



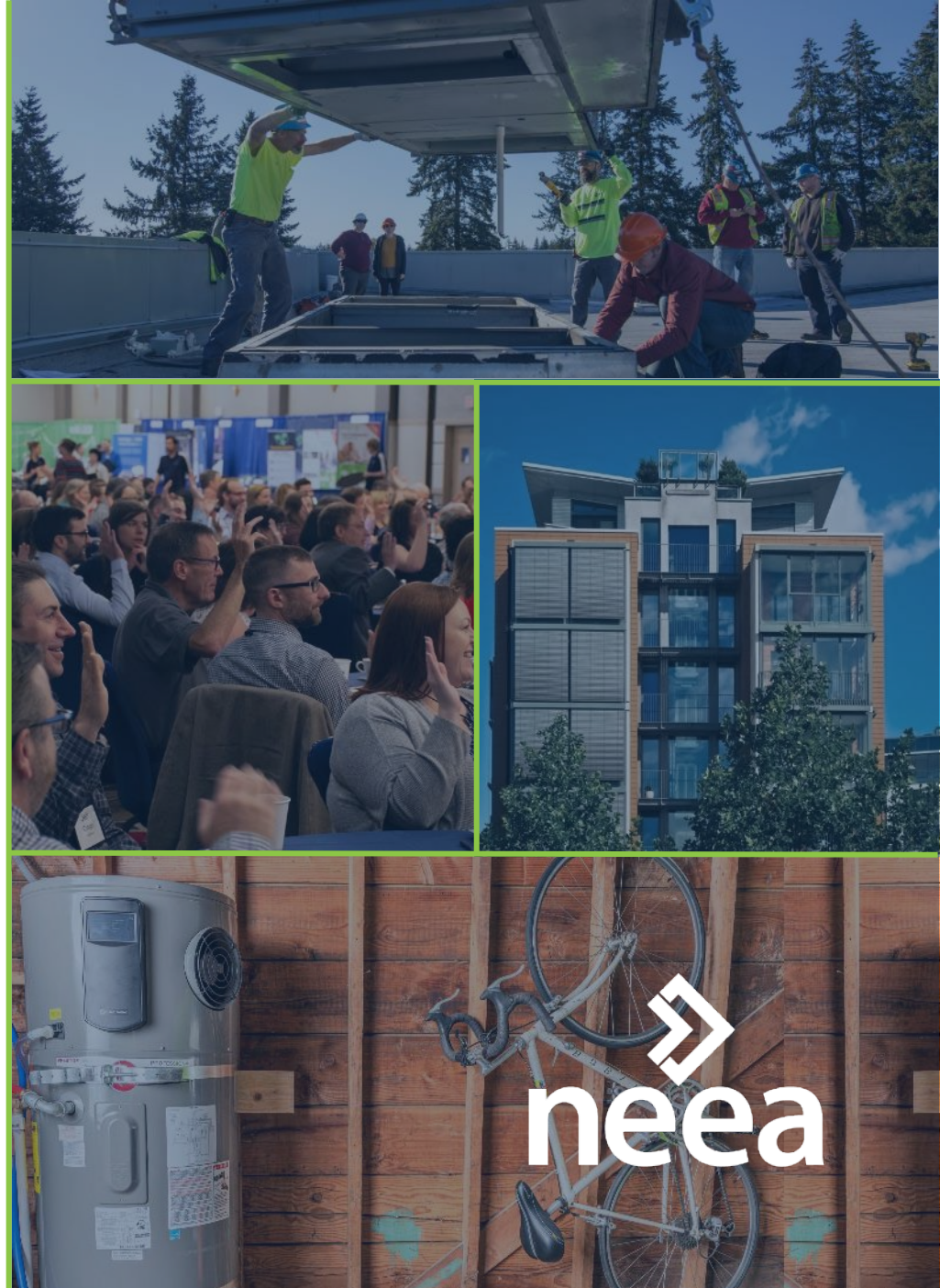
# Natural Gas Advisory Committee

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## Q1 2024 Meeting

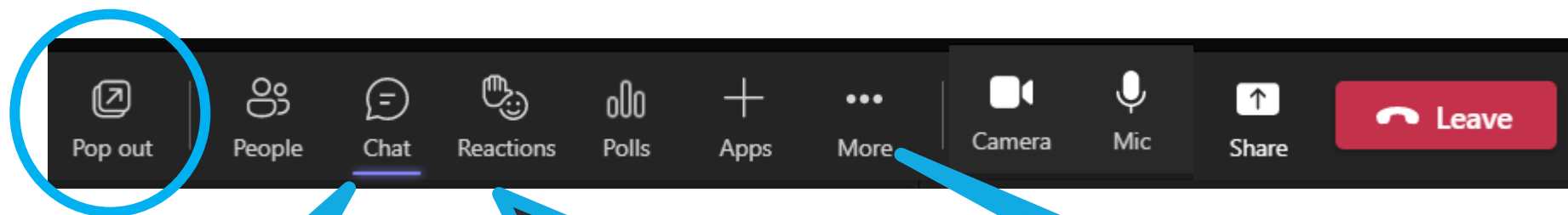
January 31, 2024  
9:30am – 2pm Pacific  
Virtual

This meeting will be recorded and transcribed





# Tools for Today: Engaging on Teams



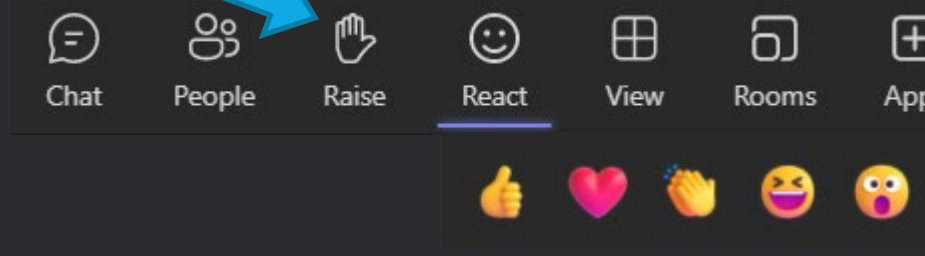
The chat is not captured in the recording.

