



The Sustainability  
Institute

# **SUNY Keynote 2016: State of Sustainability in Higher Education**

# Today's Presenters

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Jennifer Andrews



Campus Carbon Calculator/CarbonMAP

Heather Finnegan



Sustainability Services:

- GHG Inventory
- STARS Reporting
- Sustainability Planning

# Why We Study the State of Sustainability

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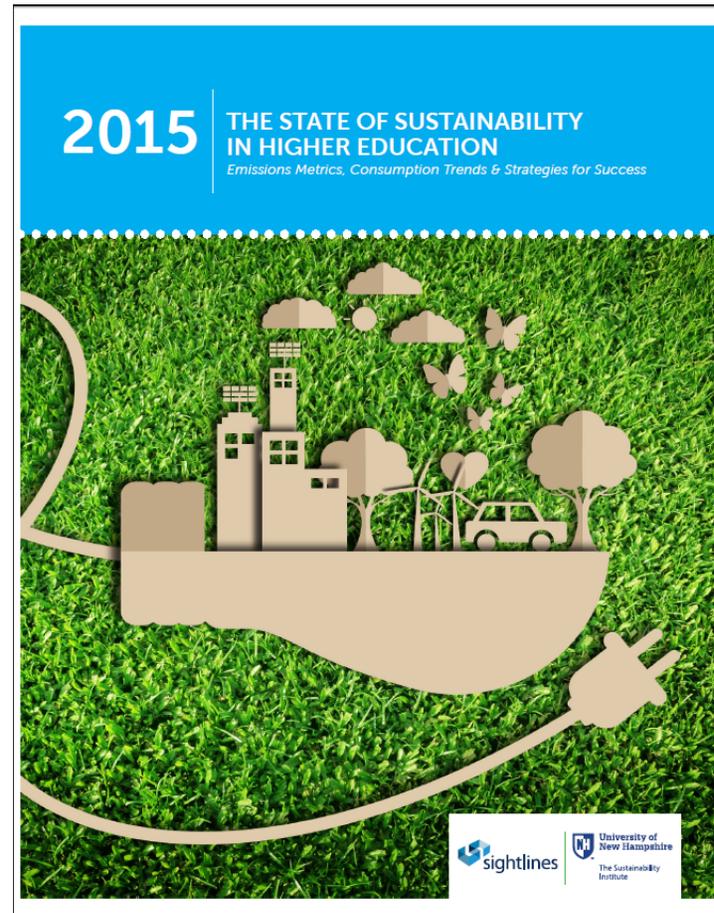
*To explore and take the first comprehensive look at key sustainability questions*

- ❏ Are campus conservation, efficiency, and fuel-switching initiatives succeeding?
- ❏ How much impact do external factors (e.g. public policies, energy costs, etc.) have?
- ❏ How can campuses be more strategic and effective in managing carbon and energy footprints?
- ❏ Is anything missing from the available set of campus sustainability metrics?

# “The State of Sustainability in Higher Education”

*Report on emissions metrics, consumption trends, and strategies available now!*

Visit [www.sightlines.com](http://www.sightlines.com) to  
download your free copy  
today



# The Power of Aggregated, Standardized Data

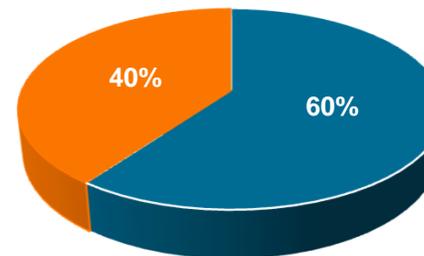
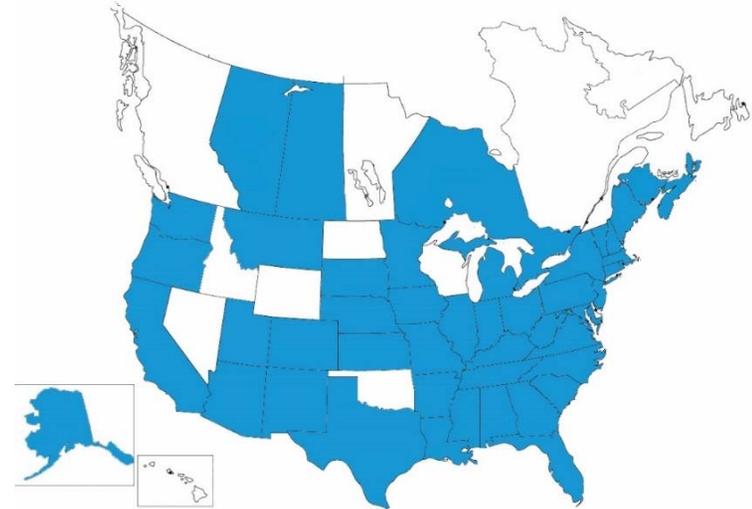
*Study methodology*

## Data Sources

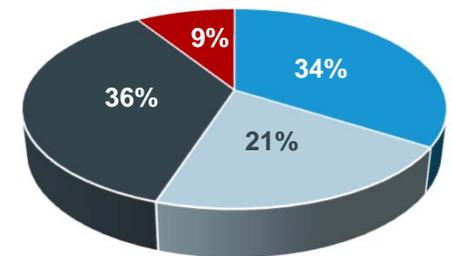
**Sightlines Return on Physical Assets (ROPA) database**, with the CCC calculation methodology overlaid. This database has extensive Quality Assurance/Quality Control (QA/QC) for its inputs.

**CMAP database**, with data from both inputs and outputs of campus GHG inventories. Primarily used for comparison and “reality-checking” the results of ROPA analysis.

