

Natural Gas Advisory Committee

Q4 2023 Meeting (Virtual)



DATE: October 19, 2023

TIME: 10:30 – 4:00 pm Pacific

WEBINAR: MS Teams – See link in calendar invite or [register here](#)

AGENDA (All Times Pacific)

10:30-10:50 (20 min)	Welcome and Introductions	Alisyn Maggiora
10:50-11:20 (30 min)	Market Transformation Refresher <ul style="list-style-type: none"> Initiative Lifecycle Opportunity & Concept Assessment process <i>Desired Outcome: Committee is reminded of Market Transformation framework for evaluating new portfolio options.</i>	Becky Walker
(10 min)	Break	All
11:30-12:30 (60 min)	Advanced Commercial Gas Water Heating <ul style="list-style-type: none"> Market Transformation Program Overview Prep for planned Concept Advancement milestone (Dec 7) <i>Desired Outcome: Committee updated on program development and primed on upcoming program milestone, and any initial questions/concerns identified.</i>	Peter Christeleit Neil Grigsby Pg. 3
(45 min)	LUNCH	All
1:15-1:35 (20 min)	Round Robin <ul style="list-style-type: none"> Share-out on recent key activities/developments <i>Desired Outcome: Committee aware of relevant activities/developments across our organizations.</i>	NGAC Members
1:35-1:55 (20 min)	Residential Gas Heat Pump Regional Pilot Opportunity <ul style="list-style-type: none"> Discuss high-level approach to potentially piloting commercialized products when/if they become available. <i>Desired Outcome: Committee gives feedback on potential approach and shares potential interest in participation.</i>	Aaron Winer Peter Christeleit Pg. 4
1:55-2:20 (25 min)	Housekeeping & Looking Ahead <ul style="list-style-type: none"> Notes & Action Items: July 26 meeting (on neea.org here) Product Council Updates Whole Buildings Update (see pg. 16) Dual Fuel Workgroups Update <ul style="list-style-type: none"> NGAC Dual Fuel Program CEAC Dual Fuel Measurement & Methodology Looking ahead <ul style="list-style-type: none"> Oct 26 webinar: 2024 draft Operations Plan Leadership in Energy Efficiency Awards Efficiency Exchange Call for Topics Stakeholder Satisfaction Survey Upcoming meetings <ul style="list-style-type: none"> Dec 7 interim webinar – *Vote* 2024 meeting schedule 	Alisyn Maggiora Eric Olson Debbie Driscoll Peter Christeleit Ryan Brown Becky Walker

	<i>Desired Outcome: Committee refreshed on previous meeting notes/action items and aware of significant upcoming items.</i>	
(10 min)	Break	All
2:30-3:50 (80 min)	Quarterly Portfolio Update (Q3 Recap) <ul style="list-style-type: none"> Budget Update Quarterly Progress Report highlights <i>Desired Outcome: Committee apprised on gas portfolio developments.</i>	Peter Christeleit Noe Contreras Aaron Winer Jason Jones Tamara Anderson Mark Rehley Pg. 5-15
3:50-4:00 (10 min)	Public comment, wrap up and adjourn	Alisyn Maggiora

Informational Updates:

- Pg. 16: Whole Buildings Update & Opportunity

Additional Resources:

- Q3 2023 Newsletter – [Market Research and Evaluation](#)
- Q3 2023 Newsletter – [Emerging Technology](#)
- Q1 2023 Newsletter – [Codes, Standards and New Construction](#)
- Recent NGAC Meeting Materials (Q3 2023) – [Packet](#), [Slides](#), [Notes](#)
- [NGAC Charter](#)

Memorandum – Agenda Item



October 12, 2023

TO: Natural Gas Advisory Committee (NGAC)
FROM: Neil Grigsby, Market Transformation Manager, Water Heating
SUBJECT: Advanced Commercial Gas Water Heating – Concept Advancement

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Our Ask of You:

Please review the memo and bring any questions, recommendations, feedback, or concerns to the Q4 NGAC meeting on October 19, or contact me at the email below. We expect to send out the Concept Advancement Milestone Document on the 19th as well; you will have 4 weeks to review.

Brief Summary of Program Update

NEEA is seeking NGAC’s support to move the Advanced Commercial Gas Water Heating program through the Concept Advancement* ILC milestone. The Advanced Commercial Gas Water Heating program focuses on increasing adoption of gas heat pump (GHP) water heating solutions in multifamily and commercial applications by removing barriers related to first cost, awareness of the technology, and increasing the value proposition to key decision makers.

