy (ZNE) by 2019, the target date was extended to 2022 for Residential and to 2030 for Commercial.
- Energy needs are overprovided at certain hours of the day, creating an overdemand relative to what is needed at other hours in the day. The duck curve infrastructure needs to be managed.
- Sometimes the answers are right in front of us but we do old habits. We have the tools but need to think about the right way to use them.

**Slide 7: All-Electric ZNE Multifamily**

- Nehemiah Stone (Stone Energy Associates) believes the answer is all-electric ZNE multifamily, but acknowledged it is a controversial topic.



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- Goals need to be agreed upon by everyone with coordinated solutions.

**ACTION:** Those who want Nehemiah Stone's research on all-electric ZNE multifamily to contact WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)).

Slide 8: All-Electric ZNE Elements

- As the CEC goes through their standards and people calculate what is cost effective, they factor in the cost of equipment and the cost of operations. While heat pumps add some to the cost of equipment, when the whole picture is considered, it saves \$2 - \$3 per apartment not to bring gas into it. The net savings are \$5k - \$6 per single family residential unit.

Slide 9: All-Electric ZNE Elements

- For most compact multifamily complexes, central systems are typically the right solution. If you are not heating it at the time you are using it, you need a lot of storage. The controls for effective grid harmonization are easier when centralized rather than handled through individual systems. There are a lot of case studies, work papers, and field studies that can provide information on how to correctly design, select, and implement these types of systems.

Slide 10: All-Electric ZNE Elements

- The right controls vary by design.

Slide 11: Why Focus on Hot Water?

- Multifamily efficiency needs to have a focus on hot water too.
- The left-side chart is real data from a King City, CA project, but is a representative energy profile.
- The right-side chart shows that over time, the amount of energy used for space and water heating has become more efficient for space conditioning, but that it has been level for water heating over time. It is the largest energy use for multifamily.

Slide 12: What are the Costs?

- Reasonable design cannot be done without the whole design team, which typically elevates the cost a few percent the first time it is done.

Slide 13: Illustration

- The point of the illustration is that things do not always go as expected under construction.

Slide 14: Benefits to Tenants

- Although there is need to build and ventilate correctly, that is not what is referenced in the slide content.
- Better indoor air quality refers more to the fans, etcetera.
- Focus is on energy bill stability.
- Savings in the health impact is more than enough to pay for the energy efficient upgrades in a multifamily building per research (for example, reduction in asthma related incidents).

Slide 15: Benefits to Owners

- Damage is easier to control and less costly.
- Reduced utility cost to the renter yields more income for greater rent stability.
- Maintenance is easier if equipment is central versus on each floor.

Slide 16: Research



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- The Build It Green team is monitoring the central systems, flow, temperature, power, and time of use to get a good idea of how the systems work and also to help CEC rewrite the algorithm within their software that accounts for a number of these areas. For example, the software cannot currently adequately account for storage in the grid and heat pumps.
- (HPWH = Heat Pump Water Heater)
- Two of the research buildings are instrumented and ready for data gathering to start.
- They are using Nexi equipment that provides feedback through the use of colored lights to notify of energy usage throughout the day. It also allows them to collect data on total household energy use for each apartment, plus total end use per equipment.

Slide 17: So, How Hard Is It?

- Per Nehemiah Stone (Stone Energy Associates), achieving ZNE is hard, but “it can be done and it should be done.”

**DISCUSSION/Q&A**

**COMMENT:** Bob Helbing with Air Tro commented that “none of this works without storage. Peak load typically matches production. If heat pumps are relied on for energy, it all comes from storage, but water storage does not really exist.”

- **REPLY:** Nehemiah Stone (Stone Energy Associates) clarified that he is talking about onsite storage and not Utility storage. If storage is oversized based on what most people think is needed, it can be controlled. For example, if stored water is heated to 150 degrees from 9:00am to 4:00pm and then the controls make sure the heat pump does not come on between 5:00pm and 9:00am, “The tenants won’t see a difference and are not locked out.” The heat stored in the water can be used by the tenant. Similar to the air conditioning strategy for precooling buildings before the cooling event starts, the all-electric ZNE multifamily strategy preheats the water using heat pumps primarily running off the PV (photovoltaic). Nehemiah acknowledged that with individual systems cloudy conditions can present a problem, but indicated that based on their current research testing with two 1,000-gallon tanks for a 50-unit multifamily building, it is not a problem to create enough hot water within a couple of days to get through those periods. He clarified that the duck curve is a bigger issue in the spring and fall then it is in the summer and winter. Any solution has issues, but at this point, “it appears that PV, heat pump and a lot of storage is the best solution to meet the State’s goals.”
- **RESPONSE:** Bob Helbing (Air Tro) disagreed based on his experience.

