Energy Trends, Energy Solutions
The impact on your business and your clients’ businesses

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Agenda

- Current Situation
- Macro Trends
- Visualization
- Incentives & Mandates
- The Cost of Green
Current Situation - Energy

• It’s in the news everyday
  – Political
  – Economic
  – Societal
• Past energy crises came and went
• This time it’s different
  – Mainstream
  – Core business driver
  – Codes and incentives
  – A variable cost
  – An operational risk

*Creates Opportunity to Increase Building Performance*
Modern Commercial Buildings
Macro Trends – Impact on HVAC

LG Internet Refrigerator
The National Marketing Institute estimates that consumers with environmental concerns represent more than $230 billion in spending power.
Visualization - Where is Our Industry Heading?
An Energy Dashboard
Measuring and Managing

• Dashboard
  – Provides information (not just data)
  – Formatted to fit the user
  – Programmed to display the right stuff

• Fault Detection
  – Rules-based decisions
  – Notifies, recommends (demands?) action
  – Requires expertise in setup
  – Requires some expertise in interpretation

• Energy and Operational Analytics
  – Targeted to Energy Managers
  – Provides comparative analysis tools
  – Multi-site or complex campus

*Keep it simple!*
Visualization Expectations
Can’t Manage What You Don’t Measure

- Are we really using our EMS strategies?
- Gain control of energy use by understanding usage

Implement Energy Strategies

Starting Energy Bills

Tenant Billing/Invoicing

Energy Analysis Tools

Meter Energy Measurement
What is an “Energy Project”??

There are many reasons, other than energy, why a customer will buy!

Energy
Water
Sewer
Trash

Operational Savings
Sustainability
Other Compelling Needs

Dayton ASHRAE – December 10, 2012
Energy Incentives

• Utility Rebate Programs
  – Prescriptive and custom rebates
  – Example: $100/hp for VFD installation
  – Renewables rebates

• State and Local Tax Credits
  – Only applies if income tax is paid
  – Can be complex, but might be simple
  – Options to use 3rd party ownership (PPP or PPA)

• State and Local Grant Programs
  – ARRA is gone, but the demand is stoked
  – Assumption that money is too tight leading to underutilization
  – “Green Business” programs

• Federal Tax Credits and Grants

Most programs found at www.DSIREUSA.org
Legislation and Mandates

- ASHRAE 90.1 and other standards
- State Building Codes
- State and Federal efficiency mandates
- State and Federal environmental mandates
- Free market “mandates”
  - WalMart
  - GM, Toyota, Ford, etc.
  - Occupant or customer demand
Does “Green” Construction Cost More? 
or … Compliance with Energy Codes – burden or benefit?

Source: Cost of Green Revisited: Reexamining the Feasibility and Cost Impact of Sustainable Design in the Light of Increased Market Adoption by Davis Langdon, AECOM, July 2007

Source: The Cost of LEED—An Analysis of the Construction Costs of LEED and Non-LEED Banks by Chad Mapp, MaryEllen C. Nobe, and Brian Dunbar, 2011
What Can Be Done - Now?

- Metering – on every project
- Broaden the conversation beyond utilities
- Make the invisible, visible - Visualization
- Use utility and government rebates and incentives
- Keep it simple
Summary

• **As always**, technology is driving significant change in HVAC

• **Different** is the “popularization of what we do”
  – Green
  – Visualization
  – Efficiency Expectations: Savings and Comfort

• **Different** is the market shift to energy efficiency: “Market Mandates”

*Significant opportunity exists today for the design and implementation of energy efficiency and sustainability projects.*
Questions?

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