



Energy Trust Dairy Incentives

April 9, 2020



About us

Independent
nonprofit

Serving 1.6 million customers of
Portland General Electric,
Pacific Power, NW Natural,
Cascade Natural Gas and Avista

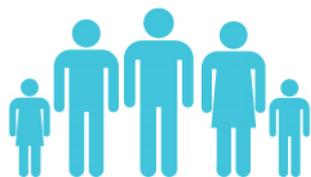
Providing access
to affordable
energy

Generating
homegrown,
renewable power

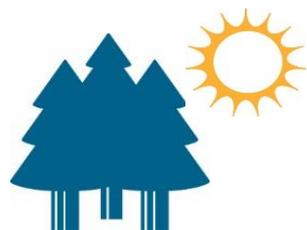
Building a
stronger Oregon
and SW
Washington

18 years of affordable energy

From Energy Trust's investment of \$1.5 billion in utility customer funds:



Nearly 660,000 sites transformed into energy efficient, healthy, comfortable and productive homes and businesses



10,000 clean energy systems generating renewable power from the sun, wind, water, geothermal heat and biopower

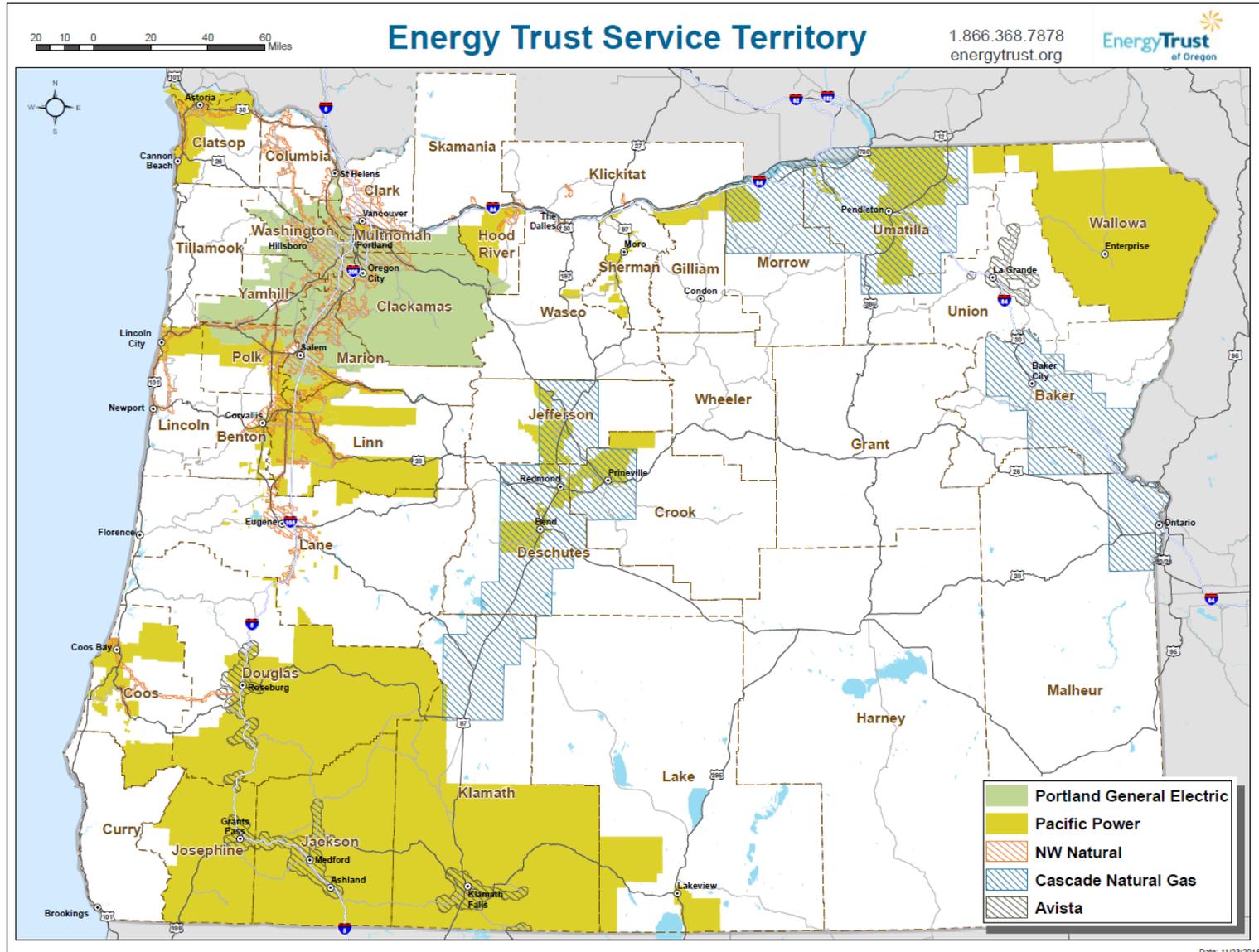


\$6.9 billion in savings over time on participant utility bills from their energy-efficiency and solar investments