If the program successfully passes through Concept Advancement, key Program Development activities will include:

- Lab testing GHP technology to assess and validate product performance and energy savings.
- Incorporating GHP water heating systems in demonstration projects to learn about supply chain and installation best practice and challenges, and how to optimize performance in real world applications.
- Conducting a Market Characterization study of multifamily and commercial water heating to gain a better understanding of common systems in existing buildings, market actor decision making processes, and the value proposition for GHP water heating.

***FYI only – Reminder of what the Concept Advancement milestone entails:**

- This is the first voting milestone; moving into the Program Development phase is all about learning.
- At this stage, we have preliminary confidence that a concept has “legs” and warrants a deeper look; there are usually more unknowns, than knowns.
- The objective of this milestone is to offer transparency around these knowns and unknowns, and our Market Transformation Theory for this technology.

Please contact [Neil Grigsby](#) if you have questions about the Advanced Commercial Gas Water Heating Program.

PROGRAM LIFECYCLE STATUS



Memorandum – *Agenda item*



October 12, 2023

TO: Natural Gas Advisory Committee (NGAC)
FROM: Peter Christeleit, Manager – Natural Gas Portfolio & Strategy
SUBJECT: Residential Gas Heat Pump Pilot Opportunities

Our Ask of You:

Please attend this presentation and come prepared to engage in the discussion by bringing your organizational priorities, perspectives, and any questions you may have.

Brief Overview:

While NEEA does not currently have a residential gas heat pump program, staff understands there is interest in monitoring and exploring opportunities related to piloting this technology. Staff will cover the following points during this presentation:

- Product updates
- Typical process for moving from lab testing to pilots and demonstrations
- Opportunities available in the next 6-18 months

Staff will facilitate a discussion to engage with NGAC members and understand their desired next steps.

Please contact Peter Christeleit (pchristeleit@neea.org) if you have questions or would like to make sure any topics are included in the discussion.

Natural Gas Progress Report

Northwest Energy Efficiency Alliance (NEEA)

Q3 2023 Highlights

Northwest Energy Efficiency Alliance
700 NE Multnomah, suite 1300
Portland, Oregon 97232
p 503.688.5400
neea.org
info@neea.org



Scanning

- Combi
 - The multifamily and single-family sites concluded the monitoring DHW-only performance of the system. Will continue to collect data for the early winter mode. Project expected to complete at the end of 2023.
 - GTI Energy working with Vicot to update software and commission V20 gas heat pump.
- Dual-Fuel
 - Ongoing work with the Utilization Technology Development (UTD) group to finalize market assessment of emerging or commercially ready gas furnace/electric heat pump products in the North American market.
 - The next phase is a laboratory evaluation of these systems. GTI Energy has designed and built a thermostat environmental emulator for dual-fuel load-based testing.
 - CSA has submitted a recommendation to AHRI for inclusion of its calculation for a dual-fuel system metric. DFUE (Dual-Fuel Utilization Efficiency) is a seasonal efficiency metric. To calculate these values the procedures are illustrated in appendix M of AHRI 210/240.
- Commercial Dryers
 - [Modulating gas valve for commercial dryer](#) study was published in August 2023.
 - Continuing work with partners to support study of liquid desiccant-based heat recovery solution for commercial clothes dryer systems.
- Engine-Driven Gas Heat Pump
 - Scoping opportunities for space heating applications in the Portland, Oregon area.
- HVAC
 - Working with multiple developer and manufacturers to analyze the effort and opportunity.
- Commercial Water Heating
 - Refining our knowledge of the cost effectiveness for economic potential within this segment. Our next step is to review achievable potential.

Codes, Standards, and New Construction

Codes & Standards

In the third quarter of 2023, NEEA staff submitted one comment letter to a request from the Department of Energy.

- Consumer Water Heaters – Efficiency Conservation Standard – NOPR (Supplemental Notice of Public Rulemaking)

Washington

- Commercial Code: Effective date delayed until March 2024. Public process completed to adjust code in light of Ninth Circuit Court's decision on Federal preemption violations by Berkeley's natural gas ban. Comment period remains open into Q4.
- Residential Code: Effective date delayed until March 2024. Public process completed to adjust code in light of Ninth Circuit Court's decision on Federal preemption violations by Berkeley's natural gas ban. Comment period remains open into Q4.

