



Q1 2025 RETAC Meeting Notes

March 13, 2025

8:30 a.m. – 12:00 p.m. (Pacific)

Microsoft Teams Webinar

Meeting Attendees

James White, Chelan PUD
 Robert Bogataj, City of Seattle
 Kenji Spielman, Energy Trust Oregon
 Todd Greenwell, Idaho Power
 Josh Quinnell, MN CEE
 Kevin Smit, Northwest Power & Conservation Council
 Christian Douglas, Northwest Power & Conservation Council

Edward P. Louie, Pacific Northwest National Laboratory
 Keshmira McVey, Bonneville Power Administration
 Andrew Pultorak, Puget Sound Energy
 Suzanne Frew, Snohomish PUD
 Ammi Amarnath, EPRI
 Quentin Nesbitt, Idaho Power
 Ryan Kerr, GTI Energy

NEEA Staff: Adam Gage, Alisyn Maggiora, Chris Wolgamott, Christopher Dymond, Dana Bradshaw, Debbie Driscoll, Eric Olson, Kristen Aramthanapon, Lynne Mosley, Mark Rehley, Noe Contreras, Steve Seminario, Wendy Preiser

Meeting Agenda

Welcome and Announcements	Mark Rehley	NEEA
GTI Energy <ul style="list-style-type: none"> Overview of GTI Energy Review of capabilities Emerging Technology projects 	Ryan Kerr	GTI Energy
Round Robin	RETAC Members	
9th Power Plan Update <ul style="list-style-type: none"> Review of measures and technologies that NWPCC will consider for next plan update 	Kevin Smit	NWPCC
AHR Expo/ASHRAE Conference Debrief <ul style="list-style-type: none"> Residential HVAC Efficient RTUs & HP HVAC Residential Water Heating Dual-Fuel HVAC & Commercial Water Heating 	Christopher Dymond, Chris Wolgamott, Dana Bradshaw, Noe Contreras	NEEA

Resources

- Agenda and Packet Materials: <https://neea.org/committee-documents/q2-2022-retac-meeting-packet> [Northwest Energy Efficiency Alliance \(NEEA\) | Q1 2025 RETAC Meeting...](#)
- Slide Deck: [Northwest Energy Efficiency Alliance \(NEEA\) | Q1 2025 RETAC Slide Deck](#)
- Q1 2025 Emerging Technology Newsletter: [Northwest Energy Efficiency Alliance \(NEEA\) | Q1 2025 Emerging...](#)

Welcome, Announcements

2025 Meeting Dates:

- Q1 – Thursday, March 13
- Q2 – Wednesday, June 18
- Q3 – Wednesday, September 24
- Q4 – Thursday, December 4

Upcoming conferences:

- April 3, 2025 – [Seattle 2030 District 2025 Vision Awards](#), Seattle, WA
- April 4, 2025 – [IFMA 2025 Symposium](#), Portland, OR
- April 14 – 15, 2025 – [American Clean Power Association’s Citing and Permitting Conference](#), Seattle, WA
- April 15 – 18, 2025 – [Western Energy Institute’s Operations Conference](#), Vancouver, BC
- April 20 - 23, 2025 – [IEEE SusTech 2025](#), Santa Ana, CA
- April 22 – 24, 2025 – [Getting to Zero Forum](#), Los Angeles, CA
- May 5 – 7, 2025 – [PLMA Spring Conference](#), Kansas City, MO
- May 14 – 15, 2025 – [Northwest Facilities Expo](#), Portland, OR
- May 15, 2025 - [IFMA Greater Seattle Chapter Expo](#), Mercer Island, WA
- May 20 – 21, 2025 – [Efficiency Exchange](#), Portland, OR
- June 11 – 12, 2025 – [CEE Summer Program](#), Boston, MA

Product Council

Do you have a topic you would like to see NEEA cover in an upcoming Product Council? Visit [Northwest Energy Efficiency Alliance \(NEEA\) | Product Council Submit...](#) to submit your idea, or contact productcouncil@neea.org.

Recent Session(s):

March 25, 2025 – [Low-Load Efficient Heat Pump Performance](#)

Upcoming sessions are being confirmed. Watch the website for more information!

