

November 7, 2019

# *Residential Advisory Committee*

Q4 2019



# Agenda

| Time          | Topic  |
|---------------|--|
| 9:30 – 9:50   | Welcome and Introductions                    |
| 9:50 – 10:20  | Housekeeping                                 |
| 10:20 – 11:05 | Consumer Products: Residential Refrigerators |
| 11:05 – 11:15 | Break  |
| 11:15 – 12:00 | Coordinating Committee                       |
| 12:00 – 12:30 | Lunch  |
| 12:30 – 1:30  | Utility Roundtable                           |
| 1:30 – 1:40   | Break  |
| 1:40 – 1:55   | Digital Coupon                               |
| 1:55 – 2:40   | Ductless Heat Pumps                          |
| 2:40 – 2:45   | Opportunity for Public Comment               |
| 2 2:45 – 3:00 | WRAP UP/ADJOURN                              |



***Welcome!***

# *Housekeeping Residential Program Memos*



## *Housekeeping*

- Leadership in Energy Efficiency Awards  
December 4 at 5:30pm at Vestas Building
- Please RSVP page for the event this year:  
<https://neea.org/leadership-awards-rsvp>
- Link to the winners and nominees article posted on Conduit:  
<https://conduitnw.org/Pages/Article.aspx?rid=3640>

## *Housekeeping – Residential Program Memos*



November 7, 2019

# *Residential Refrigerators*

Nick Leritz, Jeff Mitchell, Eric  
Olson



## *Desired Outcomes*

- Shared understanding of the current state and activities related to refrigerators
- Understanding of and potential support for ENERGY STAR program opportunity



# *Agenda*

- Refrigerator Emerging Technology
- US Federal Test Procedure Gaps
- ENERGY STAR J.U.M.P. Program

