Energy Efficiency & Renewable Energy

Hunter Hassig, Energy Advisor – Bellingham, WA
Topics:

- Safety moment
- Local resources
- Efficiency programs
- Renewable programs
Safety moment: Share the road

• Ride like a driver
• Drive like a rider
• Be seen
• Be prepared and protected
Energy management team supports customers throughout PSE’s service area

PSE locations with EE support:

- Energy Management Engineers (EME)
- Community Outreach Staff
- Energy Advisors
- Program Managers
- Bellingham Service Center
- Skagit Service Center (Burlington)
- Bothell Building H—EE Headquarters
- Bellevue, PSE Headquarters
- North Seattle
- South Seattle
- South King Complex (Kent)
- Kitsap Service Center (Bremerton)
- Olympia Service Center
- Whidbey Island (Freeland)
Energy advisors

• PSE customer contact for EE and renewable energy
• Contractor Alliance Network: Pre-screened, vetted contractor referrals
  • Instant rebates
• Troubleshoot “high usage” inquiries
• Event staffing
• Presentations
• EA hotline: 1-800-562-1482 (M–F, 8 a.m. – 5 p.m.)
• Local contact: Hunter Hassig
  1329 N State St, Bellingham, WA
  Office hours: 9 a.m. – 5 p.m., M–F

How much does PSE invest in energy efficiency every year?
○ $25 million
○ $50 million
○ $75 million
○ $100 million

$100 million

Energy efficiency is our best strategy to meet PSE customers’ growing needs. Our key drivers are:
• Social responsibility
• Helping customers manage energy costs
• Balanced resource planning
• System reliability
• Least cost alternative to power purchases
• Compliance – “It’s the law”
Business Energy Management

Lighting • Resource Conservation Management
Small Business Direct Install
Utility Energy Service Contract • Laundry
Industrial System Optimization Program
Kitchen • Custom Grants • HVAC
Comprehensive Building Tune-Up
New Construction • Energy Management Tools
Business Lighting Program

- Custom lighting incentive applies to both equipment and installation
- Number of lighting paths now reduced and simplified
  - **Business lighting**
    - Pre-approved, custom lighting upgrades with incentives of **$0.20 per kWh** saved up to **70 percent of the project cost**
    - Projects must be submitted for pre-approval before work starts and are subject to pre- or post-inspection
  - **Street lighting**
    - **Pre-approved, incentives** paid on a retrofit of an existing HID street lighting installation or new LED street lights
    - Express option available for projects of 20 fixtures or less
Instant lighting discounts

Lighting To Go:

• **Point of sale incentive at distributors.** This program has expanded to include more distributors in order to provide an easy method for business customers to receive rebates.

• No pre-approval required.

• PSE instant discounts of **$4 to $15 on qualified LED lighting** at participating Lighting To Go vendors.

• Get a list of participating vendors at [pse.com/lightingtogo](http://pse.com/lightingtogo).
New Construction Program: Overview

- Incentives help bridge the gap for developers to upgrade to energy efficient equipment which goes above code
- New construction measure incentives include:
  - Whole building energy savings—Simplified to $/kWh
  - Lighting—**New** lighting power density approach
  - Custom—Innovative ideas
  - Condensing boilers and water heaters—DHW/space heat
  - Clothes washers
  - Showerheads
  - Bi-level stairwell fixtures with occupancy sensors
  - Commercial kitchen and laundry
Commercial New Construction

• **Lighting Power Density Approach**
  - LPD approach utilizes energy code as a baseline for applicable space types
  - Incentive will be based on proposed design in comparison to the code; measure cost will be assumed to be the same as the incentive amount

• **Whole building approach (>50,000 sq. ft.)**
  - Energy Modeled Savings
  - $0.30/kWh or $5/therm (non-lighting)

• **Component approach (lighting)**
  - WA State Energy Code Lighting Power Allowance (LPA) baseline
  - Energy savings calculated from lighting compliance forms
  - $0.20/kWh up to 100% of system cost
  - Lighting must be minimum 10% more efficient than code

• **Component approach**
  - $0.30/kWh or $5/therm (non-lighting), $0.20/kWh (lighting), up to 100% of incremental cost
Local brewery - VFD

Variable frequency drive – chiller system glycol pump

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost</td>
<td>$2,060</td>
</tr>
<tr>
<td>PSE grant</td>
<td>$2,060</td>
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<tr>
<td>Brewery cost</td>
<td>$0</td>
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<tr>
<td>Annual energy savings</td>
<td>$758 (7,580 kWh)</td>
</tr>
</tbody>
</table>
Commercial retrofit grants

Most common projects:

• Controls upgrades
  o Full system
  o Rooftop units
  o Demand-control ventilation

