

RETAC - 4/25/18

Wednesday, April 25, 2018

10:41 AM

INTRODUCTIONS: In depth ice breaker for individual introductions and gaining greater familiarity with folks' experience and current roles

In the room: Mike Bailey, Kevin Smit, Suzanne Frew, John Jennings, Kathy Yi, Susan Hermenet, Veronica Marzilli, Mark Rehley, Jennifer McMaster, Dave Kresta, Todd Blackman, Jonathan Belais, Amanda Showers (missed a few people in the introductions)

On phone: Andrew Rector, Dave Nightingale, Jim White, Rem Husted

RETAC 2.0 Database Update - page 3 in the packet

- The first table is new/updated products in the database
- Second table is updates to projects
- The next memo talks about savings potential - the council has done a lot of work to update the aMW savings estimates

Give everyone 5 minutes to scan these two memos and be ready to ask a question/make an observation with regards to what you think is important, etc.

ROUND ROBIN:

XX: looking at switch remote motors, confused on classification - would like to widen to super premium efficient motors; copper router motors are almost a no brainer

Mike Bailey: looking at the bar charts and how much we're currently rating as 5 or 6 - are they still emerging tech? Are they measures? How do we dig deeper into this?

- We actually have something we'll go over in the afternoon with products and readiness levels - it would be a good exercise to go through and determine if they're really 5s or 6s, and if they are, are they ready to graduate?

 **AGENDA ITEM:** Are the currently rated 5/6 still emerging tech? Are they measures?

Suzanne Frew: with LED streetlights, etc., for us, this is pretty mainstream and in most people's programs (page 3); when is it out of our court and onto the program people?

- To clarify: there is a next gen LED streetlights...there seems like one that could potentially stay in but be re-described

Dave Kresta: it would be useful to keep things consistent; for new/next gen, we may want to consider adding a new entry so that there's a historical view and they can be linked together in the database

- Took one category and pulled it into three
- There are big questions - what's ET about it and are we doing things in these areas

Suzanne: how does that roll into the potential values that may have changed? p. 10

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- One is a graduate when we have visibility of how it's doing in the market

Kevin: on potential estimates, we can probably fine tune these more when the plan numbers are larger buckets - some of these are pretty large; also - the blinders are on for competitors, so technical potential is for a product if it was the only one in that category available

We did create a list of things we want to do - can we come up with a mechanism for estimating these potentials?; provides a little more information if every home in the region applied this

Jim White: just in general, there needs to be a third category of NEEA involvement in terms of whether we've looked at it, evaluated, and discounted it or where we are in that process, so that we have a way of evaluating these, so there's an off-ramp/onramp with NEEA - the categories don't address what role NEEA plays in each of these technologies; there is some tech as far as remote monitoring and controls street lighting

Mike: when we first developed this, we wanted to include things that NEEA had scanned but rejected for various reasons because it didn't follow the market transformation model, so others could pick it up; is there a follow-up non market transformation role for NEEA here? If we're starting to talk about funding or coordinating research, it might help to have NEEA facilitate that

Jim White: for instant thermal paint - not cost effective, we've looked at that; this committee needs to vet these and throw them out to winnow down the list if we can

Todd: if you don't ever rate it high in one of the readiness category, then it's never ready - this is how we chose to handle these at the moment

Jim White: another one would be the ultrasonic dryer - we should take a look more at this but not thermal paint

ACTION ITEM: Add a column that says disposition as a "next steps" category- add to Steering Committee Agenda item

ANNOUNCEMENT: on page 6 there's an update on the Sanden project; we're still recruiting for sites - so anyone who has access to good sites for collecting data, we'd like to have a few more houses in the mix; the challenge in Washington is that the product is in UL listed - looking for place for CO2 space and water heating system - particularly for forced air electric furnace; retrofit is good

John: like the ones that describe the next steps - this is in line with what the group described; smart to keep things on even if it's been proven a dud

Mike: started inputting evaluation results in there; trying to distinguish between bad tech now or forever & our cost effectiveness valuation; one challenge is with smart therms - if someone else wants to test a new version of lyric, please do

