

# 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....

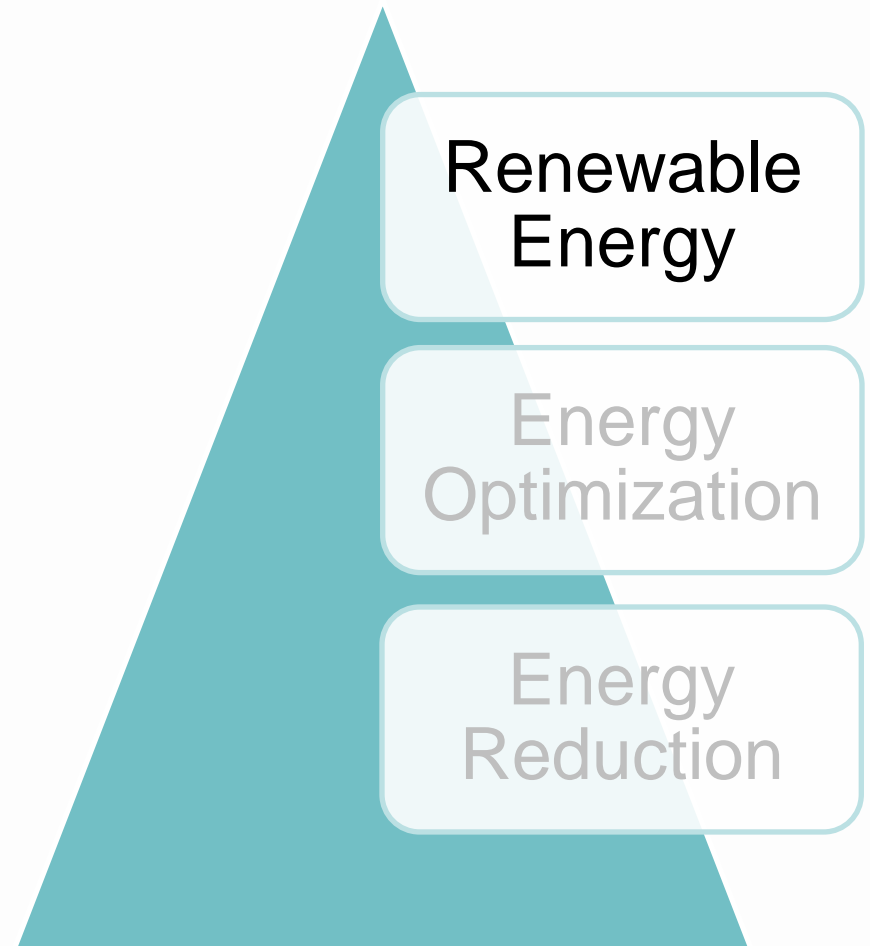
As long as it doesn't cost too much

# Elements of Sustainability



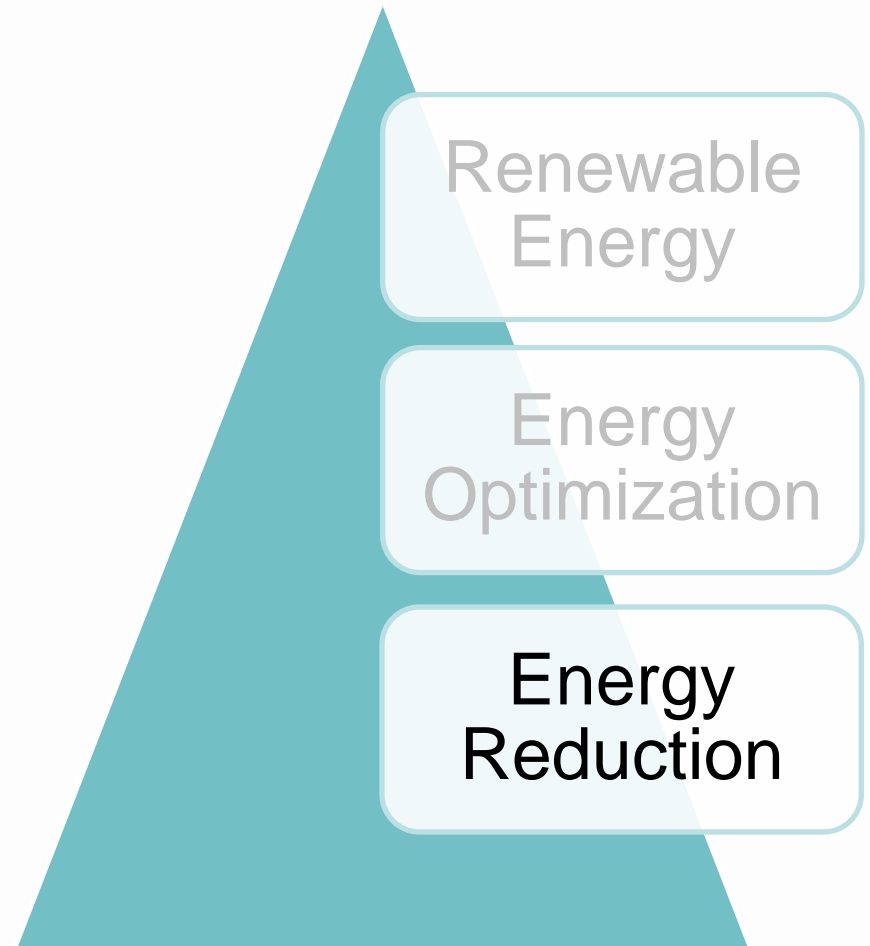
# Focus on Energy

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



