

**Summary Notes  
Industrial Advisory Committee (IAC)  
Wednesday, July 25, 2018**



**Attendees:**

In Person:

Randy Thorn – Idaho Power  
Kevin Smit – NW Power & Conservation Council (NWPPCC)

Phone:

Zeecha Van Hoose – Clark Co. PUD  
Jim White – Chelan PUD  
Natasha Houldson – Tacoma Power  
Jim Conlan – Snohomish Co. PUD  
Chao Chen – Puget Sound Energy (PSE)  
Deb Martin Young – Northwestern Energy  
Nancy Goddard – PacifiCorp

**NEEA Staff:** Eugene Rosolie, Emily Moore, Mark Rehley, Warren Fish, Geoff Wickes, Rachel Zakrasek, Alisyn Maggiora

**Resources:**

Packet link on Conduit: <https://conduitnw.org/Pages/File.aspx?rid=4544>  
Slides link on Conduit: <https://conduitnw.org/Pages/File.aspx?rid=4557>

**Welcome, Introductions and Housekeeping Items**

- A. Agenda review/Introductions
- B. Announcements/Updates - None

**Portfolio Overview Updates - p. 4-5 in packet | slides 3-6**

Emily Moore (NEEA) provided the overview. *The desired outcome is for committee members to be aware of key updates on industrial programs, as well as current NEEA Business & Operations planning.*

A. Portfolio Overview Program Updates

Program	Q3 Update
 <p>Extended Motor Products</p>	<ul style="list-style-type: none"> <li>• Launched XMP Pumps Research Plan and Technical Work Group                             <ul style="list-style-type: none"> <li>• Validate energy savings estimates for commercial and industrial pumps and circulators</li> <li>• Create a regional database of pump energy and performance data</li> </ul> </li> </ul>
 <p>C/I Strategic Energy Management</p>	<ul style="list-style-type: none"> <li>• EMA tool updated and available for customization</li> <li>• Conducted 50001 Ready workshops in Seattle and Portland, with funding from LBNL/DOE</li> <li>• Working with Idaho Power and two Idaho school districts on Community SEM, with funding from NREL/DOE</li> <li>• Kicked off planning for 8<sup>th</sup> annual Fall workshop of NW SEM Collaborative</li> </ul>
 <p>Industrial Technical Training</p>	<ul style="list-style-type: none"> <li>• To-date in 2018, 5 training courses delivered to 102 individuals</li> <li>• 5 additional training courses are scheduled for remainder of the year</li> </ul>

- 1) Extended Motor Products (XMP)
  - a) XMP Technical Workgroup meetings held in April and June. Meeting #3 is scheduled for August 22<sup>nd</sup>
  - b) The research will support reliable energy savings estimates for commercial & industrial pumps and create a regional database of pump energy and performance data.

- c) Preparing for Market Characterization and Baseline study, to begin in Q4.

#### Discussion

- **NWPCC:** *How are the energy savings estimates calculated?* NEEA clarified that energy savings estimates are coming from existing consumption data and will also conduct some field data gathering.
- **Idaho Power:** *What are the constraints around this?* The number of sample pumps have been identified so I imagine there's a budget around that.
  - Project has kicked off
  - There will be a stage gate in November
  - Page on conduit that describes data needs and
  - Getting positive response from Building Operator Certification (BOC) group
  - The research scope is large and includes residential since we're trying to make a transformation play in the northwest. PG&E and a few other extra-regional entities are supporting this financially. Total expected spend is about \$500,000 for 2018 and 2019. This is an investment in a continued path forward.
  - **Chelan PUD** is providing data on irrigation pumps.
- **Idaho Power:** *Was there a discussion when PEI first came along, that the savings estimate would be adjusted based on regulatory requirements (federal standard kicks in 2020)?* NEEA clarified no, the premise of the savings is to move beyond the lower 20% of pumps in the market.
  - **NEEA:** The pump industry is willing to provide a replacement pump for free or very cheap if we hook one up initially and meter it. This will allow them to build a case study and share with their distributors.
  - **Chelan PUD:** We do that for our customers, installing frequency drives and additional controls – have some post data on that. Doing a smart pump analysis – looking at combining controls into an integrated package to help evaluate savings potential. Will keep NEEA apprised on progress.
  - **NEEA** added that the low horsepower pumps will be much easier to work with, with a deemed savings measure instead of custom each time. Hasn't been possible before due to some of the complexity. Please share your data!

