



Environmental Management Systems and O&M

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Training Objectives



- Awareness of sustainability and its relationship to your organization's mission and activities
- Awareness of general content of the *Implementation Guide for Integrating Sustainable Practices into Environmental Management Systems*
- Identification of near term sustainable practices for your program
- Offer strategies of coordination and communication that can be used to expand relationships among EMS managers, and site operations and activities managers

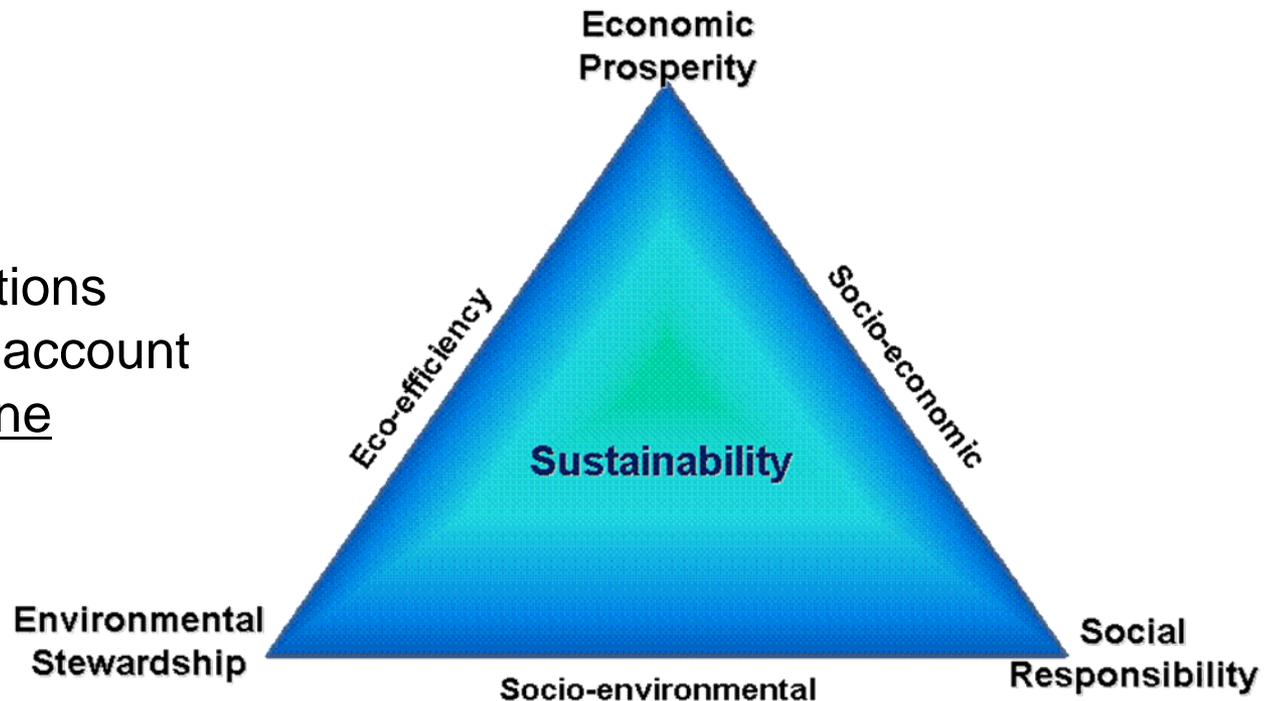


What does it mean to be a sustainable organization?



“Development that meets the needs of the present without compromising the ability of the future generations to meet their own needs.”
- United Nations Brundtland Commission

Sustainable organizations strive to balance and account for the triple bottom line





DOE Drivers and Requirements



- DOE implements Executive Order 13423, *Strengthening Federal Environmental, Energy and Transportation Management*, through two Orders:
 - DOE O 450.1A, *Environmental Protection Program*
 - DOE O 430.2B, *Departmental Energy, Renewable Energy and Transportation Management*
- To achieve the Department's sustainable environmental, energy and transportation goals both Orders require:
 - Use of Environmental Management Systems (EMSs)
 - Implementation of sustainable practices



“Sustainable Practices” Guide



- The Office of Environmental Policy and Assistance is developing a guide to assist DOE sites link the goals with their EMSs.