Montana:

- After a brief pause over summer, the Montana Homes Collaborative reconvened for a September meeting. The focus was on how to get more people in Montana certified as energy raters so builders can take advantage of the 45L New Energy Efficient Home tax credits. In a state as large as Montana, more raters are needed to inspect and certify ENERGY STAR homes (tax credits are \$2,500 for single-family, \$2,500 for manufactured homes, and \$500 for multifamily) and DOE's Zero Energy Ready Homes (tax credits are \$5,000 for single family, \$5,000 for manufactured homes, and \$1,000 for multifamily).

Oregon

- Commercial – Oregon Building Code Division (BCD) continued the Oregon Energy Efficiency Specialty Code (OEESC) update process. BCD reviewed the changes made in ASHRAE 90.1-2022 and draft amendments in developing the OEESC as necessary. The target code adoption date is January 1, 2024.
- Residential - The 2023 Oregon Residential Specialty Code (ORSC) adoption process continued in Q3 2023. A public hearing on 2023 ORSC was held on July 18, 2023, and a public comment period concluded July 28, 2023. None of this has led to any

changes to the 2023 ORSC final draft approved by the Residential and Manufactured Structures Board (RMSB) in Q1 2023. The 2023 ORSC will be adopted on October 1, 2023 and will go into full effect on April 1, 2024 as planned.

Idaho

- On August 1, Idaho Division of Occupational and Professional Licenses (DOPL) provided the Building Code Board an overview of the updated IDAPA 24.39.30 proposed draft document, which was voted into “proposed” status by the Board. This unanimous vote concludes months of efforts by energy efficiency advocates to moderate the cuts to the ID state energy code. DOPL now will host two mandatory public hearings (the first was September 7, and the second will be November 7th) to hear public input before submitting to legislature the Board’s recommendation to approve the proposed edits to the energy code.

International Energy Conservation Code (IECC):

- The 2024 IECC development process continued began to wrap up in Q3 2023. After finishing the second round of this process in Q2 2023, the Residential and Commercial IECC committees (and their subcommittees) completed their reviews of the second, third, and final round of code change proposals in July and finished their review of these proposals in September. This led to proposed versions of the Residential and Commercial Committee Action Reports with proposed changes to 2024 IECC proposed second drafts. These proposed versions were confirmed in early Q3 2023. The Residential and Commercial 2024 IECC Public Draft #2 will be voted on for finalization in October by the Committees. Barring any appeals, this will conclude the 2024 IECC development process, and the code will be published sometime next year.

New Construction

NEEA staff is continuing to support utility programs for above code new construction. Data is collected monthly on homes built and rated.

Other Updates

- Highlights from the North American Gas Heat Pump (GHP) Collaborative include:
 - Residential Space Heating Committee:
 - Development of Industry GHP Business Case, Standard Program Design and Utility Engagement Plan
 - Conducting utility interviews to research program design
 - Modeling GHP adoption rates
 - Residential GHP TRM Workpaper Template
 - GTI Energy developing draft template
 - Commercial GHP Committee:
 - The board approved formation of a Commercial GHP committee along with mission, objectives, and activities
 - Mission: Accelerate the development and adoption of Commercial GHP Space and Water Heating systems across North America.
 - Additional details can be found on the member's website (technical contact jkahn@resource-innovations.com): <https://resourceinnovation.sharepoint.com/sites/naghpcollab>
- Alliance staff attended multiple meetings/workshops highlighting Northwest progress, identifying opportunities to collaborate and gaining industry insight. Events included:
 - CEE Industry Partners Meeting: Staff attended multiple sessions highlighting regional activities, sharing knowledge and networking with stakeholders throughout North America.
 - NEEA staff shared a HeatAmp residential GHPWH product development update at the residential water heating session, appealing to manufacturers in attendance.
 - NEEA staff attended a dinner with utilities and organizations to discuss and collaborate on RTU programs and alignment.
 - Emerging Technologies Coordinating Council – ET Summit: Staff attended multiple sessions learning about technology development and sharing regional updates/successes and data.