GTI Energy

(Slides 14 – 44)

Key Points:

1. Introduction to GTI Energy:
 - Ryan Kerr introduced GTI Energy, highlighting its evolution from Gas Technology Institute to GTI Energy.
 - GTI Energy focuses on decarbonization solutions across the energy value stream, including efficiency, renewable energy integration, distribution, storage, and production.
2. Laboratories and Capabilities:
 - GTI Energy has over 20 laboratories supporting various energy efficiency projects.
 - Notable facilities include a residential nano grid, multi-family micro grid, and environmental chambers for testing space conditioning equipment.
3. Emerging Technology Program:
 - GTI Energy's Emerging Technology Program scans and screens new technologies for residential, commercial, and industrial applications.
 - The program collaborates with utility members, including NEEA, to develop new measures for energy efficiency programs.
4. Project Updates:
 - Envelope Retrofits: GTI Energy is working on AI machine learning tools for identifying and sealing leaks in commercial buildings.
 - Robotic Tools: Development of human-assisted robotics for diagnostics and air sealing in buildings.
 - Multi-Family Panelized Retrofits: Implementation of panelized retrofits with integrated hydronic fan coils.
 - Secondary Windows: Evaluation of double pane secondary windows and vacuum insulated glass.
 - Thermal Energy Networks: Design and implementation of thermal energy networks in collaboration with Vermont Gas.
 - Air to Water Heat Pumps: Testing and field deployment of Daikin AI Therma air to water heat pumps.
5. Hybrid Heat Pumps:
 - GTI Energy is evaluating dual fuel heat pumps, combining gas and electric systems for optimized performance.
 - The project includes load-based lab testing, energy modeling, and real-time marginal emissions control.

Questions Asked:

1. Optimization for Cost:
 - Kenji Spielman emphasized the importance of optimizing hybrid systems for cost, as it aligns with customer priorities.
 1. Ryan Kerr agreed and mentioned the development of a calculator for self-directed optimization based on cost, emissions, and other factors.
2. Carbon Optimization Controllers:
 - Amarnath Ammi inquired about controllers that optimize for carbon emissions.
 1. Ryan Kerr confirmed that GTI Energy is working on such controllers, using Watt time for real-time marginal emissions control.
3. Field Study Data for Heat Pumps:
 - Todd Greenwell asked about the availability of field study data to support confidence in variable speed air source heat pumps.

- Christian Douglass mentioned ongoing work by Bonneville and the need for more at-scale studies.

Round Robin

1. Bonneville Power Administration / RTF
 - a. Currently developing several measures for the implementation manual that will be released in October. One of these pertains to central heat pump water heaters, which are fully specified on the NEEA QPL or skid mounted.
 - i. Question – What can you share about the potential discontinuation of the integrated commercial heat pump water heater?
 1. There have been some issues with the AO Smith 120 products going into electric resistance mode with no alarms to notify the switch. The RTF is looking into this, as well as measures.
 - b. Another regional study underway relates to micro heat pumps. Washington State is running a combined study for us, and we're developing a measure for this.
 - c. We are also working on a measure for cold climate heat pumps, as well as one for single family new construction income qualified.
2. EPRI
 - a. There is a new CEC award moving forward focusing on a flex hub for industrial, agricultural and water sectors. CEC, EPRI, Lawrence Berkeley and UC Davis, as well as a couple of other organizations will be awarding this in partnership.
 - b. EPRI is also working on data center flexibility, called TC Flex. Three work streams focus on grid, getting new centers online, one focuses on innovative pricing mechanisms, and the third will focus on demonstrations with large centers.
 - c. Other initiatives include FlexIt, which is generally a standardization of connection to the grid. There is the Mercury Initiative, which focuses on devices and the on-going issue of interoperability and common communication protocols.
3. Energy Trust Oregon
 - a. ETO is working on a variety of projects, including gas home energy reports, residential portable heat pumps, heat pump RTUs, destratification fans, solar and storage.
 - b. Wrapping up a pilot with Honeywell Thermostats.
 - c. Internally developing a more robust billing analysis tool.
 - d. Also, looking at dehumidifiers in grow facilities to understand that market and get a feel for what the savings really look like.
4. PNNL
 - a. PNNL lead a research project on combi heat pumps. Combi systems provide domestic hot water, heating, space heating and cooling using one outdoor unit.
 - b. Might expand this to multifamily buildings in Portland area to have both lab and field test sites for the study.
5. MN CEE
 - a. Minnesota is also looking at air-to-water combi systems, but have faced numerous challenges in recruiting from contractor base.