## Sightlines Database Distribution



■ Public ■ Private

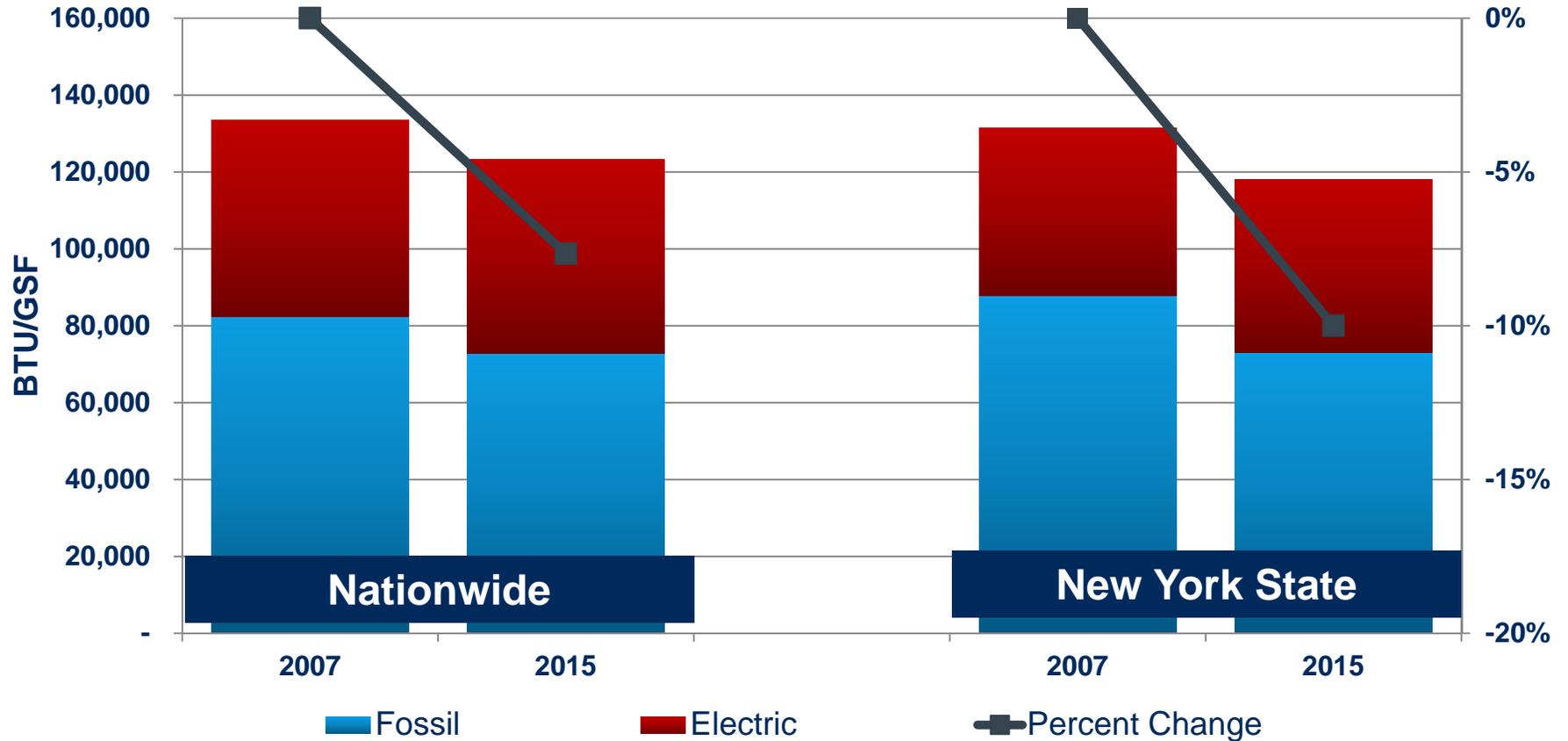


■ Comprehensive ■ Small Institutions ■ Research ■ Community Colleges

# Improved Energy Efficiency

*New York State Institutions have Faster Rate of Change*

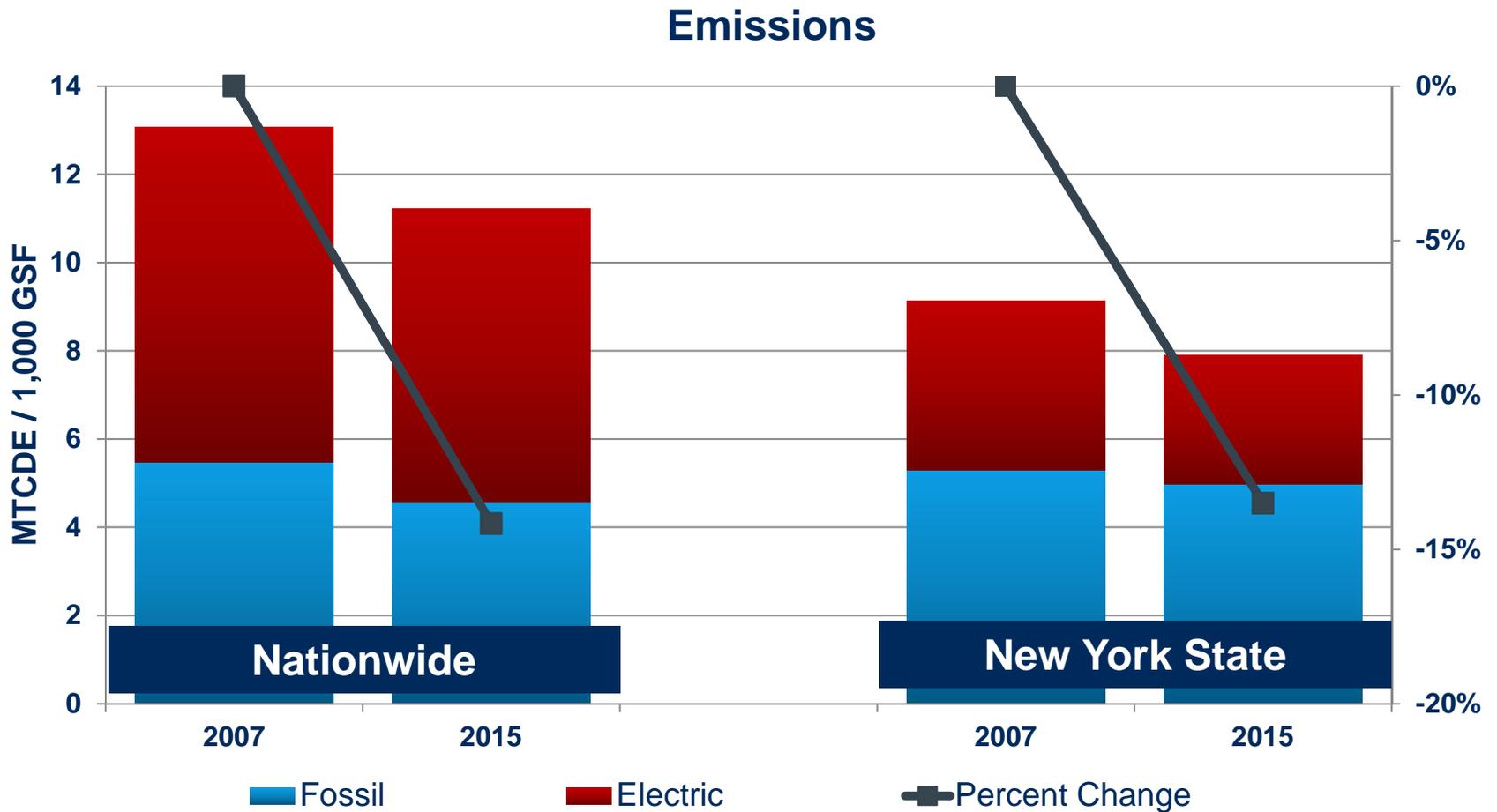
## Energy Consumption



Source: Sightlines

# Lower Emissions in New York State

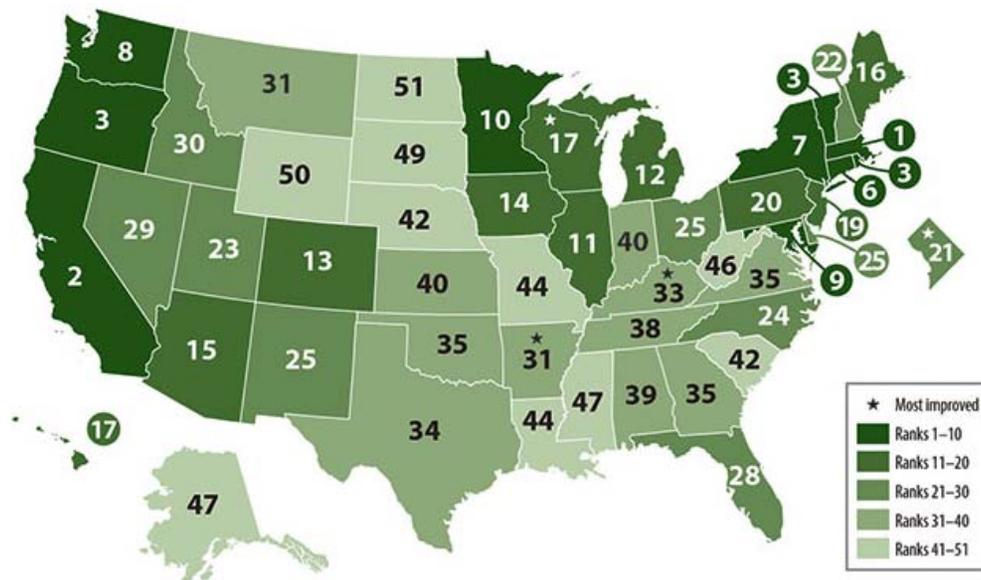
*Rate of Change Matches Nationwide Rate*



Source: Sightlines

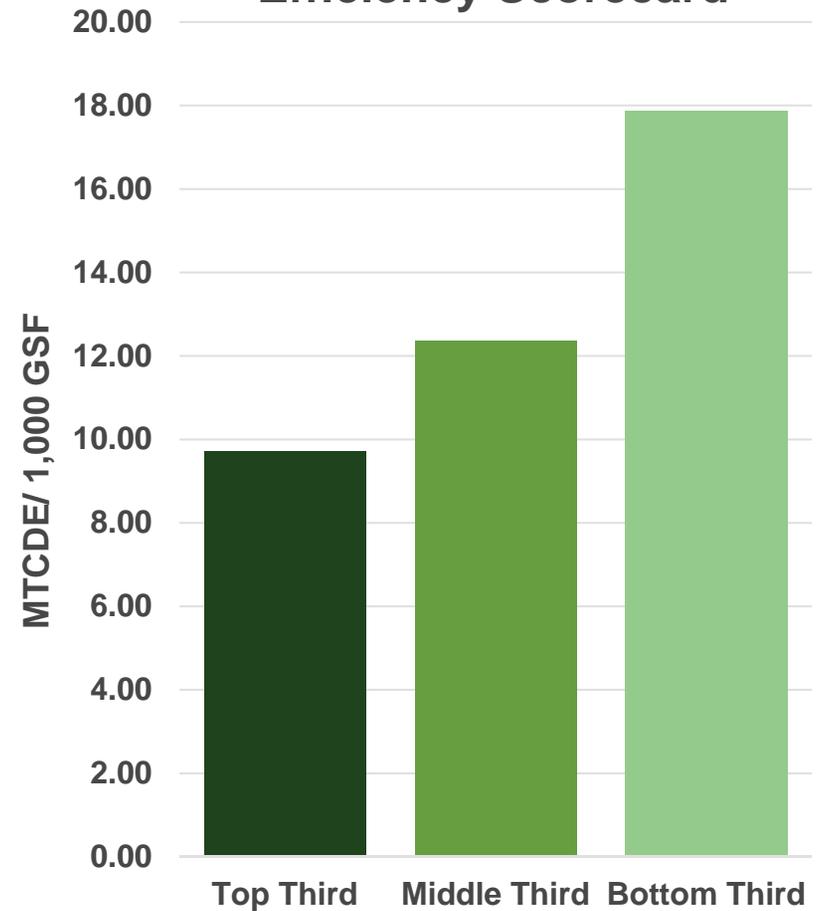
# States Ranked by Strength of Energy Efficiency Policy

