

Energy Efficiency Programs and Manufacturing

Supplier Partnership for the Environment
May 3, 2011



Consumers Energy Saving Solutions
Everyone has the power to save.

Today's topics

- Michigan energy optimization programs
- Benefits to Businesses
 - Sustainability
 - Energy Savings
 - Cost Savings
- Energy savings opportunities for business

Energy Efficiency Programs

- Programs were mandated by PA 295 enacted in October 2008
- Utilities are required to reduce energy consumption through energy efficiency measures
- All utilities in the state are required to participate
- Consumers Energy is required to show energy savings of electric use by 1% and natural gas use by .75% in 2012

Energy Efficiency Programs

- Incentive programs are available for all customers
 - Commercial
 - Industrial
 - Residential
- Consumers Energy optimization programs offer incentives for upgrading, replacing or maintaining equipment
- Since 2009 Consumers Energy has given out over \$20 million in incentives to C&I customers



SUSTAINABILITY



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What is Sustainability?

“Sustainability is the policies and strategies that meet society’s present needs without compromising the ability of future generations to meet their own needs.”

U.S. Environmental Protection Agency - 2011

- We all want to do the right thing....

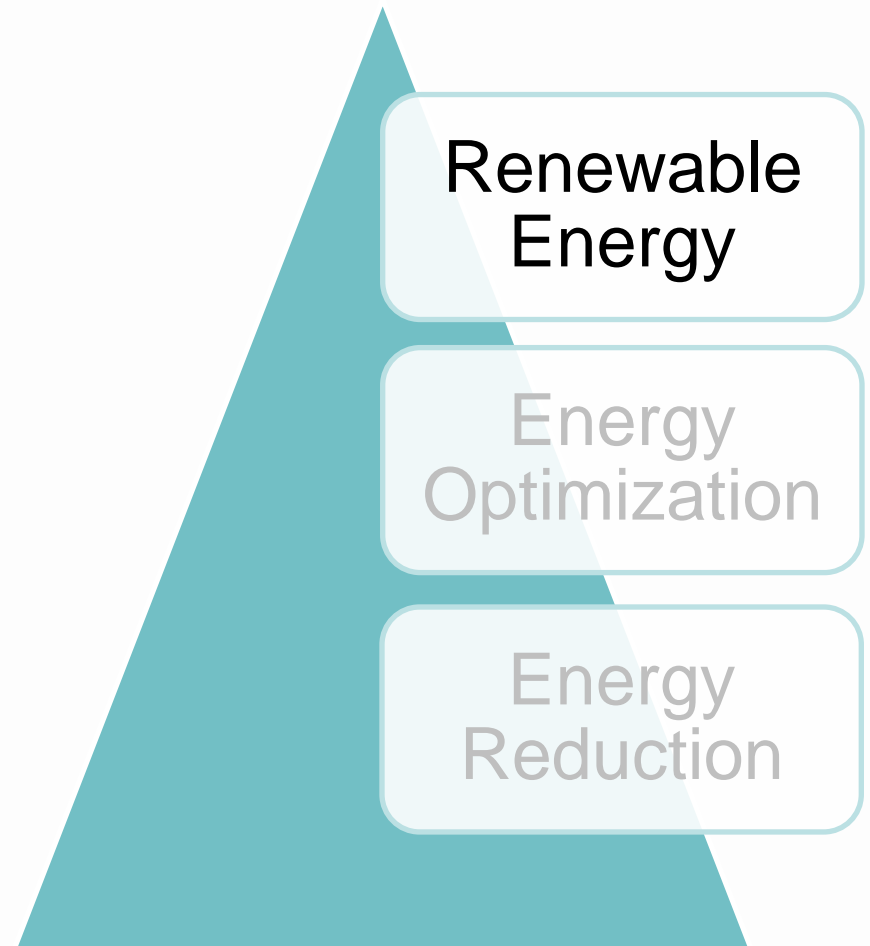
As long as it doesn't cost too much

Elements of Sustainability



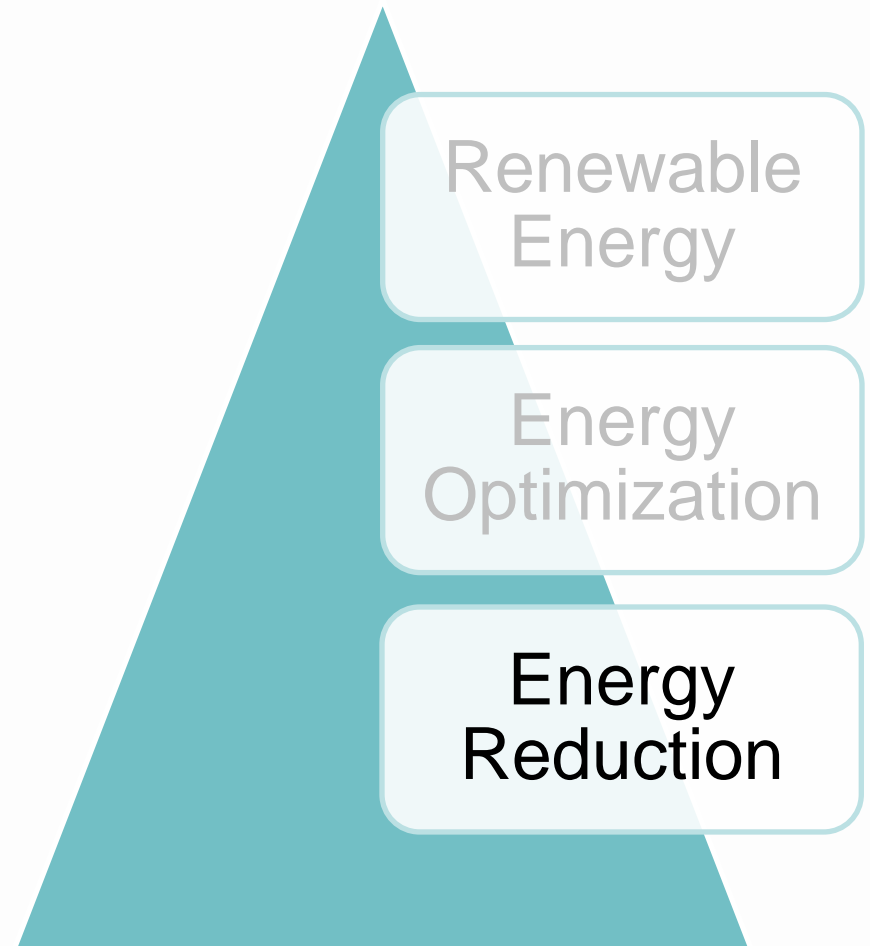
Focus on Energy

- People associate renewable energy with sustainability
 - Wind turbines
 - Solar panels
- Renewable is expensive
 - Not a 100% solution
 - High initial cost