20 million tons of carbon dioxide emissions kept out of our air, equal to removing 3.5 million cars from our roads for a year

Energy Trust Service Territory



Cash Incentives

Lighting
\$.25/kWh

**Equipment
Rebates**

**Custom
incentives**
\$0.30/kWh
\$2.50/therm

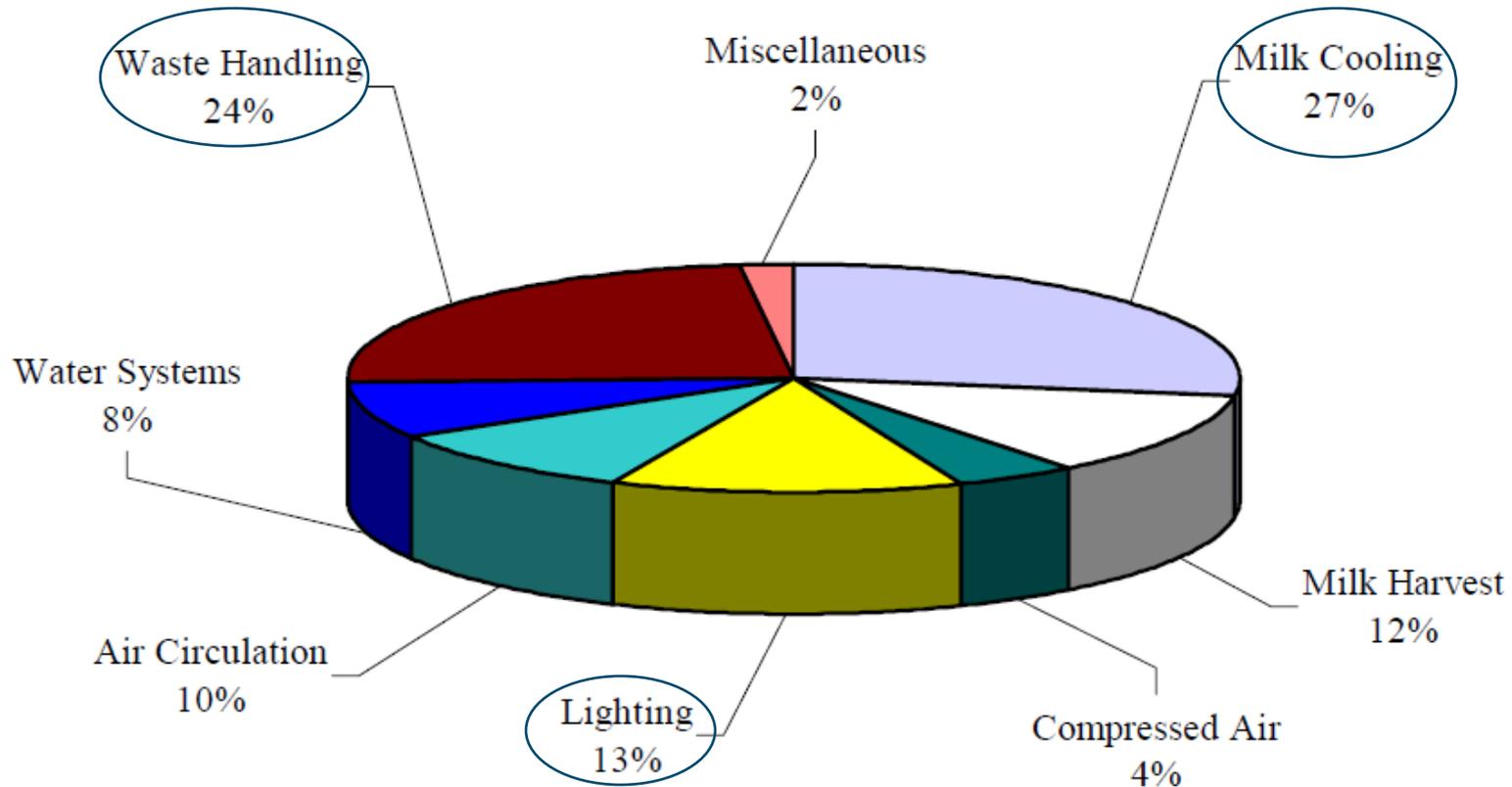
Receiving your project incentives



We are always here to help you



Electric Energy Use on a Representative California Dairy Farm



Energy Use in a Dairy

Source: SCE Dairy Farm Energy Management Guide California

Dairy Upgrades

- Vacuum pump VFD
- Heat recovery
- Milk pre-cooler
- Auto milk take-offs