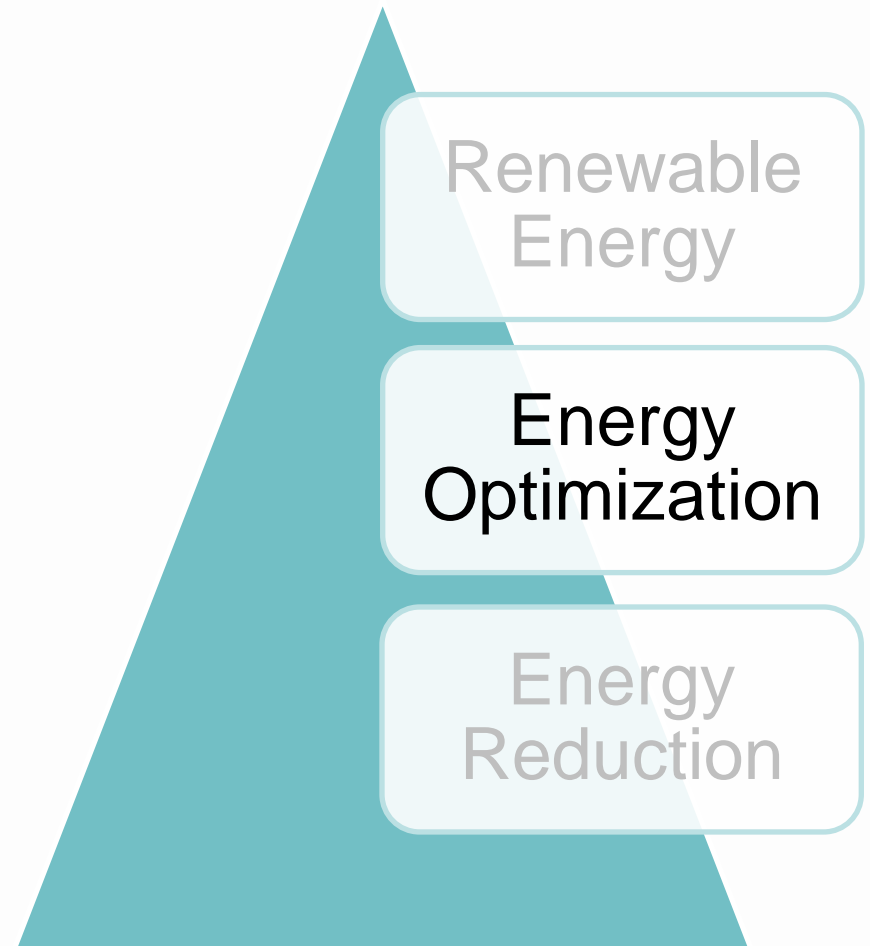
# Focus on Energy

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



# Focus on Energy

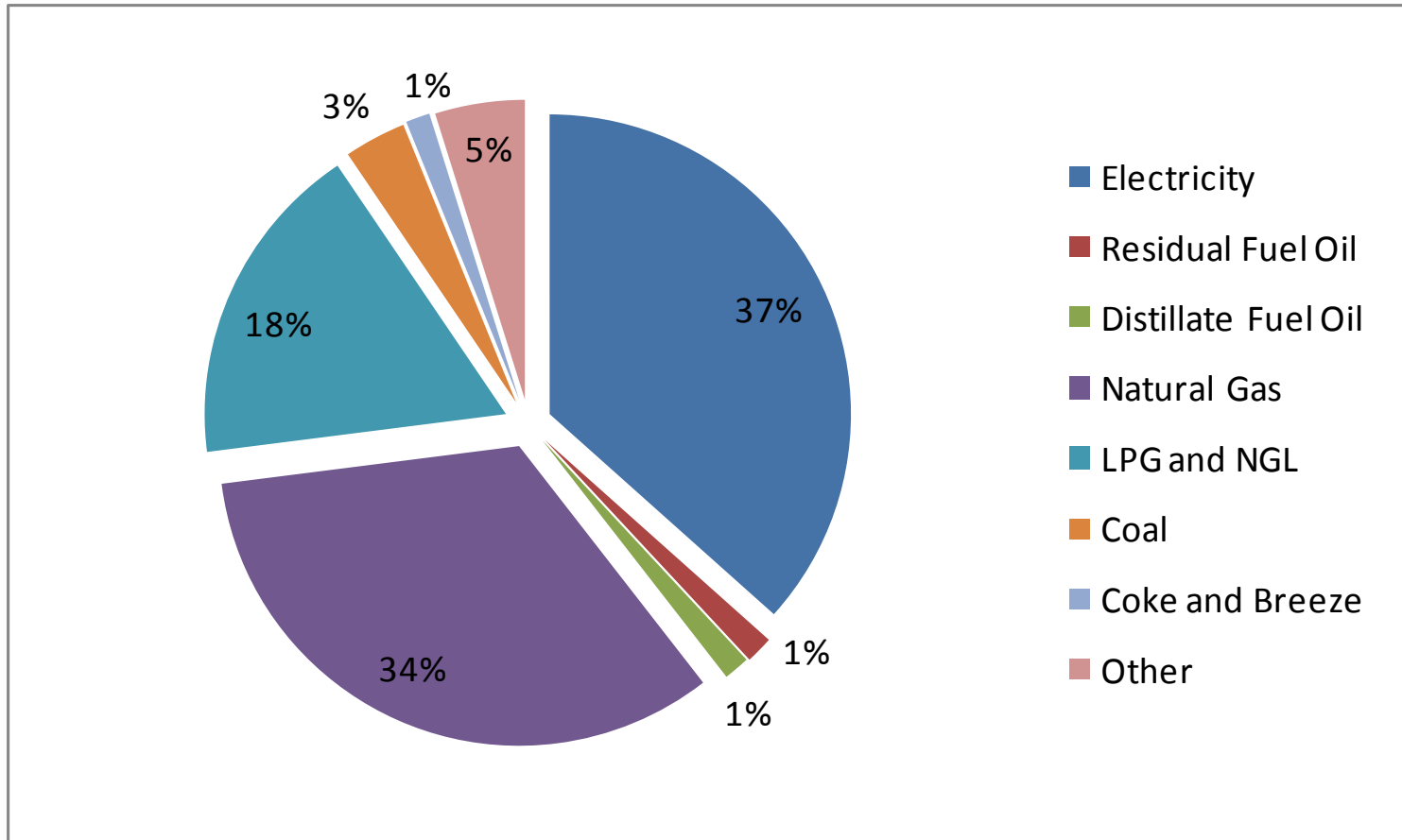
- Energy Optimization is the intelligent use of energy
- The use of efficient:
  - Lighting
  - Equipment
  - Processes
- There is a cost, but it has a defined ROI