DOE G 450.1-X, Implementation Guide for Integrating Sustainable Practices into Environmental Management Systems (draft)

- The guide is structured to engage a range of audiences including “owner” of site operations and others involved in the full life-cycle
- Approach suggested by site contractor personnel



About the Guide



- The Guide is intended to assist site personnel in:
 - Understanding how their operations might impact the environment and the site's carbon footprint
 - Using their site EMS to implement sustainable practices
 - Creating a comprehensive EMS team to work on implementing the sustainable practices, and
 - Developing objectives and measurable targets necessary to achieve the EMS objectives.
- The Guide helps sites look beyond compliance to integrate sustainability into operations.



Organization of Guide



- The Guide is organized around generic types of **site operations and activities** that are typically found at DOE sites, including:
 - Building operations and maintenance
 - Design & construction
 - Fleet management
 - IT management
 - Procurement/purchasing
 - Production and processing
 - Security
 - Utility management
 - Waste management
- The Guide links site operations with sustainable practices in a matrix and in chapters



MATRIX *(example)*



| | Building Operations and Maintenance | Design and Construction | Fleet Management | IT Management | Procurement / Purchasing | Production and Process Operations | Security | Utility Management | Waste Management |
|--|-------------------------------------|-------------------------|------------------|---------------|--------------------------|-----------------------------------|----------|--------------------|------------------|
| <u>HIGH PERFORMANCE AND SUSTAINABLE BUILDING:</u> | | | | | | | | | |
| <u>(1) Install sustainable building materials and practices throughout the Department's existing building assets.</u> | ● | ● | | | ● | | ○ | | ● |
| <u>(2) Achieve LEED Gold certification for all new construction and major renovations in excess of \$5 million.</u> | | ● | | | ○ | | ○ | | ○ |
| <u>(3) Comply with Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings for buildings below \$5 million.</u> | | ● | | | ○ | | ○ | | ○ |
| <u>(4) Ensure 15% of the Department's capital asset building inventory incorporates the sustainable practices of the Guiding Principles for energy and water related principles. (430.2B goals)</u> | ● | ● | | | ○ | | ○ | ○ | |
| <u>(5) Labs21. The Department must use programs such as the Labs21 partnership to encourage the development of sustainable, high performance, and low-energy laboratories. (430.2B at section 4.c(7))</u> | | ● | | | ● | ● | | | |

KEY:

“solid” circle = direct role of specified operation/activity in implementing specified sustainable practices to achieve specified goal

“open” circle = supporting role in implementing specified sustainable practices to achieve specified goal



Sustainable Practice Example

Energy Intensity Reduction Goal



- ***EMS Objective:*** Identify energy intensity reduction opportunities for the site's highest energy use facility.
- ***Measurable Target 1:*** Establish an operational assessment expert team in X quarter of FYXX to identify opportunities.
- ***Measurable target 2:*** Complete and report assessment findings in Y quarter of FYXX.
- ***Measurable target 3:*** Implement at least one of the identified projects by end of FYXX.



Sustainability Means Teamwork



- Bringing the team together and working effectively is critical to a successful EMS.
- Assess benefits to operations; include personnel who plan and do the work.
 - Energy efficiency
 - Life-cycle cost-effectiveness
 - Safer operations
 - Lower regulatory liability and compliance cost.



7 Habits of Highly Effective EMSs

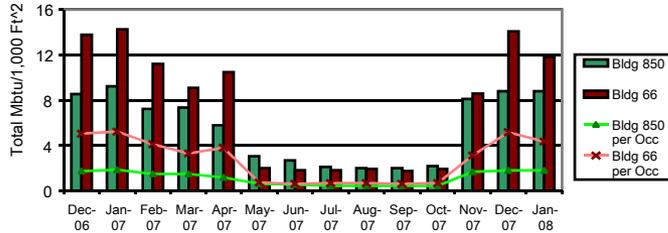


1. Form the “right” team
2. Engage leadership
3. Identify goals and action plans
4. Take action
5. Measure and communicate performance
6. Get feedback
7. Adapt goals, develop new actions and act again

Or should we say: Plan-Do-Check-Act?