Efficient Rooftop Units (Efficient RTUs)

2023 Goal	Key Success Metric	Status	Progress and Next Steps
Finalize specification and refine QPL; identify partner/owner of specification and QPL.	Partner identified by Q1	Head's Up	<ul style="list-style-type: none"> Specification and Prescriptive Path QPL is posted on BetterBricks.com and is being revised quarterly, or as needed. Consortium for Energy Efficiency (CEE) has delayed taking ownership of specification and QPL. CEE and NEEA are still in discussion with CEE member utilities about the need for a national specification for efficient gas-fired RTUs. The Program will likely accomplish only 1 of 2 parts of this goal by year end. Specification is finalized, and QPL is being updated regularly. NEEA will not have a partner to own by year end, therefore will continue to manage and host QPL and specification.
Encourage manufacturers in developing and promoting efficient RTUs for the light commercial market.	Agreement from two manufacturers to produce and offer light-commercial units by Q2.	Head's Up	<ul style="list-style-type: none"> Regular meetings with manufacturers are ongoing, but no formal agreements to produce new qualified products. One manufacturer is working to bring an ERV product to market to be used in place of the economizer of their RTUs, and a factory trip is planned for November. 2 additional qualified products have been identified: Trane Mixed Air Unit, and CaptiveAire Paragon line.

2023 Goal	Key Success Metric	Status	Progress and Next Steps
Create awareness of and support for efficient RTUs from market actors (manufacturer reps, distributors, contractors) and utilities across the U.S. and Canada.	Three partners reference Efficient RTU specification by Q4	On Target	<ul style="list-style-type: none"> Regular meetings are ongoing for regional market actors to align ERTU specification extra-regionally. This alignment will show increased demand to manufacturers for qualifying products. In addition to Minnesota’s Center for Energy and Environment, NEEA has also partnered with Nicor Gas to align on the ERTU specification for market transformation efforts in Nicor’s service territory. NEEA is working to build a collective of North American utilities to collaborate on commercial HVAC measures, primarily around RTUs that are gas-fired, dual-fuel, or HP, and include common features include in the ERTU specification.
Improve cost data, increase understanding of costs of Efficient RTUs.	Acquire data by Q3	Head’s Up	<ul style="list-style-type: none"> NEEA staff is continuing to work with manufacturers and suppliers to acquire cost data for Efficient RTUs and ERVs. Expecting to have improved data by the Threshold Goal of end of 2023.

Activities, achievements, or events

- Two additional qualified RTU products were identified in talks with suppliers and utilities at CEE meeting. One Trane product looks to be a “budget” DOAS-type RTU, and the other, produced by CaptiveAire, looks to be a double wall, efficient RTU (similar to Aeon’s offerings). The program expects these products to be added to the QPL in Q4.
- The second field study site in Portland, the KBOO radio station, is ready for data collection as the heating season begins. The RTUs have been installed, including a bolt-on ERV on the code-level RTU. Electrical issues have been resolved and upgraded thermostats and data monitors have been installed. Data will be collected in the fall and winter of the 23/24 heating season. The reporting will be finished in mid-2024.

Efficient Gas Water Heaters

2023 Goal	Key Success Metric	Status	Progress and Next Steps
Drive GHPWH product advancement and testing	Successful lab demonstration, >1.0 UEF, of <i>both</i> absorption and adsorption GHPWH technologies (Threshold: Successful demonstration of one technology)	Head's Up	<ul style="list-style-type: none"> North American testing of adsorption GHPWH prototype has begun after slight delays related to startup/shakedown, expected to be complete early Q4, 2023. Technology developer of absorption GHPWH has decided to focus on commercialization of GHP furnace/combi product in the near term, NEEA staff maintaining ongoing engagement
Understand certainty of commercialization timelines	2 manufacturers initiating product commercialization (Threshold: 1 manufacturer initiating commercialization)	Head's Up	<ul style="list-style-type: none"> Regular meetings with manufacturers and technology developers, ongoing Discussions with manufacturers regarding potential to commercialize adsorption GHPWH are focused on results of testing mentioned above; next steps may be delayed due to year end logistics
Assess utility commitment to supporting a GHPWH	NEEA NGAC + North American GHP Collaborative formalize commitment platform (Threshold: NEEA NGAC indicates significant support for GHPWH)	Head's Up	<ul style="list-style-type: none"> North American GHP Collaborative "Golden Carrot" draft report indicates members are currently unable to make financial commitments commensurate with those previously identified as required to significantly affect manufacturer decision making. Through NEEA's Cycle 7 Business and Strategic Planning process, the draft plan has a focus area to support market transformation work of products that become commercialized and have a good regional fit.

Activities, achievements, or events

- Collaborated with NEEA's electric water heating team and additional stakeholders submitting [comments](#) supporting the Department of Energy's notice of proposed rulemaking on the Consumer Water Heaters Standard. These comments reinforced the joint recommendation submitted to the Department of Energy in Q4, 2022.
- Integrated commercial GHPWH feasibility screening analysis findings into Concept Advancement Milestone documentation, informing decisions regarding possible future program development and/or resource allocation. NGAC to evaluate opportunity and vote on advancement at the Q4 NGAC meeting.