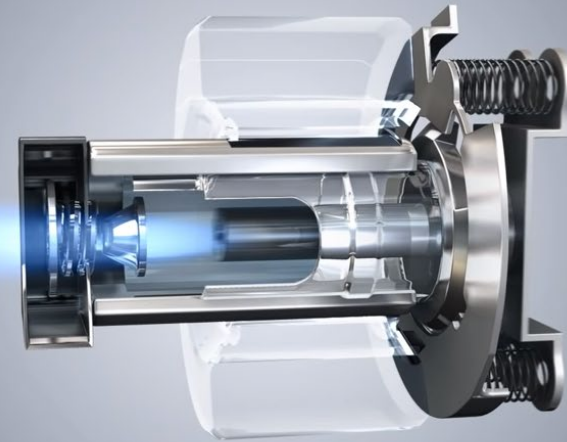
# *Refrigerator Emerging Technology*

# *Inverter Compressors*

## **LG** Inverter Linear Compressor

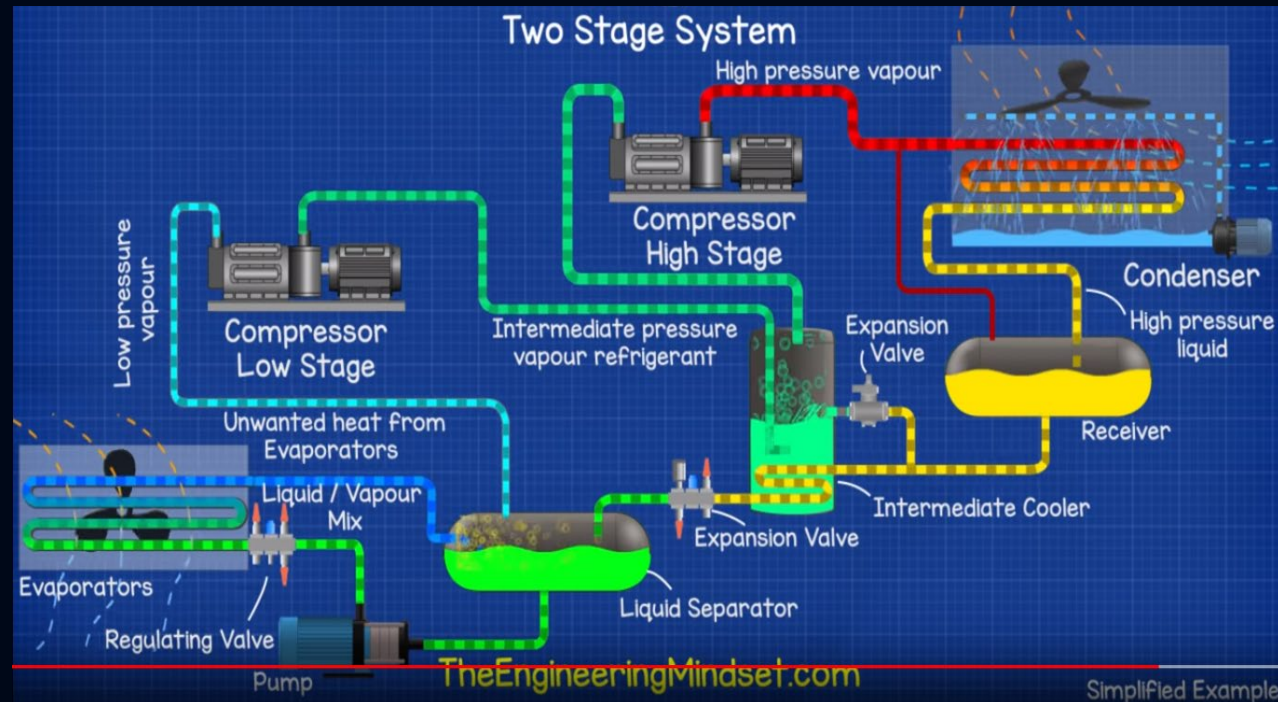


Inverter Linear  
Compressor



**1 Friction Point**  
Less Energy Consumption

# Systems Design Approach



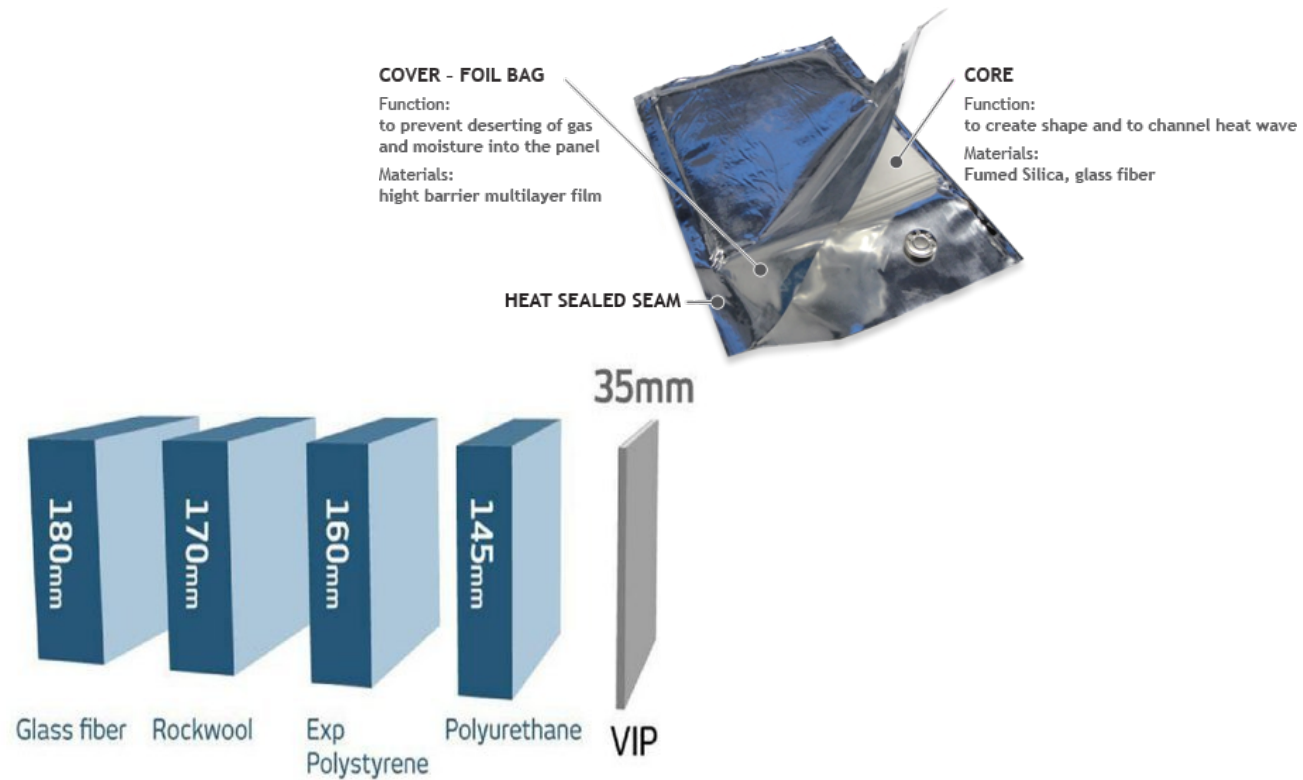
Simplified Example

# *Micro-channel Heat Exchangers*



[danfoss.com](http://danfoss.com)

# Vacuum Insulated Panels



1. <https://www.consumerreports.org/cro/news/2010/03/buzzword-vacuum-insulated-panel/index.htm>

# Questions/Comments?



# *Test Procedure Gaps*



## Updated Test Procedure is Needed

- Effectively has not been updated in 30 years
- Does not support emerging tech
- Other countries have updated theirs
- Manufacturers are asking for help!

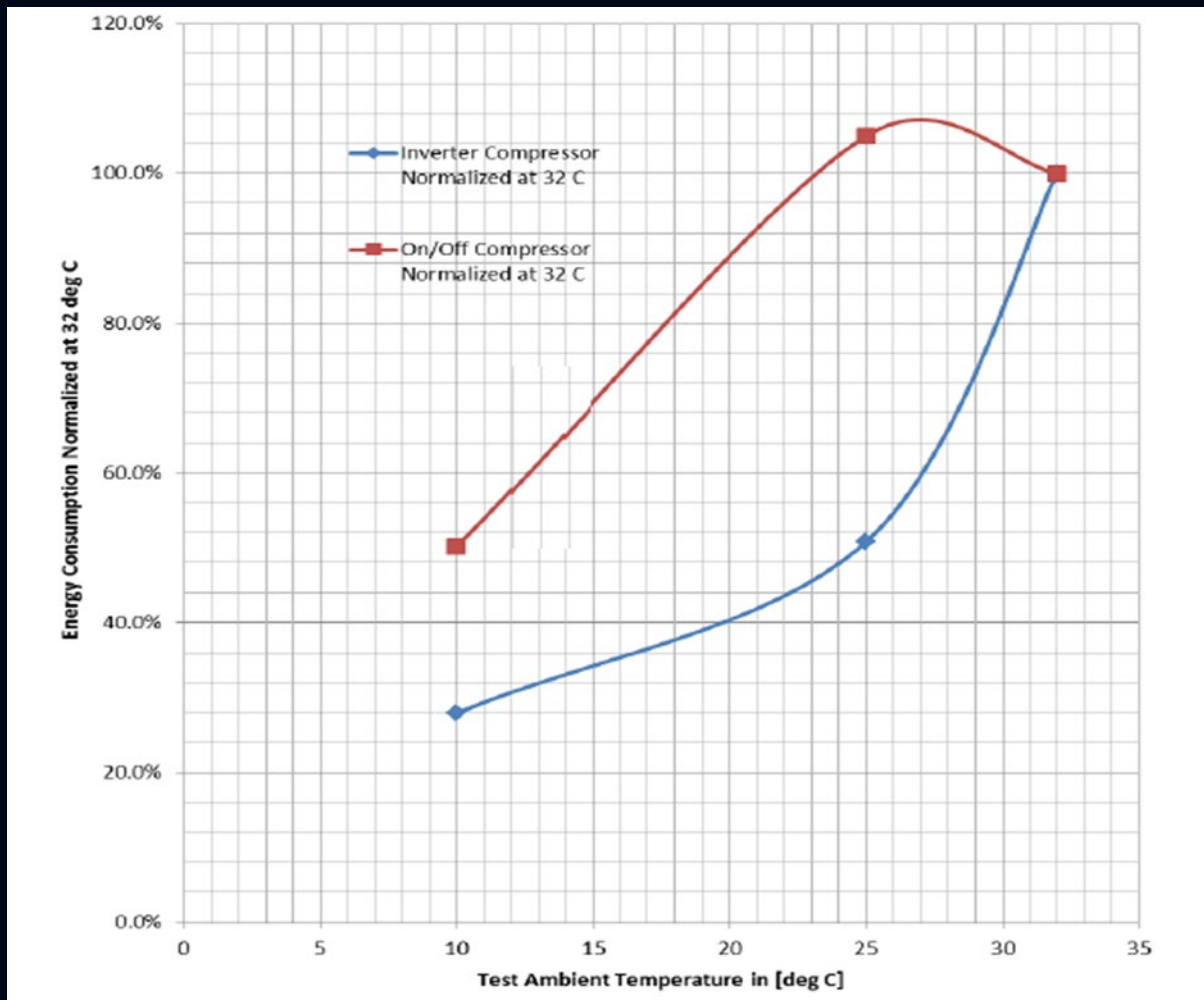
### Refrigerator Test Procedure Comparison