Great idea + buy-in + action + communication + feedback = Success





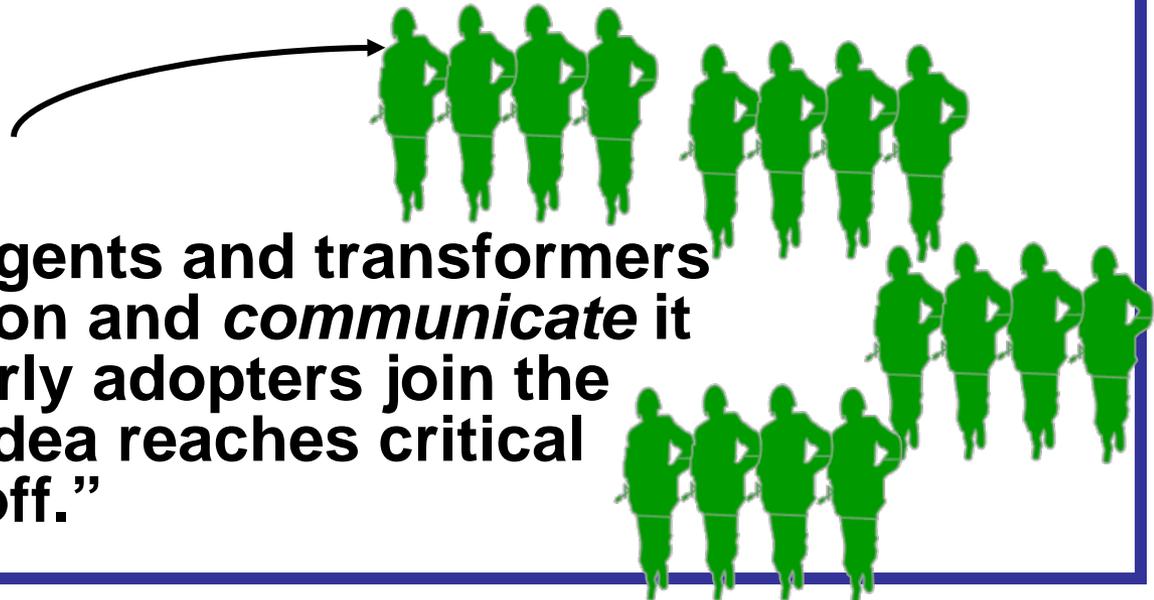
The adoption of an innovation follows a **predictable pattern**:



It starts with a **small group**, even a **single person** who has an idea that is new to the system.



It spreads *slowly* at first through the work of change agents who **actively** promote it.



As more change agents and transformers adopt the innovation and *communicate* it to others, more early adopters join the process until the idea reaches critical mass and “takes-off.”