ACEE annual rankings



Source: ACEE

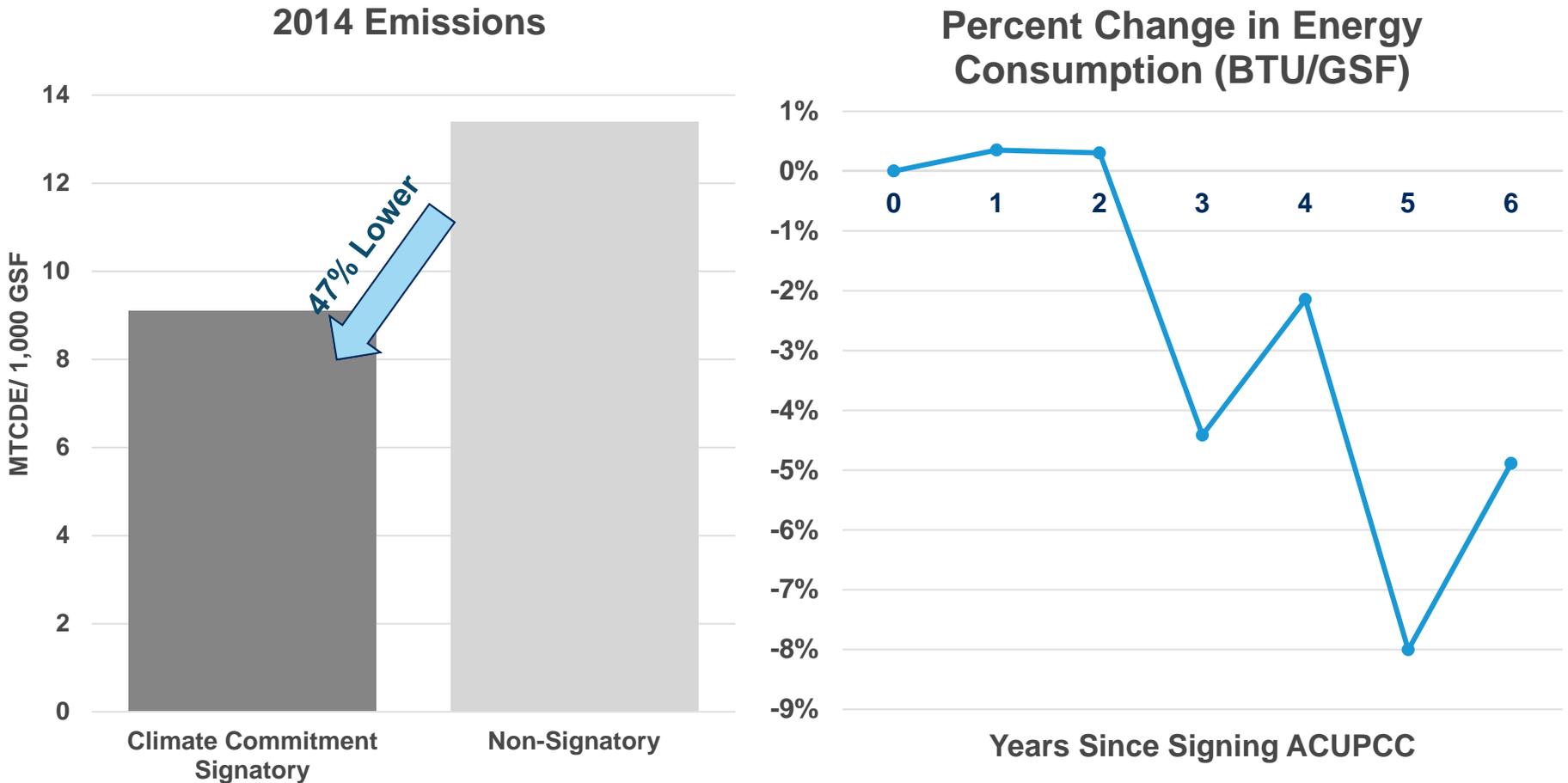
## Emissions - ACEEE Energy Efficiency Scorecard



Source: Sightlines

# Emissions and Consumption of Signatories vs. Non-Signatories

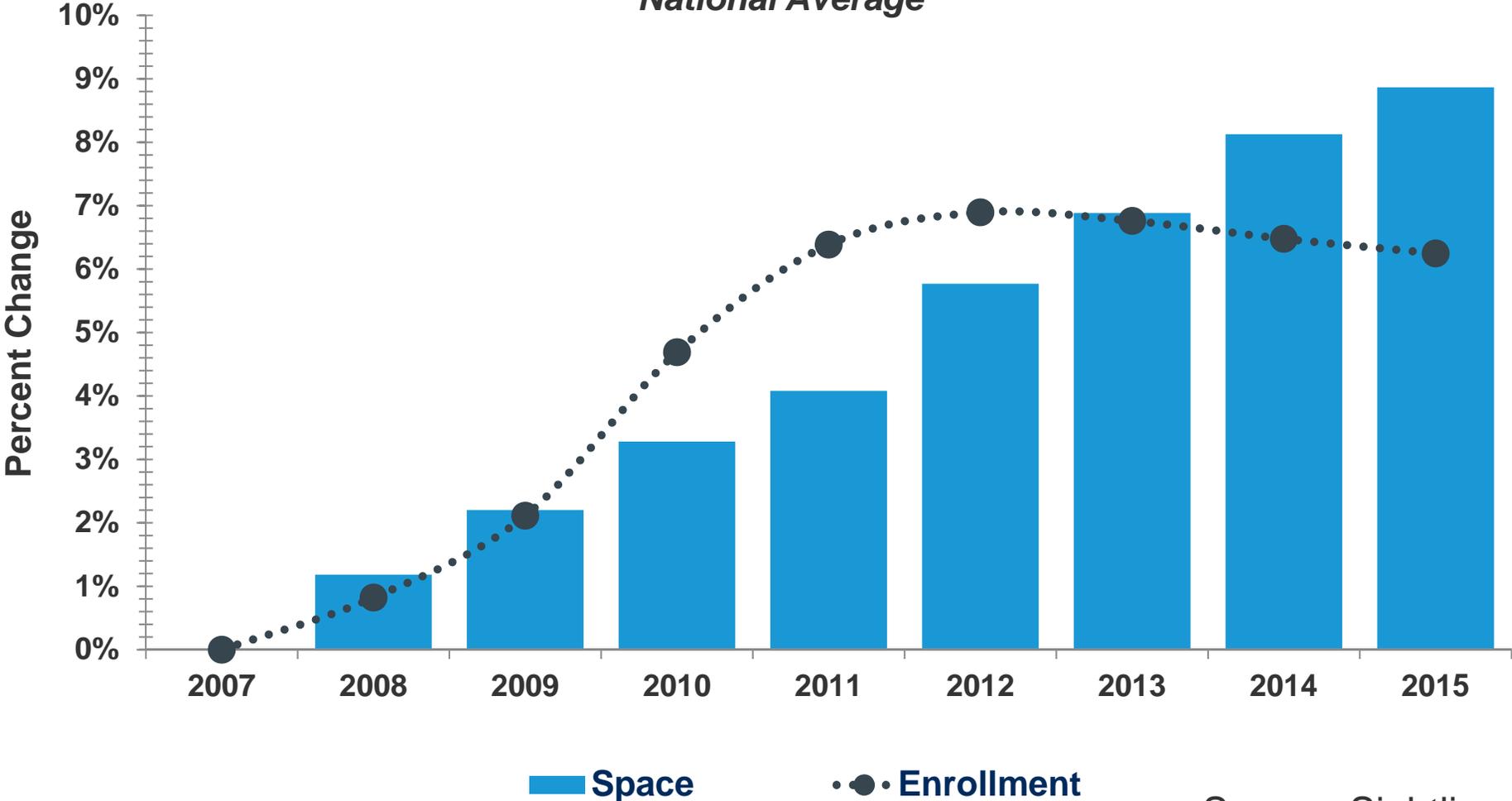
Climate Commitment Signatories have 47% lower emissions;