#### 2) Strategic Energy Management (SEM)

- a) Infrastructure program to grow adoption of SEM in the Northwest – facilitate collaboration, and deliver valuable SEM tools and resources for SEM program implementation.
- b) Recent progress with SEM Hub Energy Management Assessment (EMA) tool.
- c) With cost-share agreement with a national industry partner, Global Cold Chain Alliance (GCCA), developing a white-label version EMA tool to support GCCA's Energy Excellence program. The white-label version is something that can be leveraged by Northwest utilities as well.

#### Discussion

- **Idaho Power:** *On the EMA – how is that being rolled out?* Utilities with SEM program are having the implementer use the tool to guide the EMA session with the customer, but it can be used in other ways too.
  - d) Conducted 50001 Ready workshops in Seattle and Portland with NW SEM stakeholders as part of a LBNL/DOE grant-funded project.

- e) Working with Idaho Power and two Idaho school districts on Community SEM, specifically energy data collection and visualization as part of a NREL/DOE grant-funded project.
  - f) Currently, engaging two school districts, Pocatello and West Ada, and working on data collection.
  - g) Kicked off event planning for the 8th annual Fall Workshop of the NW SEM Collaborative (October 25, 2018).
- 3) Industrial Technical Training (ITT)
- a) 2018 goals: Deliver 10 training courses, 180+ individuals participate in industrial Technical Trainings with an average class size of 17+, Achieve funder and trainee satisfaction rate of 95%+
  - b) In Q1: Completed one training in Q1 in Central Washington. The subject was refrigeration systems, 18 people attended, and the host sponsor was Okanogan PUD.
  - c) In Q2: The following four trainings were delivered to 84 individuals:
    - 1. 4/19/18, Energy Efficiency for Industrial and Commercial HVAC Systems, Bellevue WA
    - 2. 4/26/18, Compressed Air Challenge - Level 1, Longview WA
    - 3. 5/17/18, Best Lighting Retrofits Now and Future Impacts, Billings MT
    - 4. 6/27/18, Pump System Optimization, La Grande OR
  - d) 84 individuals took ITT courses in Q2-18, and the program is on track to meet attendee and utility host sponsor satisfaction rate targets of 95%+ satisfaction for the year

B. 2019 Operations Planning Update

- 1) All Advisory Committee webinar will be October 9; same format as last year

C. 2020-2024 Business Planning Update (cycle 6)

- 1) Progress thus far
  - a) Board will review the 2<sup>nd</sup> draft of the plan on Monday, July 30.
  - b) This is a public board workshop, all materials are available and posted on neea.org under [EVENTS](#).
  - c) There will be a public outreach process in the fall
  - d) If you have input please talk to your Board representative or RPAC member
  - e) Goal is to have the plan approved at the December Board meeting
- 2) Many of NEEA's funders are having to tighten their EE budgets; the current draft business plan represents a 5-year cycle budget slightly less than current funding cycle. Board business planning committee asked NEEA staff to prioritize energy savings programs and emerging technology; this put pressure on the investment levels for infrastructure programs. .
- 3) There are a few proposed changes relevant to the industrial sector in current draft business plan; these are changes that the Board will consider in the coming trade-off conversations.
  - a) Motor-driven Products is a Portfolio Category
    - 1. Focus of XMP initiative is clean water pumps and circulator pumps below 50 horsepower
    - 2. Continue to explore opportunity for other motor-driven products, such as fans and compressors
  - b) ITT is proposed to be discontinued - no budget in the current draft business plan for 2020-2024

1. If ITT is discontinued at the end of cycle 5, the team would work to transition the assets, such as training curriculum, to interested funders and the market by the end of 2019.
  2. Also, NEEA would continue to support training that directly supports MT initiatives.
- c) SEM is proposed to be offered as an optional infrastructure program
1. If optional, a 'critical mass' of funders would be needed to support the existing SEMhub and regional resources.
  - 2.