| Country/Region          | Test Standard     | Ambient Temperature |                    | Thermal Loads   | Door Opening   |
|-------------------------|-------------------|---------------------|--------------------|---|--|
| International           | IEC 62552-1-2014  | 32 °C (182.5 days)  | 16 °C (182.5 days) | FF: Thermal packages, 4.5 kg/ 100 L<br>FZ: Thermal packages, 3.5 kg/ 100L | None   |
| Japan                   | JIS C9801-2015    | 32 °C (205 days)    | 16 °C (160 days)   | FF: PET bottled water, 900 g/75L<br>FZ: 80 g/20 L, one load               | FF: Open once for loading [1 min]<br>FZ: Open once for loading [1 min] |
| Europe                  | EU IEC Adaptation | 32 °C (182.5 days)  | 16 °C (182.5 days) | FF: Thermal packages, 4.5 kg/ 100 L<br>FZ: Thermal packages, 3.5 kg/ 100L | None   |
| Australia & New Zealand | AS/NZS 4474-2018  | 32 °C (117 days)    | 16 °C (248 days)   | None  | None   |
| China                   | GB/T8059-2016     | 32 °C (182.5 days)  | 16 °C (182.5 days) | FF: Thermal packages, 4.5 kg/ 100 L<br>FZ: Thermal packages, 3.5 kg/ 100L | None   |
| USA                     | AHAM-2016/2019    | 32 °C               |                    | None  | None   |