NWPCC 9th Power Plan Update

(Slides 48 – 67)

Key Points: *(Generated by CoPilot)*

1. Introduction to Northwest Power Conservation Council:
 - Kevin Smit introduced the Northwest Power Conservation Council and its role in developing the integrated resource plan for the region every five years.
 - The Council is currently working on the 9th Power Plan, which will be released by the end of next year.
2. Planning Environment:
 - Significant growth from data centers, state policies, electrification, and electric vehicles is driving load growth.
 - Intermittent resources like solar and wind are low-cost but not 24/7, requiring flexibility, storage, and demand response.
 - Retirements of baseload coal plants and other large fossil plants necessitate new resources.
3. Conservation Supply Curves:
 - The Council is developing conservation supply curves, with industrial and agriculture, motors, commercial, and residential measures already out for review.
 - Upcoming measures include commercial HVAC, distribution efficiency, and new emerging technologies.
4. Heat Pump Measures:
 - The Council is revamping the heat pump suite of measures, including ducted and ductless air source heat pumps, ground source heat pumps, room heat pumps, and recommissioning of existing heat pumps.
 - HRV and DOAS measures will be expanded in this plan.
5. Deep Retrofits:
 - The Council is using national benchmarking and building performance standards to identify potential for deep retrofits.
 - The goal is to achieve significant energy savings by improving building envelopes and using advanced HVAC systems.
6. Building Resilience:
 - The Council will include some value for weatherization measures due to their resilience benefits.
 - A model developed by Apex will be used to quantify these benefits.
7. Electric Vehicles:
 - The Council conducted a study on electric vehicles but concluded that it is not feasible to include them in the supply curves due to the variability in performance and features.
 - The focus will be on fleet vehicles for potential efficiency measures.
8. Data Centers:
 - The Council is looking into efficiency measures for data centers, including engine block heater controls and heat pump measures.
 - Hyperscale data centers are considered current practice, but there is potential in embedded and mid-size data centers.

Questions Asked:

1. Heat Pump Measures:
 - Todd Greenwell asked about the availability of field study data to support confidence in variable speed air source heat pump1.
 1. Kevin Smit and Christian Douglass discussed the need for more at-scale studies and the challenges in developing upgrade measures.
2. Peak Power Impact:

- Christopher Dymond inquired about the impact of peak power and the ability to capture it in the model.
 1. Kevin Smit and Christian Douglass explained the importance of measure shapes and the value of savings during peak periods.
- 3. District Heat from Data Centers:
 - Jim White asked about the potential for district heat or waste heat from data centers.
 1. Christian Douglass mentioned that it is locational and more common in populous areas.

AHR Expo/ASHRAE Conference

(Slides 69 – 73)

Several NEEA Product Managers recently had the opportunity to attend the AHR Expo | ASHRAE Conference. Each met with multiple manufacturers during this event, and following are a few highlights each of them shared.

1. Dana Bradshaw, Residential Heat Pump Water Heaters
 - AO Smith is launching a new split system later this year.
 - Bradford White has a new unit. It is trilingual (English, Spanish, French). It's been changed to an A/C form factor for their unified communication module for demand response.
 - GE is re-entering this market, with production starting this month. Units will have an integrated mixing valve, as well as a wireless PUC design for the leak sensor.
 - Navien enters the market in April, with a stainless-steel tank and no anode.
 - Bonn is bringing a new design with a thermal plastic tank, which will replace their current cement tank.
2. Chris Wolgamott, Efficient RTUs and High-Performance HVAC
 - Attended ASHRAE and participated in several technical committees (slide 70 for list.)
 - Co-presented with Energy 350 and Greenheck on "Wonderful World of DOAS", which examined several different types of DOAS units.
 - Met with several manufacturers as well and explored new products on display.
 1. Greenheck is entering traditional rooftop unit market, starting a line of products with improved insulation. Pre-production is underway, with expected release into the market in 2026.
 2. LG is also coming into the market with a rooftop unit, which is a new product for them.
3. Christopher Dymond, Residential HVAC
 - Attends each year with a delegation of EE and utility folks that can network collaboratively with manufacturers and exhibits to ensure consistent messaging. The team had several topics they particularly wanted to touch up, as it's a great opportunity to influence and foster overall alignment.
 1. Improved performance data access
 - Within residential heat pump space, we primarily use NEEP database, but there is some disagreement on it's reliability and accuracy. We were able to make some progress towards NEEA being able to access underlying performance data.
 2. Deeper understanding of where manufacturers are around installer and design skills

- Manufacturers do not teach efficiency, so we realized that this is an opportunity to broaden thinking around how we share this information to see improvement in overall performance data.
- 3. Discussing approaches to load flex and grid power management
 - Manufacturers are moving towards open ADR, and we expect to see first steps towards certifying that variable speed heat pumps can meet these requirements somewhere between May and September of this year.
- 4. Dual-fuel technology
 - Everyone is starting to look at building dual-fuel products, but there are multiple approaches. Devices are operating separately with no communication between outdoor and indoor units.
 - Not all manufacturers are yet interested in more integrated solutions.