Why is an Integrated Energy Management Strategy Important?

- **Everybody’s got problems**  
  You must demonstrate how to solve the problems you have identified.

- There are few “single issue” problems in today’s complicated energy environment:
  - Design an optimal solution which addresses both energy needs and fiscal responsibility.
  - Students, education and research are your clients; however, your “CEO” is the Senior Business Officer.
What is an *Integrated Energy Strategy*?

- A plan which is consistent with institutional goals.
- A model which incorporates technical and financial issues within the context of constraints.
- A tool for anticipating and adapting to dynamic institutional demands and energy market conditions.
- An instrument for communicating both the criticality of problems and feasibility of the solutions offered.

Critical Issues for an *Integrated Energy Strategy*

- Integration with institutional goals
  - Commitment to solve challenging *financial* (not technical) problems.
- Institutional “Business Structure” must be adaptive.
- Solution must address comprehensive long term issues.
- Attractive isolated strategies cannot control decision process.

Requires input and cooperation from all stakeholders.
Meeting future energy needs

"Demand side" = better energy management and conservation

"Supply side" = efficient plant production and distribution

"Price side" = improved procurement of energy and fuels

The Integrated Energy Equation

Efficiency vs. Conservation

Efficiency
- Energy efficiency involves the use of technology, requiring less energy to perform the same function.
- Focuses on the equipment or system being used
- An example is installing LED light bulbs throughout a facility

Conservation
- Energy conservation includes any behavior that results in the use of less energy.
- Focuses on the behavior of people
- An example is turning off the lights when not needed

Energy Management Options
Energy Strategy Business Plan

- Business Plan Components
  - Campus Growth Projections
  - Utility Development
  - Energy Conservation
  - Energy Procurement and Management
  - Operations and Maintenance
  - Project Management and Construction
  - Financial Planning

Energy Projects

Payment Strategy
- Create Energy Savings Within Facilities Budgets
- Budget Surpluses Related to Energy Savings Go To Project Costs
  - Energy Procurement: Purchase Fuels at Low Unit Cost ($/MMBTU)
  - Operating Efficiencies: Lower Cost of Production ($/lb & $/ton hour)
  - Energy Conservation: Use less energy: lighting, electric heaters, computers etc.
  - Cogeneration: Cost difference between self-generation & purchased electricity

Critical Issues For Success
- Produce products efficiently
- Use less energy through conservation
- Manage projects effectively to deliver expected benefits
- Manage and maintain operations effectively. Accurately account for production costs, revenues, and consumption patterns
- Retain energy savings
Breakout Sessions

- What critical Energy Strategy items need to be addressed at your institution? With the attendees at your table, list some unique challenges that your institution faces to develop an integrated energy strategy. Pick someone to speak on each challenge selected.
- Select four or five challenges for further discussion.
- With the attendees at your table, discuss the nature of the assigned challenge(s) and ways to deal with them.
- Report Out:
  - What is the nature of each challenge, i.e. energy efficiency, energy conservation, financial, behavioral, etc.?
  - What are the critical issues related to each challenge?
  - Can the challenges be integrated with other issues?
- Discussion:
  - What ideas have we developed to deal with these challenges?
  - How would we go about presenting the ideas, integrated with our other solutions?
  - How do we manage the solutions so that these challenges remain controlled?