- Irrigation systems
- Manure separators



Vacuum Pump VFD

- Low cost
- High savings potential ~ 60%
- Less noise
- Less wear → longer pump life
- Stable vacuum
- Most Dairies have it

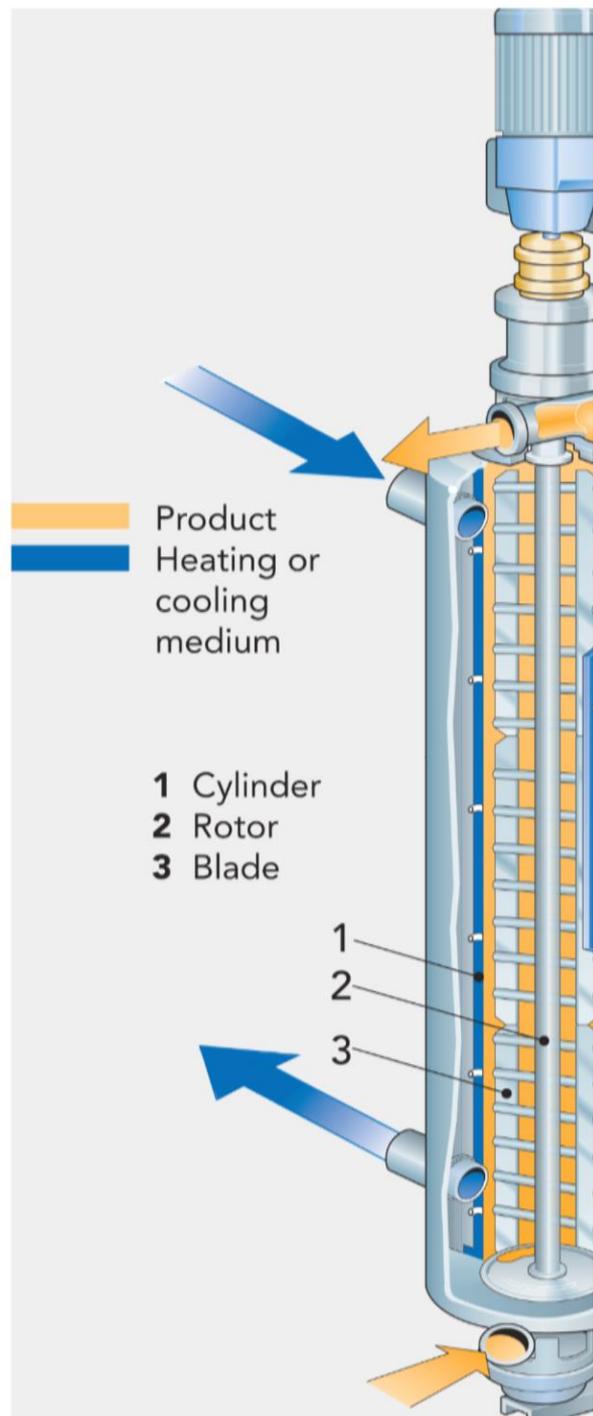


Heat Recovery

- Recovers refrigeration heat
- Preheats water
- From 50 → 80 degrees

Other opportunity

- Pipe Insulation



Milk pre-cooler

- 100 degree Milk has to be cooled
- Uses ground water
- A chiller finishes the cooling
-
- Precooler prewarms wash water





Auto milk take-offs

- Most have this already.
- If not using this they use more vacuum than they need to.