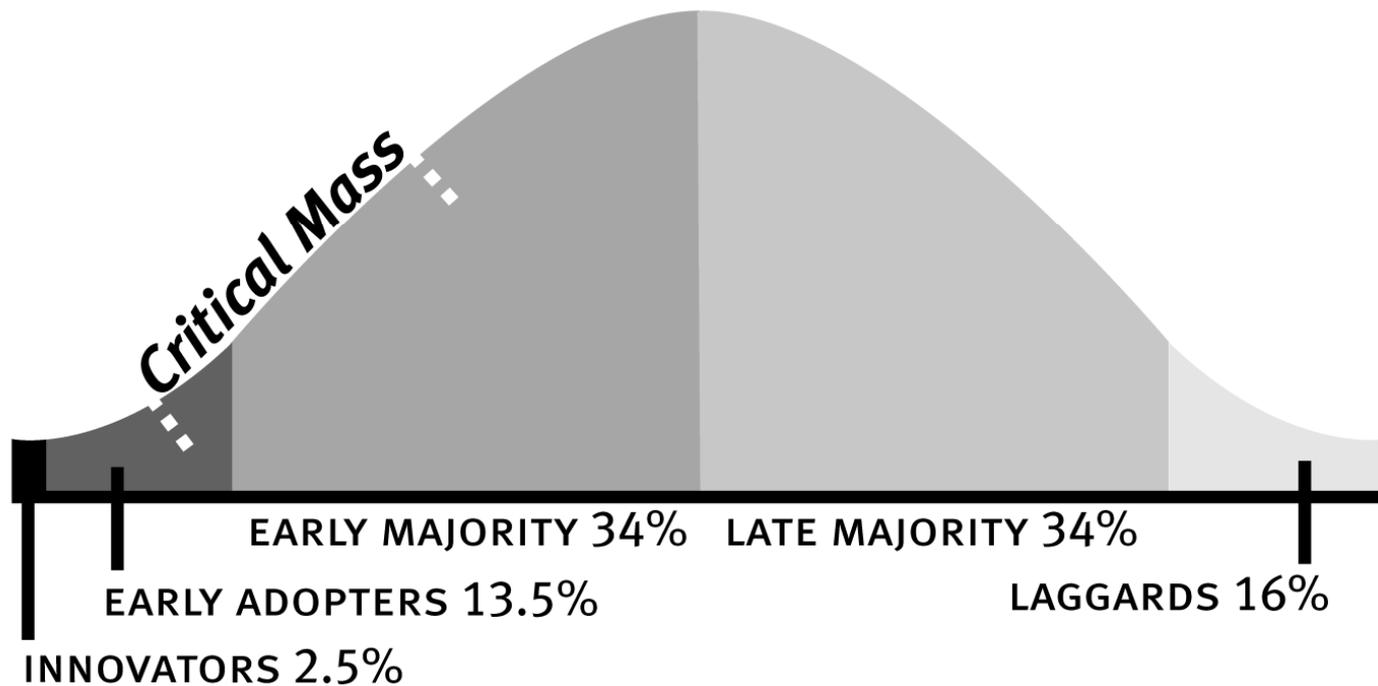
Stages of Adoption



Rate of Adoption of an Innovation Over Time

Figure 3.2

Source: Adopter Categorization on the Basis of Innovativeness
Adapted from: Rogers, 1995, pg. 262





Where are your upcoming priorities?

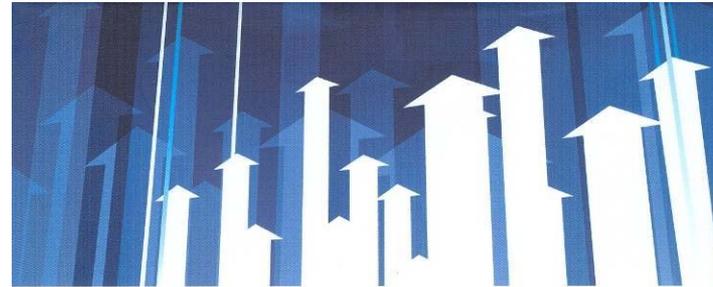


- What are the top 3 to 5 sustainable practices you want to pursue over the next 12 months?
 - Identify the organizations you will need to involve.
 - Write down the name and/or specific position you will need to contact first to get started.

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Cultural Change Game



THE ISIS AGREEMENT

How Sustainability
Can Improve
Organizational
Performance and
Transform the World

Alan AtKisson





Scenarios – Amoeba Game Round 1



- Role play activity centered around sustainable practices
- Each person will be assigned a role
- Read your card and play the role as authentically as possible

- Two scenarios:
 - Green Housekeeping (GH)
 - Energy efficiency in data centers (DC)