#### Discussion

- **Tacoma Power:** *On ITT, what would be the best way to see additional details that led to this proposal?* The current board packet for the July 30 workshop has some detailed memos that describe the tradeoff decisions being proposed, but this will be general. Contact Emily with additional questions specific to ITT, or any of the proposed changes.
- **NWPCC:** Unfortunate budget has to be cut at all, Industrial was cut a fair amount last time. Given the budget scenario, great how NEEA is approaching and prioritizing the work on extended motor products.

### SEM HUB Energy Management Assessment Demo – p. 6 in [packet](#) | [slides 8-21](#)

Warren Fish & Rachel Zakrasek (NEEA) provided the overview. *The desired outcome is for committee members to be aware of the tools available to them and NEEA's online training platform.*

#### A. NEEA's Current Roles in SEM

- 1) Convene an active community of SEM practitioners and deepen their capabilities by teaming up to tackle shared challenges
- 2) Gather, vet and maintain available SEM tools and resources, and offer them in a configurable platform that plugs and plays with programs
- 3) NEEA is working to address this need by developing a set of tools that support utilities and the market in building market capability, awareness and demand for SEM.

#### B. SEM Hub Energy Management Assessment tool & Learning Management System Demo

- 1) Offering a 1-hour webinar demo that goes into further detail:
  - i. August 22 from 2:00-3:00 pm
  - ii. <https://neea.adobeconnect.com/a1100903420/r7iofzxuifgs/>
  - iii. This will be recorded
  - iv. All SEM program managers, team members and interested colleagues are encouraged to attend
- 2) Energy Management Assessment (EMA) Tool: <https://ema.semhub.com>
  - i. Shifted the learning management tool over to an in-house NEEA system that connects better with the SEM Hub, improves user and facilitator/admin experience, is customizable to the company hosting the training, and yields significant cost savings.
  - ii. You are welcome to test the tool, please use the term "test" in the input data to indicate that
  - iii. Question set was devised via a group of diverse stakeholders that came out of an SEM maturity research project conducted with ACEEE.
  - iv. Customization is a collaborative effort with NEEA; logo, color profile preferences and a few other details are required to build a draft site. Energy Trust of Oregon is currently customizing this tool for their Commercial SEM program.
  - v. Utility and customer information is securely protected.
- 3) [SEM Hub Online Courses using NEEA's Learning Management System](#) (LMS):

- i. Central administration, documentation, tracking, reporting, and delivery of e-learning courses or training programs.
- ii. “Anywhere” and “Anytime” access to e-learning material
- iii. 17 online courses available to any user – when customizing this platform for use in your SEM program, you can also add own resources, learning modules and other content
- iv. Customizable platform is currently being utilized by Puget Sound Energy with at least 60 active program participants
- v. Utility and customer information is securely protected.

## Utility Share-outs

*The desired outcome is for committee members share their what their working on, ideas and highlights from their organization.*

### A. Idaho Power:

Behavioral programs and measure life are still the great unknown – so much variability and uniqueness with each site. have big construction projects going on in the region, including Bitcoin quandaries. Otherwise, business as usual. In response to curiosity around their Agriculture programs, all things are moving along well.

### B. PSE:

Doing well, not much new to report. Have a cohort setup in the SEM Hub with two workshops thus far, going well. Looking into hard to reach markets, want to know what more we can do in that sector. Looking to Idaho to discuss irrigation further; we have a lot of dairy farms, interested in doing more with this.

### C. NorthWestern:

Two big changes: 1) Gas avoided costs – discontinued prescriptive rebates for residential and commercial; still offering custom incentives for commercial. Don’t have an SEM program right now, but excited to see online progress to see if that can help us better reach our geographically challenged customers. 2) Recently lost senior chief engineer who just retired; recruiting for a replacement. Our C&I customers are generally small compared to the rest of the region, larger customers of those are mostly buying energy from the capacity supply market – thus, were not seeking energy savings with them. In process of having work done on valuing capacity on EE measures; will likely be end of year before we have anything to report on for that.