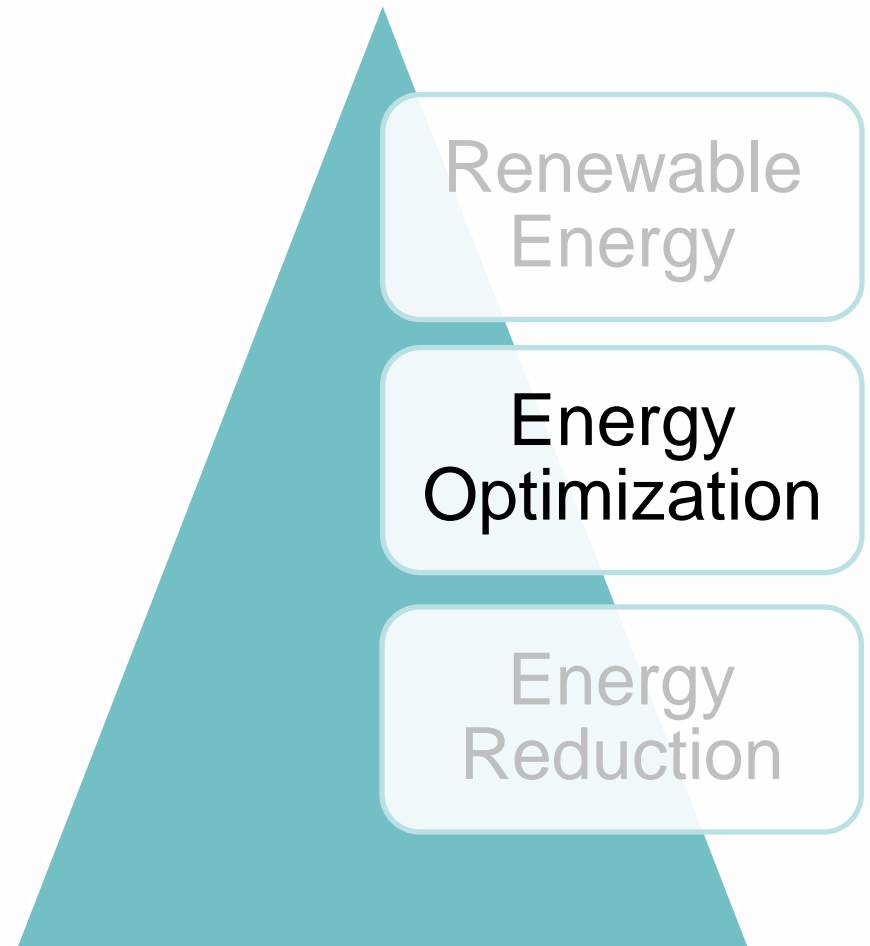
Focus on Energy

- Energy reduction works
- Just turn off the lights and the heat
- Not always practical
- But it is free



Focus on Energy

