

City of New York's 30 x 17 Plan: Implementation Strategy and Progress to-date



The City's efforts to reduce its own GHG emissions is a major component of PlaNYC, NYC's sustainability plan



10 Sustainability Goals

- Improved air quality
- Clean, reliable energy
- Climate action
- ...and more

To achieve these goals,

- City government to lead by example
- Set goal to reduce GHG emissions from government operations 30% by 2017

From PlaNYC to the Plan on how to achieve 30 x 17



In October 2007 Mayor Bloomberg released Executive Order 109

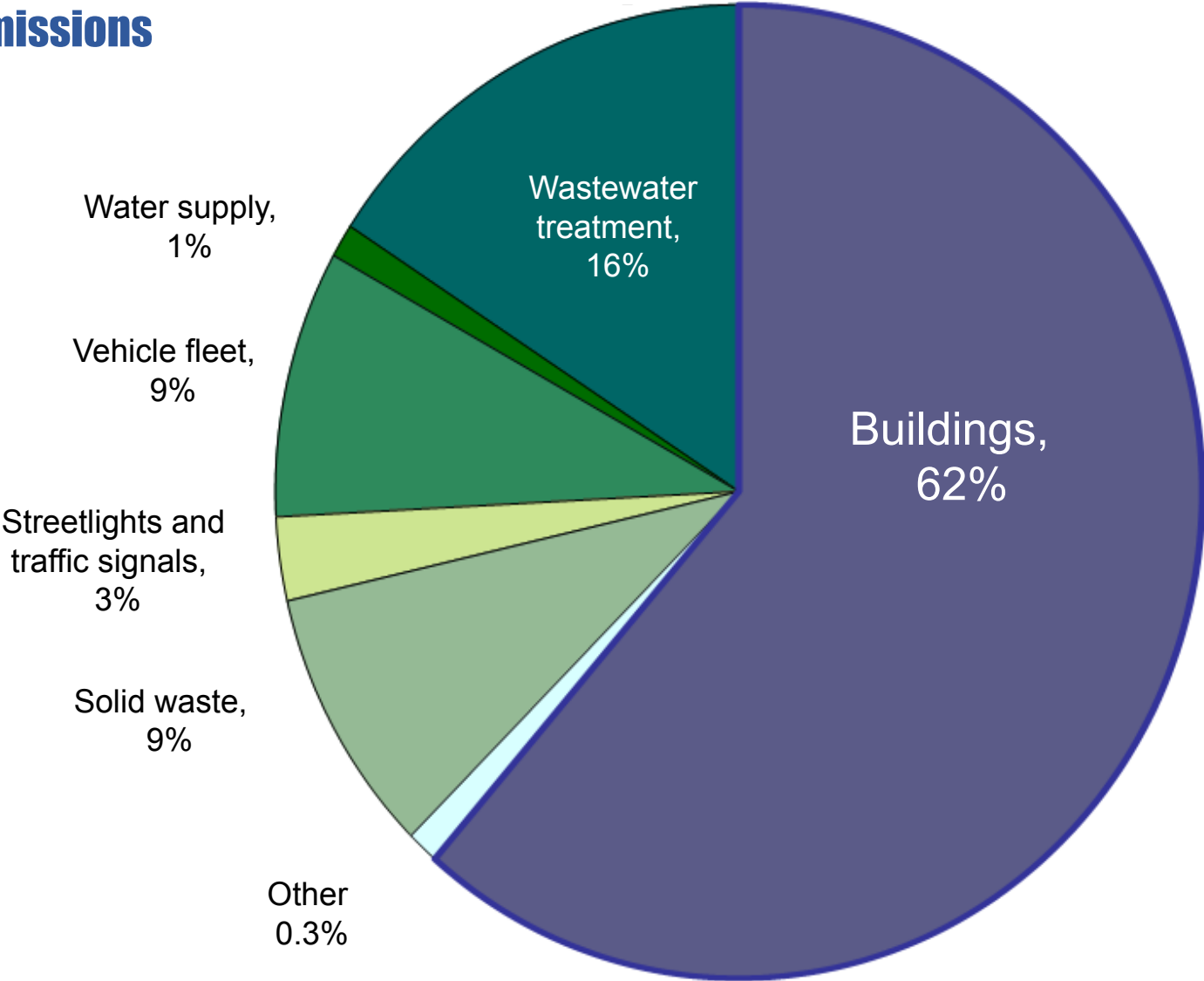
- Set 30% by 2017 goal
- Established Energy Conservation Steering Committee led by Deputy Mayor for Operations
- Put in place stream of funding: 10% of energy expenditures or ~ \$80 million/year
- Mandated a plan