### D. Snohomish PUD:

Lighting program reached savings goal for year. Putting added effort on building efficiency targets; working with trade allies to better promote that. Have 25% incentive bonuses for those projects as long as they’re complete by November, hoping that will spur more activity. SEM – report coming out for first year of wastewater cohort – one group achieving about 19% energy savings in first year. Overall, whole group seeing average of 8-9% savings in first year, were expecting 3-5%. Manufacturing cohort should yield about 5% savings for the first year. Looking at peak KW reduction, starting to track more closely.

### E. Chelan PUD:

Doing smart pumps currently. Not much more to report. Looking at compressed air savings, interested to see what comes out of the efficiency work on this group and with fans. With respect to SEM projects, Industrial customers energy use is really sporadic, so hard to evaluate energy data; sorting the data to better evaluate energy use between months and evaluate the impact of the efficiency effort. Not many industrial customers interested in demand response currently; using smart thermostats (Ecobee system since data is free) to do some DR with commercial customers.

F. **Pacific Power:**

In planning stage for Washington program changes for January 2019; part of that includes reviewing RTF updates. Noticing that irrigation hardware measures for deemed savings are going down and some have increased measure costs so most are no longer cost-effective. May end up cancelling those measures as a result. **Are others considering this?** Have to wrap this up by early October. In May, changed to using deemed costs for all types of energy management measures; value used is based on data collected. Lighting doing well. In response to a question about planning for 2018-19, it includes planning for I-937 and updating RTF measures. Don't have a cost cap for the energy management incentive.

- **COMMITTEE ACTION ITEM: Please share what you're doing for the energy management incentive.**

G. **Tacoma Power:**

For C&I sectors, we're on track for the year. have a couple big new construction projects finishing up in the latter half of the year. Recently launched commercial SEM pilot program, have 8 customers enrolled and first workshop is next week. On industrial side with SEM, still have mixed results, each customer is unique.

H. **Clark PUD:**

Have a few modest sized lighting projects still coming in. Expect to have a few more large, new construction projects coming through and will need some new construction measures. Programmatically everything is staying steady. Bill Hibbs working on Commercial SEM pilot; considering having a water/wastewater cohort given the good results others are sharing. Have new O&M contractors for the City of Vancouver, would be good to get them looped in with the SEM cohort. Seem to be capping on energy more frequently, which seems to be driving programmatic costs up.

I. **NWPCC:**

Working on mid-term assessment for 7<sup>th</sup> Plan. Updating load forecast for industrial. Beginning next year will be working on development of the 8<sup>th</sup> Plan – trying to figure out how to revise the potential assessments for that. Will be tapping several folks later this year and into early next year for more information on this. Load forecasting effort is getting tuned up as part of that effort as well.

- **ACTION ITEM: Chris Wolgamott (NEEA) to contact Massoud Jourabchi (NWPCC) regarding lighting with vertical grow operations.**

BPA part of this as well. In response to a question from NEEA, there are no plans to make any changes to atmospheric inputs in the model.

## **Emerging Technology Scanning update – p. 7 in [packet](#) | [slides](#) 24-46**

Mark Rehley & Geoff Wickes (NEEA) provided a short update on emerging technologies NEEA staff are assessing for industrial applications. *Desired Outcome: Inform and discussion.*

A. Air Saver Unit

- 1) Converts continuous air flow into pulse blow
  - a) Reduces consumption of compressed air
  - b) Potentially reduces overall system pressure
  - c) Improved the impulse of air blow resulting in higher efficiency
  - d) For every pound per square inch of increased pressure, there is a 1% energy savings
  - e) Tunable / highly adjustable
- 2) Study done by SBW
- 3) 20-year potential regional savings estimate: 6.2 aMW
- 4) Preliminary Findings – cost estimates

ASU model	Rated Flow (cfm)	ASU List Price (\$)	Nominal Install Cost (\$)	Total Cost (\$)	Flow Reduction		Energy Savings (\$/year)	Simple Payback (years)
					(%)	(cfm)		
ASV200	5.3	\$255	\$240	\$495	57%	3.0	\$165	3.0
ASC500	15.9	\$398	\$240	\$638	25%	3.9	\$213	3.0
ASO500	15.9	\$398	\$240	\$638	25%	3.9	\$213	3.0
ASV2000	70.6	\$429	\$240	\$669	6%	4.1	\$223	3.0
ASV5000	176.6	\$461	\$410	\$871	3%	5.3	\$290	3.0
ASV13000	459.1	\$930	\$410	\$1,340	2%	8.2	\$447	3.0
ASV15000	529.7	\$1,225	\$410	\$1,635	2%	10.0	\$545	3.0