Do you have any accessibility challenges with this technology today?



## Comments/Questions?

Please raise your virtual hand or chime in  
Chat & reactions also welcome



“...” More includes:

- ✓ Settings: mic & video
- ✓ Background effects



# Agenda

*All times Pacific*

9:30-9:50	<b>Welcome and Introductions</b>
9:50-10:20	<b>Modulating Commercial Gas Dryers</b>
(10 min)	Break
10:30-11:00	<b>Round Robin</b> <ul style="list-style-type: none"><li>• Share-out on recent key activities/developments</li><li>• <b>*NEEA Request*</b>: Learnings, unique elements, gas-specific barriers on equity-focused pilots/efforts</li></ul>
11:00-11:45	<b>Housekeeping &amp; Looking Ahead</b>
(45 min)	Lunch
12:30-1:45	<b>Quarterly Portfolio Update</b>
1:45-1:55	<b>Public comment, wrap up and adjourn</b>





# *Introductions*

- Name
- Organization
- *And...*

**XXX**



# Update: » Modulating Gas Dryers

Noe Contreras, Product Manager  
[Ncontreras@neea.org](mailto:Ncontreras@neea.org)





## *Modulating Dryer from EZ-Efficiency: BIO-Therm*

- Standard commercial gas-fired dryers only have one firing rate
- In the Later stages of drying not as much moisture remains in the clothes, not as much heat is needed and more energy is being wasted and lost out the flue



*Front of Hotel Dryers in IL*



## *Modulating Dryer from EZ-Efficiency: BIO-Therm*

- Replace gas valve with 2-stage valve and install controller
- Place temperature sensor into dryer exhaust to sense drying temperature
- Installation is usually 30 min per dryer



[MARK.SEIPKE@EZ-EFFICIENCY.COM](mailto:MARK.SEIPKE@EZ-EFFICIENCY.COM)



# *Energy Trust Share-Out*

## *(Jackie Goss)*

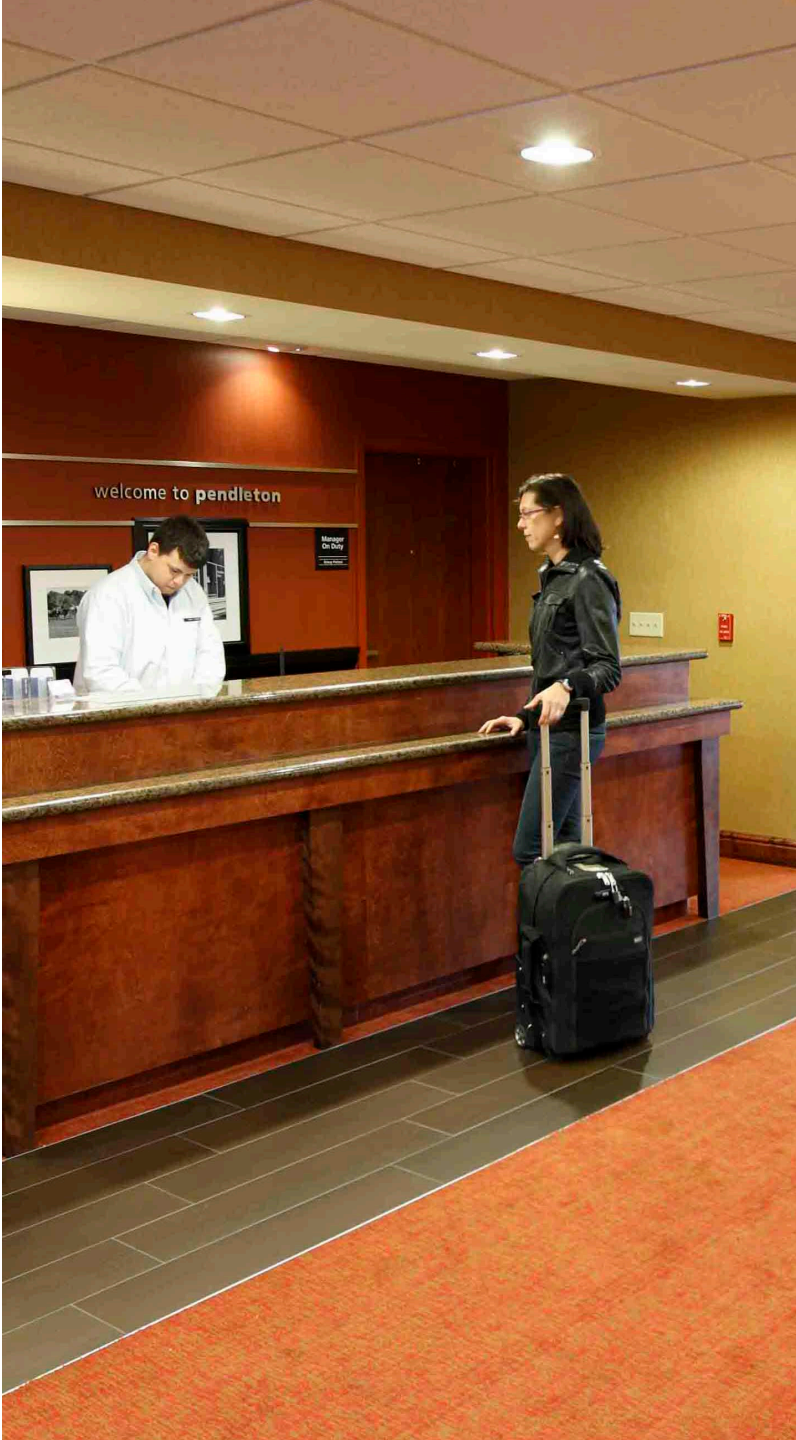
# Energy Trust 2-stage Dryer Valve Measure

