

Washington DSM Advisory Group Meeting

June 17, 2021



Agenda

- 2022-2023 planning /target setting
 - NEEA
 - Production Efficiency
 - Distribution Efficiency
 - High efficiency co-generation
- 2020-2021 conditions list
- Tariffs
- Return to in-home activities
- Clean Buildings (HB 1257) updates
- Other updates

2022-2023 planning /target setting



Conservation target development process overview

- Identify the cost-effective, reliable, and feasible potential of possible technologies and conservation measures in the utility's service territory [WAC 480-109-100 (1)(a)(i)]
- Types of conservation, WAC 480-109-100 (1)(b)
 - End-use efficiency (IRP selections)
 - Behavioral programs (existing plus incremental IRP selections)
 - High-efficiency cogeneration (private generation study)
 - Production efficiency (Company forecast)
 - Distribution efficiency (Company forecast)
 - Market transformation (NEEA, included in IRP selections)

Target development process

- Start with 10-year Washington energy efficiency resource selections from PacifiCorp's Integrated Resource Plan – price sensitivity case – social cost of carbon + non-energy impacts proxy
- Add forecasts for resources not included in IRP DSM supply curves in IRP selections
- Analyze recent RTF measure-level updates to cost, savings or measure life and adjust for material changes including recent legislation.
- **New for 2022-2023:** Account for additional (beyond RTF/prior periods) non-energy impacts
- Take the larger of the two-year forecast and a pro-rata share of the 10-year forecast
- Treat NEEA consistent with prior period.
 - NEEA savings included in EIA Target
 - NEEA savings excluded from EIA Penalty Threshold
- Increase EIA target by 5%, per decoupling commitment

2021-2022 target challenges

- 2021 IRP (filed by September 1) will provide state end use efficiency (EE) targets by year.
- Targets will be generated by CETA compliant portfolio; date certain coal plant closures, social cost of carbon and none-energy impacts proxies all included
- Close to final version of CETA compliant portfolio expected in late June
- Targets currently due August 2 (date move proposed – see Conditions list agenda item).
- Typically start with end use efficiency, finish with other types of conservation.
- This period, starting with other types of conservation, finish with end use efficiency to optimize around portfolio timing.

NEEA



NEEA

NEEA has provided an initial forecast for 2022 – 2023 using current RTF assumptions and draft 2021 Power plan. Three categories of savings:

- **Program:** These savings come from measures NEEA worked on. Counts all the savings above the Council baseline for a specific measure less those claimed through local programs.
- **Codes and Standards:** These savings come from codes and standards NEEA worked on with code proposals, code development meetings and provide testimony for the Technical Advisory Groups and the State Building Code Board. After code adoption, NEEA quantifies and reports the savings for the region.
- **Trackable:** Through its work, NEEA often collects additional data. For example, NEEA worked on both the residential lighting standard and on CFLs. In doing so, NEEA is able to collect total market data, which includes other efficient measures like LEDs. This report includes savings from those efficient measures.
- Same categories as last period. Utilize first two categories in developing the target. Comparison with CPA assumptions will be performed. Adjustments may be necessary. Updates for new standards may reduce the target.

NEEA forecast notes

- The Northwest Power and Conservation is still finalizing the 2021 Power Plan. NEEA has not reviewed its measure alignment with Council staff. Review will generate final values in August which are expected to change.
- Savings from codes and standards decline significantly with the 2021 Power Plan update. Any code or standard approved prior to 2020 will not count against the Power Plan targets. This includes the 2018 WSEC.
- The forecast also does not include a few new programs such as Very High Efficiency Dedicated Outdoor Air, **Engine Block Heaters** and Televisions (a part of the Retail Products Portfolio). These programs will likely provide additional savings during the next Biennium.