In July 2008, Committee released *Long-Term Plan to Reduce Energy Consumption and Greenhouse Gas Emissions of Municipal Buildings and Operations*

First, we looked at where our emissions were coming from

Source of City of New York Government GHG Emissions

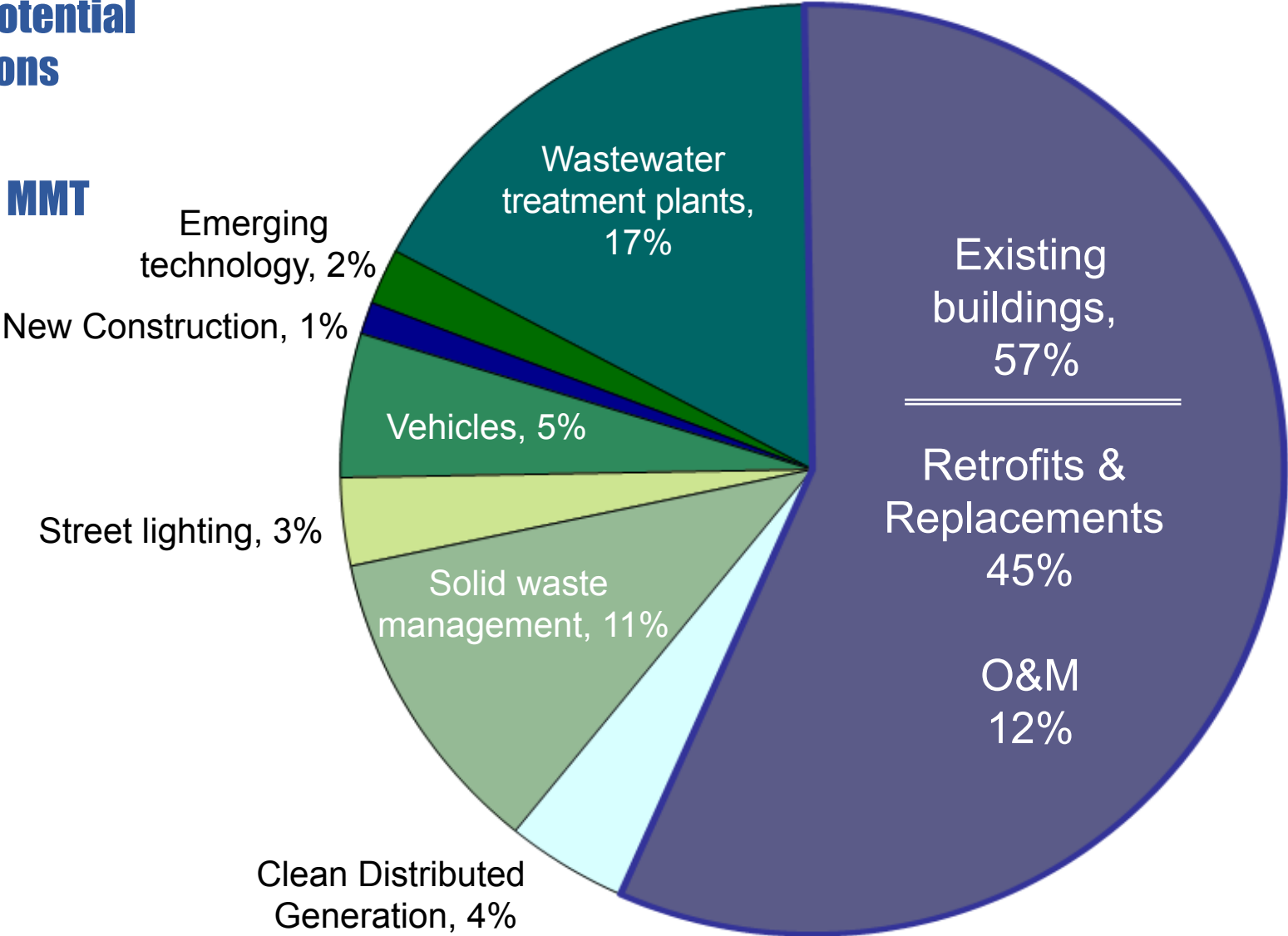
Total = 3.76 MMT



...and outlined where emissions reductions would come from

Source of Potential GHG Emissions Reductions

Total = 1.68 MMT



Then, we organized for implementation

WHO

Division of Energy Management: the Hub of City energy management

- Manage 30 x 17 implementation
- Report to Steering Committee
- Create implementation strategy
- Identify projects, oversee budget