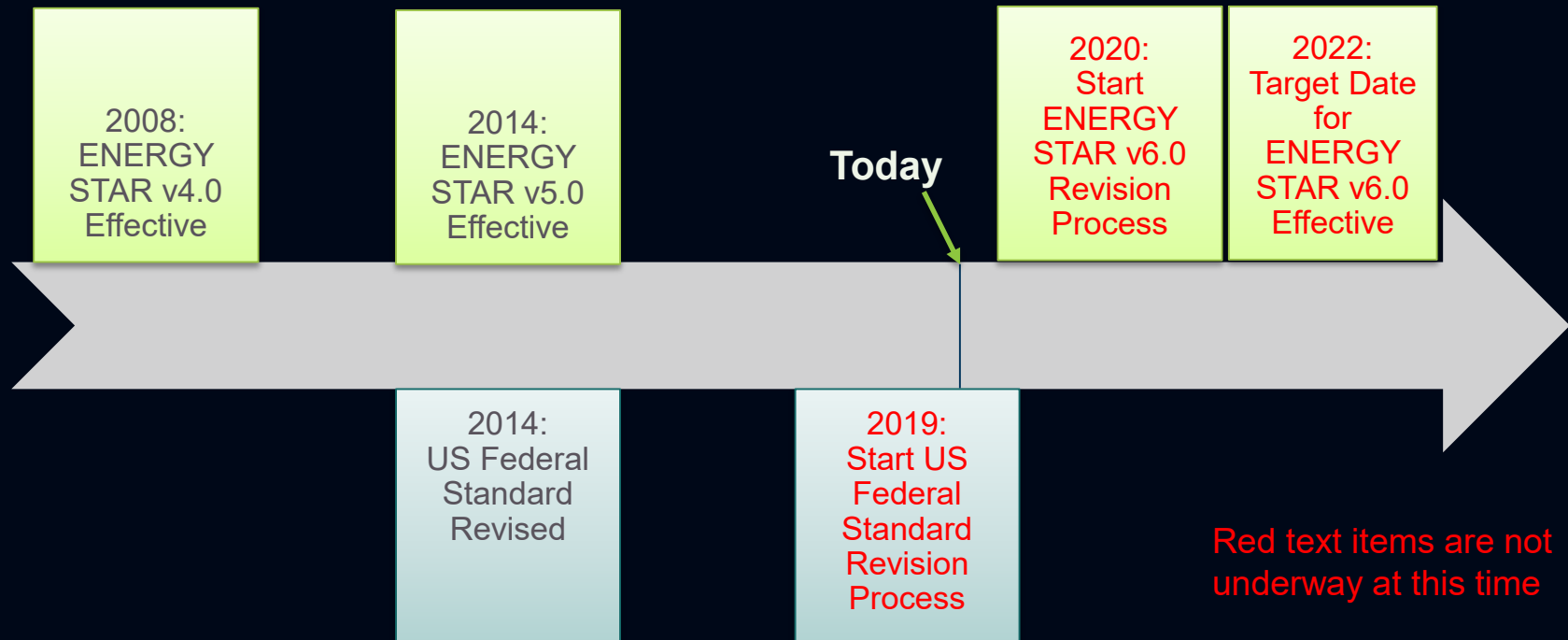
# Example Data of Unrealized Savings

## Energy Consumption of On/Off and Inverter Compressor

### Experimental Results



# Fridge Efficiency Policy is Stagnant



- Best case scenario is to have a revised test procedure prior to specs and standards revisions
- Critical to be involved in ENERGY STAR v6.0 revision and US Federal Standard revision when they occur

## Questions/Comments?



# ***ENERGY STAR JUMP Program***

# *Joint Utility Manufacturer Procurement “JUMP”*

- Early stage pilot program
- Facilitated by EPA staff
- “Next-generation”, uses up-to 40% less energy
- Target market - 200% of poverty level (~50K)
- Shooting for product in market by Fall 2020

# Market Context\*

| Efficient Product Availability |                       |                   |                        |
|--------------------------------|-----------------------|-------------------|------------------------|
| Width (inches)                 | Non-E* Models < \$600 | E* Models < \$600 | Avg Price Differential |
| 24                             | 3                     | 2                 | \$153                  |
| 28                             | 8                     | 0                 | NA                     |

\*Snapshot of availability from a single national retailer

# Opportunity

## EPA

- Needs a guaranteed annual procurement to attract manufacturers

## NW Utilities

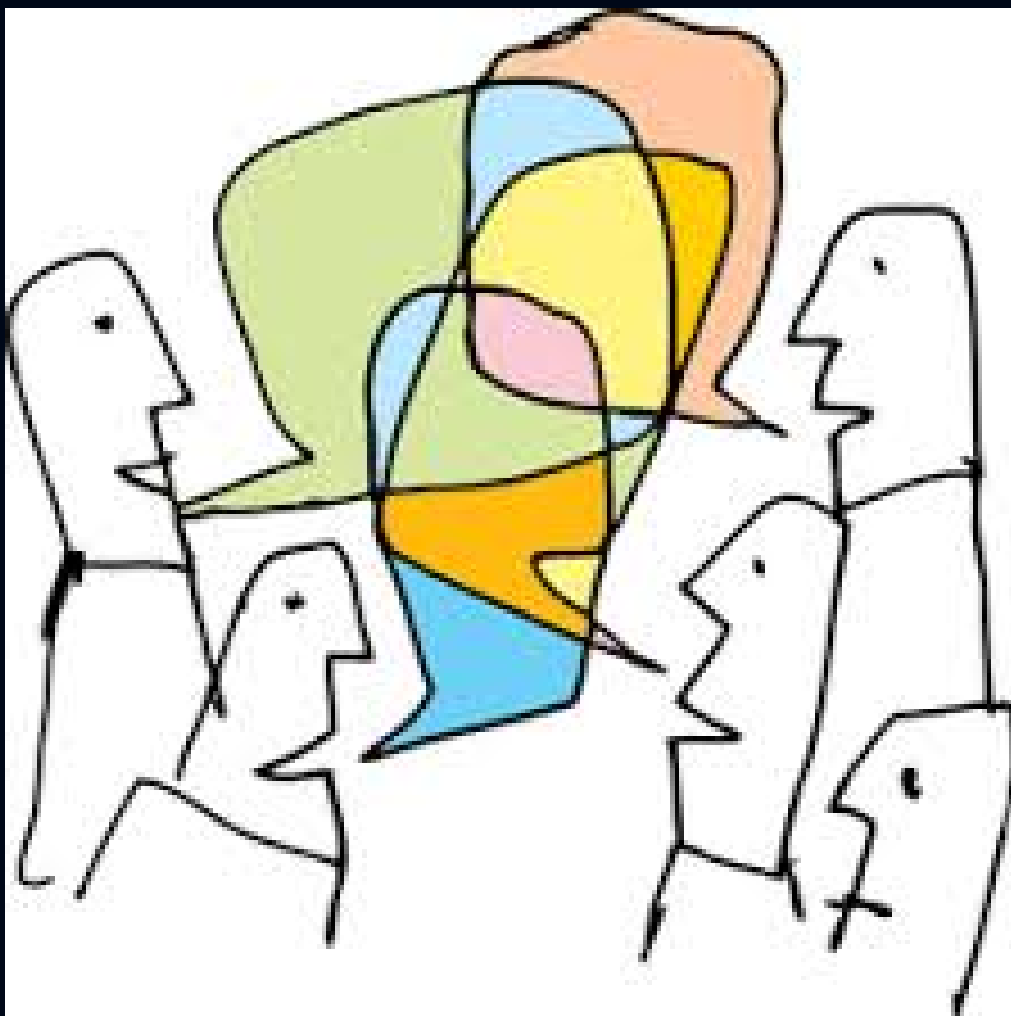
- Local low income, direct install, multifamily programs could supply low cost refrigerator @ up to 40% better efficiency than DOE
- May allow for new refrigerator incentives

## NEEA

- Could leverage NW support to require additional lab test points for qualifying models.