NEEA

		2022-2023 Biennium Savings Forecast (aMW)			2024-2025 Biennium Savings Forecast (aMW)		
		2022	2023	Total	2024	2025	Total
		Remaining Savings Total		0.32	0.37	0.69	0.50
Program Measures							
Section Total		0.26	0.30	0.56	0.36	0.49	0.85
Residential	Total	0.21	0.24	0.46	0.30	0.42	0.72
	Ductless Heat Pumps	0.07	0.08	0.14	0.10	0.14	0.24
	Heat Pump Water Heaters	0.03	0.04	0.08	0.06	0.10	0.16
	Extended Motor Products	0.01	0.01	0.02	0.01	0.01	0.02
	New Construction	TBD	TBD	0.00	TBD	TBD	0.00
	Manufactured Homes	0.00	0.00	0.01	0.01	0.02	0.02
	Refrigerators/Freezers	0.01	0.02	0.03	0.02	0.03	0.05
	Clothes Washers	0.06	0.06	0.12	0.06	0.06	0.12
	Clothes Dryers	0.02	0.03	0.05	0.03	0.04	0.07
	Room Air Conditioners	0.00	0.00	0.00	0.00	0.00	0.00
	Home Audio	TBD	TBD	0.00	TBD	TBD	0.00
Air Cleaners	0.00	0.01	0.01	0.01	0.02	0.03	
Commercial	Total	0.04	0.04	0.08	0.05	0.06	0.11
	Extended Motor Products	0.01	0.01	0.01	0.01	0.01	0.02
	Windows Attachments	0.00	0.00	0.00	0.01	0.02	0.03
	Luminaire Level Lighting Controls	0.00	0.00	0.01	0.00	0.01	0.01
	Reduced Wattage Lamp Replacement	0.03	0.03	0.06	0.03	0.03	0.05
Industrial	Total	0.01	0.01	0.02	0.01	0.01	0.02
	Certified Refrigeration Energy Specialist	0.00	0.00	0.00	0.00	0.00	0.00
	Reduced Wattage Lamp Replacement	0.01	0.01	0.01	0.01	0.01	0.01
Codes & Standards							
Section Total		0.06	0.08	0.14	0.14	0.19	0.33
Residential	Total	0.05	0.06	0.11	0.09	0.11	0.20
	Codes	0.05	0.05	0.10	0.08	0.10	0.18
	Standards	0.00	0.00	0.01	0.00	0.01	0.01
Commercial	Total	0.01	0.02	0.03	0.05	0.08	0.13
	Codes	0.01	0.02	0.03	0.05	0.08	0.13
	Standards	0.00	0.00	0.00	0.00	0.00	0.00

Production Efficiency



Production Efficiency

- “means investments and actions that save electric energy from power consuming equipment and fixtures at an electric generating facility.” WAC 480-109-060 (27)
- Projects need to be in generating facilities allocated to Washington:
 - Wind: GoodNoe Hills, Marengo I, Marengo II, Leaning Juniper
 - Thermal (coal): Jim Bridger and Colstrip
 - Thermal (gas): Chehalis and Hermiston
- Largest opportunities at thermal plants per original studies.
- Production side cost effective methodology developed for energy efficiency at generating facilities. Aligned with investment criteria used for joint owner decisions and recovery of plant investments through rates.
- Accelerated coal plant retirements planned in the 2019 IRP and/or required under CETA means there would only be 4 years (2022-2025) to recover efficiency investments in Bridger and Colstrip.
- Analysis during prior period (2020-2021) performed in 2019 of one of the Jim Bridger projects as a proxy (largest and highest ranked originally) indicated it was not economic by a wide margin using 7.5 year life. Reducing the life to 4 years would further erode the economics.

Production Efficiency

- For 2022-2023, propose following approach:
- No further analysis of any project at Bridger (or Colstrip)
- Update Chehalis and Hermiston studies for any changes in operating profiles, equipment changes and escalate costs.
- Assess economics with generation efficiency model
- For projects that pass, ask joint owner(s) to participate.
- Share results of economics and/or joint owner responses with DSM AG prior to proposed Sept 2 due date for target.
- Include any project that a) passes the screen and b) receives joint owner approval in 2022 - 2023 forecast & target.