Source: Second Nature & Sightlines

# Nationwide: Space Added, Year over Year

## Space and Enrollment Trends *National Average*

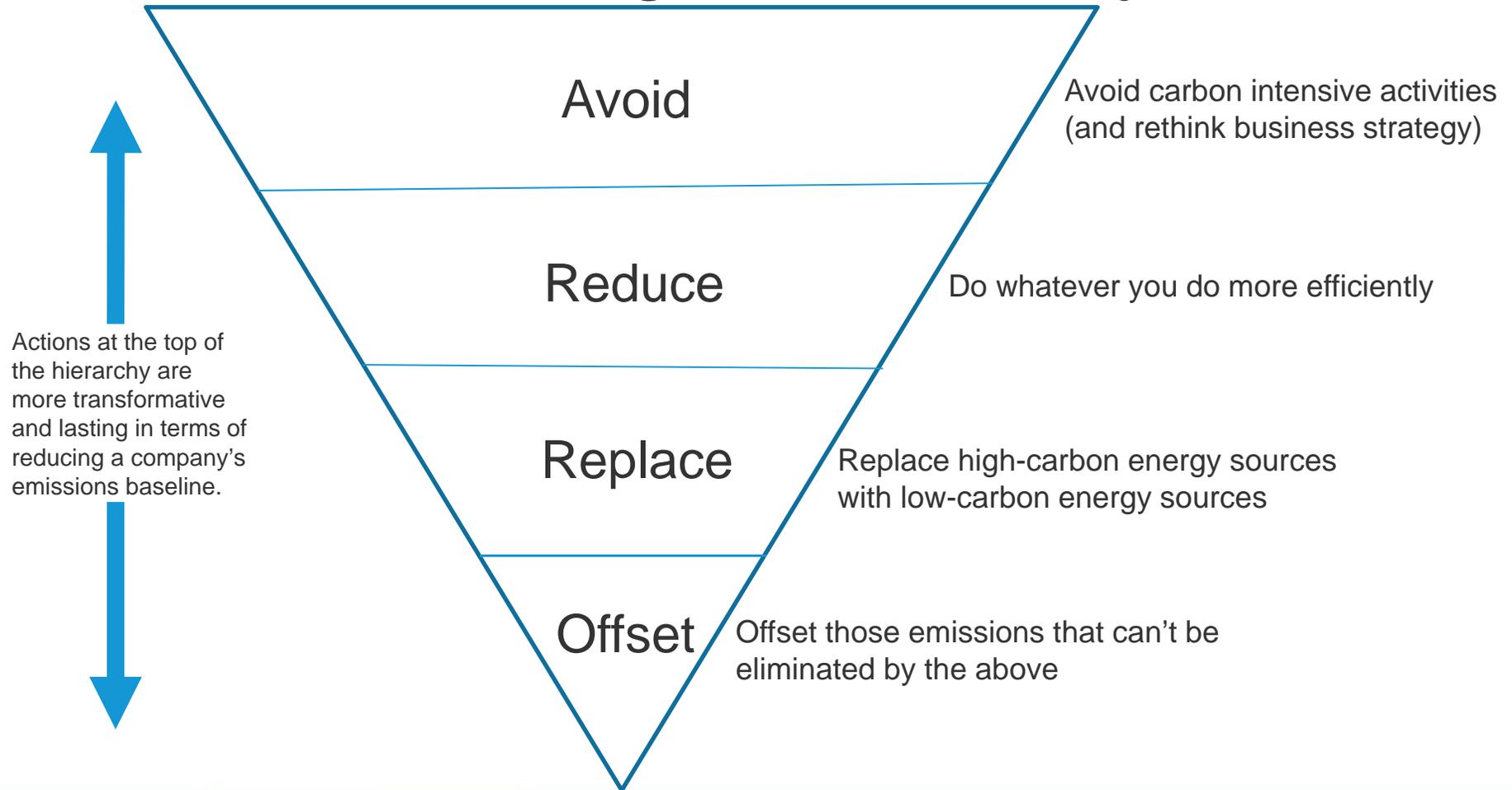


Source: Sightlines

# Carbon Management Hierarchy

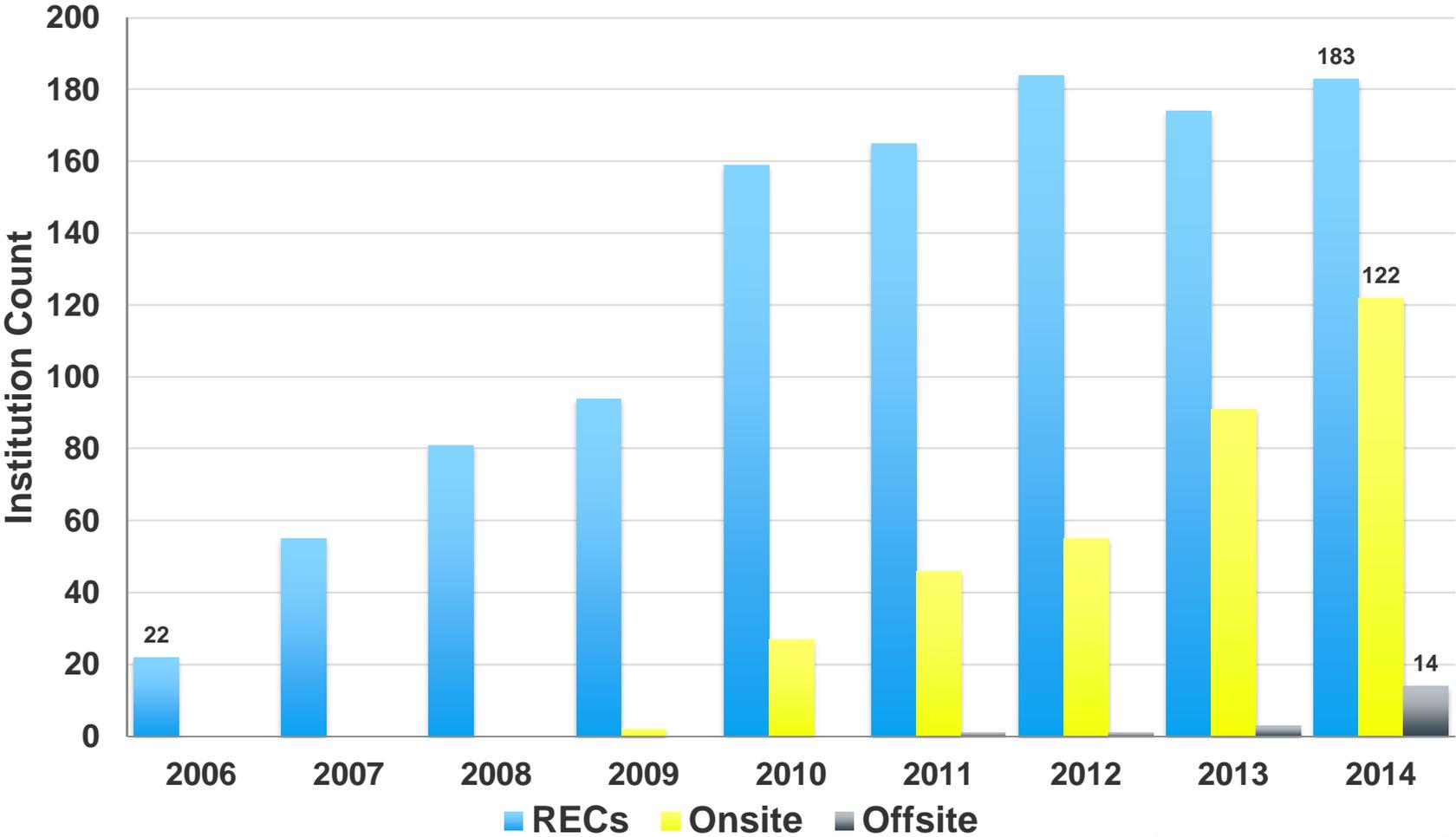
*“Best practice” approach*

## The Carbon Management Hierarchy



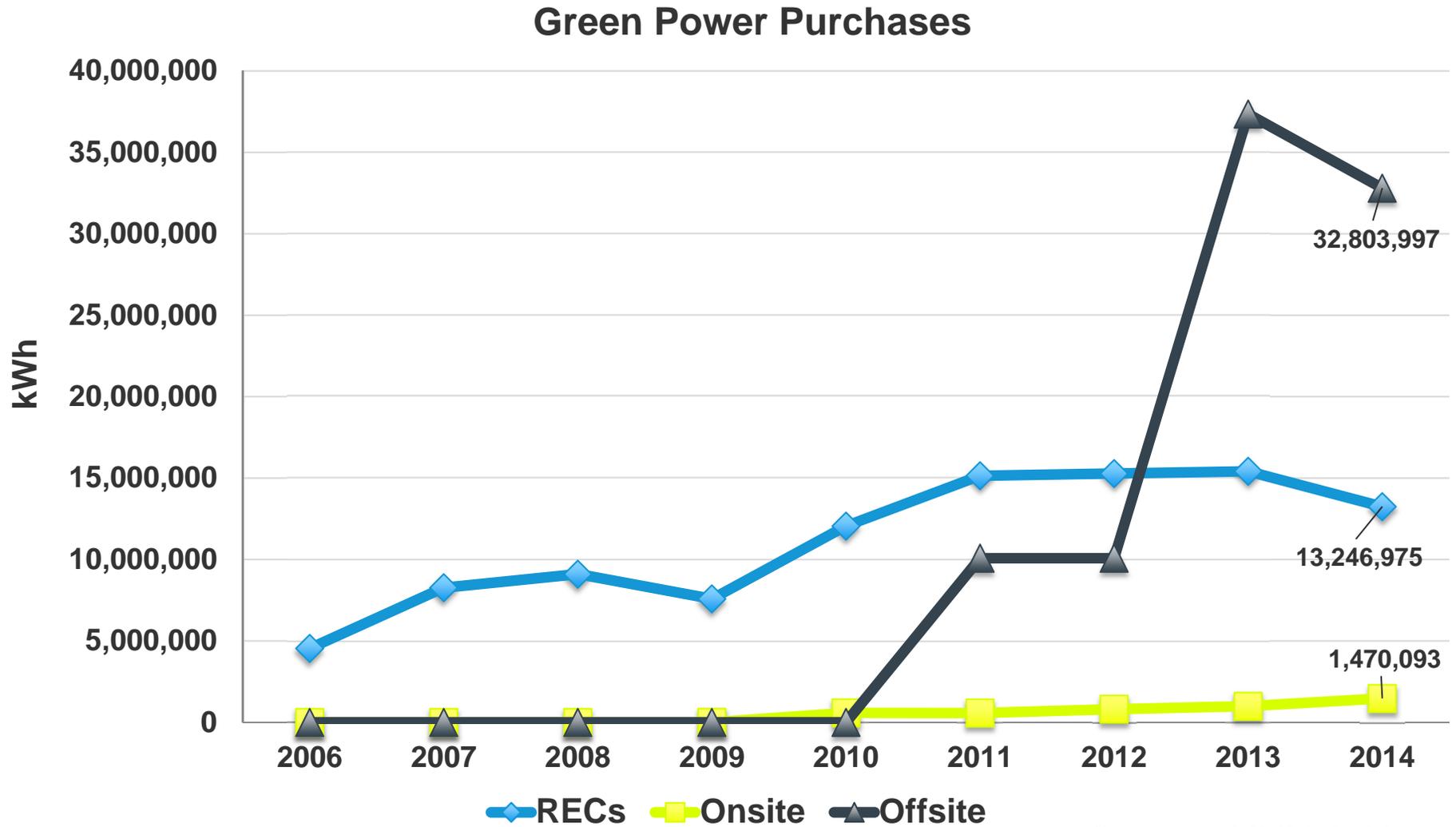
# On-Site & Off-Site Renewables Gaining Traction