# 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/ft<sup>2</sup>
  - 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



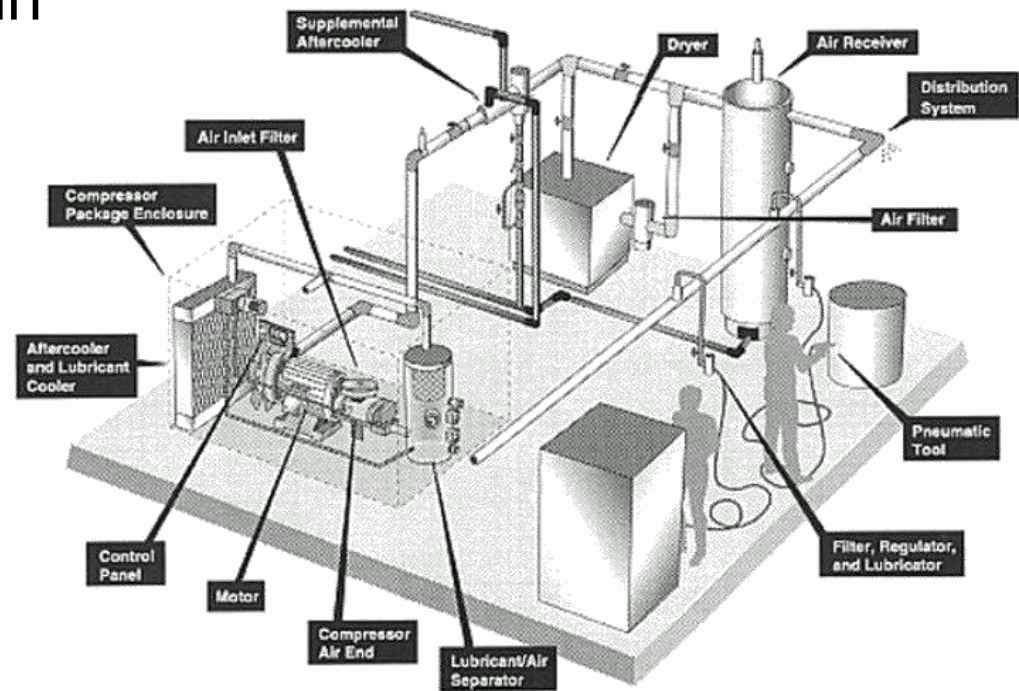
# HV/LS Fans

- 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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