Distribution Efficiency



Distribution efficiency – background & current results

- During 2020 the Company used the CYME model to assess four of Washington’s approximately 142 distribution circuits where VAR flow is high enough to cause voltage violations, seasonally high enough to create operational issues, or bring a circuit’s average power factor below 0.95 lagging.
- Cost effectiveness for potential project(s) assessed with financial tools used to support recovery of other distribution system investments.
- Results presented at December 2020 DSM AG meetings
 - 5Y303 – VAR Management, 16.9% reduction in line losses and 0.5% less power consumed. **Costs: \$75k**
 - 5Y352 – Reconductor/Volt Optimization, 46.49% reduction in line losses and 1.5% less power consumed. **Costs: \$2.625m**
 - 5Y681 – Did not exhibit efficiency reduction in line losses AND power consumed. **Costs: Not estimated since it did not exhibit efficiencies in both categories**
 - 5Y203 – Reconductor/Volt Optimization, 50.56% reduction in line losses and 0% less power consumed. **Costs: \$2.082m**

Distribution Efficiency - current results

- Preliminary financial results shared at December 2020 DSM AG meeting.
 - 5Y303 has benefit/cost ratio > 1.0
 - 5Y352 & 5Y203 have benefit/cost ratios < 1.0
- Grandview 5Y303 project included replacement of the existing capacitor banks with switched capacitor banks and installation of a three additional switched capacitor banks.
- **Update: Internal projects performed earlier this year, which included replacement of existing capacitor banks and installation of switched capacitor banks on 5Y303 completed.**
- Subject to DSM AG feedback, propose including energy savings estimate from the 5Y303 project in results counted towards the commission approved 2020-2021 target.

Distribution Efficiency 2022-2023 plan

- Propose a repeat of the last process for next period.
- Use the CYME model to assess four of Washington's approximately 142 distribution circuits with focus on Walla Walla region where VAR flow is high enough to cause voltage violations, seasonally high enough to create operational issues, or bring a circuit's average power factor below 0.95 lagging.
- Cost effectiveness for potential project(s) assessed with financial tools used to support recovery of other distribution system investments.
- In 2022, the Company will update the forecast of available projects that are cost effective feasible and reliable. Complete projects meeting these criteria.
- Subject to DSM AG feedback, report energy savings from completed projects against target.
- Since the circuit and project identification is on-going, the Company does not have any updated information on reliable cost-effective distribution efficiency for the 2022-2031 forecast period, and no savings from distribution efficiency are included in the Company's 2022-2023 Biennial Conservation Target.

High efficiency cogeneration



High Efficiency Cogeneration

- Assessed in *Private Generation Long-Term Resource assessment (2021-2040) – Appendix C*, conducted by Navigant Consulting
- Includes reciprocating engines and micro-turbines
- Use analysis approach similar to prior periods – compare levelized costs with highest cost energy efficiency bundle selected in the IRP.
- **New for this period** - cost adders to reflect emitting resource costs in the CETA environment.
 - Social cost of carbon – same source as those used in IRP
 - Renewable natural gas.
- Each applied separately to base cost assumptions in study. Mutually exclusive. One or the other.
- No screening now. Be ready to compare levelized costs with energy efficiency from IRP.

