How to Reduce Energy Costs by 20% - 40%

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Presented by:

Gary A. Swanson, PE

President - Energy Management Solutions, Inc. - (612) 819-7975

gswanson@emsenergy.com

www.EMSenergy.com

EMS Qualifications

- Energy Management Consulting Company
- In business for 12 years
- 18 employees
- Working with over 500 customers in USA, Canada, Mexico and Panama
- Audited over 8,000 facilities and saved over $50,000,000

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Customer Opportunities

- Most customers can save 20 – 40% of their utility costs
- Some low hanging fruit with no or little costs (10% of total)
- Most of the opportunities are under 3 years payback
- Rebates, incentives and stimulus package money will help lower the payback by up to 50%

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Cost Reduction Options

Supply Side Solutions

- Utility Negotiations/ Tariffs
- Sales Tax Exemption
- Renewable Energy
- Carbon Credits

Demand Side Solutions

- Demand Response
- Energy Conservation
- Controlling and Shifting Load

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Supply Side Solutions

- Review Tariffs – Review Yearly
  - Could save 5% of energy costs (28% on incorrect tariff)
- Negotiate with Utilities
  - Need competitive option
    - Moving facility
    - Generation
    - Bypass
- EDI Rate – Save up to 30% of the utility costs

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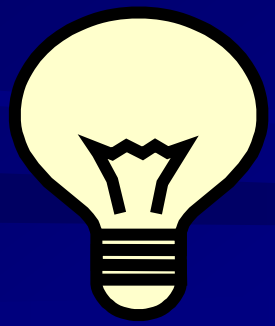
Supply Side Solutions

- Review Bills
- Sales Tax Exemption
  - Can recover past years as well
- R&D Sales Tax Deductions (20%)
- Lighting/HVAC Tax Deductions
  - Non Profit Company
  - Private Company



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Renewable Energy Options

- Wind Generation – Great opportunity for distributive
  - Stimulus Package paying 30% of projects if started in 2009 or 2010
  - Many States offering additional incentives
  - USDA grants available for up to $500k
  - Guaranteed Government loans
  - Turbines now available
  - Costs have come down

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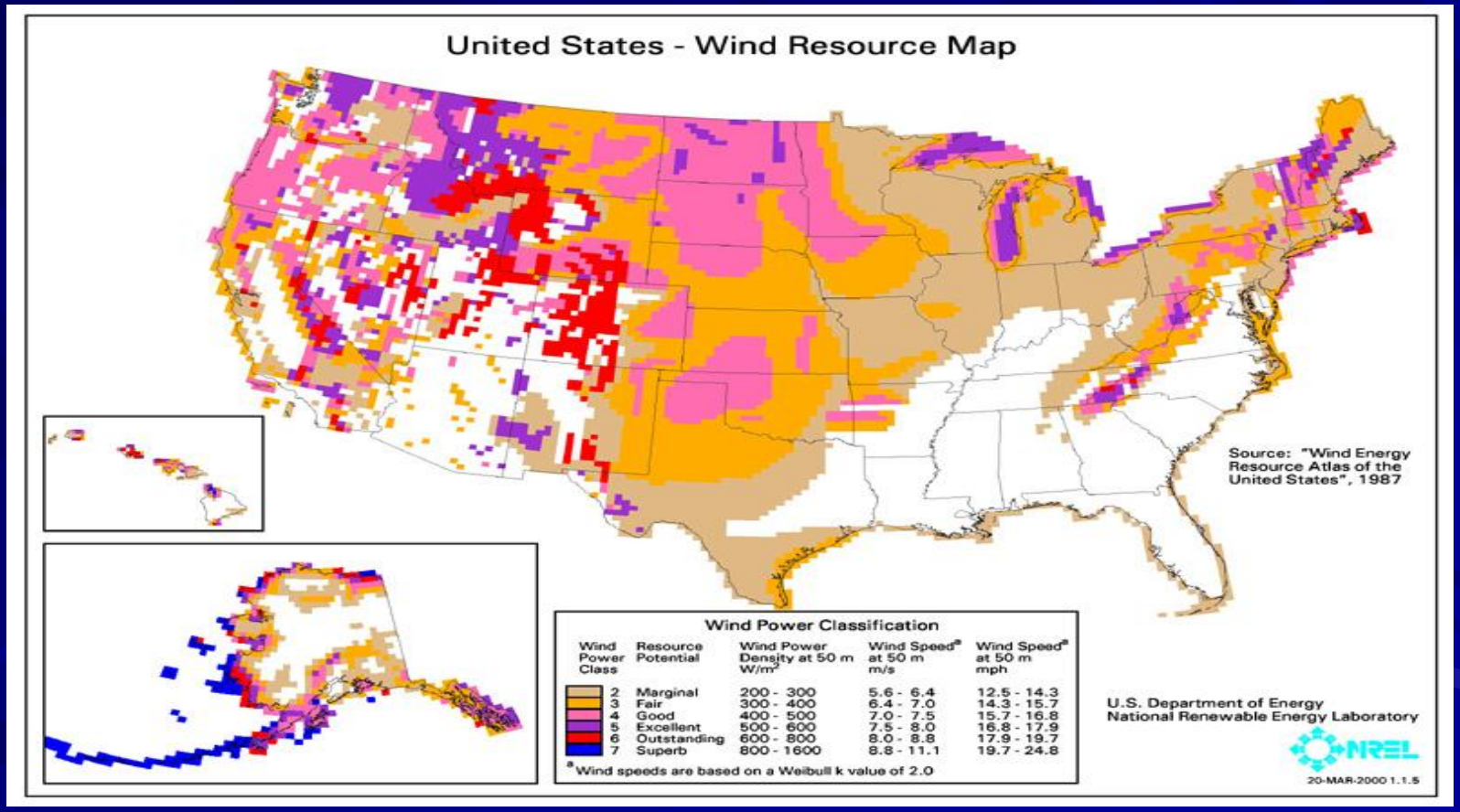
Wind Map