Irrigation Systems Efficiency comparison

	Application Efficiency	PSI	Annual Energy Cost	Initial Cost	Estimated Energy Trust Incentive
Big Gun Hard Hose Traveler	60%	100	\$7,700	\$12 k	
Wheel Line / Solid Set	65%	70	\$4,325	\$70 k \$200 k	\$12,375*
Pivot / Linear	85%	60	\$3,150	\$80 k \$117 k	\$16,250
Drip Micro Irrigation	95%	35	\$1,645	\$185 k	\$21,625



Manure separators

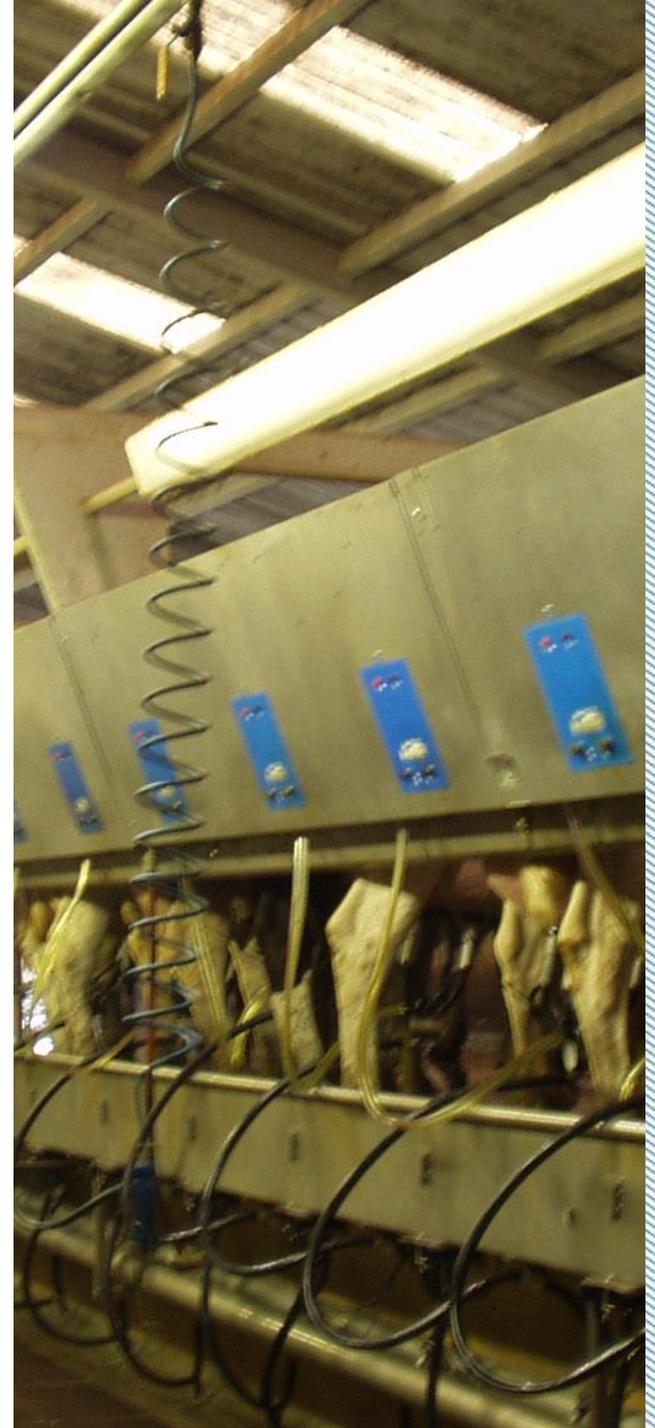
- A few projects
- Add a VFD
- Application specific

- Do not want manure out of suspension too soon!

Lighting upgrades

- Talk to a lighting contractor
- All are calculated measures
- All require preapproval

- Great measure
 long operating hours



Industrial Equipment Incentives and Rebates

Rebates

- Battery Chargers
- Steam Traps
- Compressed air
- Natural gas heating
- Insulation
- Welders
- Irrigation
- Greenhouses
- Cannabis Dehumidifiers

Submit within 6 months and
before the end of the year

Calculated Projects

- Variable-frequency drives
- Refrigeration Controls
- High-speed doors
- Compressed Air
- Dust collection
- HVLS fans
- Industrial pumping
- Cannabis Insulation
- Process hot water boilers

Call before you buy
Preapproval is required



Program Staff

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Compressed air, Irrigation, Steam traps

Christian Bernard
Compressed Air, Steam traps

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Outreach Manager



Thank you

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