- 5) Conducting ASU field tests with Energy 350 on 10 sites
  - a) if you have a site with a lot of compressed air and open blowing and would be interested, let NEEA staff know!
- 6) Target markets: food processing, timber products, secondary wood processing (i.e. cabinet making), machine, tool and die, aerospace, paint shops, semi-conductor
- 7) After sites are tested:
  - a) Prepare Performance Specification based on flow interruption
  - b) Development of RTF Measures
  - c) Informational & Educational Outreach
  - d) Shipment data information

#### DISCUSSION

- **Pacific Power:** Clark has one installed and another that's wash-down rated. Hearing about some of this because we're engaged with the customers. Well received thus far. On one site, results are not linear. Not sure how it will be a deemed measure, probably wouldn't want to run it on custom so still trying to figure out how we'll run this regionally.
  - **NEEA** noted that Energy 350 will be working on the savings measure piece in the second phase. Pacific Power added they would be willing to talk to Energy 350 about this further.
- **NWPPC:** *How much of a share of the air compressor market is this application? Does this now work for powering tools, etc?* NEEA clarified that this would be for open blowing or moving product, not force or something where full pressure would be required.

Pacific Northwest Annual Electric Demand and Consumption

	Percent	aMW	GWh
Total Pacific NW Electric Demand & Consumption <sup>1</sup>	100%	20,000	175,200
Industrial Share of Total <sup>2</sup>	19%	3,800	33,288
Compressed Air Share of Industrial <sup>3</sup>	12%	456	3,995
Blowing End Use Share of Compressed Air <sup>4</sup>	15%	68	599
Potential Penetration of Blowing End Uses Over 20 Years <sup>5</sup>	30%	20.5	180
Potential Average ASU Savings <sup>6</sup>	30%	<b>6.2</b>	<b>54</b>

Sources: 1 - aMW value from NWPPC 6th Plan; GWh value assumes 8760 hours/year at aMW

2 - Percent value derived from NWPPC 6th Plan

3 - Percentage derived from USDOE Advanced Manufacturing Office 2010 report by Energetics, Inc.

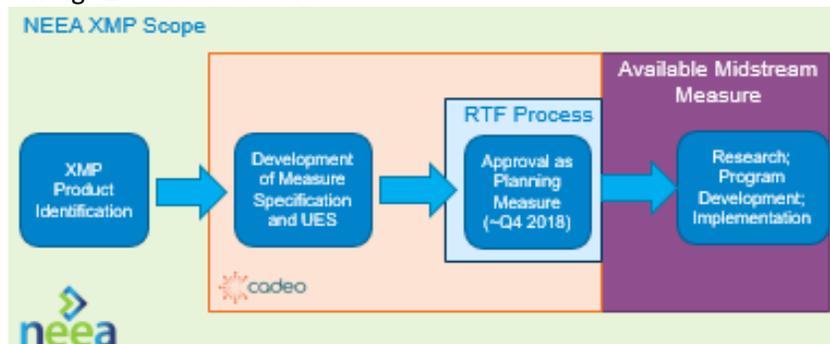
4 - Percentage estimated based on field experience

5 - Cumulative savings over 20 years - percentage is estimated

6 - 30% potential savings is a conservative estimate based on manufacturer's estimate of 40%

#### B. XMP Fans Update

- 1) Fans have several opportunities for efficiency savings
- 2) XMP Overview
  - a) Initiative goal is to drive lasting awareness, stocking, and sales of efficient motor driven products – starts with the label
  - b) AMCA test procedure and labeling standards complete
  - c) DOE and CEC rulemaking analysis complete (DOE rulemaking on hold but CEC significantly under way).
  - d) NEEA is partnering with Cadeo and RTF to develop deemed Unit Energy Savings Estimates for Fans
  - e) Next Steps
    1. NEEA is partnering with Cadeo and RTF to develop deemed Unit Energy Savings Estimates for Fans



- 3) Benefits of Fan Energy Index (FEI)
  - a) FEI will drive energy savings 2 ways:
    1. Manufacturers will improve Fan Designs
    2. System designers can make better Fan Selections
  - b) FEI can be used with all fans
  - c) FEI is a good comparison of relative energy consumption
    1. Incentive programs can be designed with minimal market friction
    2. Potential midstream intervention solution
  - d) Will help improve long term efficiency standards (DOE)

## DISCUSSION

- **Idaho Power:** *Small savers and fans – what are other examples of this in an industrial or commercial environment?* NEEA noted that embedded fans and services may be excluded from this. The smallest fan we might see in a residential area is exhaust fans for bathrooms and kitchens; in the commercial markets, it would be air handlers or boost fans, or rooftop ventilators; in the industrial sector we're not sure yet depending on the horsepower. Expect these will all be handled by a custom measure.
- **Chelan PUD:** Have industrial fruit houses using these. The air dynamics of the fan is really important and that's not really being evaluated. Hope standards will look at this. NEEA noted that is expected to be reviewed.
- **NWPCC:** *Regarding defining savings for these measures – is there new technological development needed or does this equipment already exist and you just need to repackage it?* NEEA clarified that there's a little bit of both going on. there are some drives, controls and sensor technologies that can be added but it adds cost. The owner or building manager has to want performance over cost.
  - **NWPCC:** *Are you moving ahead with just California and the manufacturers?* NEEA confirmed. Everyone was pretty well set with doing the fan efficiency index. have a good definition of what the planning measure with the RTF will be as well.
  - **NWPCC:** There's no standard, so the baseline is going to be a lot lower, which is fine.

- **Pacific Power:** *How far are we on getting the planning measures?* NEEA noted it could be later this year or early next year for fans, and for air, Q1 2019.

C. Switched Reluctance Motors

- 1) Starting to use these in electric trucks in Europe

Features	Attributes
- Rotor contains no windings, rare earth materials or magnets	- Simple and rugged
- Power is delivered to windings in the stator	- Lower rotator losses
- Requires fast switching power electronics	- Less heat produced at full torque
- Position feedback is required to time the stator switching operations with that of the rotor	- Runs cooler normally and heat is limited to stator
	- Efficient operation over wide load percentages
	- Wide range of RPMs
	- Able to operate in high temperature environments

- 2) Can run for longer lengths of time and don't overheat
- 3) Software motor company pitching utilities
- 4) Savings Potential

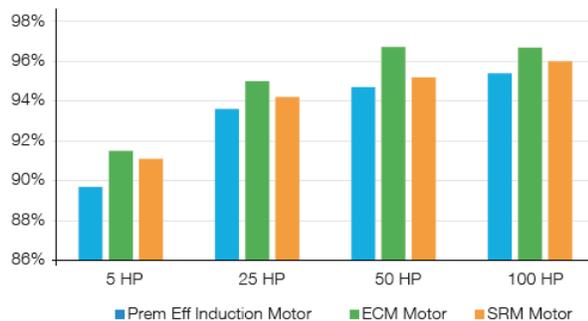


Figure 10: A Comparison of the Efficiencies of All Three Motors

- 5) Will start an inventory of these kinds of products out in the market, as well as evaluate whether the PEI or FEI measurements are sufficient.
  - a) **Idaho Power** noted that gear boxes are improving and some have 96-98% efficiency (Stober product).
  - b) **Chelan PUD:** On fan energy savings estimate – seems one of the areas has different pump energy indexes for all the types, it confuses things instead of having one energy efficiency rating for a fan combination. Would be better to have one single number for what it would be for a system to help handle the issues of the losses. NEEA replied that they are looking at that, trying to create a performance of aeratable electricity than with a prescription.