Color	$/kWh
	$ 0.0300
	$ 0.0380
	$ 0.0430
	$ 0.0500



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Wind Example

- GE 1.5 MW – Installed Cost ($3M)
- Stimulus Package (-$1M)
- USDA Grant (-$.5M)
- Net Cost of Turbine ($1.5M)
- Iowa State Incentive ($.015/kWh)
- Green Credits ($.0088/kWh)
- Wind Speeds 8m/s
- Cost of Energy is less than $.03/kWh

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Waste to Energy Projects

- Type of Generator Depends on Waste
  - Solid Fuel Boiler (dry wood)
  - Gasifier (seed corn, wood, other material)
  - Pyrolyzer (garbage)
  - Microwave (single fuel source)
  - Digester (organic waste)
- 10% Tax Credit for Thermal
- 30% Tax Credit for Converting to Electricity

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Waste to Energy Example

- 7.5 MMBtu Gasifier
- Fuel Sources – waste wood, plastic tops and seed corn
- Cost of Waste (-$2.0/MMBtu)
- Tax Credits ($4.5/MMBtu)
- Stimulus Package 10% of project
- Avoided Cost of Natural Gas $5/MMBtu
- Carbon Credits - $70k/Year

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Waste to Energy Example

- Revenue Stream $800,000 per year
- Cost of Gasifier $2 M
- Stimulus Grant $200,000
- USDA Grant $500,000
- Net Cost of Project $1.3 M
- Simple Payback 1.6 years

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Examples of Waste

- Cardboard – Distributive warehouse
  - Cardboard at $40/Ton is worth more as energy
- Waste Water – Food plant with starches and sugars in water
  - Avoid water disposal costs/penalties
- Paper – Printer (value of paper is greater for energy than selling waste)

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Carbon Credits

- Any project saving energy or installing renewable energy source
- Value is $3-4 per ton in states and $15 for Europe
- Can now sell US credits to European markets
- Expected to reach $20/ton in USA