High Efficiency Cogeneration

Technology	Units	2021	2030	2040
Reciprocating Engines	\$/MWh	93.4	106.3	118.7
Microturbines	\$/MWh	93.8	104.4	114.6

Table 29 - Appendix C – no adders

- Scenario One: add social cost of carbon. See
 - https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf
 - Appendix A, Table A1, 3% average. Escalate using 2021 IRP inflation rate of 2.155%.
- Adders in \$/MWh for Scenario One
 - 2021: ~\$20.9/MWh
 - 2030: ~\$29.3/MWh
 - 2040: ~\$45.5/MWh

High Efficiency Cogeneration

Technology	Units	2021	2030	2040
Reciprocating Engines	\$/MWh	114.3	135.6	164.2
Microturbines	\$/MWh	114.7	133.7	160.1

Table 29 - Appendix C – Scenario One (social cost of carbon)

- Scenario Two: Fuel with renewable natural gas (RNG)
- From study author at Navigant/Guidehouse. *“in this case we do not have a simple adder that we can point to. After talking to our RNG expert he suggested the following: apply a 6x premium to the price of NG for 5 years and then reduce the premium by 1 point for each subsequent 5 year until reaching a premium of 2x at which point the premium is constant. By applying that we obtain the following premiums”*
- Adders in \$/MWh for Scenario Two
 - 2021: ~\$172.5/MWh
 - 2030: ~\$103.6/MWh
 - 2040: ~\$36.5/MWh

High Efficiency Cogeneration

Technology	Units	2021	2030	2040
Reciprocating Engines	\$/MWh	265.9	209.9	155.2
Microturbines	\$/MWh	266.3	208	151.1

Table 29 - Appendix C – Scenario Two (RNG)

- Scenario Two: Fuel with renewable natural gas (RNG)
- From study author at Navigant/Guidehouse. *“in this case we do not have a simple adder that we can point to. After talking to our RNG expert he suggested the following: apply a 6x premium to the price of NG for 5 years and then reduce the premium by 1 point for each subsequent 5 year until reaching a premium of 2x at which point the premium is constant. By applying that is obtain the following premiums”*
- Adders in \$/MWh for Scenario Two
 - 2021: ~\$172.5/MWh
 - 2030: ~\$103.6/MWh
 - 2040: ~\$36.5/MWh

Conditions List



Conditions list 3(f)

- 3(f): Prior to filing the Biennial Conservation Plan, Pacific Power must provide the following information to the Advisory Group: draft ten-year conservation potential and two-year target by August 2, 2021; draft program details, including budgets, by September 1, 2021; and draft program tariffs by October 1, 2021.
- Target depends on IRP selections. With candidate IRP portfolios available in late June, approximately six weeks to review, make adjustments and share with stakeholders is a challenge.
- Propose to change as follows:
 - two year target from August 2 to September 2.
 - draft program details (including cost effectiveness) from September 1 to September 15.
 - File motion to amend order.

Conditions list 9 (a)

- 9 (a): Pacific Power must develop a plan and conduct the **research** necessary to achieve sustained energy burden reductions for low-income households, with advice and review provided by the Advisory Group(s) outlined in 3(b). The low-income savings **potential** must be included in the 2022-2023 Biennial Conservation Plan along with a description of how the **plan prioritizes** energy assistance to low-income households with the highest energy burden and future actions under consideration to improve this prioritization.
 - PacifiCorp Equity Advisory Group (EAG) is conducting research on customer demographics including energy burden.
<https://www.pacificorp.com/energy/washington-clean-energy-transformation-act-equity.html> - **research in progress – EAG**
 - Low income potential in 2021 CPA used to inform 2021 IRP selections. Volume 2 Section E and Appendix G. **Complete**
 - Plan for prioritizing energy assistance to those with highest energy burden follows from research being done in EAG. **Included in program details provided on Sept 15.**



The Clean Energy Transformation Act

- Commits Washington to an electricity supply free of greenhouse gas emissions by 2045
- Overseen by Washington Utilities and Transportation Commission (WUTC) and other state agencies (*i.e.*, Departments of Commerce and Ecology)
- Requires the utility to develop a 10-year Clean Energy Action Plan (CEAP) and a 4-year Clean Energy Implementation Plan (CEIP)
- **Requires Public Participation from the General Public and Existing Advisory Groups (WAC 480-100-655)**
- Requires formation of an Equity Advisory Group (EAG):
 - The utility "must maintain and regularly engage an **external equity advisory group to advise the utility on equity issues...**"