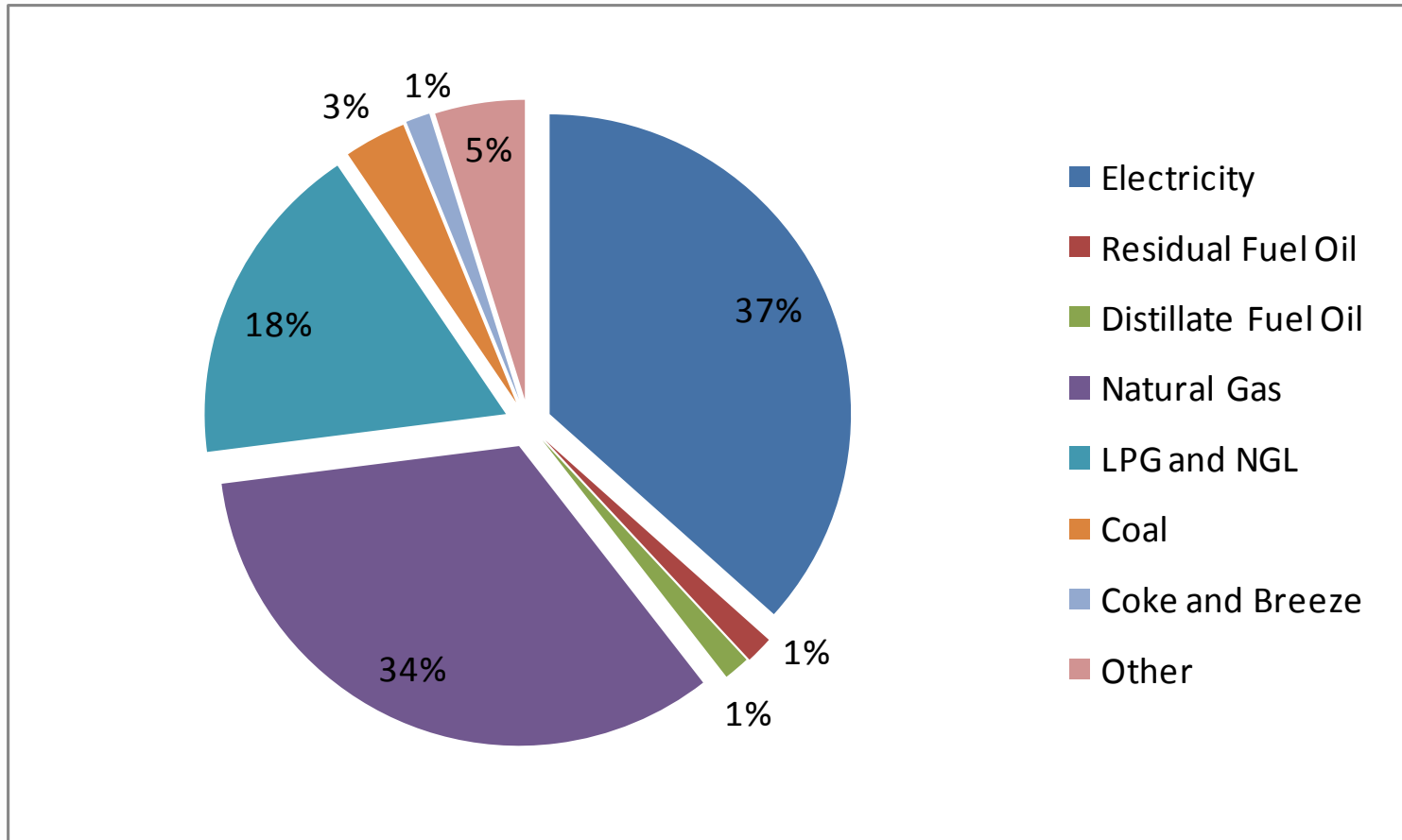
- Energy Optimization is the intelligent use of energy
- The use of efficient:
 - Lighting
 - Equipment
 - Processes
- There is a cost, but it has a defined ROI