## Campuses Purchasing Green Power



Source: UNH & Altenex

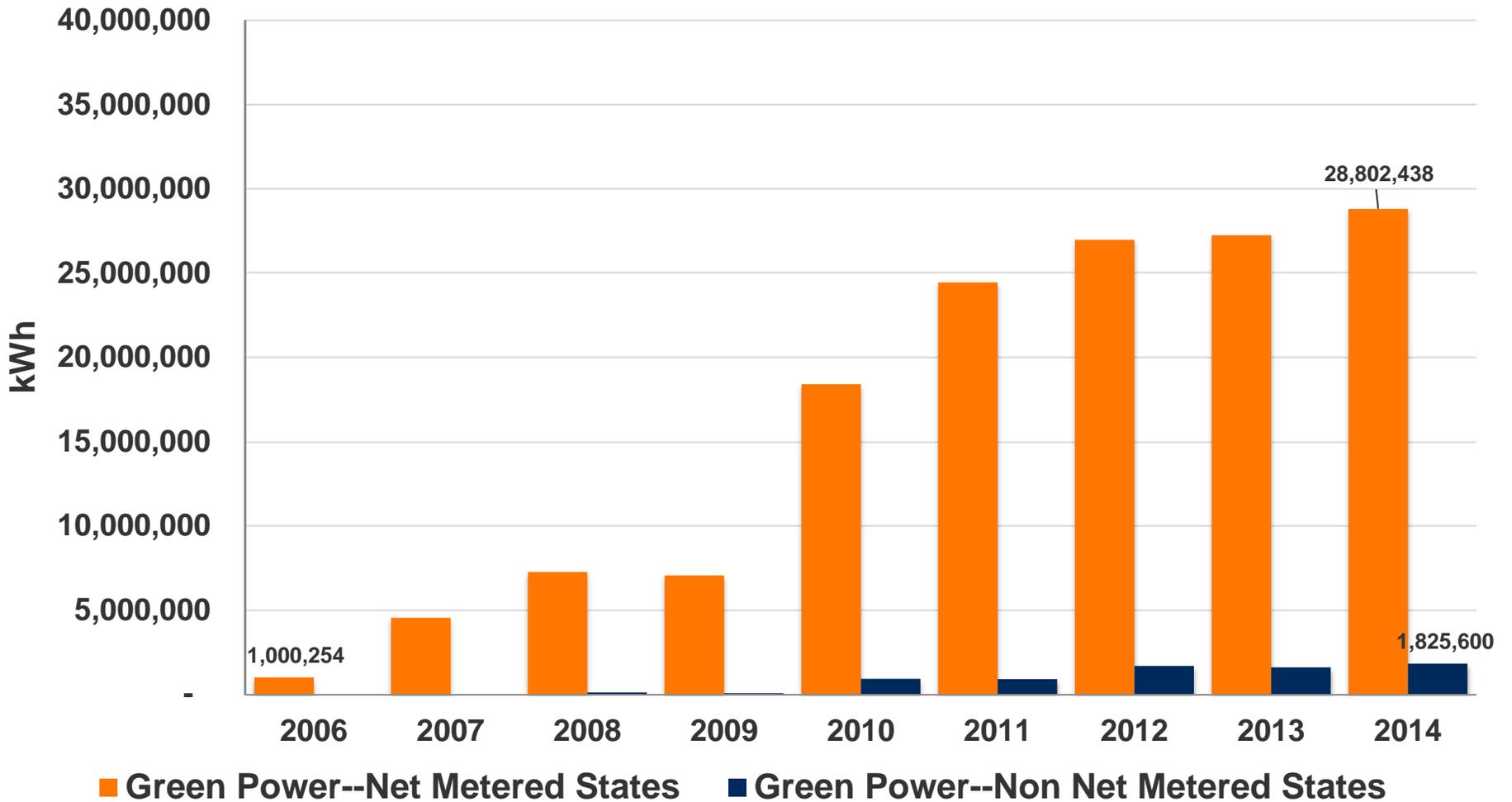
# Off-Site Production Dominates Beginning 2013



Source: UNH & Altenex

# Green Power Purchases Lag in Non Net-Metered States

## Total Green Power Purchased



Source: UNH & Altenex

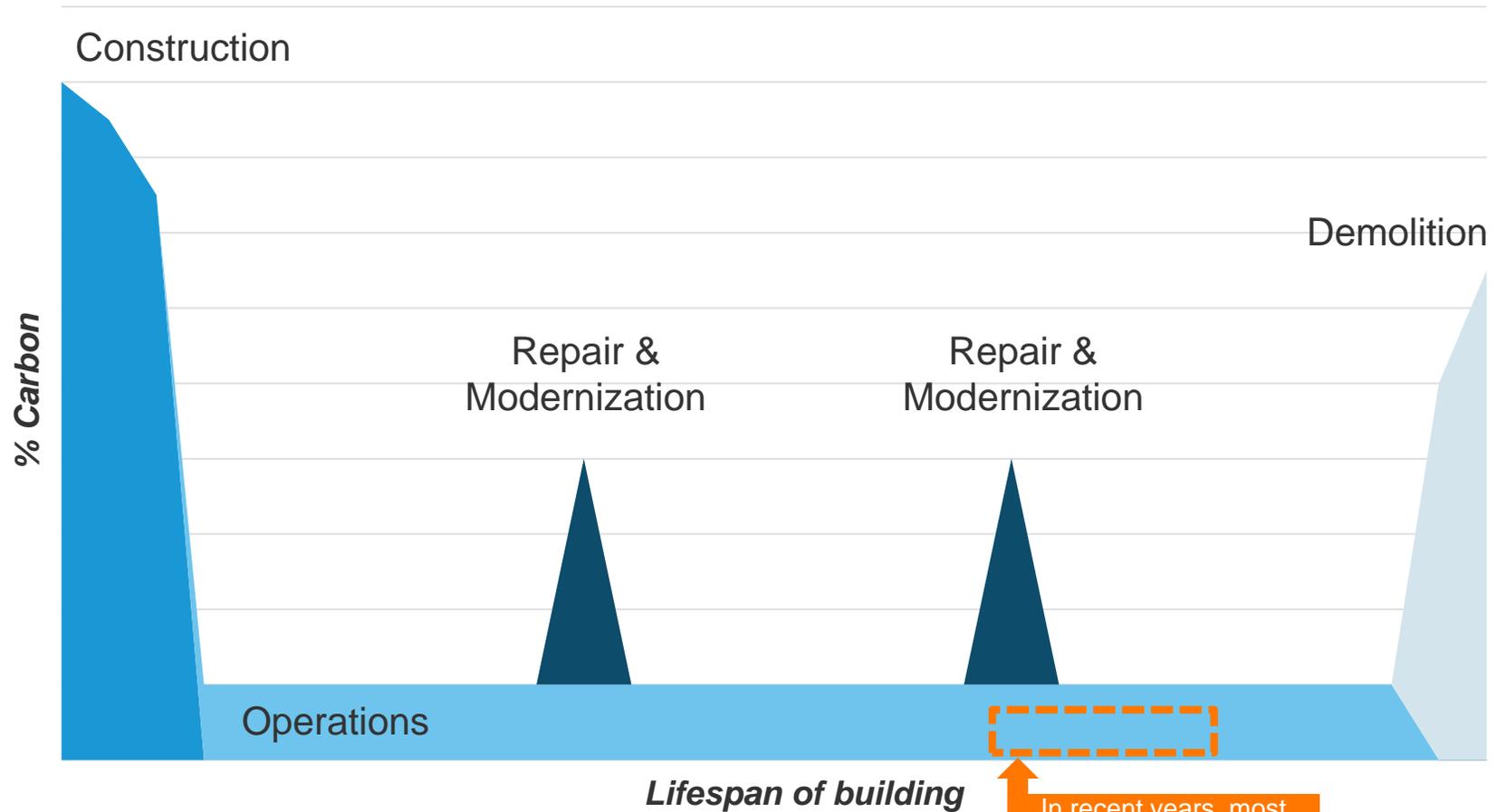
# 2016 State of Sustainability in Higher Education:

*The Life Cycle of Higher Education Facilities*

coming soon

# Majority of a Building's Carbon Profile Unmeasured

## Theoretical Emissions Profile of a Building



In recent years, most institutions have measured just a portion of operational emissions

# In 2016, We Analyzed Data From a Variety of Sources

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## Sightlines

- ROPA+ Database

## AASHE

- STARS Database

## National Association of Educational Procurement

- Annual Survey

## USGBC

- Higher Education  
Project List

## Second Nature

- Tangible Action  
Statistics

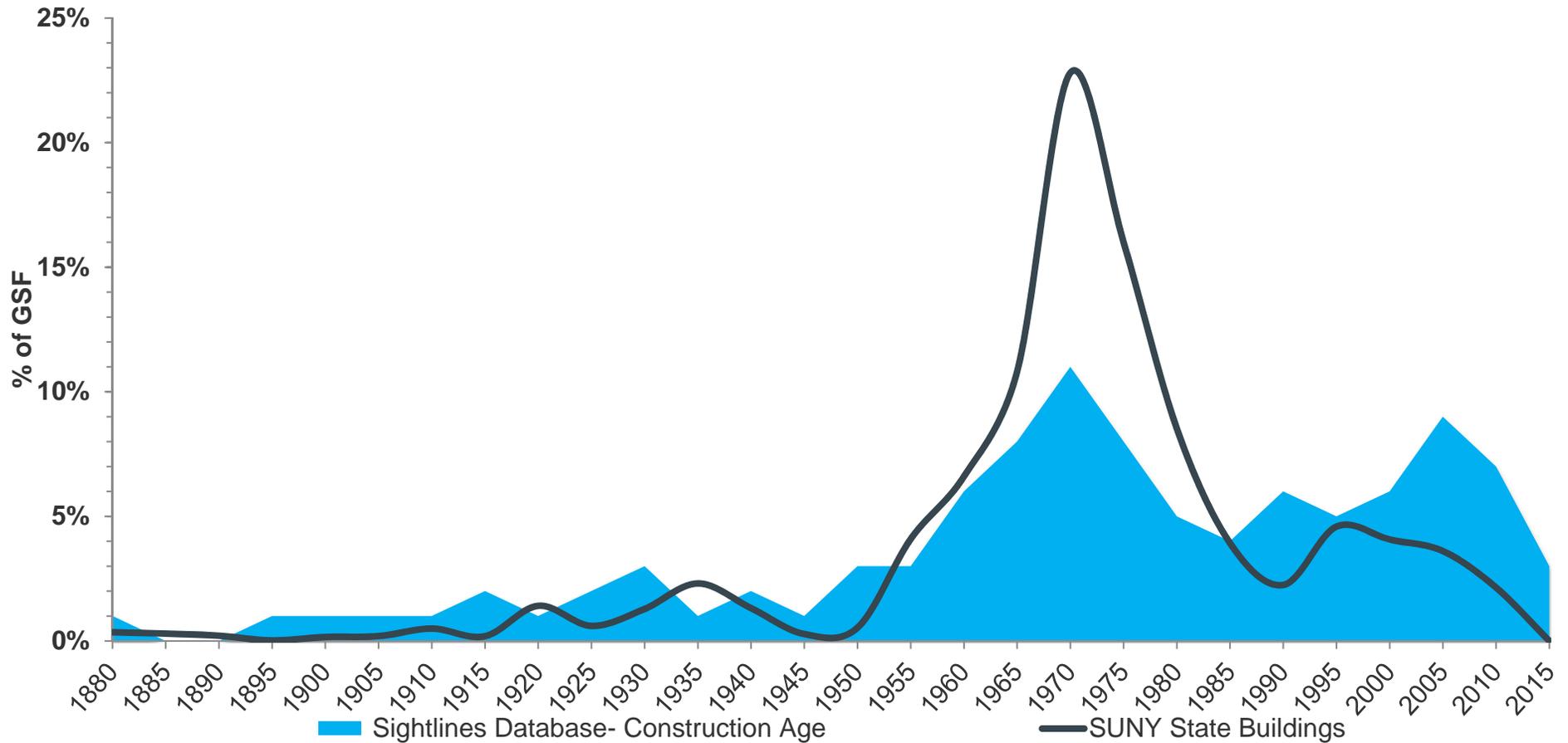
## Living Building Institute

- Higher Education  
Project List

# Higher Ed Experienced 2 major Building Booms

*SUNY experiences most growth during 1<sup>st</sup> boom*

## Waves of Construction



Source: Sightlines

# LEED Construction Popular in 2<sup>nd</sup> Building Boom

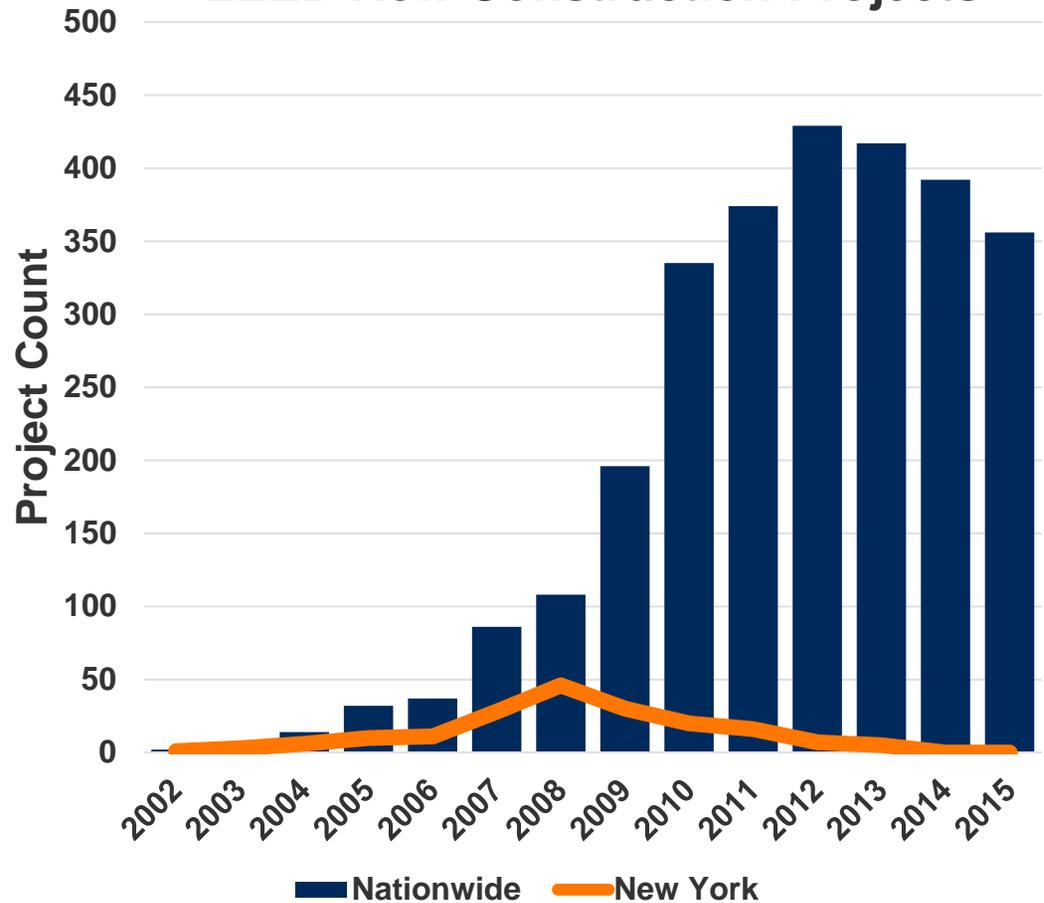
*Peak in NY state LEED projects occurs sooner than nationwide peak*

## Fast Fact

80% of Second Nature Carbon Commitment signatories committed to a LEED Silver construction policy