Equity Advisory Group Collaboration

Advisory Group Members will:

- **Engage in developing metrics** to embed equity into planning and decision-making for the Clean Energy Implementation Plan
- **Focus on paths to expanding equity**, so our efforts are accessible, affordable and accountable
- **Highlight opportunities to mitigate barriers** to customer participation
- Provide **input on public participation plans**

Process includes:

- **Participating in facilitated discussions** about PacifiCorp's electric energy resource planning, programs and investments
- **Providing advice, experience, and perspectives** on social, economic, and environmental equity
- **Working collaboratively** with PacifiCorp on equitable energy outcomes for customers
- **Serving as a conduit for information** to and from affiliated groups and community members

THREAT

X

VULNERABILITY

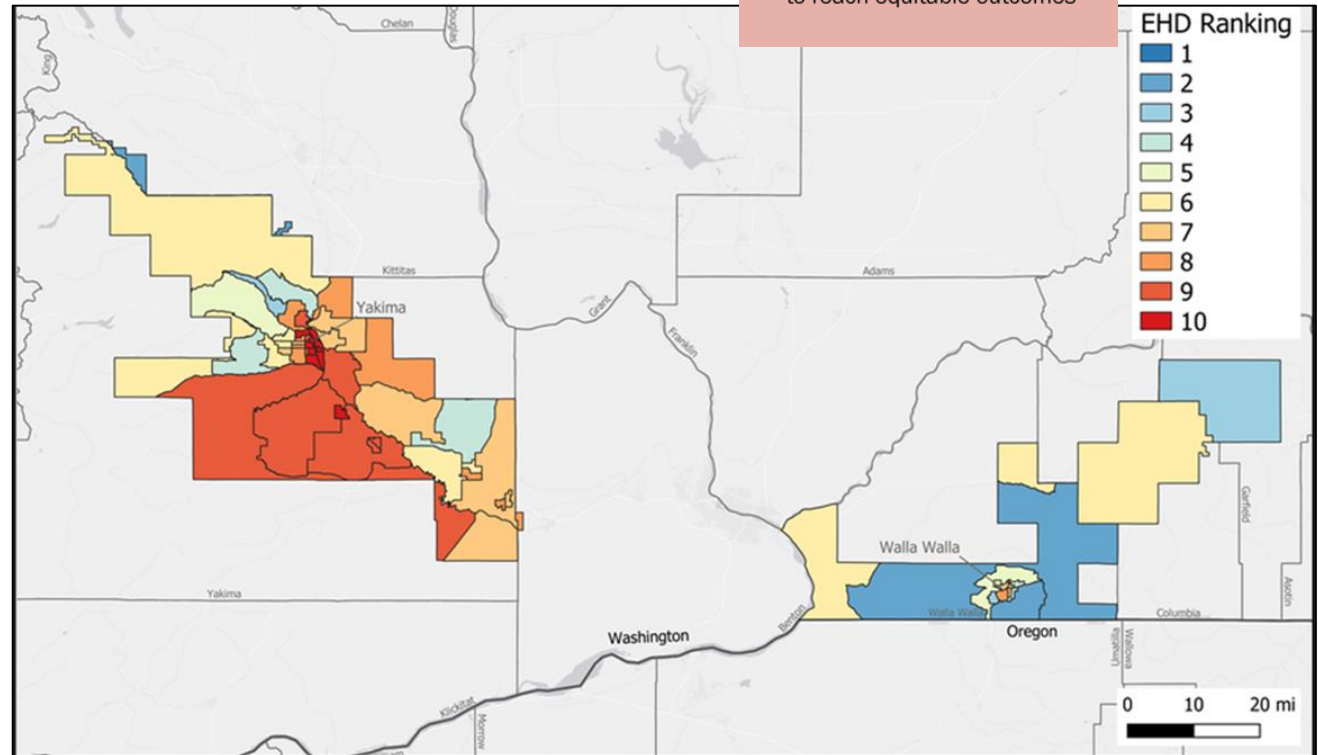
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RISK

