Getting to 15%
DOE National Lab Experience

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Overview

- Defining our building inventory
- Assessing the building inventory
- Identifying strategies to meet goal
- Integrating requirements into policies and procedures to ensure compliance
- Guidance needed

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Projected Building Inventory[1]

2008 Inventory

- 96 total buildings
  - 2,015,000 gross square feet (ft^2)
- 29 DOE-owned buildings
  - 762,000 ft^2
  - 224,000 ft^2 is data center and high-end laboratory
- 39 Battelle-owned buildings
  - 407,000 ft^2
- 28 Leased buildings
  - 846,000 ft^2
- FIMS database: 1,566,374 ft^2
- Energy reporting: 945,000 ft^2
- Water reporting: 1,169,000 ft^2

2015 Projected Inventory

- All buildings: 2,181,000 ft^2
- DOE-owned buildings: 794,000 ft^2
- Battelle-owned buildings: 407,000 ft^2
- Leased buildings: 980,000 ft^2

- Energy reporting: 1,550,000 ft^2
- Water reporting: 1,774,000 ft^2

Potential 15% Goal: 119,100 to 327,150 ft^2

1. Pacific Northwest National Laboratory FY2009 Laboratory Plan.

Assessing Building Inventory

- STEP 1:
  - Identify applicable buildings for baseline
- STEP 2:
  - Identify buildings that may already incorporate the *Guiding Principles*
    - New radiological laboratory, LEED certification expected (201,000 ft^2)
    - Two new leased chemical and biological laboratory buildings, LEED certification expected (150,000 ft^2)
- STEP 3:
  - Identify which buildings would be the most impactful and to the portfolio for improvements to accomplish the *Guiding Principles*.

Strategy

- Require LEED Gold for all new construction per the TEAM Initiative
- Review existing building inventory for buildings that have the potential to meet the *Guiding Principles*
  - DOE-owned provides access to ESPC funding
  - Large “office” type buildings would be simpler than laboratory space
  - Simple, non-chemistry based laboratory buildings
  - Cooperative landlord for leased facilities
  - Buildings we are investing in to meet the Energy goals
  - Energy intensive laboratories with data centers and fume hoods – **IF** advances in technology allow for breakthrough in energy savings

Potential Buildings

- New Construction
  - Radiological laboratory, 201,000 ft^2
- Leased Buildings
  - Office, 85,000 ft^2
  - Office, 100,000 ft^2
  - Offices, 3 X 17,000 ft^2
  - Chemical and biological laboratory buildings, 150,000 ft^2
- DOE-Owned
  - Energy intensive laboratories

Existing Laboratory-Wide Policies/Strategies Supporting the *Guiding Principles*

- Environmentally Preferable Purchasing Program
  - Requires purchase of materials with recycled content as designated by EPA
  - Requires purchase of materials with bio-based content as designated by USDA
- Using ESPCs to meet 30% energy use reduction goal
- Working with landlords to increase number of Energy Star rated leased facilities
- On-site, trained commissioning expertise
- Site-wide outdoor water use reduction practices
- Environmental Management System Core Team working across organizations to meet EO goals

Challenges to Meeting the *Guiding Principles*

- Removing all water free urinals on campus
  - Maintenance challenges
  - Changing to ultra-low flow fixtures
- Larger, DOE-owned buildings are laboratory intensive and/or data centers
  - Testing innovative energy saving technologies
- Construction waste management strategies are new to our community

Example Building

- Leased Office Space, 85,000 ft^2
- Cooperative landlord
- Re-commissioning building to achieve Energy Star rating
- Upgrading indoor water fixtures
- Optimizing outdoor water use
- Open Plan, with daylight available to almost all regularly occupied spaces

Looking for Guidance

- Which buildings will apply for the 15% of “capital asset inventory” goal?
  - DOE only
  - DOE and leased
  - Exemptions
- Will there be an opportunity to document exceptions for new construction when funding isn’t available?
- Will there be an opportunity to document exceptions for existing buildings when a *Guiding Principle* cannot be met, or does not apply?

Comments or Questions?

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