New measure for 2024

Measure developed by our Existing Buildings Program Management Contractor (PMC): TRC Solutions

Commercial-sized gas dryers  
>200 lb capacity or >65 cf drum capacity

	Oregon	SW Washington
On-premises laundry (hotels, gyms, nursing)	\$700	\$700
Coin-operated laundromats	NA	\$400
Multifamily common laundry	NA	Approved but not offered



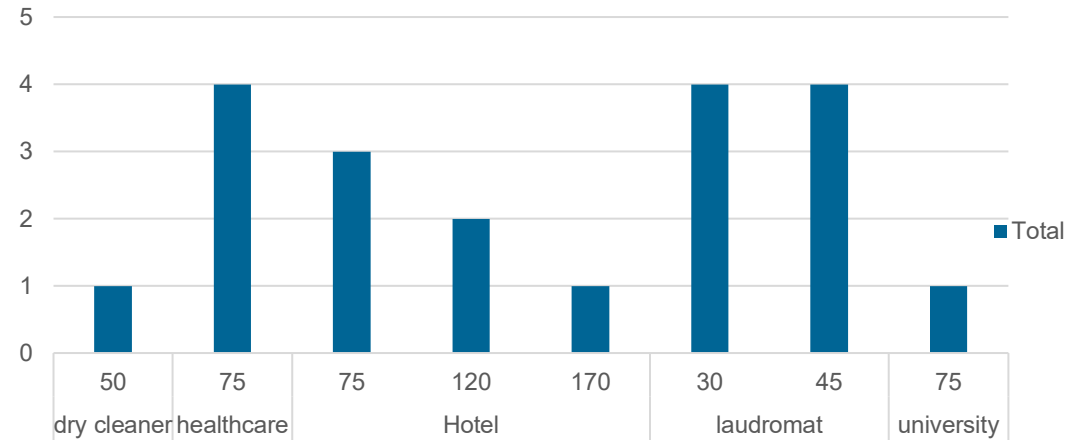
## Key Variables

- Baseline
  - Business type
    - Dryer Capacity
    - Cycles per year
  - Existing Dryer Controls – assume none
- Savings
  - GTI - -1.75%-35.09% average 12.83%
  - Weather adjustment
    - GTI - 1 therm - ignored

# 2014 and 2023 GTI Report

- 20 dyers at 9 sites
  - 8 laundromat
  - 6 hotel
  - 4 healthcare
  - 1 dry cleaner
  - 1 university

Dryer counts by capacity



Did not record number of cycles per year or gas use per cycle.

Savings range from -1.75% to 35.09%

- 229 therms or 12.9% weighted by dryer
- 286 therms or 11.9% weighted by baseline therm
- 231 therms or 11.2% weighted by capacity

# Dryer Capacities and locations

Not easily possible to find capacity or location in CBSA. CBSA shows 68% of commercial dryers in “mixed commercial”.

2015 California on-premises [Dryers Market Study](#)

Facility Type	Installed Capacity in lbs. in CA	% Dist. of Installed Capacity in CA	Dryer Capacity Range (lbs. dry clothes) and Representative Avg. Capacity for Each Range					Weighted Avg. Capacity by Market Sector	Weighted Avg. Capacity All Sectors (lb.)
			<30	≥30 to <50	≥50 to <70	≥70 to <120	≥120 to <220		
Hotels & Motels	524,845	44%	0%	0%	42%	44%	14%	91	83.2
Nursing Homes	274,467	23%	0%	3%	17%	59%	21%	103	
Health Clubs	160,150	13%	0%	0%	100%	0%	0%	60	
Dry cleaners	111,938	9%	40%	17%	0%	43%	0%	54	
Universities & Colleges	85,767	7%	0%	52%	0%	48%	0%	66	
Fire Stations	25,050	2%	0%	100%	0%	0%	0%	40	
Law Enforcement	7,650	1%	0%	0%	0%	100%	0%	95	

# Baseline Dryer Usage

Building/Facility Type	Average dryer capacity (lbs dry clothes)	Estimated Number of Annual Drying Cycles per Dryer (Illinois TRM)	Annual Baseline Usage per Dryer (therms)
On-Premises Laundries	83.2	3,607	2738
Coin-Operated Laundromats	31.6	1,483	410
Laundry Rooms in Multifamily Bldgs.	21.2	1,074	192

