Energy Savings from Smarter Pump Systems - Easy Upgrades for Big Savings

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Who is NEEA?

Regional energy efficiency organization working on behalf of 140 utilities in the Pacific Northwest to transform the market.
Why focus on pumps?

- Component of major energy-consuming systems in buildings
- Easy opportunity for savings

New Labels for Pumps

Pump Energy Index
- New Federal metric for clean water pumps*
- Required to be on pump nameplate since Jan 27, 2020
- Indexed to Standard (lower is better)

Energy Rating
- Voluntary rating developed by Hydraulic Institute based on DOE PEI metric
- Most pump manufacturers are participating
- Describes “percent energy savings” over Standard

* Generally covered certain clean water pumps between 1-200 hp. See 10 CFR 431.462 for more details.
Opportunities for Utility Incentive Programs

The Extended Motor Products (XMP) Initiative’s goal is to drive awareness, stocking, and sales of efficient motor-driven products.

New Pump Labels + New Utility Incentives = Energy Efficiency Opportunity for Pumps!

More to come…
**Program Highlights**

- Program began in June 2019
- Includes 2019 & 2020 Year to Date Performance

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<tr>
<th><strong>Program Highlight</strong></th>
<th><strong>Performance</strong></th>
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<td>1,549 incented pumps and circulators</td>
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<td>$293,847 in per-pump incentives</td>
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<td>1,696 MWh energy savings</td>
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<td>54 outreach events</td>
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<td>Reached 586 individuals involved with specifying or installing HVAC pumps</td>
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<td>2 Case Studies Completed &amp; 3 Underway; Complete <a href="#">Pumps Research</a></td>
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**Smart Pumps**

- Packaged pump, variable speed drive, internal sensor, and pre-programmed controls
- Flexible control modes can operate on constant flow or variable flow systems
- Do not require integration to an external sensor or building management system (BMS)
- Minimize energy use in operation, while maintaining or improving performance
A Case Study: Smart Circulators Provide Convenience and Savings for Bellwether Housing

BEFORE
Four DHW Recirculation Loops served by a single speed circulator with an inefficient motor pulling 88 watts continuously 24 hours a day 7 days a week

AFTER
All four circulators were replaced with smart circulators equipped with ECMs and Advanced Speed controls, resulting in a 90% decrease in power consumption. Additional savings occur from the reduced demand placed on water heaters and boilers
Take Aways

• Even though pumps are small, can result in big and easy savings opportunities
• Look for Smart Pumps with ECMs and Advanced Controls
Questions

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