



An Energy Efficiency Workshop & Exposition
Palm Springs, California

Energy Conservation

What else is there?

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It's not Just Energy

What Else Is There?

- Environmental Issues
 - Air Emission
 - Natural Resources
 - Sustainability





It's not Just Energy *What Else Is There?*

- Collateral Savings
 - New Infrastructure and Transmission cost
- Maintenance and Reliability
 - Deferred Capital and Labor cost
- Case Studies
 - 750 KW Photovoltaic System
 - Horizontal Axis Washers
 - LED Lighting systems

June 2 -5, 2002

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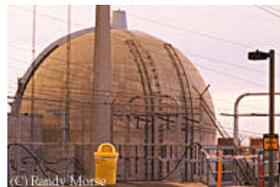
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The Basics

Energy conservation projects that reduce electrical consumption avoid at least:

- 103 pounds of carbon dioxide per megawatt
- 0.21 pounds of sulfur monoxide per megawatt
- 0.15 pounds of nitrous oxide per megawatt



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The Basics

Avoided resources needed for new generation and distribution infrastructure.

- New Gas and Electric transmission and distribution systems
 - Cost of Labor
 - Cost of raw materials
 - Cost of land and environmental studies



The Basics

- Maintenance and Reliability
 - Deferred Capital and Labor cost
 - New Technologies have longer expected life
- Unplanned outages
 - **Very Expensive !**



750 KW PV System Naval Base Coronado

- Green house gases associated with power generation
- Cost avoidance for **on peak** electricity
- Distributed generation for California unique energy situation



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Its Not Just - Energy Savings

- Community stewardship
- PV system will generate approximated 2.5% of base peak electrical demand
- Showcase project for the Navy
- 450 secured covered parking stalls for deployed sailors



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High-Efficiency Front-Loading Washing Machines

Compared to the existing 45 Gal. washers, savings will result from:

Electricity Savings

- Reduced electricity to operate washer motor and controls – 25 % savings.
- Reduced electricity to operate existing electric dryers – 10 % savings due to less moisture content in clothes leaving washer.
- Reduced electricity due to less (electrically heated) hot water required – 40 % savings.

Natural Gas Savings

- Reduce Natural gas used for heating hot water - 40 % savings.
- Reduced natural gas to operate existing gas clothes dryers – 10 % savings.

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Its Not Just - Energy Savings

Water Savings

- Less water required per wash – 40 % savings
 - And all the energy needed for delivery

Sewer Savings

- Equal to water savings – 40 % savings
 - And all the energy needed for processing

Environmental Permitting Savings

- Allows water treatment plant to meet daily discharge limits
- Defers expensive expansion of water treatment plant



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LED Aviation Lights

- Annual Kwh saved
488
- Annual dollars
saved @\$0.10 Kwh=
\$48.80
- Simple ROI = 1.43
years
- Product cost \$70



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Its Not Just - Energy Savings

- HI - Lift cost
\$100/day
- Labor for Hi-lift
\$65/hour
- Labor for Electrician
\$75/hour
- Twice / Yr. Avoided
Maintenance = \$480



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Additional Resources & Facts

Websites:

- <http://www.awea.org/pubs/factsheets/EmissionKB.PDF>
- <http://www.epa.gov/globalwarming/actions/cleanenergy/sol/>
- <http://www.eren.doe.gov/geothermal/>
- <http://yosemite1.epa.gov/oar/rew.nsf/greenpower/index.html>



What Else Is There ?

- Environmental Benefits
- New Generation Infrastructure
- Maintenance, Reliability & Sustainability



Conclusion

- Energy generation and consumption is one of the greatest impacts that man has on the environment.
- Aggressive energy management is one of the most successful activities to minimize those impacts.