**COMMENT:** Charles Segerstrom (Consultant) commented that we view from the HVAC lens, but also from the lens of deep reductions with existing buildings. He asked for any words of wisdom Nehemiah Stone could share related to the latter view.

- **REPLY:** Nehemiah Stone (Stone Energy Associates) noted that he is a leader in the field simply because “he got here first”. He suggested that there are others who have much deeper experience in existing buildings/renovations than him. Nehemiah has been focused more on new construction through codes and standards. He noted that the Association for Energy Affordability (AEA) runs the Low-Income Weatherization Program (LIWP) for the California Department of Community Services and Development (CSD), which provides “soup to nuts” for all needs from design to end incentives.

**COMMENT:** Bob Helbing (Air Tro) commented that based on technology, it does not look like natural gas will go anywhere for the next 20 years as it is stable in cost and volume. On the other hand, electricity rates have risen steadily over the same period. He acknowledged that the onsite availability may take the energy off-grid so it may not be an issue, but confirmed that he still sees several issues preventing market adoption of the proposed solution: (1) Power would be moving away from a stable energy source. (2) He does not know how to do a forced air system that would be competitive for the multifamily landlord. Most put wall heaters in for cost effectiveness since they are less than \$1,000 per unit. Heat pumps typically run at a higher rate. (3) In terms of comfort, customers perceive heat pumps as draftier. (4) More people like cooking on gas versus electric heat.





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- **REPLY:** Nehemiah Stone (Stone Energy Associates) acknowledged that gas cooking is preferred, and that induction cooking is preferred over gas or electric, but that it is costly so it is not an affordable option at this point. However, if there is a gas storage water heater and the owner desires to change it out for something more efficient, options include tankless or heat pump. It is not really more expensive to go to the heat pump. In terms of the stability of the price of gas versus electric, the price of electric is changing. You can get cheaper than gas if you have solar on the roof. “We are as efficient as we can get with gas at this point, but it is a wasted investment if you are going to a more efficient heat pump.”
- **RESPONSE:** Bob Helbing (Air Tro) commented on costs based on his personal experience. He changed out a 30-gallon water heater in his California basement two years ago for about \$1,800. In the summer, his gas bill for a five-person household, including three teenagers, is about \$20/month. In the winter, it is about \$50 month with a gas fired heater. He can replace the heater for about \$2,000. Heat pumps are a higher first cost because of the compressor. They are also more complex mechanically and electrically, plus they require more maintenance, so all he sees is higher cost.
- **REPLY:** Nehemiah Stone (Stone Energy Associates) agreed that costs are higher if there is no solar on the roof. He clarified that loads need to be combined to have the ability for better control.

**QUESTION:** Tim Mann (Indio Cooling & Heating Supply) asked if this is about solar thermal.

- **ANSWER:** Nehemiah Stone (Stone Energy Associates) noted that one building in their study is solar thermal, but that so far, the numbers indicate it is cheaper to run the heat pump with solar than to run solar with gas. He recommends solar with PV.

**COMMENT:** Bob Barks (CALBO) summarized that the big take away is to integrate the entire building into a plan to provide the best services available. The best solution is to look at the entire building and determine the best solution for the building overall rather than for each unit.

- **REPLY:** Nehemiah Stone (Stone Energy Associates) agreed that his proposed solution is not for all cases.
- **REPLY:** Bob Helbing (Air Tro) agreed with Bob Barks’ remarks and the potential performance benefits.

**NEXT STEPS and SUGGESTED ACTION ITEMS FOR EBEE-EWG**

**COMMENT:** While acknowledging that there are others, Nehemiah Stone (Stone Energy Associates) suggested that Andy Brooks would be the best resource for the WHPA EBEE Committee to contact regarding energy efficiency in existing buildings.

**ACTION:** Nehemiah Stone (Stone Energy Associates) to send Andy Brooks’ contact info to WHPA Staff for further information about obtaining energy efficiency in existing buildings.

**QUESTION:** Co-Chair Barbara Hernesman (SynergyNexGen) noted the rise in the use of renewable energy, such as solar in California, but indicated that it still feels like there is a missing link for integrated design. She asked, “How do we get the workforce ready?”

- **ANSWER:** Nehemiah Stone (Stone Energy Associates) was not sure he could answer. He has seen some programs with requirements to hire an apprentice and laborers from the local community, but noted that some of those programs have not worked well. He struggles with workforce education since there is a lot of mobility in the trade. He noted that there has been a regular problem with insulators getting trained by companies and then leaving to work for a competitor the next year. That being said, Nehemiah acknowledged that there are some community colleges “doing a good job getting people ready for construction and EE/performance”. An example is Laney College, which works with the Union. Nehemiah sees there being no EE Union as a problem because the concept needs to be brought into all the other individual unions as part of their training. He suggested that better focus is needed on making sure CALBO’s education has a strong and effective EE element in it. “What isn’t enforced isn’t done. If a contractor knows something is not being inspected and won’t suffer consequences, corners will get cut”.



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**COMMENT:** Co-Chair Barbara Hernesman (SynergyNexGen) reported that key issues to address are (1) How to get the owner to engage in to the process to understand the educational needs, and then (2) How to get involvement from the people living in the building (the tenants) to buy in to the process.

- **REPLY:** Nehemiah Stone (Stone Energy Associates) noted that there are a lot of devices on the wall that integrate, but studies show that the typical household stops looking at them after the first couple of months. Nexi helps by providing color coding in relation to budget to foster behavior adjustment for energy use. It is very effective when combined with tenant ongoing education on how to address some of the loads. All electric ZNE loads become plug loads so it is up to the tenant to affect it.
- **RESPONSE:** Co-Chair Barbara Hernesman (SynergyNexGen) agrees that visual/audio cues for education and behavior change is a good idea.

**QUESTION:** Co-Chair Tim Mann (Indio Cooling & Heating Supply) asked for Nehemiah Stone’s (Stone Energy Associates) opinion on any current technology he has seen “with PV or anything else” that works best.

- **ANSWER:** Nehemiah Stone (Stone Energy Associates) noted that he believes in solar thermal for space conditioning and in the simplest solutions. As a cleaner grid is approached, he suggests going to PV rather than to solar thermal. He acknowledged that others strongly disagree with him on that, but, based on his experience, he cannot recommend solar thermal. “With multifamily PV down to the \$1.50 to \$2.25/watt range, it is hard to make solar thermal with its maintenance issues pencil out.” He noted that PV prices have been dropping.

**ACTION:** Tim Mann (Indio Cooling & Heating Supply) to send Clean Spark (battery storage) information to Nehemiah Stone (Stone Energy Associates) for review.

**COMMENT:** Nehemiah Stone (Stone Energy Associates) commented on the need to look to Europe and Japan for innovative ideas. For example, Japan was using refrigerant coolant for 10 years before it came to the U.S. There are relatively low energy costs in California, but the same cannot be said for Europe and Japan. Energy security is a bigger issue there so they have drivers that force them to look for higher EE.

The Co-Chairs thanked Nehemiah Stone (Stone Energy Associates) for his informative presentation and comments.

**ACTION:** Nehemiah Stone (Stone Energy Associates) to send the resource link for Canary Systems (Nexi) to WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)) for distribution to the roster.

**ACTION:** The EBEE Co-Chairs to review the [prior multifamily notes from their call with CEC Staff](#) to generate further discussion points in relation to Nehemiah Stone’s presentation on “whole building/systems approaches to comprehensive energy efficiency (EE) in the multi-family sector with emphasis on how HVAC plays into the paradigm”.

<b>Closing Comments/Scheduling</b>
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**ACTION:** The Co-Chairs to talk with Andy Brooks with AEA about presenting their thoughts on the “boots on the ground” perspective for multifamily existing building applications, including best practices used, etcetera.

**QUESTION:** Co-Chair Barbara Hernesman (SynergyNexGen) asked Daniel Jones (Consultant) about financing mechanisms that are helping building owners doing energy efficiency applications, and asked if they are applicable to multifamily.

- **ANSWER:** Daniel Jones (Consultant) believes it is applicable. He noted that there are several banks doing it as well. He offered to help secure presenters on the topic.