ENERGY SAVINGS

Manufacturing energy spending



U.S. Energy Information Assoc. – 2006 MECS

Energy Costs

- The industrial sector uses over 35% of the natural gas and electricity in the US
- US manufacturers spend over \$136 billion annually in energy costs
- Energy cost ranges from 5 – 40% of production cost
- Over 80% of manufacturers do not participate in energy management activities
- What have you done to reduce your energy costs?

U.S. Energy Information Assoc. – 2006 MECS



COST SAVINGS

Cut the Cost of Equipment

- Incentives reduce the incremental cost of energy efficient measures
- Typically lower the cost of an energy efficient measure by 30% or more
 - Exterior LED lighting up to \$120/fixture
 - T8/T5 fluorescent bulbs up to \$5/bulb
 - Energy management systems up to \$.40/ft²
 - Boiler tune-ups up to \$350/boiler

Investment Opportunities

- Lowered cost of energy efficient measures allows companies to make improvements they might not have made
- Reduced costs leave more money available for other business investments
- Reduced energy use could free up additional money for more investment in the business



ENERGY SAVINGS OPPORTUNITIES

Building retrofit incentives

- **There are two types of Incentives:**
- **Prescriptive Incentives**
 - Think “**off the rack**,” get it and go
 - You install energy efficient equipment and achieve energy savings and pre-determined incentive levels
 - Incentives typically average 20% to 50% of the incremental cost of purchasing qualifying technologies
- **Custom Incentives**
 - Think “**tailored**,” custom fit to your business
 - Incentives are determined on a case-by-case basis
 - Must have a greater than one-year payback period and less than eight years

Prescriptive Measures

- Electric Measures
 - CFL's
 - T12-T8/T5 replacement
 - Exit signs
 - Exterior lighting
 - Metal halide replacement
 - Occupancy sensors
 - Chiller replacement
 - VFD's
 - Barrel wraps
 - Compressed air nozzle
- Gas Measures
 - Programmable thermostats
 - Boiler/Furnace/RTU tune-ups
 - Demand control ventilation
 - Energy management systems
 - Boiler controls
 - Insulation
 - Loading dock seals

Custom Projects

- Capital investment measures that increase energy efficiency that are not eligible for a Prescriptive incentive may qualify as a Non-Prescriptive measure.