High-Performance Windows

2023 Goal	Key Success Metric	Status	Progress and Next Steps
Builders engaged in pilot grow their use of HPW as a standard offering in new homes	3 builders grow their use of HPW as standard offering in new homes in the Northwest	On target	<ul style="list-style-type: none"> Two of the four builders who participated in the volume builder pilot for 2022 have committed to grow their use of High-Performance Windows as their standard offering in new homes in the Northwest, as documented in the exit interviews from the project and the 2022 final report. The other two builders who participated in the volume builder project for 2022 will continue to consider High-Performance Windows as a path to energy efficient homes. The program continued the volume builder pilot in 2023 with three different builders and have confidence that at least one more will grow their use of High-Performance Windows as their standard offering in new homes in the Northwest.
Engage manufacturers to co-create strategies for scaling future supply of HPW to meet growing demand	By Q2, 1-2 leading manufacturers supplying the Northwest develop roadmap to scale production of HPW	On target	<ul style="list-style-type: none"> Seven large window companies dominate sales in the Northwest and are also active in California and Canada. Currently, triple pane windows are available and scalable to meet demand from Andersen, Marvin, Milgard, Pella, PlyGem and Prime (the latter two are brands owned by Cornerstone Building Brands). A national manufacturer with regional manufacturing capacity is nearing commercial launch of its thin triple window.
Finalize key intervention strategies and transition to market development.	Q4 Program Advancement presented to RPAC and NGAC.	Action Required	<ul style="list-style-type: none"> The High-Performance Windows program is in the Program Development phase and is currently uncertain of the path forward to Market Development. Using currently available data—not including non-energy benefits—the High-Performance Windows program does not meet NEEA’s Benefit/Cost Ratio threshold of >1 at the measure level now, nor will it in the near future. The program will remain in in the Program Development phase, with limited scope and resourcing in 2024.

Activities, achievements, or events

- We are collaborating with [MN CEE](#) on a **macro level study based on manufacturer/supplier interviews** to understand the total number of units sold in the Northwest (and MN) segmented by efficient and non-efficient windows defined as .22 U-Factor or less, along with understanding the breakdown of prescriptive ($\leq .22$ U-Factor) and the Equivalent Energy Performance defined by the new [ENERGY STAR v7 specification](#) for the Northern Climate Zone.
- [2023 High-Performance Window Naturally Occurring Baseline Review \(neea.org\)](#) by Cadmus has been posted on neea.org.
- High-Performance Windows now has a dedicated space on BetterBuilt^{NW}. This was recently shared via their newsletter on Sept. 27th.
 - [A New Home For High-Performance Windows](#). Go to Resources, then Available Resources from the top navigation.
 - Two new case study videos for the Confederated Tribes of Grande Ronde as well as a print study for their project, and a forthcoming print case study for Lennar's project will be posted on BetterBuilt^{NW} soon.

Latest Resources | 'High-Performance Windows'

- 20 September, 2023**
How Triple-Pane Windows Stop Energy (and Money) from Flying Out the Window
Open Resource
Add to Collection
- 30 August, 2023**
Video: Why Glazing Matters So Much More Than Insulation
Download
Add to Collection
- 21 August, 2023**
Video: Thin Triple-Pane Windows
Add to Collection
- 18 August, 2023**
Habitat for Humanity: Bend/Redmond projects
Download
Add to Collection

Memorandum – *Informational Item*



October 12, 2023

TO: Natural Gas Advisory Committee (NGAC)
FROM: Debbie Driscoll, Market Transformation Manager – Integrated Systems
SUBJECT: Whole Building Efficiency – Special Funding Opportunity

Our Ask of You:

Please review the memo and bring any questions or feedback to the Q4 NGAC meeting on October 19. If you would like to know more or may be interested in this opportunity, contact me at the email below.

Brief Summary of Update

NEEA is developing market-centric concepts for accelerating commercial whole building efficiency, especially in support of Washington’s and Oregon’s building performance standards. Since this work is most applicable to Oregon and Washington funders, NEEA is proposing it be a Special Project.

In the upcoming NGAC meeting, we will share an overview of the vision and proposed approach for motivating buildings toward meeting or exceeding policy goals. We will have a small amount of time to discuss your feedback in the meeting, and can schedule a more in-depth conversations as desired.

Please contact [Debbie Driscoll](mailto:DDriscoll@neea.org) DDriscoll@neea.org with questions or if your organization might be interested in learning more about this opportunity.