Source: Second Nature

## LEED New Construction Projects



Source: USGBC

# Sustainable O&M Policies Lagging

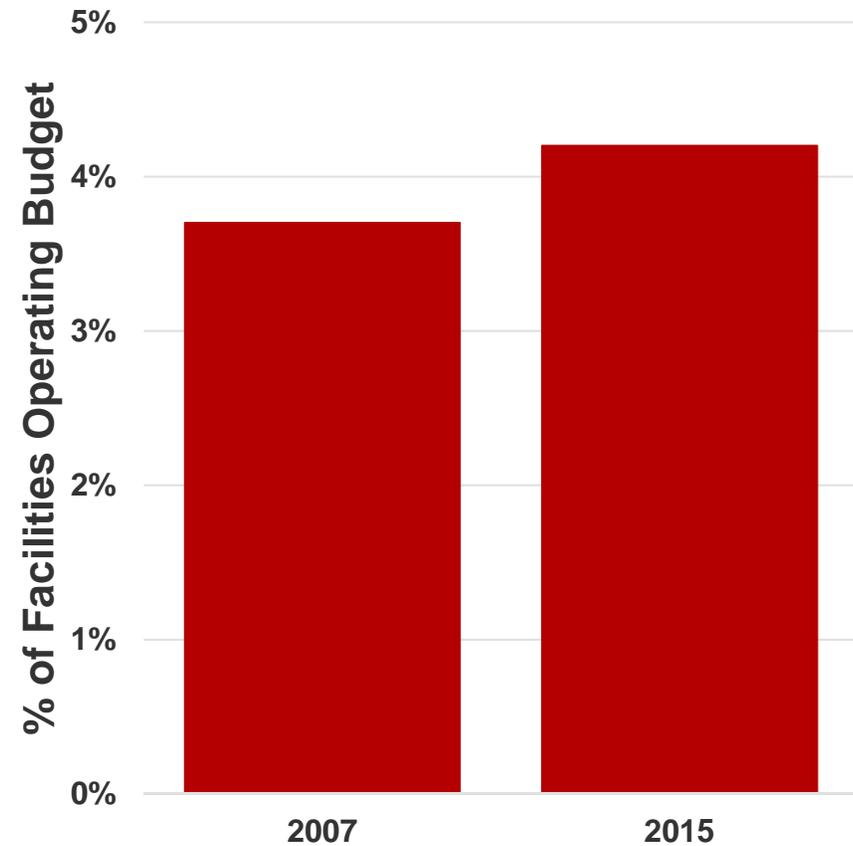
*But, evidence of progress implementing programs that extend life cycles*

## Fast Fact

42% of institutions reporting under STARS v 2.0 have formally adopted sustainable operations and maintenance guidelines or policies