\* For coin-operated laundromats, this baseline is much lower than the GTI study. Illinois sites DOE's Federal Register Notices, Energy Conservation Program: Energy Conservation Standards for Commercial Clothes Dryers, Office of Energy Efficiency & Renewable Energy

# Gas Dryer Valve Savings

Building/Facility Type	Annual Savings (therms)	Oregon TRC (2024)	Washington TRC (2024)
On-Premises Laundries	352	4.2	4.3
Coin-Operated Laundromats	53	0.6	0.6
Laundry Rooms in Multifamily Bldgs.	25	0.3	0.3

# *Share-Outs + Discussion*

*What experience, if any, have you had in  
developing related measures?*

# » Thank you!

Noe Contreras, Product Manager  
Ncontreras@neea.org





***Break!***



# Agenda

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## ➤ *Round Robin*

- Focus: Organizational & program highlights since October
- **SPECIAL REQUEST:** Learnings, unique elements, gas-specific barriers on equity-focused pilots/efforts





## Housekeeping & Looking Ahead

- Cycle 7 Business Plan Update
- Product Council updates
- Condensing Water Heater Research
- Dual Fuel Workgroups Update
- Reminder: Vicot Field Demo
- Notes & action items from [Oct 22](#), [Dec 7](#)
- Annual Charter Check-in
- Looking Ahead
  - Savings Reporting
  - ERTU Measure Development
  - Upcoming Stakeholder Engagements
  - Efficiency Exchange May 14-15
  - Upcoming Meetings & Events



## ***Cycle 7 (2025-29) Business Planning Update***

- Board is voting on a business plan March 12.
  - The natural gas plan is crafted to maximize the probability of success by maintaining a conservative involvement in multiple product areas: gas equipment, dual-fuel/ fuel-neutral products & gas heat pumps.
- Contracting is underway and will happen throughout 2024.
- Final funding is TBD until the end of the year.
- The Board is aligning on priorities and principles in the event that full funding isn't realized.



# Product Council Updates

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**Noe Contreras**

*Product Manager, Gas*

[NContreras@neea.org](mailto:NContreras@neea.org)



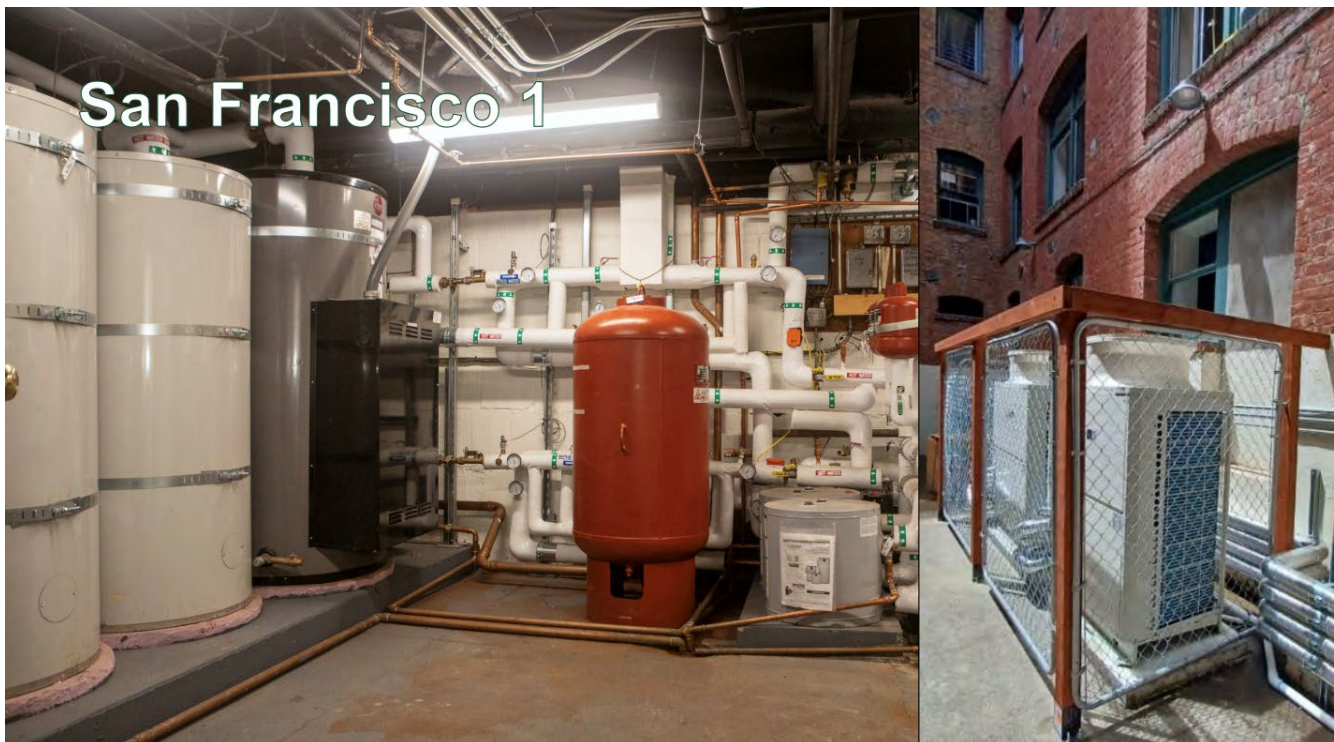


# Product Council

## Multifamily Central Heat Pump Water Heaters

### Stories From the Field

#### Project Sites - California



- Electrify Existing Central Fossil Fuel Domestic Hot Water
- Evidence of monobloc heat pump solution
  - Electric solutions use R744 (CO2) or R410A refrigerant and has a 480V or 208/230V based on manufacturer
  - Impact of Outdoor Air Temperature
    - [Product Council Link](#)