Dave: there are research questions at both product and project level and we can label either as disproven

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Kathy Yi: was interested in thermal paint - very interested in cooling savings even though it's likely not cost effective; interested in smart clothes to some extent as well, though likely not viable

Mark: did ping a few people we knew about thermal paint - it's about radiation and heat transfer

XX: so we shouldn't have to test it to say "no," it won't work - let's kick it off

Mark: if you find something in there that nobody's really attached themselves to, by definition it's a "no"

Kathy Yi - can we add some sort of voting button to show interest/skepticism in an area?

Dave - we don't have this functionality right now, but we're relying on these interactions or entering in a wish list project

Jennifer: found it motivating to get involved in providing updates; because I'm not aware of what's in the database, it felt like things were missing, so I need more familiarity

XX: want to know more about the air compressor and leak sealing systems

Mark: have basic information about the air compressor; unsolicited proposal different than the normal oil additive, this one was about sealing against the refrigerant leaks - it is worth asking if there's new information

Nick: very recently added - some dryer work - looking at advanced auto-termination technology - could be a stairstep on base energy star; work done at UC Davis - having 3rd parties evaluate and it turned out to not really be an alternative - it's probably not going anywhere - points to need to push ultrasonic

Rem - it is electric forced air furnace and electric water heating restrictions for Sanden and home needed to have a load under 35k BTUs/hour

EMERGING TECH Map on NEEA.org - the idea here is to put in zip codes for things in the field of ET so when projects are entered, they auto fill the map and get visibility - you'll be asked to supply zip code for new projects - not asking for addresses or GPS coordinates; will display on ACTIVE projects

INTRODUCTION TO Discussion of Priorities for Regional Leadership Rd. 2

- Review from Q1
 - Northwest Energy Efficiency Leadership group - they want to know how they can support the ET pipeline
 - Q1 conversation around the barriers and needs as a group
 - In your packets on page 12

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- Suzanne - what's on the table is whether NEEA belongs in the demand space or not? And there are different opinions on this?
 - Jeff - the paint is still wet on the strategic planning - they came down (not officially), NEEA should be able to build out flexible demand on EE products and services - what we're not going to be doing is anything that looks like a demand response program - needs to be efficient and flexible; the NEEL group is painfully aware that in the near-term, we're long on energy and short on capacity - have higher interest in things that increase flexibility on customer side of the meter; if you wait until you need that thing, it's too late - if we can add flexibility and demand into our work, then we've added lots of value into the system
 - NEEL wants to know what is the need from them to support this
 - They have decision making power but not about the details
 - How can we characterize what the opportunity is for the NEEL group - similar thing happened with End Use Load Research (EULR)
 - What are the next steps to move this forward?
 - It's important to recognize that NEEL is not guidance for NEEA, it's guidance for the region
 - It's a leadership forum - and it's the one time a year that this level sits down together and talks about EE and DR - it's not a council action plan
 - It's more about what are they supportive of and what will they go to their organizations with and promote
- Todd - capacity could get worse with electrification of the grid - could be a problem OR a solution if we get out in front of it;
 - If it's on the customer side of the meter, it's fair game - not about grid size
 - Could be electrification of vehicles - some are clearly thinking about that
- Mike - did the feedback from last quarter get communicated?
 - That was an input to this meeting and then Jeff will take to NEEL
- A chunk of the EE/DR potential is in the emerging tech space
 - They want to know what the problem statement is and what opportunities would we miss if they didn't help push it forward?
 - Need to provide examples where previous investments in emerging tech yielded positive results
 - Maybe HPWH/DHP
 - What are the next things that NEEL group could look at as maybe a total potential - avoiding a "gas turbine or 400kV line", etc.
- Kevin - while it's true that we're energy long and capacity short - but in 2021, there will be a huge hole - if we keep building EE, we'll keep building that gap before it gets here - this is where ET comes in; we really need to get next big (and little) things to fill the hole before it gets to be a hole