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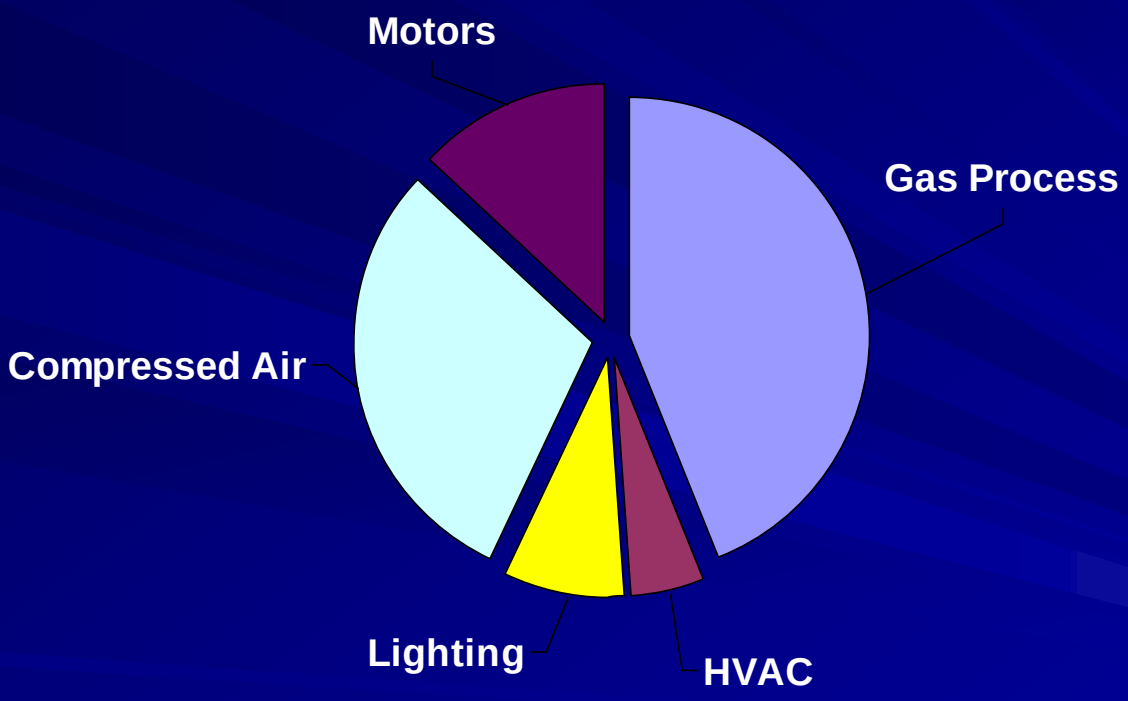
Energy Usage Profile



Complete an Energy Assessment

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Energy Conservation

- Can save 30% of energy costs with low paybacks
  - Lighting – save 50% with 1.5 year payback
  - Refrigeration – save 30% with controls
  - Air Compressors – save 35% at most facilities
  - HVAC – save 25%
  - Boiler/Thermal – save 40%
  - Motors/Drives – save 40%

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Minimize Energy Usage

- Turn equipment off when not needed
  - Lights off at night
  - Equipment off during breaks and lunch
  - Dust collection system (drives with valves)
  - Control aux. equipment when equipment is off
  - Turn off idling equipment
- Shift usage
- Night and lunch walk through useful

Saved one customer $175,000 by adding a switch to lights, turning down thermostat and turning off mezzanine lights.

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Actual Example

- Automotive Industrial Customer (Ohio)
  - Total Utility Spend - $2,200,000 per Year
  - Total Potential Savings $632,000 (28%)
  - Simple Payback 1.5 years
  - Carbon Credits $20,000 per year
  - Total Projects with < 1 year payback $236k
  - $50k with Instant Savings

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Rebates and Incentives

- Many States have incentives to help reduce costs of projects
- USDA will pay up to $500k for Small Business <500 employees
  - Also 25% of feasibility study
- Stimulus Package pays for grants, studies, and projects – State by State
- Tax Credits for Lighting/HVAC and R&D

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States With Utility Incentives

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Utility Programs

- Customers pay into programs today
- Need to research state, federal and local utility programs
- Audits/studies may be partially covered
- Need to know the program to know how to present all projects in best light and not miss deadlines

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Demand Response

- Demand Response
- Synchronized Reserves (15 min control)
- Depends on location
- Up to $100,000 per MW
- Depends on risk willing to take
- Some programs without risk

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Demand Management

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Summary

- Many opportunities for supply and demand solutions
- Need to uncover all rocks to determine best plan for each plant
- Each plan needs to be customized for each plant
- 30% savings is achievable in most locations
- Sustainability plan is needed to maintain savings
- Savings will go right to the bottom line while being socially responsible
- Energy Star and Green Certifications show customers you care. Many customers are demanding you have a sustainability program.

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Any Questions?