# Discussion





*Thank you!*

*TOGETHER We Are Transforming the Northwest*



***Break***  
***Return at***  
***11:15 a.m.***

November 7, 2019

# *Coordinating Committees Check-In*

Eugene Rosolie  
Stakeholder Relations Manager



# *Agenda*

AC Streamlining Update

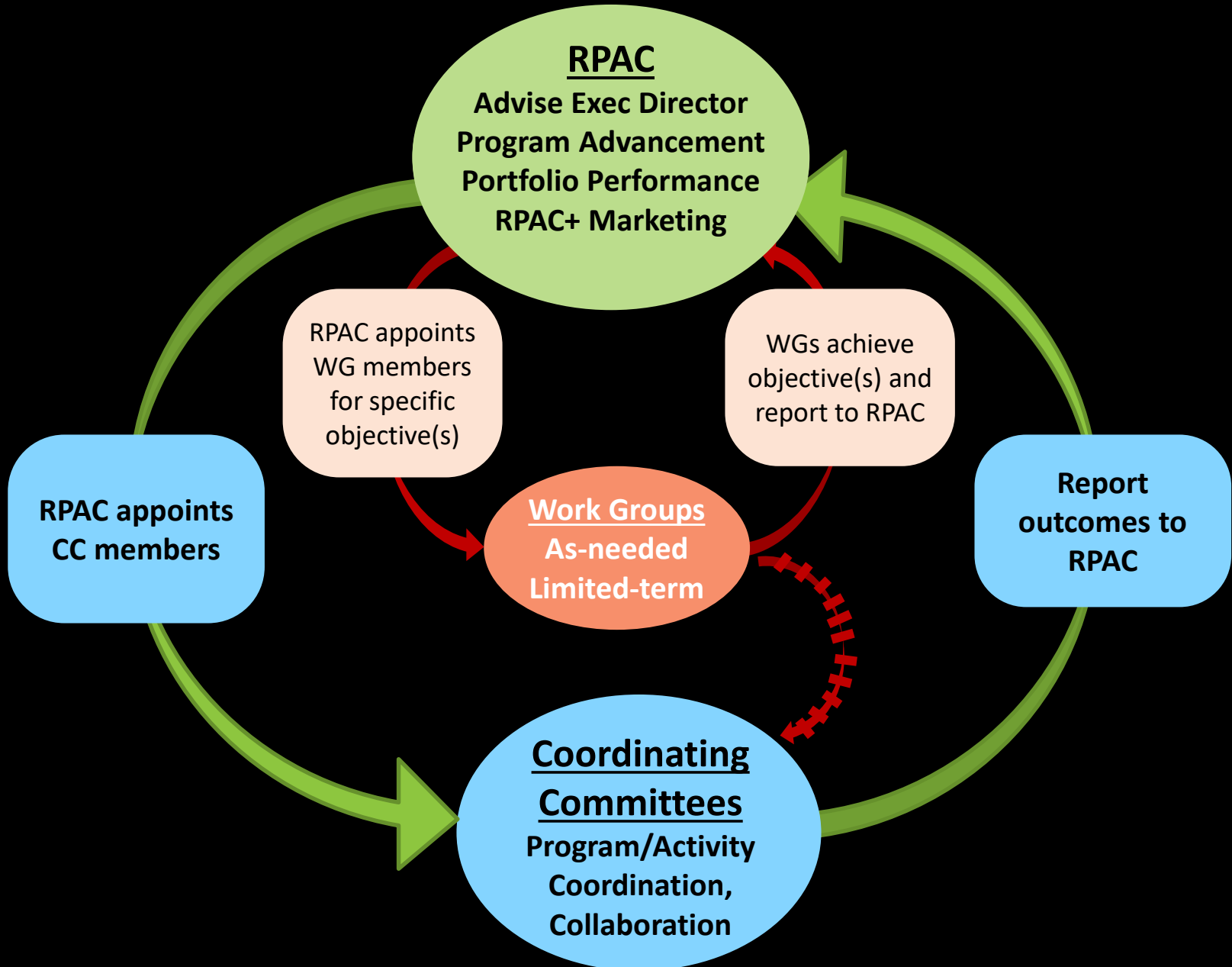
Next Steps

Feedback/ideas on best tools & practices  
to help NEEA design most successful  
Coordinating Committees (CCs)