Environmental Health Disparities

Communities experiencing a disproportionate share of environmental health burdens that will need more assistance to reach equitable outcomes

- Within the Yakima area, 19 census tracts have an Environmental Health Disparities (EHD) ranking of 9 or greater
- The Walla Walla area includes no census tracts with an EHD ranking of 9 or greater
- Socioeconomic Factors and Environmental Effects are the leading factors in this category



Conditions list 10 (a)

- **10 (a):** During this biennium, Pacific Power must demonstrate progress towards identifying, researching, and developing a plan to properly value nonenergy impacts that have not previously been quantified. The nonenergy impacts considered must include the costs and risks of long-term and short-term public health benefits, environmental benefits, energy security, and other applicable nonenergy impacts. These impacts and risks must be included in the 2022-2023 Biennial Conservation Plan.
- Scope with DNVGL
 - Task 1: Map PacifiCorp measures to DNV's NEI Database
 - Task 2: Assign confidence factors
 - Task 3: Assign plausibility factors
 - Task 4: Estimate economic adjustment factors
 - **Task 5: Adjust Database values to calculate utility-specific NEIs**
 - **Task 6: Choose the best value for each NEI/measure combination**
 - Task 7: Gap analysis

Conditions list 10 (a) - draft list of NEIs

NEI Reporting Name	NEI Type	Definition	NEI Category In PacifiCorp	Studies Used in PacifiCorp
Administrative costs	Participant	Participant reported avoided overhead costs associated with invoice processing, parts/supplies procurement, contractor coordination, and customer complaints.	Yes	Study0002, 0005
Avoided Pollution	Societal	Modeled value of emissions associated with electricity generation at power plant. Does not include carbon dioxide.	Yes	Study0005
Bad Debt Write Offs	Utility	Reduction in cases of bad debt write offs	Yes	Study0048
Calls to utility	Utility	Reduction in number of calls to utility from customers	Yes	Study0004
Carrying Cost On Arrearages	Utility	Reduced carrying cost on arrearages	Yes	Study0048
Noise	Participant	Participant reported value associated with reduced amount of outside noise that can be heard inside the home.	Yes	Study0005
Supplies and materials	Participant	Includes changes in the type, amount, or costs of materials, and supplies needed	Yes	Study0002, 0040
Ease Of Selling Or Leasing	Participant	Participant reported improved ability to sell or lease property due to increased performance and desirability.	Yes	Study0004, 0005, 0007
Fires/insurance damage	Participant	Avoided cost of fires based on insurance estimates	Yes	Study0005
Health and safety	Participant	Participant reported costs from time off and lost pay due to fewer missed days of work/school, heat/cold stress, etc., resulting from measures installed in the home.	Yes	Study0004, 0049
Lighting Quality And Lifetime	Participant	Participant reported value of improved lighting lumen levels, color, and steadiness.	Yes	Study0004, 0007
O&M	Participant	Modeled avoided time and costs associated with reduced maintenance, parts/repairs, service visits, and system monitoring	Yes	Study0001, 0002, 0003, 0004, 0005, 0040
Other Impacts	Participant	Other costs or profits not defined by material handling or movement, product spoilage, waste disposal. May include reduced tenant complaints.	Yes	Study0002, 0004
Other Impacts	Utility	Other costs or profits not defined by material handling or movement, product spoilage, waste disposal. May include reduced tenant complaints.	Yes	Study0002, 0004
Product Spoilage/Defects	Participant	Participant reported value of avoided product losses (e.g.: reduced food spoilage in grocery stores).	Yes	Study0002, 0005, 0040
Productivity	Participant	Participant reported value of improved workplace productivity resulting from improved rest and sleep related to improved living conditions.	Yes	Study0005, 0007
Sales Revenue	Participant	Participant reported increased sales resulting from improved product.	Yes	Study0002, 0005
Waste disposal	Participant	Participant reported costs to remove solid waste and landfill fees (e.g.: fees to dispose of CFLs).	Yes	Study0002
Thermal Comfort	Participant	Increased comfort due to fewer drafts and even temperatures throughout the building.	Yes	Study0004, 0005
Water/Wastewater	Participant	Reduced water usage due to efficient equipment (C&I)	Yes	Study0040