Source: AASHE

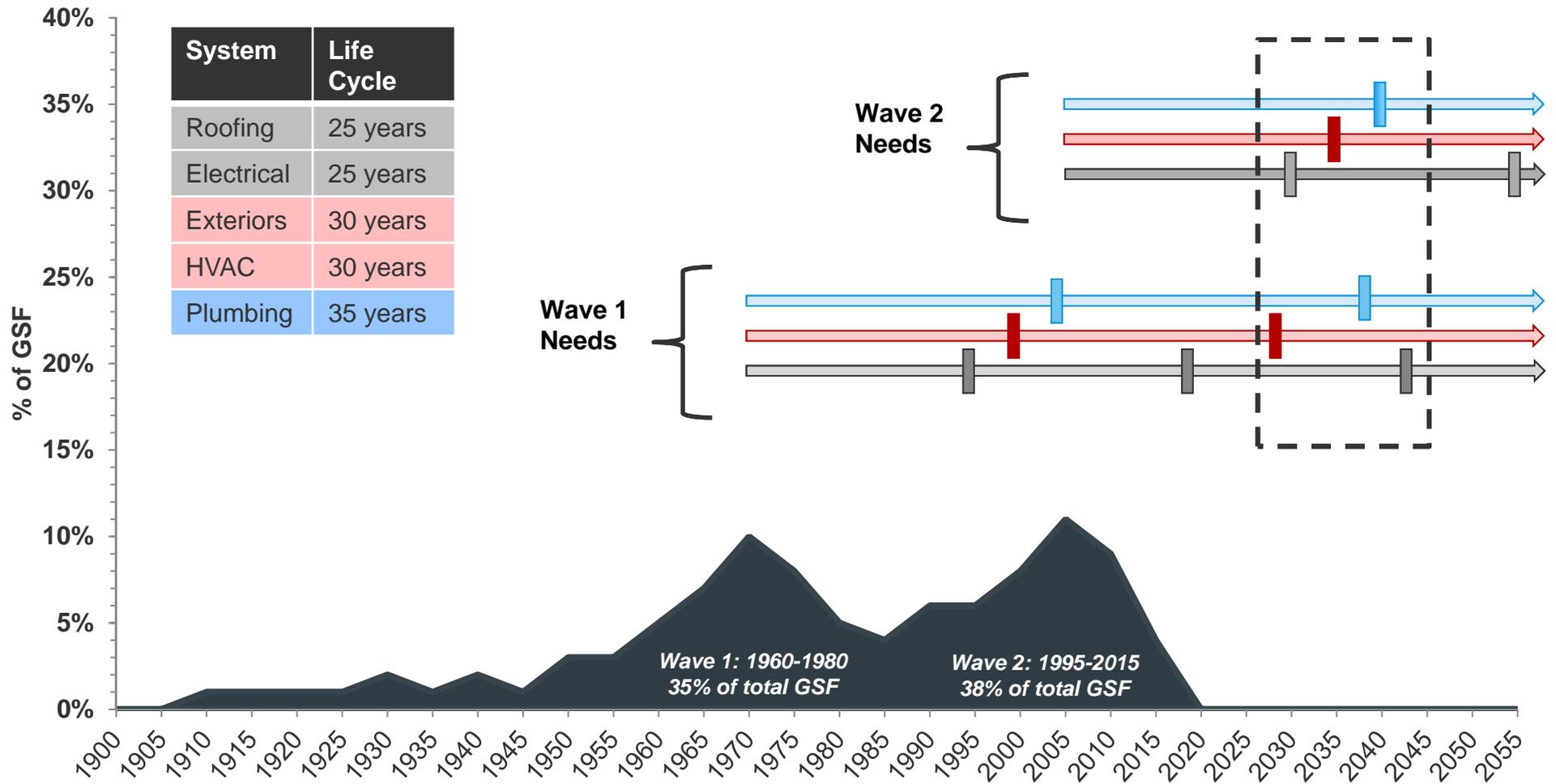
## Preventative Maintenance



Source: Sightlines

# Campuses have reset the clock on spaces via renovation

*Future systems needs of 2 peaks will coincide in future*

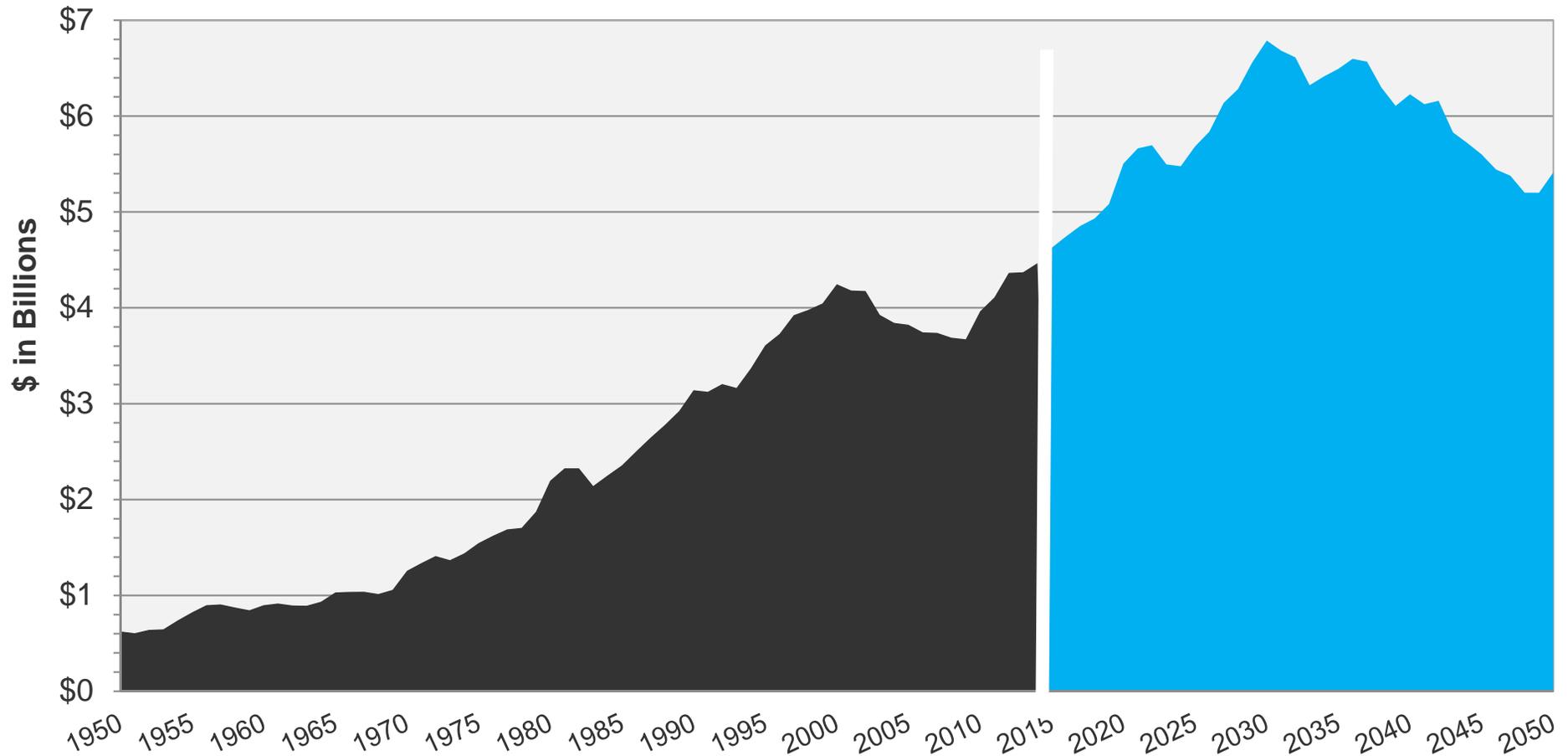


Source: Sightlines

# Capital Implications of Existing Space

*First boom needs major renos and complex second boom needs expensive upkeep*

**Total Database Need 1950-2050**  
*3-Year Moving Average Using ROPA+ Prediction*

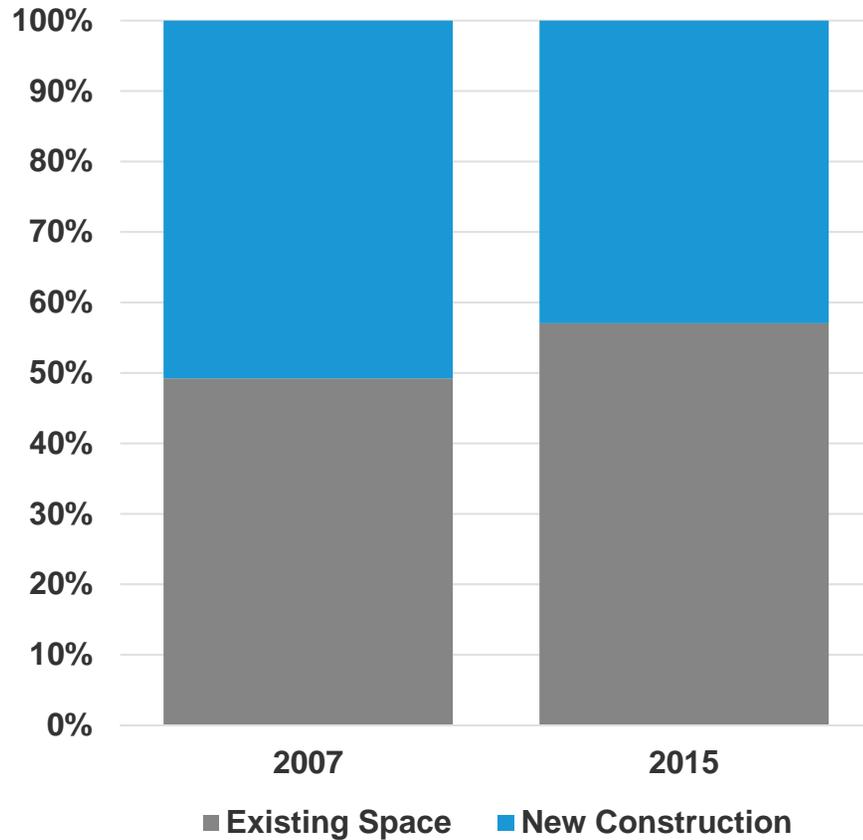


Source: Sightlines

# >50% capital spending in Existing Buildings

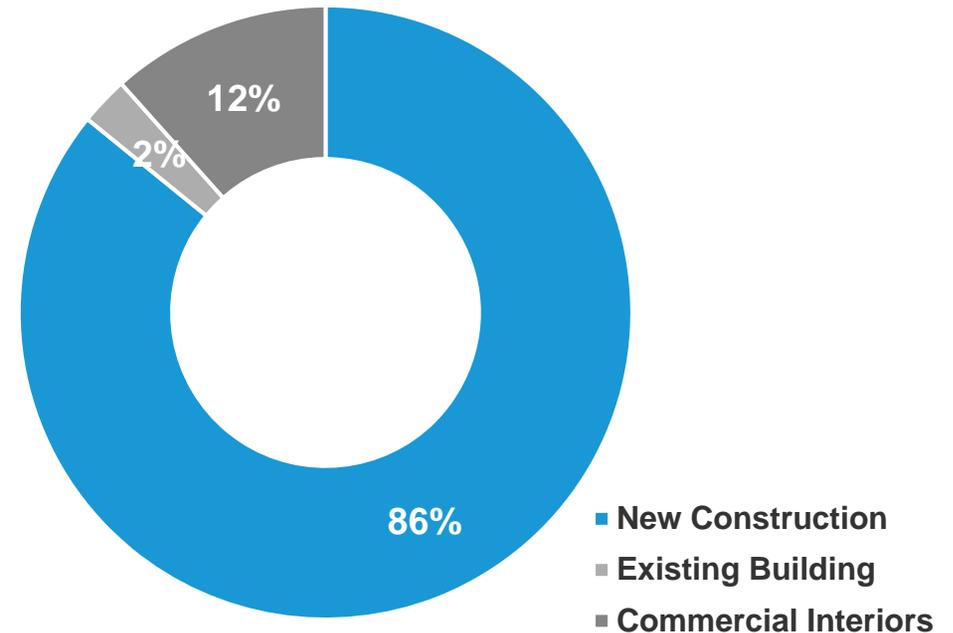
*Yet, LEED Certifications for Existing Buildings Rare*

### Capital Spending



Source: Sightlines

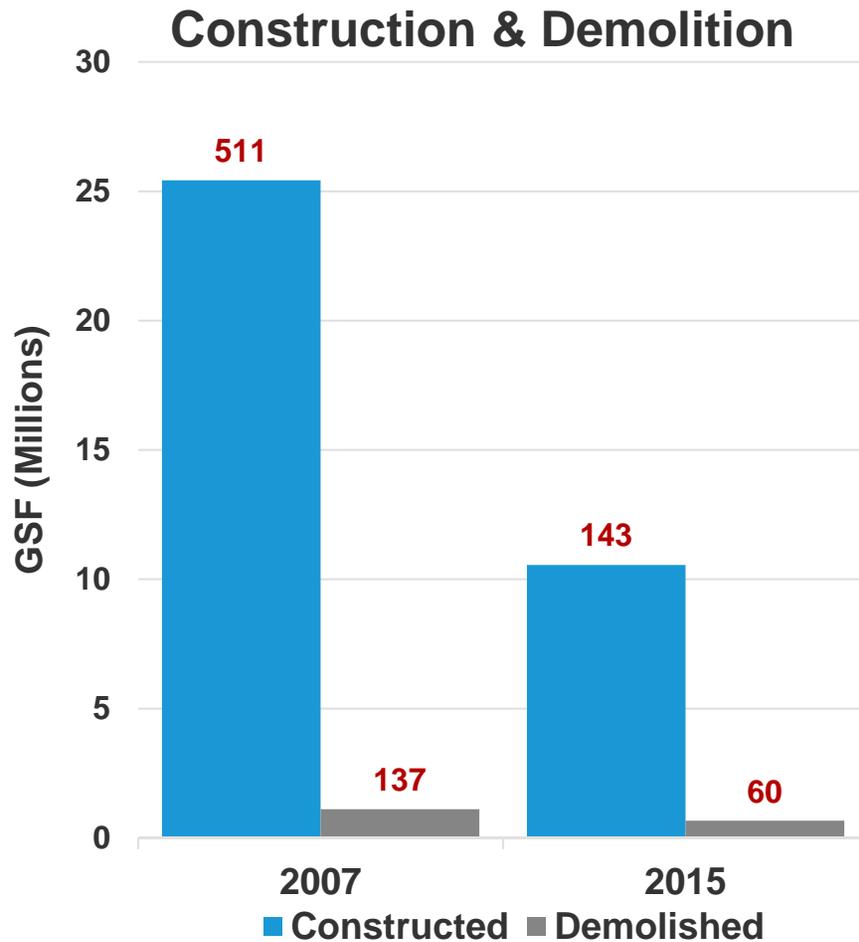
### Higher Education LEED Projects



Source: USGBC

# Construction Significantly Outpacing Demolition

*Few institutions tracking C&D waste*



Source: Sightlines

## Fast Fact

37% of institutions reporting under STARS 2.0 were unable to track the amount of Construction & Demolition waste generated on campus

Source: STARS

# Summary of Key Findings

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	Institutions Measure Carbon	Institutional Policies Common	Average Performance
Construction	Red	Green	Green
Renovation	Red	Yellow	Orange
Operations	Green	Yellow	Green
Demolition	Yellow	Yellow	Yellow

> Recommendations:

- > Adopt a more “life-cycle” approach to understanding institutional impact, including expanded annual tracking and reporting of Scope 3 emissions
- > Adapt sustainability policies that target existing buildings
- > Seek continuous improvement in sustainability performance



# Questions & Discussion