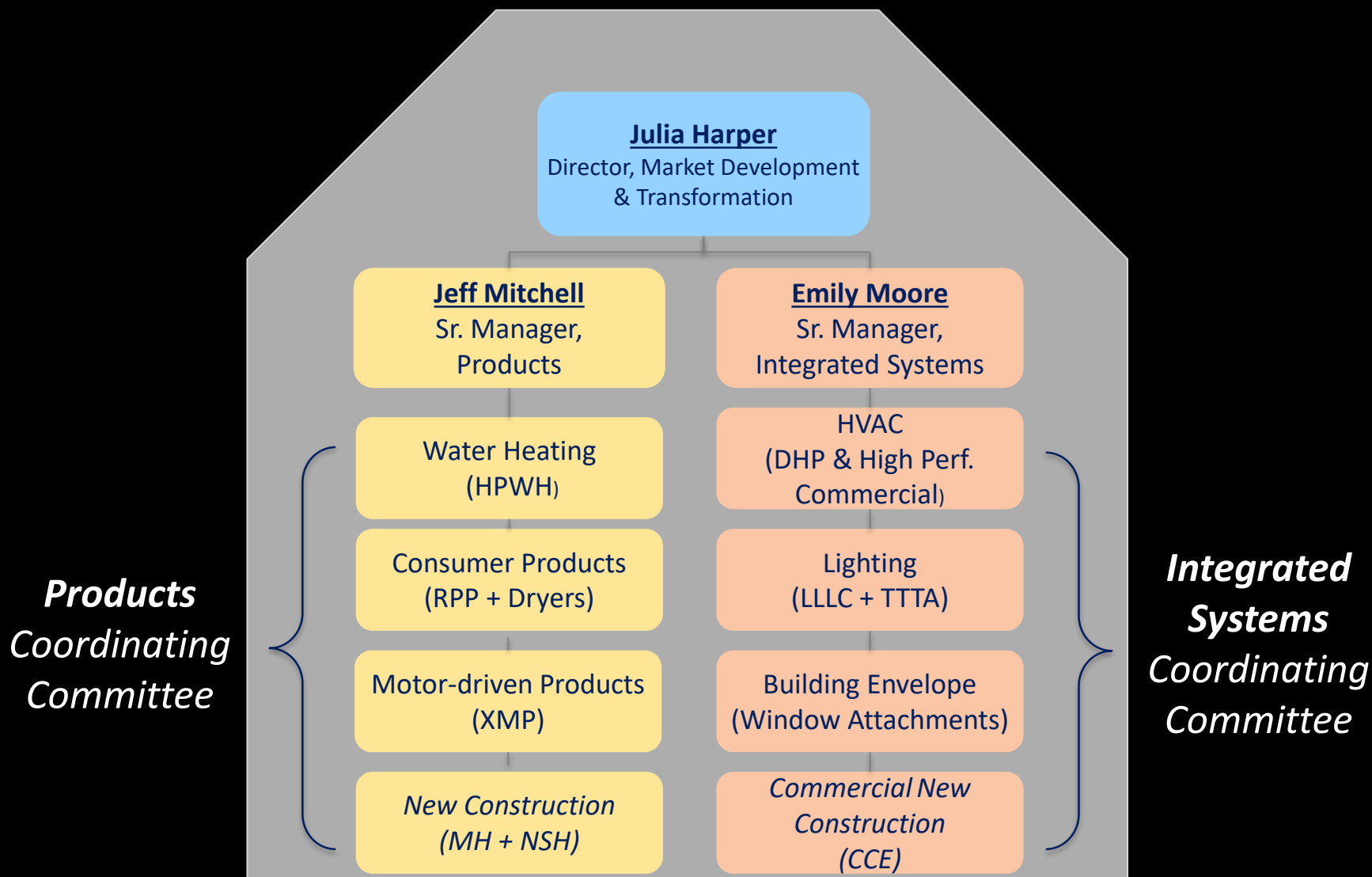


# *Streamlining Update*

# Structure As Proposed



# Two Coordinating Committees





# ***Roles & Responsibilities***



Coordination &  
optimization of  
NEEA programs  
and activities

# Roles & Responsibilities



Identify manage  
potential  
challenges  
between regional  
and local

# Roles & Responsibilities



Identify & seize  
leveraging  
opportunities to  
amplify market  
influence

# ***Next Steps***

## Next Steps



NEEA staff is on task  
to design the  
operational details of  
CCs

## Next Steps



RAC, CAC, IAC and  
WGs will sunset this  
year

## Next Steps



NEEA launching new  
CC structure in  
January 2020



## Next Steps



WGs will have  
limited terms and  
specific purpose  
approved by RPAC

## *Design of Operational Details of CCs*

Adhere to RPAC's intent and guiding principles, as well as addressing Alliance members' concerns, wherever possible

## *Design of Operational Details of CCs*

Adhere to RPAC's intent and guiding principles, as well as addressing Alliance members' concerns, wherever possible

Design meetings to be more efficient, productive and engaging by utilizing the most effective engagement practices and communication channels

# *Questions for You*

# *Questions for You*

## *Exercise*

- Take 3 minutes to write 2-3 answers on the question
- Prioritize your answers
- Come back, go around table and share
- Repeat for Question 2

## Question #1



What have you found most valuable about committee meetings?  
What has been least valuable?

## Question #2



What communication channels have been the most helpful/effective? What has been least helpful/effective?



## Question #3



What did we miss?  
Anything else you  
want to add?

# ***Discussion/Review***

# Lunch is being served



corn salad



guacamole



pico de gallo



tortillas



steak



shrimp



chicken



red cabbage



lettuce



cilantro & onion



sponge cake  
chocolate ganache frosting  
cherry frosting/filling  
crystallized flower petals

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# *Round Robin Share-out*



***Break***

***Please be back by 2:10***

November 07, 2019



# *Digital Coupon Update*

Jon Clark  
RAC Q4 2019 Meeting



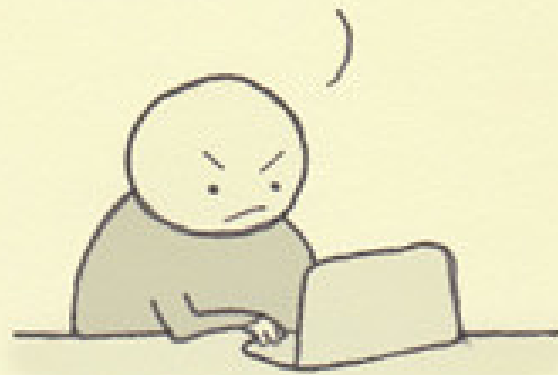
# AN UPDATE IS AVAILABLE FOR Digital Coupons

COOL, MORE  
FREE STUFF!



some

NOT AGAIN!