Site	Install Type	Dwelling Units	HPWH Product	Recovery (btu/hr)	Storage Volume (gal)	Storage Ratio (gal/ton)	Status
San Francisco 1	Retrofit	81	Mitsubishi	273k	357	16	Complete
San Francisco 2	Retrofit	133	Mitsubishi	273k	2,150	95	Complete
San Francisco 3	Retrofit	119	Mitsubishi	273k	1,350	59	Complete
East Palo Alto	Retrofit Retrofit	28 20	Mitsubishi	273k 273k	300 300	13 13	Complete
San Diego	Retrofit	74	Mitsubishi	273k	785	35	Contracting
Fontana	Retrofit	90	Mitsubishi	136k 136k	300 600	26 52	Contracting
Fresno	Retrofit	53 53	WaterDrop	139k 139k	505 505	44 44	Commissioning

#### Project Sites – New York



Site	Install Type	Dwelling Units	HPWH Product	Recovery (btu/hr)	Storage Volume (gal)	Storage Ratio (gal/ton)	Status
Bronx 1	Retrofit	65	Lync	988k	975	12	Construction Complete – Pending electrical service
Bronx 2	Retrofit	38	Lync	658k	585	11	Construction Complete – Pending electrical service
Bronx 3	Retrofit	40	Lync	658k	575	10	Construction Complete – Pending electrical service
Bronx 4	Retrofit	21	Lync	420k	585	17	Construction Complete – Pending electrical service
Bronx 5	Retrofit	38	Aermec	455k	475	13	Construction complete \ Pending Control Wiring & Electrical service
Far Rockaway	Retrofit	119	Lync	988k	1500	18	Construction Complete - Pending Startup (10/17/2023)
Manhattan	Retrofit	50	Mitsubishi	408k	900	26	Construction Complete - Pending electrical service



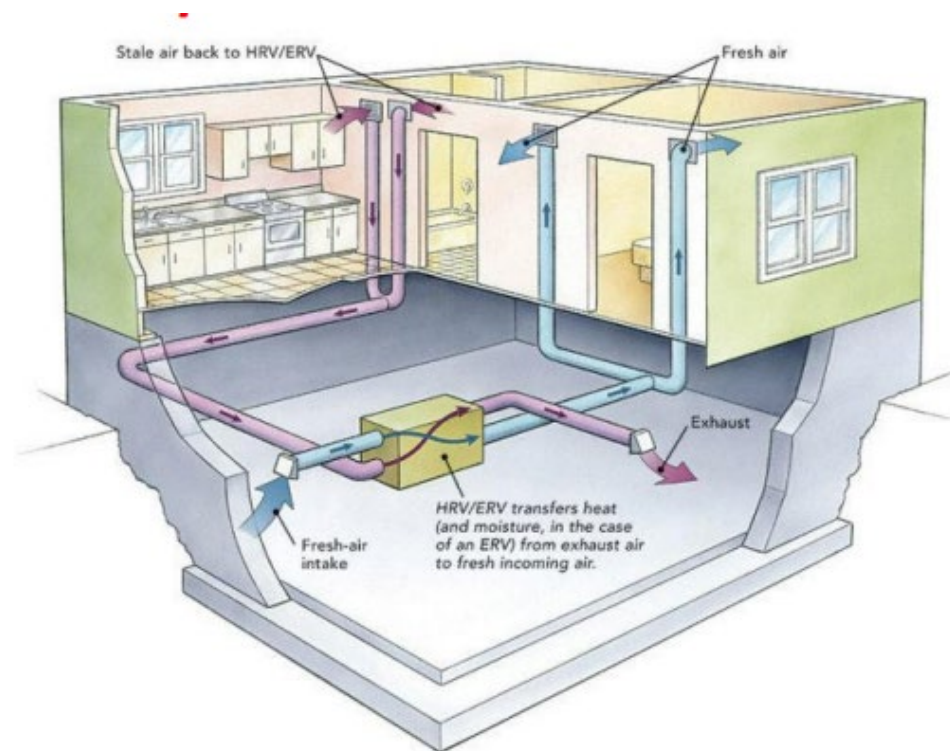
# Product Council - Integrated Design Lab

## Ventilation Requirements for Residential Buildings in Cold Climates

Jaya Mukhopadhyay, Associate Professor School of Architecture - Montana State University

- Winter in Alaska
  - Particulate Matter
  - Carbon Dioxide
  - Total Volatile Organic Compounds (TVOCs)
- Continuous vs Intermittent HRV played a roll in PM, in addition to cooking approaches, HVAC, and humidifier

[Product Council Link](#)



Hypothesis: A combination of ventilation & air cleaning strategies optimally operated for residential buildings in cold climates will maintain appropriate IAQ without significant increase in energy consumption.



# Stay engaged with Emerging Technology



Sign up to receive Emerging Technology's Quarterly Newsletter

<https://neea.org/subscribe>



Submit an Emerging Technology idea  
<https://neea.org/get-involved/submit-your-idea>



Attend Product Council (most Tuesdays)  
<https://neea.org/get-involved/product-council>



Reach out directly via email  
[NContreras@neea.org](mailto:NContreras@neea.org)

Subscribe today to receive:

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### ☐ NEEA Newsletter

Sign up for bi-monthly updates on the latest alliance news and activities

## NEEA Bulletins

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Sign up to receive NEEA's quarterly and annual reports and updates on NEEA activities and workshops

### ☐ Breaking News & Press Releases

Keep informed on breaking industry and NEEA partner news

### ☐ NEEA Research & Reports

Receive announcements whenever NEEA releases new evaluation and market research reports, plus quarterly Market Research & Evaluation newsletter

### ☐ NEEA Job Announcements

Be the first to know when a position opens at NEEA

## NEEA Initiative News

### ☐ Emerging Technologies

### ☐ Codes & Standards

### ☐ Residential Efficiency

### ☐ Commercial Efficiency

### ☐ Industrial Efficiency

Prefix	First Name *	Last Name *
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Email *		Confirm Email *
<input type="text"/>		<input type="text"/>
Title		Company/Organization *
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Address 2		
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City	State	Zip Code
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Preferred Phone		Fax
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<input type="button" value="SUBMIT"/>		



## Condensing Water Heater Research Request

- Overview:
  - Hypothesis: Condensing storage market could be a proxy for an early GHPWH market
  - Conducting research to speak with purchasers
  - Does not involve sharing customer info
- **Our Ask of You:**
  - Are you willing to reach out to your customers offering opportunity to participate in compensated focus group?

Anu Teja ([ateja@neea.org](mailto:ateja@neea.org)) and/or Aaron Winer ([awiner@neea.org](mailto:awiner@neea.org))

*Workgroup Updates*  
*RPAC Federal Funding*  
*NGAC Dual Fuel Product*  
*CEAC Dual Fuel Measurement*



*Reminder*  
*Vicot Field Demo*  
*Opportunity*



## Housekeeping & Looking Ahead

- ✓ Cycle 7 Business Plan Update
- ✓ Product Council updates
- ✓ Condensing Water Heater Research
- ✓ Dual Fuel Workgroups Update
- ✓ Reminder: Vicot Field Demo
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  - Efficiency Exchange May 14-15
  - Upcoming Meetings & Events



## *Oct 22, Dec 7 Notes & Action Items*

- [Oct 22](#) Notes
  - No action items
- [Dec 7](#) Notes
  - Action items:
    - ✓ Noe to send draft confidential lab test results report on Vicot unit to funding utility NGAC members. (sent Dec 12)

Additional edits or questions?



## *Annual NGAC Charter Review / Check-in*



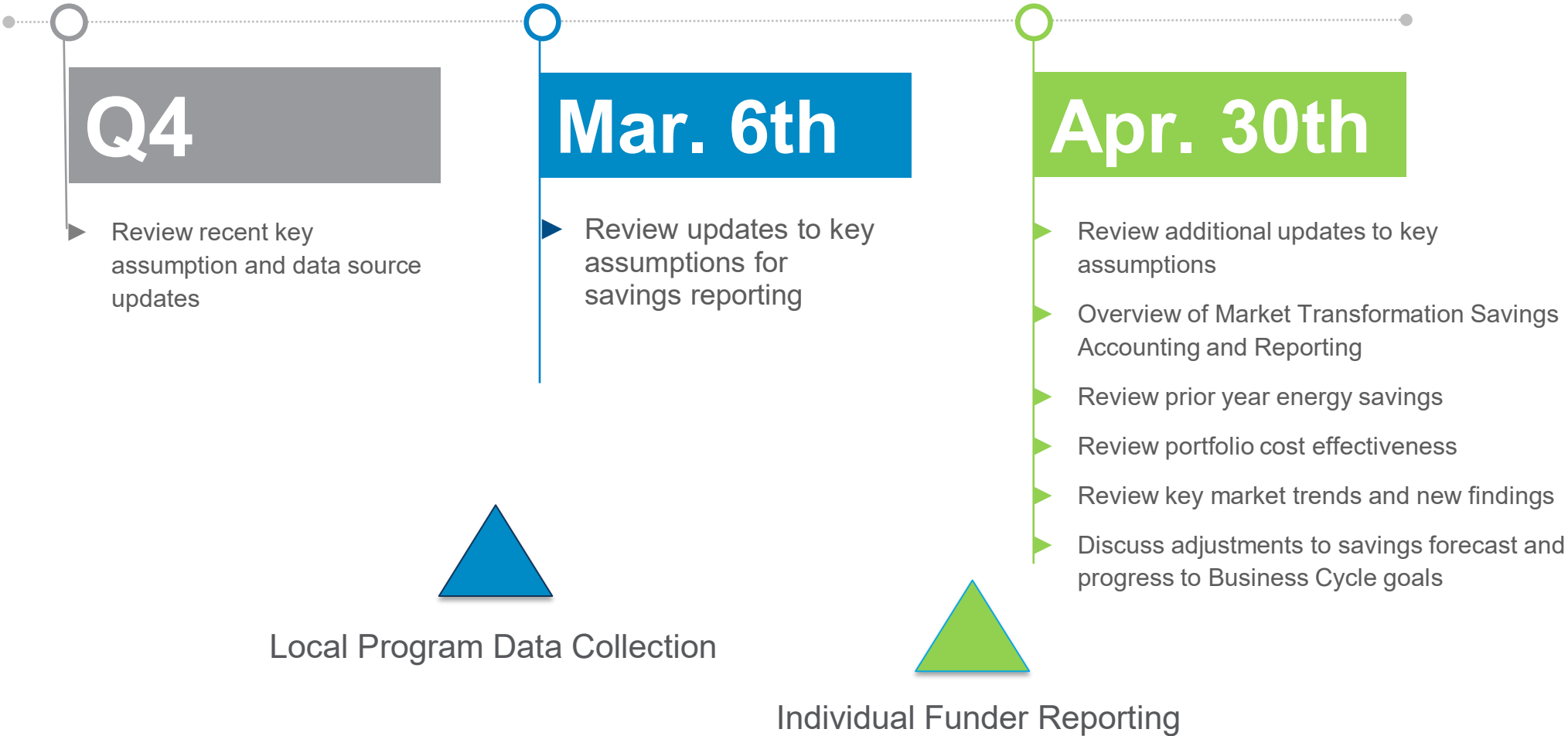
A faint, light blue geometric logo is centered in the background. It consists of several overlapping, nested shapes that form a diamond-like structure with internal lines, resembling a stylized 'S' or a complex architectural element.