Eligible Measures:

- Process improvements
- New technology applications
- Air compressor controls and end use reduction improvements
- Refrigeration
- Chiller plant optimization
- Cooling tower optimization
- Window replacements
- Insulation improvements
- Heat recovery projects

Ineligible Measures:

- Fuel switching
- Renewable generation
- On-site generation
- Peak shifting

Custom Projects

- Three key elements to a successful custom incentive
 - Story
 - Strategy
 - Savings

Process Improvement

- Paint mix process improvement
- Over ventilation exists from old paint processes
- Reduced ventilation requirement to meet current needs
 - Reduced air changes from 12 to 6 per hour
- Up to 50% energy savings in heating costs



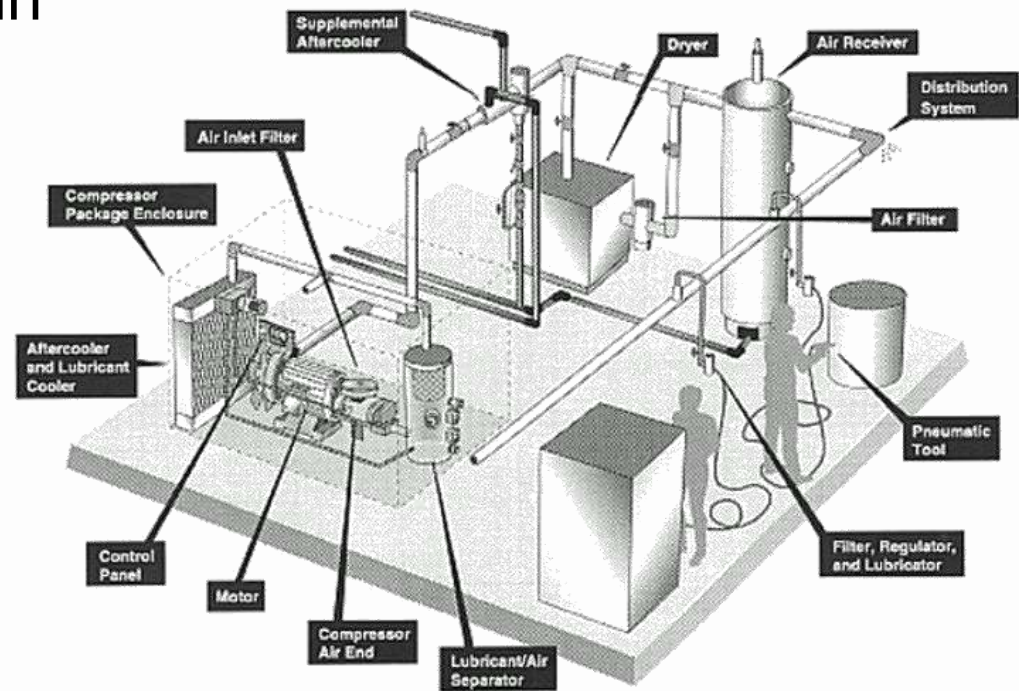
HV/LS Fans

- High Volume/Low Speed Fans
- Can provide both natural gas and electricity savings
- Potential heating savings of 25%
- Increased efficiency for heating and cooling systems
 - Warm air recirculation in winter
 - Evaporative cooling in summer
- Increased personnel comfort



Compressed Air Systems

- Compressed air is the most expensive utility in a facility
- Audits are a great starting point
 - Identify leaks
 - Inappropriate uses
 - Replace inefficient equipment
 - Optimize cycle times/loading
- 25%+ energy savings



Incentive Programs

- New Construction/Major Renovation
- Existing Building Commissioning
- Air Compression Audits

Thank You!

Contact Us

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