Conditions list 10 (a) - NEIs initial look

- Review and QC underway. Includes another look at overlap and measure applicability.
- Positive and negative values. Negative = increased O&M
- “*costs and risks*”, “*impacts and risks*”, understand impacts to be positive and negative costs, in this context, are risks different?
- More than one may apply
- How are these applied?
- Full post QC list and support studies to DSM AG
- DNV presentation?

Tariffs



Tariffs

- Schedule 118 and 140. Broadly enabling. Program modifications managed through change process; stakeholder review and comment, 45 day noticing
- Immediate past two biennial cycles – no changes.
- Upcoming cycle – changes to existing schedules and a new schedule enabling demand response
- Schedule 118 – remove program name
- Schedule 140 – refine fuel switching language
- Both schedules – eligible rate schedules moved to content managed on web
- Schedule XX – new DR – same format as EE. Broadly enabling. All customer sectors. Offer(s) on web. Same change process as EE.

Return to in home activities



Return of in-home activities – Residential Direct Install

- Nexant reviewing county by phase in Healthy WA Roadmap to Recovery, safety protocols and other implementer in-home activities. Goal is to resume activities safely and in the very near future. Adaptive management/ target achievement tactic.
- Three separate direct install/in-home channels
 - Multifamily buildings - lighting and advanced power strip in some cases.
 - Update: safety protocols and customer permission being developed in conjunction with property managers. Target date of mid-July.
 - Partnership with the Sustainable Living Center in Walla Walla to incorporate the direct install of lighting during their in-home weatherization work.
 - Update: SLC currently in funding and planning processes and work will resume shortly (July) using SLC developed safety and customer permission protocols.
 - Manufactured home duct sealing direct install program will expand to include the installation of approved LED bulbs in eligible manufactured homes.
 - Update: safety and customer permission protocols complete. Schedule appointments starting week of June 14. In home activities start June 28th.

Clean Buildings (HB 1257) Updates

Accounting Treatment (full disclosure)

Type of Expense	Accounting plan
Early Adopter Incentive Payments (and PUT credits)	WA Public Utility Tax (PUT)
Labor – processing Early Adopter incentive reservations and checks <i>Can submit for PUT credit (same year as incentive payment)</i>	Expense/OMAG Customer Solutions Cost Center <i>(PUT credit would offset OMAG expenses)</i>
Customer Solutions staff Labor – <ul style="list-style-type: none"> Commerce webinars, etc. Early Adopter Incentive system (in DSMC) and process setup, Customer communication, etc. Non-Labor – Share of DSMC licensing fee	System Benefits Charge account <i>(Washington Wattsmart Business program)</i>

- New web page for Clean Buildings <https://www.pacificpower.net/savings-energy-choices/business/benchmarking/wa-clean-buildings.html>
- Providing information for customers before notification 7/1
 - Website information
 - Slide deck for email communication
 - One on one customer meetings with large commercial customers
 - A mix of customer knowledge of Clean Buildings.
 - Discussions around path of compliance and Level 2 ASHRAE audits
 - K-12/Higher Ed slated for American Rescue Plan Emergency Relief Fund grants thru Sept. 2022. Likely increase HVAC related projects.
 - Informing customers of free Portfolio Manager trainings through Energy Star

Other updates