AFTER LUNCH - we will discuss some larger opportunities - want to know how we're doing on these

Lighting - includes ALL lighting

- Nick: are smart plug power strips and advanced power strips diff? They are for different sectors/measures

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- Focuses are different - entertainment vs. all office equipment
- John: what about DOAS systems? This is under variable refrigerant flow - it's a combo measure (maybe we could rename this)
- Mark: is the commercial application for power strips really that much lower than the res? It's based on the multiplier; and is res really that high?
- **ACTION ITEM:** Kevin to look into assumptions for power strips

Straw poll for the amount of progress:

- Mike: worried about giving NEEL a list of technologies
- Jeff: what they'll need to know to make the commitment, is the size of the opportunity - it's not about any one thing - it's about order of magnitude for what's still needed as far as support goes
- Mike: it might be better to say - lighting is happening and we don't have a replacement in the pipeline - worried about the story
- Jack: when you say more effort - are you saying marketing too?
 - Marketing may be more on the program side - this group is more on the product readiness
- Todd: what does flexible mean to you in this context?
- Jeff: immediately controllable - example: controllable hpwh - flexible on demand side; the distinction is less important to the NEEL group
- Mark: the question might be - what does NEEL know going into it? Do they understand the landscape of time and the coasting on lighting right now?
- John: they know enough to know that there's no "next big thing"
- Jennifer: and their perspective is much broader energy savings
- Jeff: I think that these guys get the uncertainty of the future, but may not understand the lighting, but they do have a sense of the tech wave happening for customers
- Jennifer: trying to get at where is energy used and what we have a hope of affecting - and then maybe the list of tech goes into the blue and the red
 - Interest in looking at the numbers that could be controllable
- Jeff: some of our work is about converting tech potential to achievable
- Suzanne: what are we asking them to do? What's the gap; what's not getting us there?

- MIKE: need staff capacity/resources to work on emerging technology and look 3-5 years out - includes engagement from program staff time who are currently overwhelmed with short-term delivery obligations; dedicated people to find potential & knowing a lot of stuff in short-term won't be cost effective
- SUZANNE: agree, it is the staff - only one working on ET & it's the 5th priority;

JONATHAN's SLIDE SCRIBING - See Slide Deck

Who is the right group to design the memo/proposal?

- We need everything to feel comfortable that this represents
- **ACTION ITEM:** NEEA Staff (Jonathan or Jeff) to create strawman outline; Steering committee to take a swing at designing the proposal based on this for NEEL (2-3 pages max); At next steering committee - flesh out an outline for steering committee

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- Kathy - add "increased risk tolerance" - to tell them to work with stakeholders/regulatory advisors group to have more receptivity to take risks
- **ACTION ITEM:** Suzanne to join this group - makes sure all utility perspectives are represented

ACTION ITEM: NEEA to go to RETAC steering committee - someone take the lead on creating the outline, creating regional business case argument and the ask - submit to all RETAC for comment
Would be useful to take notes that we're taking here - does it capture the things to consider?

ACTION ITEM: Jonathan to share raw notes with whole RETAC group

WISH LIST PROJECTS REVIEW

- We want to encourage everyone to add projects as wish lists
- Downlight LED Porchlight - this has been here for a while
 - Looked up tech potential and it's 200 aMW
 - California is already updating this standard - there aren't a lot out there that meet all of the requirements
 - "any light not shining where it's intended is wasted light/energy"
 - No light that has all 3 features
 - What do you mean by step dimming?
 - Motion sensing - photocell motion sensing and be LED full cutoff
 - 50% or more reduction in power use
 - ET has measure for exterior lighting with motion center - but this is the floods
 - We're talking about the "jelly jar" light
 - Haven't found a product but offering big incentive (100%)
- RTF Research Strategies - both connected thermostat related - sunset is next November
 - This is to move from planning to proven to meet the requirement
 - 2 versions of the measure - 1 is put in place, set and verify and let it go
 - 2nd you check on it every year/6 months - 2 different savings values
 - Getting someone to fund research to do that
 - These are residential
 - Energy Trust - did research and only giving incentives for Nest and Ecobee
 - Public reports on website - lyric wants us to retest theirs
 - Doing another pilot for Whisker Labs
 - Right now energy star spec doesn't guarantee results
 - Jim: like Ecobee for commercial - give good data and second data for auxiliary heat - looking to have DR and maybe floating the heating in morning - looking to fund 100% for this application
 - The Ecobee is more open on the data
 - It's up to utilities to do the research, but the RTF isn't really pushing it - but that's the way that an RTF measure will get created
 - How much savings come from measures that never get proven?
- RTF Research - ALSO Commercial application
 - **ACTION ITEM:** RETAC Members NEXT STEP - as you think about products - take a look at wish list products
 - Be brief and specific