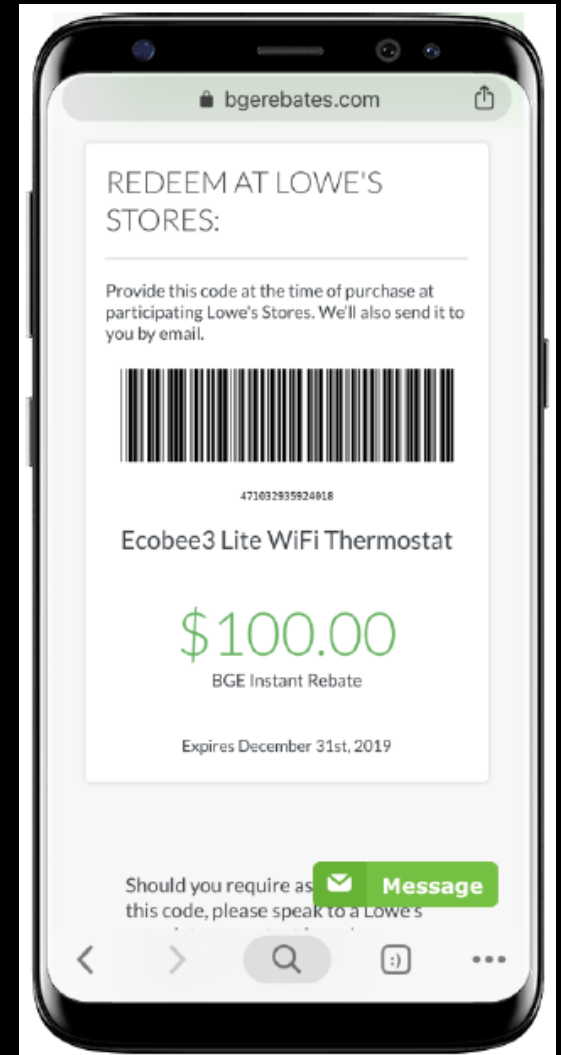
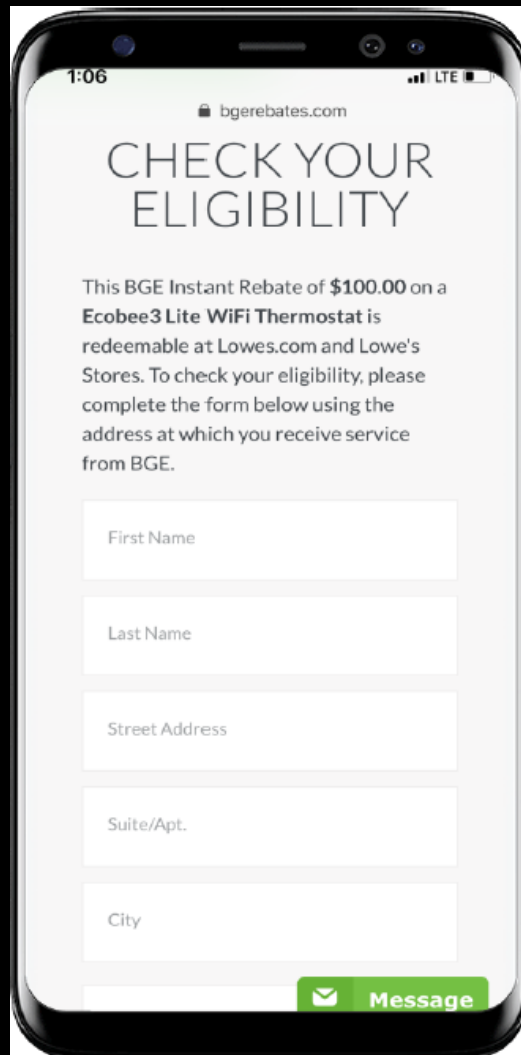
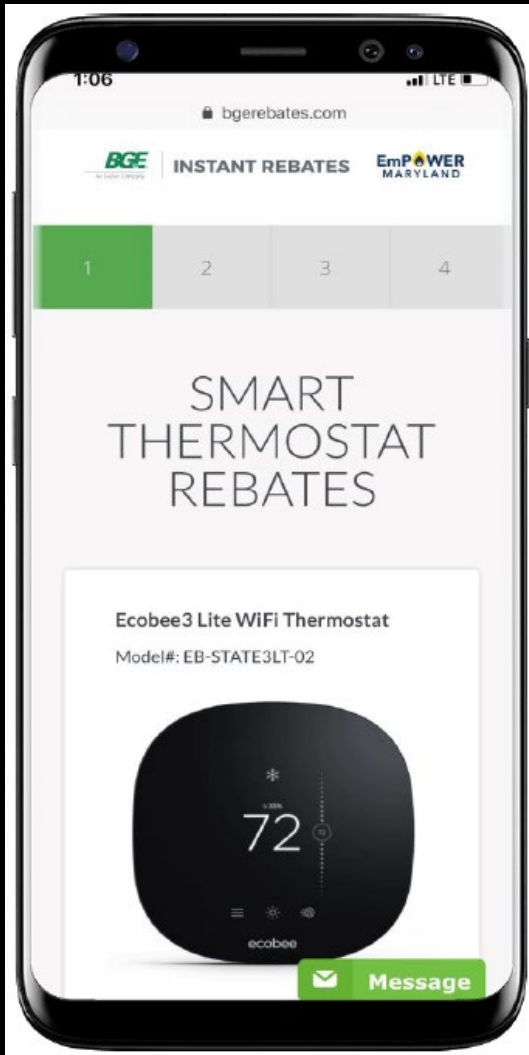
others

OOH, ONLY  
\$99!



package deal

# Mail-in goes Digital



Product Selection



Customer Eligibility



Validation



Redemption



# Data Collected



**Customer Info  
(who)**



**Digital Coupon  
(where)**



**Product Info  
(what)**

The issued digital coupon links customer and product information

# Update

- NEEA starting validation database design
- Launch Q1 2020
- 6-8 weeks to-market post contract execution
- BPA will make it easy
- Package deal



# Package Requirements and Pricing

- **Same**
  - **Contract**
  - **Retailers and Products**
  - **Incentive range**
  
- **Unique**
  - **Customer interface**
  - **Utility branding**
  - **Instore POP**



| # of Utilities | One-time Setup<br>Per Utility | On-going Annual<br>License Per Utility | Total First Year<br>Per Utility |
|----------------|-------------------------------|--|---------------------------------|
| 1              | \$ 4,350.00                   | \$ 13,000.00                           | \$ 17,350.00                    |
| 20             | \$ 3,436.50                   | \$ 10,920.00                           | \$ 14,356.50                    |