• Boiler upgrades

• VFDs

• HVAC equipment

• Chillers

Typical Pacific NW building

- Heating 33%
- Cooling 10%
- Lighting 25%
- Other 20%
- Water heater 3%
Commercial HVAC incentives

High-efficiency Commercial HVAC Unit Replacement

• Incentives of $100/ton to $550/ton
• Switch from PSE electric resistance heat to heat pump or natural gas

Commercial HVAC Rooftop Unit Premium Service incentive

• Incentives range depending on size and service

Did you know that almost half of business energy bills can be attributed to heating and cooling?
Small Business Direct Install

- Any PSE customer served by electric rate schedules 8, 24, or 25, or gas rate schedule 31 will qualify for a free assessment
- <50 kW demand or under 10,000 sq ft
- No-cost installation of basic measures and low-cost customer co-pay measures

PSE will perform a FREE energy assessment for customer in order to identify and install common energy efficiency measures:
- Comprehensive projects including lighting, refrigeration and water savings measures
- For more complex measures, PSE will connect customer to contractors and offer incentives through other programs
# No- and low-cost measures

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Refrigeration</th>
<th>HVAC</th>
<th>Water saving</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>• LED lamps</td>
<td>• Strip curtains</td>
<td>• Programmable thermostats</td>
<td>• Aerators</td>
<td>• Open and Exit signs</td>
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<tr>
<td>• LED Recessed Cans</td>
<td>• Gaskets</td>
<td>• Refrigerant charge (small pkg AC)</td>
<td>• Showerheads</td>
<td>• Smart strips</td>
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<tr>
<td>• T12 to T8 retrofits</td>
<td>• Vending cooler miser</td>
<td>• Premium HVAC tune-up measures</td>
<td>• Pre-rinse spray heads</td>
<td>• Water heating line insulation (LDI)</td>
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<td></td>
<td>• Suction-line insulation</td>
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<tr>
<td></td>
<td>• Auto closers</td>
<td></td>
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<tr>
<td></td>
<td>• Night covers</td>
<td></td>
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<tr>
<td></td>
<td>• Case lighting controls</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>• Anti-sweat heater controls</td>
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[Image of different energy-saving measures]
Commercial kitchen equipment incentives

Cooking, refrigeration, water heating, and sanitation equipment
• Must be served by PSE electricity or natural gas
• PSE will incentivize high-efficiency equipment
• Customers can receive incentives by completing application
• Or from purchasing at an approved kitchen distributor
• Incentives range from $100 to $2,000/unit, depending on the equipment
• Current qualifying equipment include:
  o Fryers
  o Steamers
  o Convection, combi, conveyer, rack Ovens
  o Ice makers
  o Water heaters & boilers
  o Dish washers
• More equipment categories possibly coming in 2016!
  o Such as DCV for kitchens

Did you know that more than 50 percent of the energy used in most restaurants is from cooking and sanitation?
Commercial kitchen equipment incentives

- ISOP will continue to serve PSE Industrial customers
- Natural gas incentives + SEM offering coming soon:
  - Still must be a PSE electric customer

- Provides **no- and low-cost** operation and management improvements to your facility
- Includes **engineering support at no cost** to the customer
- Provides **in-depth action plan** to achieve energy savings
- Incentive is **$0.05/kWh up to 70%** of the implementation cost

**Eligibility guidelines:**
Typical use at least 1 million kWh
Building should have industrial processes
(fans, pumps, blowers, refrigeration, compressed air, etc.)

Facility energy savings: 5-15 %
Average payback period: < 1 year
Green Power Program

- Allows customers to support renewable energy development by matching a portion or all of their electricity with renewable energy.
- Supports independent, renewable energy producers
- Focused in the Pacific Northwest
- Cost: as little as $20 additional per month
Green power resource supply

- Wind - 68%
- Solar - 1%
- Livestock methane 15%
- Landfill Gas - 9%
- Qualified Small Hydro - 5%
- Geothermal - 2%

Help win Bellingham Green Power Challenge and PSE will donate up to $50,000 for a city Solar PV array!
Renewable energy for your business

Incentives:

- Net Metering
- REAP
Business Energy Management

Business incentives

Make energy efficiency your business’s best asset

When you’re looking to bump up your business’s bottom line through energy efficiency improvements, use PSE’s commercial incentives to save on energy-efficient equipment and waste-reducing services. For personalized advice, call an Energy Advisor at 1-800-562-1482, Monday through Friday from 8 a.m. to 5 p.m.

Energy Management
HVAC
Kitchen
Laundry
Lighting
New construction
Retrofit grants
Generators
Tools & resources

For Communities
For Condos & Apts
For Schools
Green Power
Carbon Balance
Renewables
New Construction
For Trade Allies
All Fuel Vehicles
About Efficiency

PSE.com/mybusiness
Questions?

Thank you

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1-800-562-1482