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2018 Projects

It's not just NEEA's Products/Projects

- Came up as part of steering team meeting - quarterly we're making changes - once a year we should look at everything that's active
- Themes/gaps/unexpected/etc.
- There are quite a few whose end dates were 2017/2016 - need to be updated
- SEE SLIDE for QUESTIONS to consider
 - Next steps is sorely missing

Jennifer - a few things I wonder; work on refrigeration and refrigerants

- Turbo core compressors - magnetic bearing compressors for large chillers
- Not sure of quantity of applications
- In projects - a lot of people are putting doors on display cases in grocery; Energy Trust may be getting out of this now - no longer ET for them
 - Energy Trust didn't put all of existing stuff in database
- On refrigerants - the general consensus - for regulations that will require people to change, it's not looking that feasible that there will be drop-in replacements - where's the opportunity here?
 - ETO hasn't been able to isolate the energy savings of the refrigerant alone
 - Also excited about high-efficiency pumping systems - any place where fluid is pumped - variable speed
 - This is an application of the XMP
- A lot of need for PTACs for multifamily
 - The inverter driven is the only one right now
 - Quite a lot cheaper than DHPs
 - No defrost capabilities - severely limits in our region
 - ETO also looking at some other heat pumps that can solve this problem - maybe doing a pilot
 - Christopher Dymond has been pulling a lot of this for us
- One common problem is the need to deice/snow roofs
 - Doing a test of a control system, because you don't want to melt it around 20/30 because it just refreezes - it needs to be finessed

CO2 HPWH - this caught my eye - I've used them in office buildings

- For \$4000, not many people will fit in home, but good for commercial applications
- For domestic hot water

Rem: on residential heat pump in existing homes - is this DHP or standard energy star?

- Tied to manufactured homes it looks like
- It may be a little niche thing about heat pump commissioning oversight through department of labor, etc. to improve performance of manufactured homes

What's the difference between combo water and space heat or combo space and water heat?

- This was a mistake - this includes gas too: combi is gas/combo is electric

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Todd - one of the reasons we wanted to do this is to remind people of where we do and where we don't have projects

- Opportunity to look at holes, etc.
- There are better ways to display data - but we'll get there

▲ **AGENDA ITEM:** Presentation on CO2 HPWH - could be really big

Aside from SEM, we don't have a lot of processes/practice/systems here

- How do we include these?
- What is the unit of adoption?
- We would love to tap into custom projects around the region - eventually
- We're trying to do the 80/20 rule - where are people actively researching
- There's the huge opportunity with the custom projects and measures that aren't there that could be
- Not a lot of industrial here either - more electrification on the horizon
- **ACTION ITEM:** Smaller compressor refrigerator applications - Nick to input into database

CHARTER REVISION

Avoiding putting references to specific documents for longevity

- Under responsibilities - coordinating with RPAC - is this happening?
 - If there are things in here we want to float to RPAC - maybe the things with 5s and 6s
 - We do have work to do here
- Pipeline goals - not NEEA specifically - regional
 - We're not sure about what the metrics will tell us and how to measure just yet
- LOOKS GOOD - next steps - take back to Director team and governance committee for approval

NEXT MEETING - Monday, July 16

Feedback on this meeting:

- Shoutout to Rem - introductions for who we all are - good to hear
- HAPPY HOUR