**ACTION:** Daniel Jones to reach out to “financing mechanisms” to see if they want to be part of a “collective conversation” with the WHPA EBEE Committee on July 20<sup>th</sup> or August 17<sup>th</sup> for discussion on how to identify energy efficiency financing opportunities for building operators/owners.



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**QUESTION:** Co-Chair Barbara Hernesman (SynergyNexGen) asked Charles Segerstrom (Consultant) if he could get a conversation going “with Linda”, and with [Energy Docs](#) (Mike MacFarland and Brain Terrell) for collective conversation at the July 20<sup>th</sup> or August 17<sup>th</sup> WHPA EBEE Committee meeting for discussion about the next steps in our industry for the paradigm shift/whole house approach/whole building approach (or “whatever the correct terminology should be”).

- **ANSWER:** Charles Segerstrom (Consultant) confirmed he has preliminary approval for Linda to participate. He would also like to provide some comments himself. He agreed to work on coordinating that panel discussion.

**ACTION:** Charles Segerstrom (Consultant) to coordinate a panel to discuss the next steps in the HVAC industry for the “paradigm shift/whole house approach/whole building approach” at either the July 20<sup>th</sup> or August 17<sup>th</sup> WHPA EBEE Committee meeting.

The next EBEE Committee meeting (includes the EWG and “Community” members) was confirmed for Thursday, July 20, 2017 from 9:00am – 10:30am PDT. Future meetings will be the third Thursday of each month. The recordings will be emailed post meeting for those who need to drop off before the full 90 minutes of each meeting.

**ACTION:** WHPA Staff to distribute a calendar notice for the July 20, 2017 WHPA EBEE Committee meeting held from 9:00am – 10:30am PDT.

**Adjournment**

Co-Chair Barbara Hernesman (SynergyNexGen) adjourned the meeting at 10:27 am PDT.

\* \* \* \* \*

**Summary of Action Items and Key Decisions (from above discussion)**

ACTION ITEMS (Related to EBEE Committee Activities)

1. **ACTION:** EBEE Members to review and submit comments on the suggested “Stakeholder Engagement Feedback Loop Process for EBEE-AP 1.9 Sub-Strategies” to WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)) prior to the July Committee meeting. (IN PROCESS)
2. **ACTION:** The EBEE Co-Chairs to review the [prior multifamily notes from their call with CEC Staff](#) to generate further discussion points in relation to Nehemiah Stone’s presentation on “whole building/systems approaches to comprehensive energy efficiency (EE) in the multi-family sector with emphasis on how HVAC plays into the paradigm”. (IN PROCESS)
3. **ACTION:** The Co-Chairs to talk with Andy Brooks with AEA about presenting their thoughts on the “boots on the ground” perspective for multifamily existing building applications, including best practices used, etcetera. (IN PROCESS)
4. **ACTION:** Daniel Jones (Consultant) to reach out to “financing mechanisms” to see if they want to be part of a “collective conversation” with the WHPA EBEE Committee on July 20<sup>th</sup> or August 17<sup>th</sup> for discussion on how to identify energy efficiency financing opportunities for building operators/owners. (IN PROCESS for August 17<sup>th</sup>)
5. **ACTION:** Charles Segerstrom (Consultant) to coordinate a panel to discuss the next steps in the HVAC industry for the “paradigm shift/whole house approach/whole building approach” at either the July 20<sup>th</sup> or August 17<sup>th</sup> WHPA EBEE Committee meeting. (DONE)
6. **ACTION:** WHPA Staff to distribute a calendar notice for the July 20, 2017 WHPA EBEE Committee meeting held from 9:00am – 10:30am PDT. (DONE)

ACTION ITEMS (Related to EE-MF Presentation by Nehemiah Stone)

1. **ACTION:** Those who want Nehemiah Stone’s research on all-electric ZNE multifamily to contact WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)).





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2. **ACTION:** Nehemiah Stone (Stone Energy Associates) to send Andy Brooks' contact info to WHPA Staff for further information about obtaining energy efficiency in existing buildings. (DONE)
3. **ACTION:** Tim Mann (Indio Cooling & Heating Supply) to send Clean Spark (battery storage) information to Nehemiah Stone (Stone Energy Associates) for review.
4. **ACTION:** Nehemiah Stone (Stone Energy Associates) to send the resource link for Canary Systems (Nexi) to WHPA Staff ([wendy@performancealliance.org](mailto:wendy@performancealliance.org)) for distribution to the roster.