

Sample Emerging Technologies for the Pacific Northwest

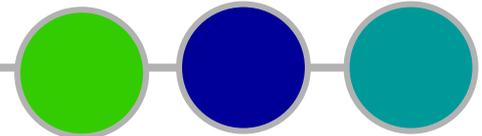
Jack Zeiger

March 2009

Assessing Emerging Technologies

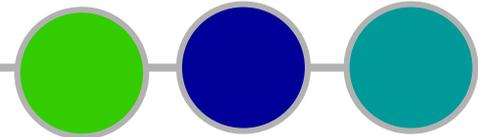
WSU Energy Program:

- **Contracted by 3 NW utility organizations (NEEA, NWPCC, BPA)**
- **Seeking out emerging technologies**
- **Perform secondary research**



Organization Consulted

- ACEEE
- BC Hydro
- BPA
- California Lighting Technology Center
- E Source
- ECOS Consulting
- Edison Electric Institute
- Emerging Technology Coordinating Council
- Federal Energy Management Program
- National Labs
- Natural Resources Canada
- Puget Sound Energy
- Seattle City Light
- Sacramento Municipal Utility District
- UC Davis
- U.S. Dept of Energy
- WSU Energy Program
- Washington Technology Center



Major Findings So Far

- **No silver bullets**
- **Many incremental improvements**
- **Proliferation of niche applications**
- **Development of business practices for energy management**
- **Some potential “breakthrough” technologies warrant RD&D now**



Findings in Three Categories

Improvements to Existing Technology

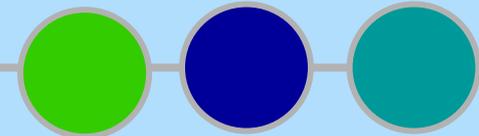
Improved Tech

Changes to Design & Business Practices

New &
Improved
Practices

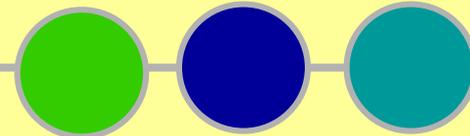
New Products & Technology

New Tech



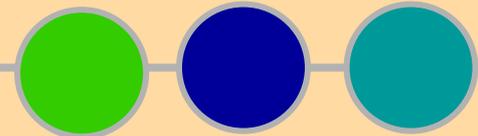
Improvement to Existing Technology: Frigitek Evaporator Fan Controller

- Two-speed fan control
- Cuts cooling energy 25%
- Lower product shrinkage
- Decreases cooling loads
- Low-cost
- Simple installation



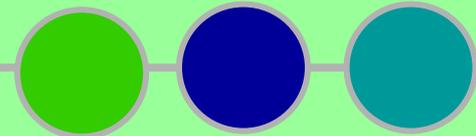
Change to Design Practice: Integrated Building Design

- Reduces energy and operating costs
- Many environmental and non-energy benefits
- First cost surprisingly low
- Benefits are difficult to predict and quantify



New Technology: Solid State Plasma Lighting

- Luxim LIFI Lamps (<http://www.lifi.com>)
- Topanga Technologies (<http://topangatech.com> – under construction)
- High lumen output (projectors)
- Small electrodeless lamps
- 120 lumens/W
- Low mercury



Thank you!

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WSU Energy Program

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