# *Looking Ahead*



# Coming up... Savings Reporting!

## CEAC Schedule





# *Efficient Rooftop Unit Measure Development*

Contact: Jason Jones ([Jjones@neea.org](mailto:Jjones@neea.org))



## 2024 Stakeholder Engagement Activities

- 1) Stakeholder Satisfaction Survey (reminder – Feb 9 deadline)
- 2) In-person stakeholder visits (2024)

### **Goals:**

- Solicit feedback on stakeholders' experience working with NEEA staff; participating in NEEA forums
- Build understanding of stakeholder needs
- Discuss marketing coordination as needed
- Continue socializing Cycle 7 Business Plan



## *Efficiency Exchange 2024 – Registration Opens Feb. 15*



EFX24 Early Bird Registration

**February 15 – April 12**

**[neea.org/EFX](https://neea.org/EFX)**

EFX24 Hybrid Conference  
May 14-15 in Coeur d'Alene  
In-person + Virtual



# Upcoming Meetings

Date	Event
TBD	CEAC Dual Fuel Measurement Work Group
TBD	NGAC Dual Fuel Product Work Group
Mar 7	Interim NGAC webinar (1-2pm) - TBD
Apr 24	Q2 NGAC Meeting*

**\*Key Q2 Topic(s):** Dual Fuel White Paper, Start reporting on Adv. Commercial Gas WH





# 2024 Meeting Schedule



## Q2 & Q4 Location check

QUARTER	DAY	DATE	TIME (PACIFIC)	LOCATION
Q1'24	Wednesday	Jan 31	9am – 4pm hold	virtual
Interim Webinar	Thursday	Mar 7	1-2pm hold	virtual
Q2'24	Wednesday	Apr 24	9am – 4pm hold	@ NEEA's office (SeaTac not avail)
Interim Webinar	Wednesday	June 5	1-2pm hold	virtual
Q3'24	-	No Q3 mtg	-	
Interim Webinar	Thursday	Sept 19	1-2pm hold	virtual
Q4'24	Tuesday	Oct 22	9am – 4pm hold	@ NEEA or (?) (SeaTac not avail)
Interim Webinar	Monday	Dec 9	1-2pm hold	virtual





*Other regional /  
industry events or  
announcements?*



# ***LUNCH!***

***[Please return by 12:30 Pacific]***





# Agenda

*All times Pacific*

9:30-9:50	<b>Welcome and Introductions</b>
9:50-10:20	<b>Modulating Commercial Gas Dryers</b>
(10 min)	Break
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## ➤ PORTFOLIO UPDATE

- *Financials*
- *Portfolio Check-in*
- *Progress Report Highlights (Q4'23 recap)*
- *2024 Program Goals*





# 2023 Portfolio



Lifecycle Stage	Gas Heat Pumps	Dual Fuel/Fuel Neutral	Gas Products
Scanning	✓ Eff. Gas Water Heating	✓ Dual Fuel research via GTI emerging technology research	✓ GTI ETP
Concept Assessment	✓ <del>Comm. GHP Water Heating</del>	✓ Res. Dual Fuel HVAC	
Program Development		✓ HP Windows	
Market Development			✓ Efficient RTUs

Existing Portfolio Activities



# Looking Ahead: 1-2 Year Activities & Options

Lifecycle Stage	Gas Heat Pumps	Dual Fuel/Fuel Neutral	Gas Products
Scanning	<ul style="list-style-type: none"><li>✓ <b>Eff. Gas Water Heating</b></li><li>☐ <b>New Gas Heat Pumps (GHPs):</b><ul style="list-style-type: none"><li>- Vicot      - Yanmar</li><li>- SMTI      - Aisin</li><li>- EU OEM   - Broad USA</li></ul></li></ul>	<ul style="list-style-type: none"><li>✓ <b>Dual Fuel research via GTI emerging technology research</b></li></ul>	<ul style="list-style-type: none"><li>✓ <b>GTI ETP</b></li></ul>
Concept Assessment	<ul style="list-style-type: none"><li>✓ <del><b>Comm. GHP Water Heating</b></del></li><li>☐ <b>Res. HVAC GHP [vote]</b></li></ul>	<ul style="list-style-type: none"><li>✓ <b>Res. Dual Fuel HVAC</b></li></ul>	
Program Development	<ul style="list-style-type: none"><li>✓ <b>Comm. GHP Water Heating</b></li></ul>	<ul style="list-style-type: none"><li>✓ <b>HP Windows</b></li></ul>	
Market Development			<ul style="list-style-type: none"><li>✓ <b>Efficient RTUs</b></li></ul>



