

Climate Friendly Nurseries Project

BEST MANAGEMENT PRACTICES

Save Money Save Energy

While improving your growing environment and yield



Invest in GREENHOUSE EFFICIENCIES

- Install a programmable thermostat
- Replace single poly with two layers: one poly and one infrared poly
- Replace fiberglass with double or triple polycarbonate
- Install roll-up walls or roof vents for natural ventilation to minimize the need for fans
- Insulate sidewalls and unused ends
- Install a thermal curtain
- Upgrade to an energy efficient boiler
- Replace gravity vented heaters with power vented heaters or even better, with combustion air separated heaters or better still with condensing heaters
- Your best bet is to replace heaters with under bench heating – although it is expensive, it heats plants directly at the roots, has a long life, and uses the least amount of energy

Example of a grower who's done it

Harts Nursery replaced their old boiler with two high-efficiency condensing boilers and expect to save \$19,000 each year on natural gas. The new boilers are better at maintaining greenhouse temperatures and are propagating flower seeds faster to increase yield. With incentives, they will recover their investment after only four years.

Potential Savings

Greenhouse Thermal Curtains and Insulation of Unused Ends		
	40-acre Nursery	400-acre Nursery
Cost (before incentives)	\$5,625	\$94,500
Incentives	\$3,101	\$52,256
Energy Trust of Oregon	\$218	\$3,825
Oregon Business Energy Tax Credit	\$1,477	\$24,806
USDA Rural Energy for America Program Grant	\$1,406	\$23,625
Annual Savings	\$600	\$10,935
Payback	~4 years	~5 years

* Examples are based on financial incentives available in Oregon as of March 2011 and are subject to change. Many states have similar programs. Opportunities for efficiency improvements are site specific and vary.

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Where do I start?

1. Check for and seal any leaks in the ceiling, around doors, windows and vents.
2. Reduce temperatures at night, where possible.
3. Conduct regular maintenance – clean and check boilers and burners for peak efficiency, adjust vents and lubricate louvers and calibrate thermostats.
4. Contact Energy Trust (for NW Natural or Cascade Natural Gas customers) or local utility to understand current greenhouse upgrade incentives and training opportunities.
5. Find a contractor near you.
Energy Trust trade allies—
http://energytrust.org/industrial-and-ag/find-a-contractor/production-efficiency/default.aspx?s_txtService=GH
6. Schedule onsite assessment.
7. Get quote and understand project cost and available incentives (Energy Trust or utility + State of Oregon’s Business Energy Tax Credit). Energy Trust offers specific incentives for greenhouses, including reglazing and heating system upgrades.
8. Talk to someone who’s done it. See case studies at www.climatefriendlynurseries.org
9. Consider applying for additional incentives such as USDA’s Rural Energy for America Program (REAP). Apply for applicable incentives BEFORE you begin.
10. Set up installation to work with your production cycle.

Climate Friendly Nurseries Project

The Climate Friendly Nurseries Project, a collaborative partnership between the Oregon Association of Nurseries and the Oregon Environmental Council, has developed a guide, Best Management Practices for Climate Friendly Nurseries, to help nurseries reduce operating costs and greenhouse gas emissions. The BMP Guide contains detailed recommendations, Oregon case studies, and low and no-cost efficiency improvements for nurseries.

Learn more at www.climatefriendlynurseries.org



Information and subject matter was also provided by partners:

