

# **NREL's Progress Toward Meeting its Climate Leaders Goal**

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**National Renewable Energy Laboratory  
Climate Leaders Partners Meeting  
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# NREL Background

- DOE National Laboratory Managed by Midwest Research Institute and Battelle
- Nation's Primary Lab for Renewable Energy and Energy Efficiency R&D
- +/- 1200 Employees and \$200+ Million Annual Operating Budget
- Research Spans Fundamental Science to Technology Solutions

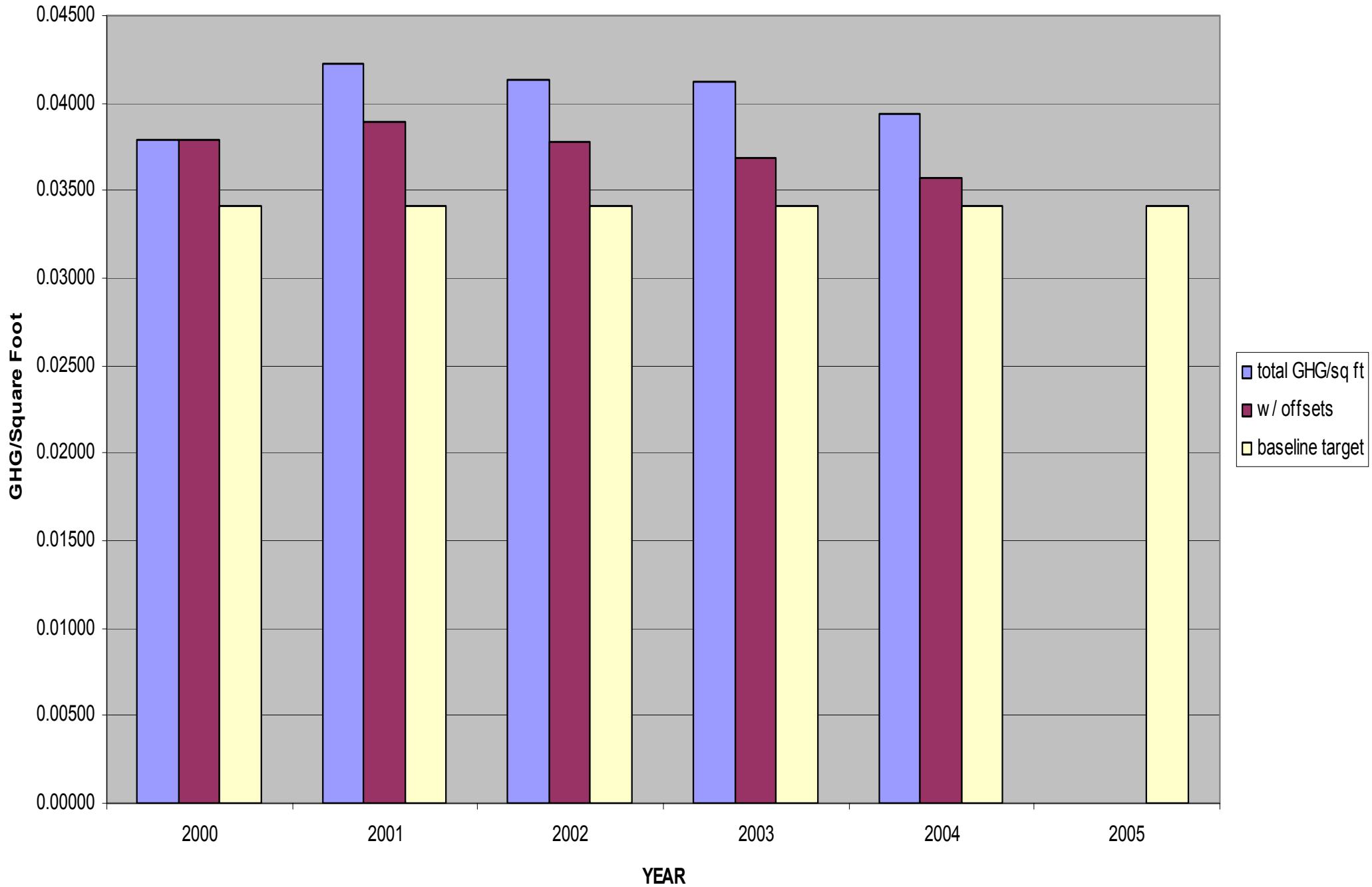
# Why Climate Leader's was of Interest to NREL

- Demonstrate Leadership as First Federal Facility to Join the Partnership
- Build Upon the Lab's Mission under the Sustainable NREL Program
- Better Understand the Practical Challenges and Opportunities in Designing and Implementing a GHG Reduction Target

# NREL's Goal & How it Was Set

- Normalized Target by Square Footage
- Owned and Leased
- Goal of a 10% Reduction in Five Years from the FY00 Baseline
- Evaluation of Baseline, Discussion with Key Technical Staff
- Approval of Upper Management

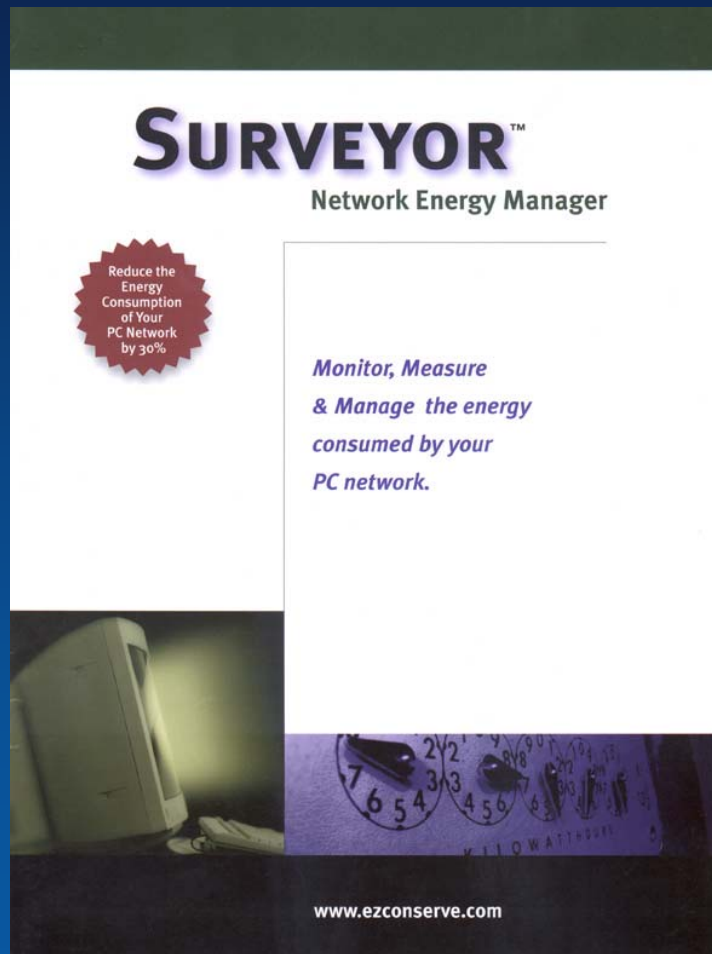
# Climate Leaders Goal



# Progress Toward our Goal

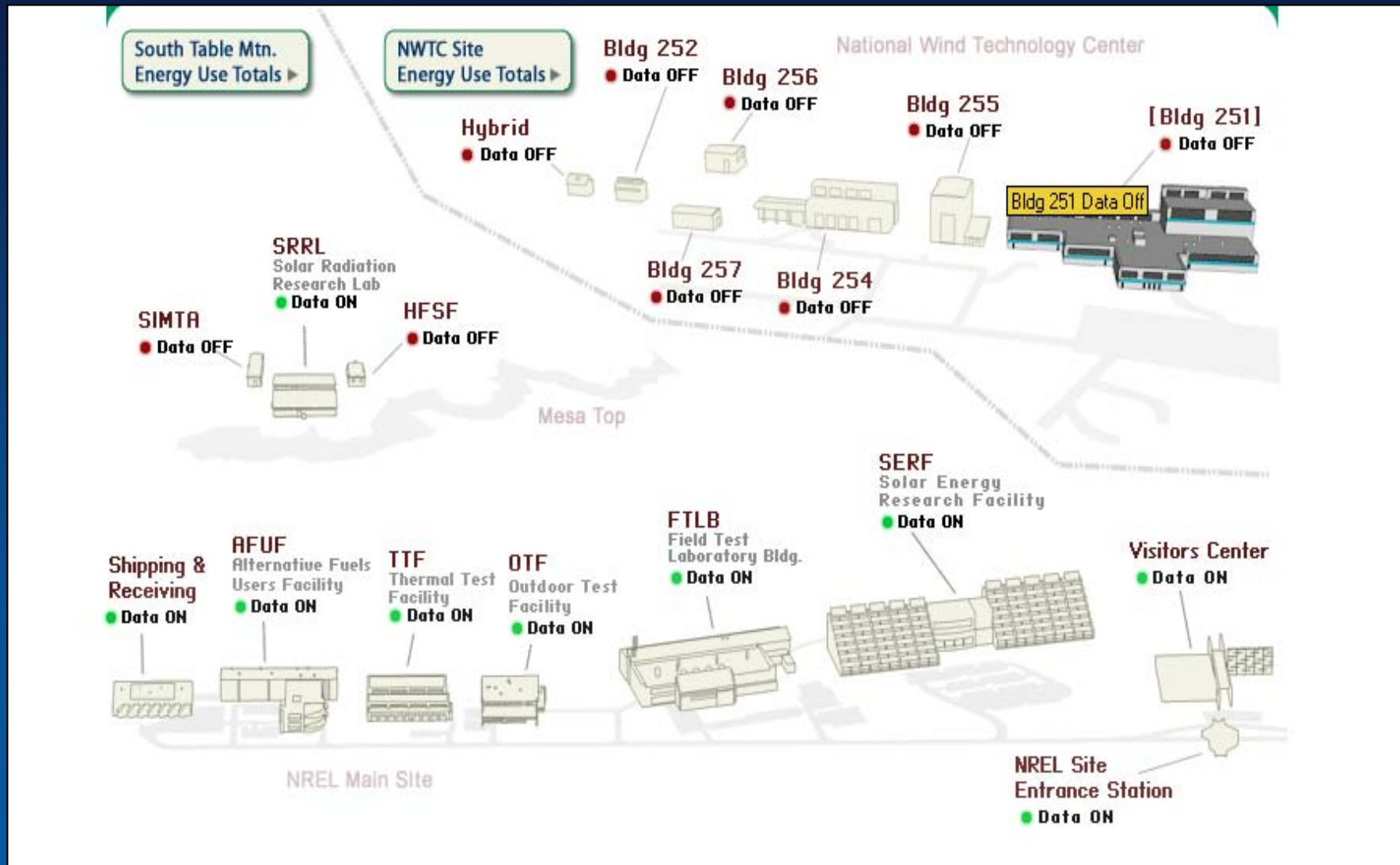
- **Development of Inventory Management Plan (IMP)**
- **Annual Inventory**
- **Energy Efficiency Measures, Capital Investments, On-Site Renewables**
- **Extensive Use of Metering and Analysis**
- **Colorado-based Green Power Purchases**

# Energy Management



- Remotely monitors PC system power modes and estimates energy consumption
- Able to manage power settings remotely
- Automates the use of “best practices” for power settings with a customized approach
- Built-in reporting
- Reduces energy waste

# Site Metering





## New Buildings

- NREL New Buildings Design Policy is to exceed 10CFR435 Model Energy Code by 30% and at a minimum achieve LEED Silver Ratings
- The three new buildings under design or construction all exceed the Model Energy Code requirements by 50%
- Science & Technology Facility (S&TF) design is at LEED Gold Level (77,000 sq.ft. laboratory)



# Unique Challenges

- **Output is Research Rather than a Quantifiable Product**
- **Accounting for Leased Space**
- **Uncertainty Associated with Annual Budget Cycles**
- **Identifying Cost Effective Opportunities in an Already Efficient Environment**

# Insights Along the Way

- **First Step in Managing is Measuring**
- **Awareness of Value-Added is Critical – Both for Management and Staff**
- **Pre-baseline Efficiency Gains Make Your Target that Much Harder to Meet**
- **Local Impacts as Important as Global...Local Green Power Only**
- **Excess Emissions are Often a Sign of Inefficiencies that Can Deliver Cost Savings**

# Benefits of Participating

- **Walking the Talk**
- **Leading as a Federal Facility**
- **Better Understanding of the Potential Role of EE/RE Technologies**
- **Understanding our Impact and Identifying Cost Effective Actions**
- **Providing a Vision for Management and Staff**

# Thank You!

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