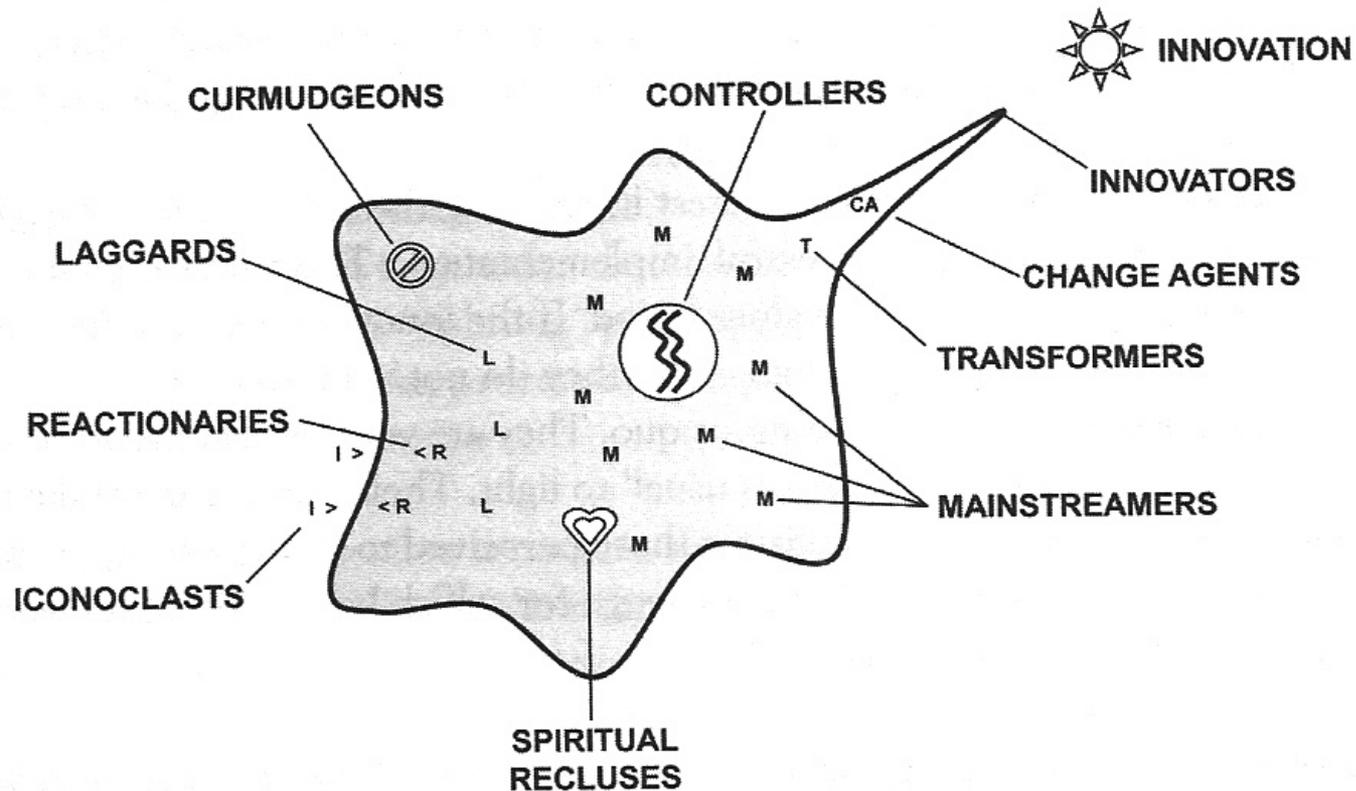
Feedback



- How much progress did you make?
- What challenges did you encounter?
- Have you encountered a situation similar to this in real life?



Who was playing?

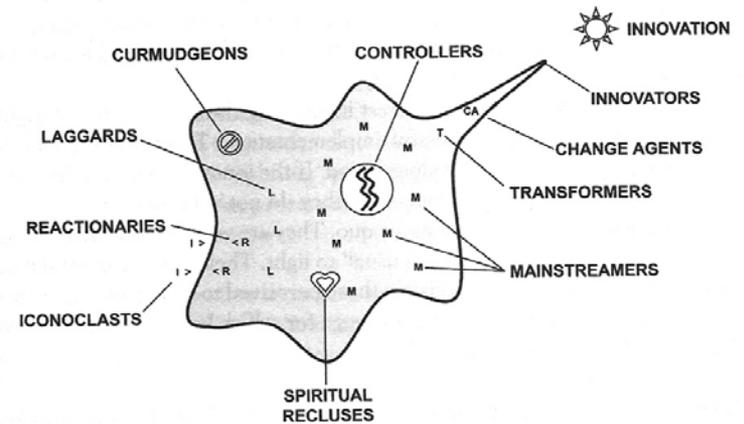


The ISIS Agreement: How Sustainability Can Improve Organizational Performance and Transform the World (Figure 8.5, page 181) By Alan AtKisson (2008, ISBN: 978-1-84407-415-0)



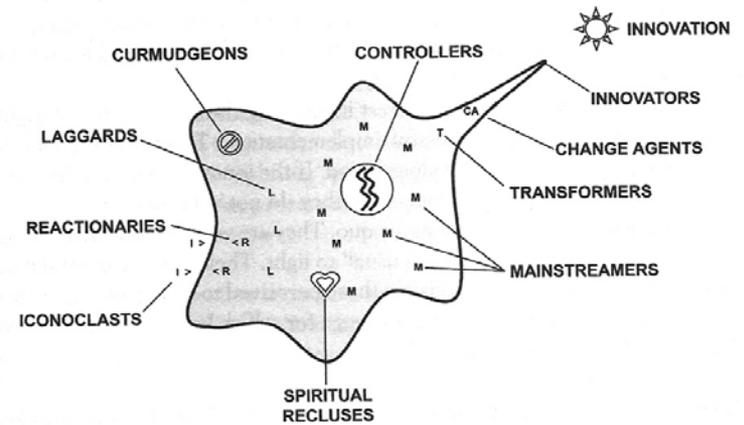
What can you do?