Existing Portfolio Activities  
Potential Portfolio Options



# Looking Ahead: 1-2 Year Activities & Options

Lifecycle Stage	Gas Heat Pumps	Dual Fuel/Fuel Neutral	Gas Products
Scanning	<input checked="" type="checkbox"/> <b>Eff. Gas Water Heating</b> <input type="checkbox"/> <b>New Gas Heat Pumps (GHPs):</b> - Vicot      - Yanmar - SMTI      - Aisin - EU OEM   - Broad USA	<input checked="" type="checkbox"/> <b>Dual Fuel research via GTI emerging technology research</b>	<input checked="" type="checkbox"/> <b>GTI ETP</b> <input type="checkbox"/> <b>Commercial Dryers</b>
Concept Assessment	<input checked="" type="checkbox"/> <del><b>Comm. GHP Water Heating</b></del> <input type="checkbox"/> <b>Res. HVAC GHP [vote]</b>	<input checked="" type="checkbox"/> <b>Res. Dual Fuel HVAC</b> <input type="checkbox"/> <b>Res. Dual-Fuel HVAC [vote]</b>	
Program Development	<input checked="" type="checkbox"/> <b>Comm. GHP Water Heating</b>	<input checked="" type="checkbox"/> <b>HP Windows</b>	
Market Development		<input type="checkbox"/> <b>VHE DOAS Program change</b>	<input checked="" type="checkbox"/> <b>Efficient RTUs</b> [Option to add dual-fuel]



Existing Portfolio Activities  
Potential Portfolio Options



*Portfolio Highlights*  
*Q4'2023 Recap*  
*2024 Program Goals*



## *Efficient Rooftop Units 2024 Goals*



Encourage manufacturers to develop and promote efficient RTUs for the light commercial market. (Engage with 4 manufacturers by Q4)



Create awareness of and support for efficient RTUs from market actors (manufacturers, manufacturer reps, distributors, contractors) and utilities across the U.S. and Canada. (Recruit 6 partners by Q2)



Work with alliance stakeholders to increase utility programs that reference NEEA's Efficient RTU Specification. (Commitments from 4 utilities by Q2)



## *Efficient Gas Water Heaters 2024 Goals*



Developing regional market acceleration strategy to demonstrate commitment to GHPWH technology. (Final Strategy by Q4)



Utilizing relationships with major manufacturers to drive for expedited review of the business case and initiation of commercialization. (2 major manufacturers initiate commercialization stage gate process)



Continuously scanning the market for additional technology options. (2 additional technology options identified)



# *High-Performance Windows 2024 Goals*



Evaluate NEEA's influence to-date via PAWS and the program on the market and ENERGY STAR® Residential Windows version 7 specification. (Market Influence Study complete by Q2)



Engage major manufacturers and/or window suppliers to acquire sales data and learn about their go-to market strategies for High-Performance Windows. (3 partners confirmed by Q2)



Continue the Volume Builder Project and complete an in-progress project with national, production builder. (Document lessons learned by Q4)



# Advanced Commercial Gas Water Heating 2024 Goals



Gas heat pump *Product Testing and Savings Validation* through lab and field testing. (Prioritize Robur, Vicot, and Thermolift GHP products)



Complete a Commercial buildings *Market Characterization* study that gathers data on current water heating systems in existing buildings and collects key influencer feedback on gas heat pump perceptions, value proposition, and barriers to adoption. (Kick-off in Q2; expected completion in early 2025)



Partner with the *North American Gas Heat Pump Collaborative* to align gas heat pump goals and activities to advance the technology and develop market outreach plans. (Offer an opportunity to expand on NEEA's Northwest Market Characterization, leverage lab and field-testing results).



# Agenda

*All times Pacific*

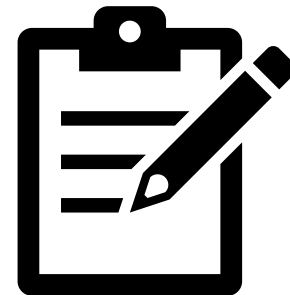
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A piece of brown paper with a string tied in a bow. The string is a light brown, twisted cord. It is tied in a bow that is centered on the right side of the paper. The bow has two loops, one pointing upwards and one pointing downwards. The string extends horizontally across the middle of the paper, and then vertically down the right side. The background is a solid, textured brown paper.

***Let's wrap it up!***

## *Action Items | Any Final Qs?*



### NGAC Member Action Items

1. xx

### NEEA Action Items

1. xx

## *Feedback*

*What was helpful? What could be improved?*

*Public Comment*

*Closing Remarks*

# » Until we meet again...

- *Q1 Interim Webinar: March 7, 1pm (TBD)*
- *Q2 NGAC: Wednesday, April 24 -- Hybrid @ NEEA's office (Portland)*