Pricing includes 2 retailers and 1 product category

## Next Steps

- **Build regional validation database**
- **Support participating utilities as needed**
- **Work with BPA on package**
- **Retail Rebate Stacking**
- **Available for 1:1 as requested**



*End*

November 7, 2019

# *Ductless Heat Pumps*

Suzi Asmus  
Program Manager



# Operations Plan Feedback

**MORE CLARITY  
NEEDED ON 2020:**

- Cold Climate Adoption
- Utility Cost Effectiveness Challenges
- New Residential HVAC





**HEAT PUMPS IN COLD CLIMATES?  
YOU BET!**

Presented By:  
**NW DUCTLESS HEAT PUMP PROJECT**

Hosted By:  
 **Thermal  
SUPPLY INC.**

Sponsored By:  
 **DAIKIN**



## *2020 Cold Climate Adoption*

- Trainings
- Research
- Recommendations
- Support





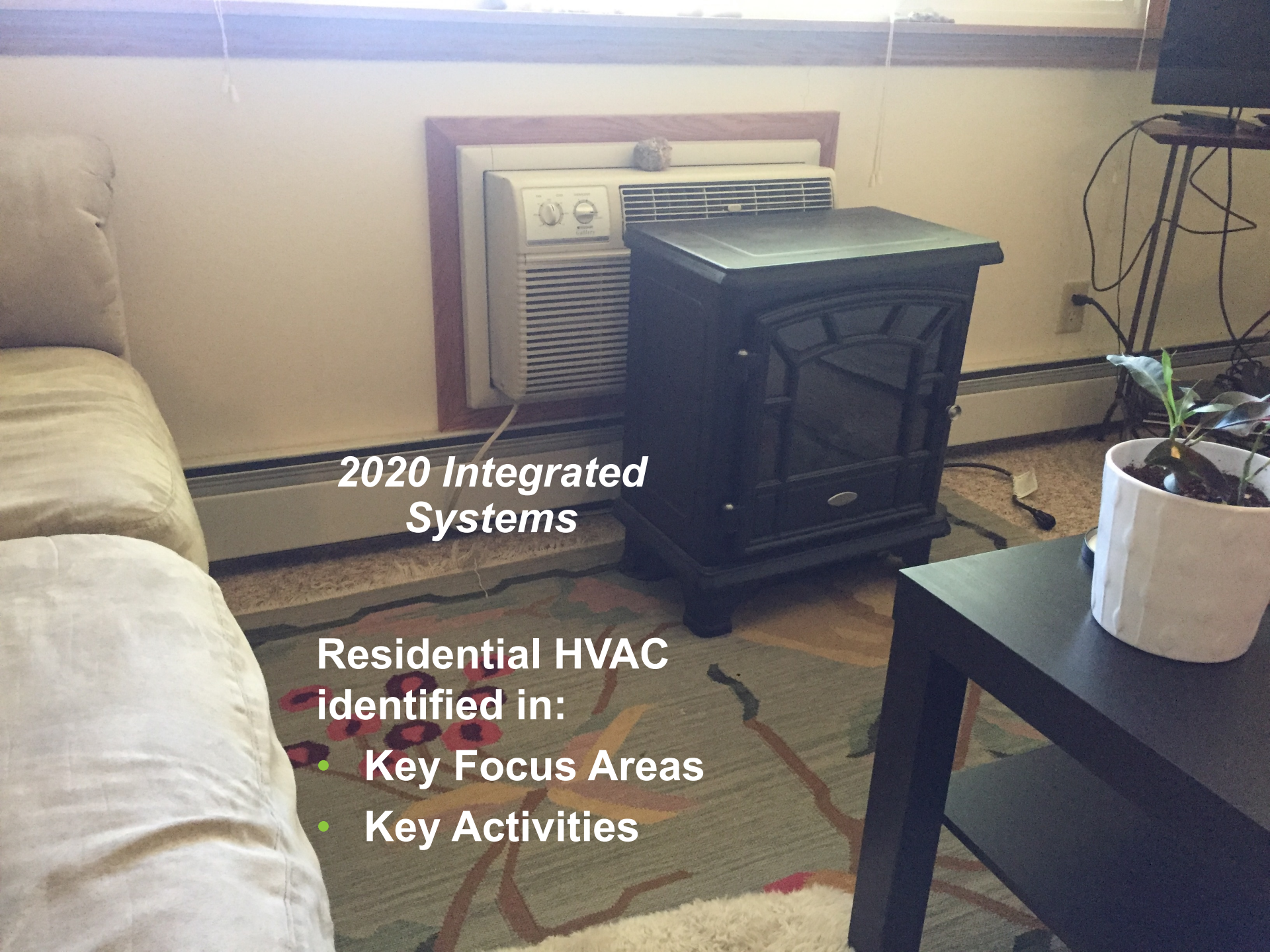
# *Regional Technical Forum Measure Changes*

**2020**

## ***Cost Effectiveness***

- **Convene**
- **Lab studies**
- **RTF engagement**
- **Screened measure development**





*2020 Integrated  
Systems*

**Residential HVAC  
identified in:**

- **Key Focus Areas**
- **Key Activities**

# 2020 *Emerging Technologies*

## **Residential HVAC identified in:**

- **Key Focus Areas**
- **Key Activities**
- **Scanning Portfolio**



*Questions and  
Feedback*

Welcome to  
Damariscotta

**DON'T GET A DIVORCE  
GET A  
MINI SPLIT**

# Thank you!

Suzi Asmus

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November 7, 2019



# *Public Comment & Wrap-up*

Eugene Rosolie