- Innovator
 - Express respect and appreciation
 - Learn important parts of their ideas
- Change agent
 - Use to produce a brochure, report or website
 - Test ideas and collaboration opportunities
- Transformer
 - Busy, but interested, so need the elevator speech
 - Listen carefully to their priorities
- Mainstreamer
 - Approach after Transformer buy-in





What can you do?

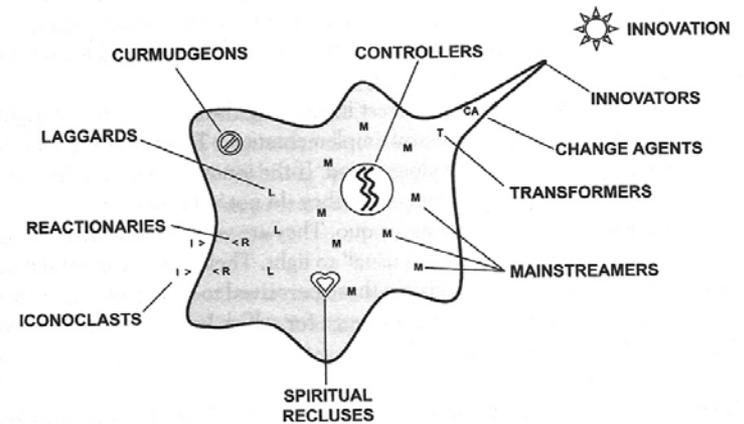


- Laggard
 - Avoid and keep away from Reactionaries
- Reactionary
 - Avoid or engage Iconoclasts to distract them
 - Recruit as Transformers, if they must be engaged
- Iconoclast
 - Give them information to support your cause
 - Publicly keep your distance
- Spiritual Recluse
 - Use when they can support your goals



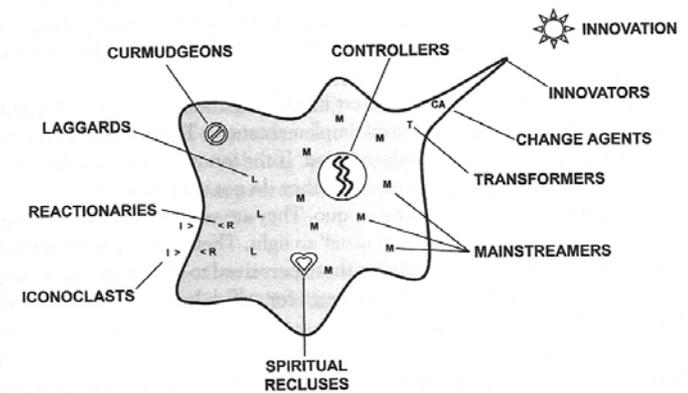
What can you do?

- Curmudgeon
 - Energy drain that are best to avoid
 - Look for opportunities rehabilitate
- Controller
 - Treat them as ‘super-transformers’
 - Have a clear action-focused message ready
 - Stress benefits of idea
 - Don’t waste time with chit chat
 - Avoid nervous laughter





Remember the AMOEBA



- A = Adapt the Innovation
- M = Mobilize the Change Agents
- O = Organize the Transformers
- E = Easy does it for the Mainstreamers
- B = Build momentum at the margins
- A = Avoid Reactionaries, Laggards, and Curmudgeons

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Additional Thoughts – *My personal favorites*



- Walk the Talk
 - Without the experience of wrestling with changes yourself, it is difficult to advise others on how to make a large-scale change
- Use up-to-date information
 - Have current information when you talk with your peers
 - Encourage your peers to be technical leads and to recommend strategies
- Share information and credit
 - Create a cooperative environment
 - Nominate peers in different organizations for energy and environmental awards



Thank you!

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