**Continued Discussion: Industrial Sector Trends, Changes, Opportunities – p. 8-11 in packet | slides 47-57**

*Desired Outcome: Gain insight from committee members about macro issues that challenge or provide opportunity for energy efficiency in the industrial sector and the future role of the committee.*

**Key Topics**

**1. Water and Wastewater Treatment**

- a. **What is the current level of interest and program activity at your organization?**

- b. What technologies or products are you supporting and/or interested in?*
  - c. In what specific ways could better regional collaboration support your organization?*
- 2. Interest and value in utilizing the IAC forum in the future to explore other themes or topics**

**Discussion**

Water and Wastewater Treatment

- Currently running, or planned utility programs:
  - **Idaho power:** Shelly Jenson running both programs. Key learnings on wastewater:
    - Improved Dissolved Oxygen control
    - Fine bubble diffusers in basins okay now but need to be maintained/cleaned to prevent clogging.
    - Going to turbo blowers in lieu of positive replacement blowers
    - Biggest savings from working upstream with engineering architectural firms on wastewater plant designs during modernization efforts
    - This is all custom work on these projects
    - Plants were designed for 20-year build out, so how to improve efficiency in 5-10 year span is
    - Some have been industrial customers engaging
    - Water distribution: struggle is getting customer to understand everything involved in hydraulic models for production wells.
  - **Snohomish PUD:** Had a program for about 10 years; very relationship based in terms of getting started. Have about 12 wastewater plants in the area.
    - Cohort has 8 participants; just started year 2 (ends in April) and will do a SEM renewal once the cohort ends.
    - Working with Cascade Energy
    - Struggles: Low risk tolerance from wastewater plant staff, this may be starting to improve
    - Most plants have large bubble diffusers
      - Aeration often targeted since it comprises 40-50% of usage
      - Education behavior has been important for this
    - Capital projects are a natural results of the continuous improvement effort
    - Highly favorable of the cohort model approach
    - On manufacturer side, technological efficiencies are becoming more commonplace. Manufacturers they've worked with: Zion, Aerostrip
    - Region should prioritize this effort
  - **PSE:** Worked with UV system in the past, know some have experienced issues.
    - **Clark PUD** has done a couple UV light upgrades in their territory; overcame cost issues by running as an incremental project. Found that non-ragging pumps have a fair amount of savings compared to what was originally installed (in particular the Flyght brand). Looked at individual component measures instead of the entire project cost for cost-effectiveness.
  - **NWPCC:** Are there metrics (like equivalent net zero) and are they used for this?
    - Yes. **Snohomish PUD will send a report on this to NWPCC.**
- Common Themes:
  - Best practices
  - Behavior
  - Relationship based effort
  - Not seeing much work on water (treatment) plants
    - leak detection is a major loss issue
    - **ACTION ITEM: Mark to share report on leak detection with committee.**

- **NEEA:** *Why is it now that water and wastewater is becoming more front and center, and how much of that is at the local level, and how much could be collaborative at the regional level?*
  - Snohomish PUD: Capital projects are the carrot behind all this: networking among cohorts, constant attention and communication now also helps identify capital projects.
  - **PSE:** Cohorts have deepened awareness through tours of others plants.
    - **Idaho Power** noted their cohorts have done a little of that
  - Energy Smart Industrial has good expertise in the wastewater market
  - **ACTION ITEM: Mark to synthesize and summarize discussion and share back out with Committee.**
  - **COMMITTEE ACTION ITEM: Contact Mark with any other ideas you might have on this (discussion ideas, questions, etc): [mrehley@neea.org](mailto:mrehley@neea.org) | 503-688-5499.**

Utilizing the IAC Forum in the Future (Gauging interest on exploring themes/topics in greater depth)

- **Idaho Power:** How do get our arms around the next great thing, particularly given potential budget cuts to Industrial in next NEEA business cycle?
- Waste water treatment plant panel?
- Guest speaker from CH2MHILL?
- **NWPCC:** Common themes are great to hear/discuss from my standpoint
- **Idaho Power:** Capitalizing on share-outs to learn what others are doing is valuable
- **PSE & Chelan PUD** agreed the discussion was helpful.
- **NorthWestern:** Discussion is good; putting qualifications around technologies and where they're applicable is helpful.

**NEXT STEPS:**

1. **ACTION ITEM: NEEA to follow up with BPA on Pulsair Compressed Air Mixing**

**Opportunity for Public Comment**

None.

**Wrap up/Feedback on Meeting**

1. Appreciated hearing from folks on the phone
2. Shareout reports or summaries from ACEEE and/or CEE discussions on pumps and fans will be shared out if/when crafted, and as requested.
3. Next Meeting is set for Wednesday October 3 in Portland at NEEA's office.