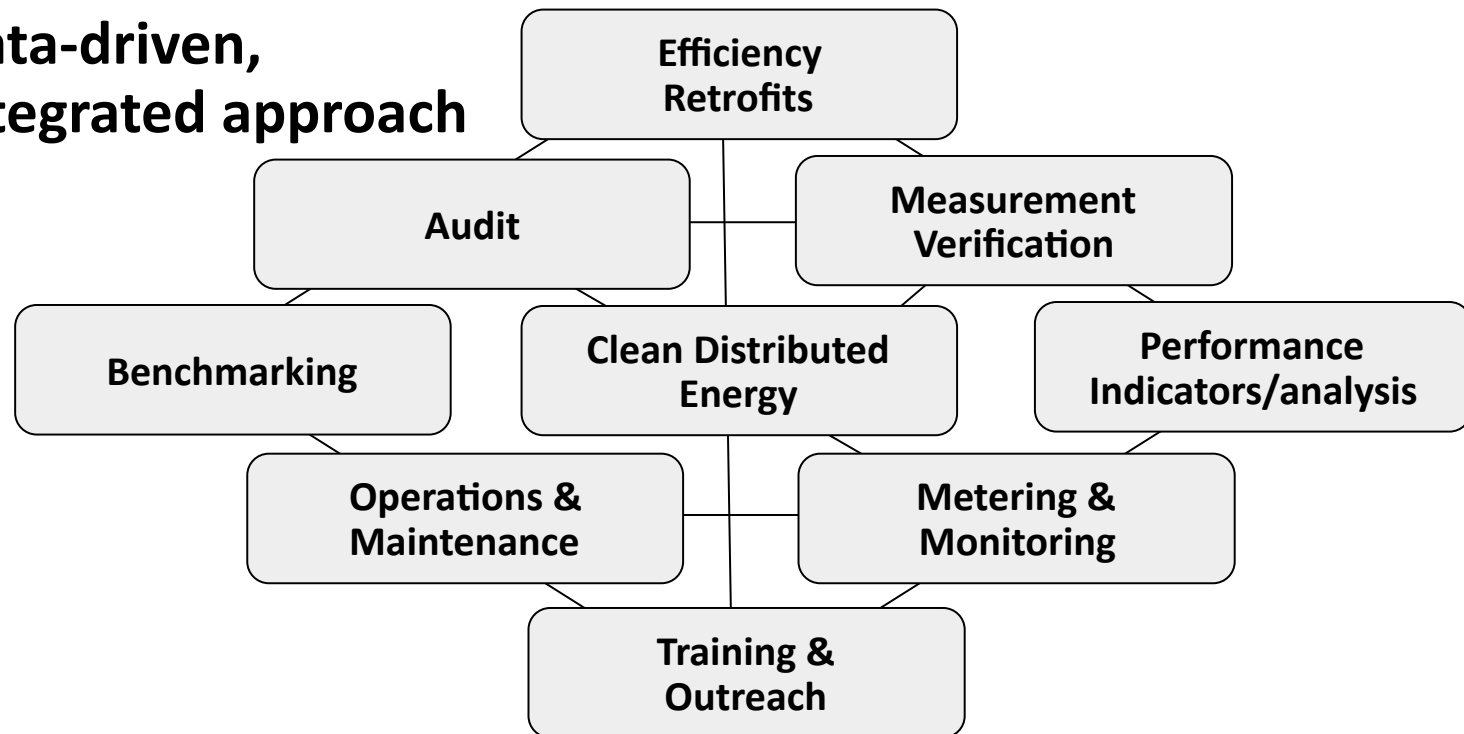


DCAS

Division of
Energy
Management

HOW

Data-driven, integrated approach

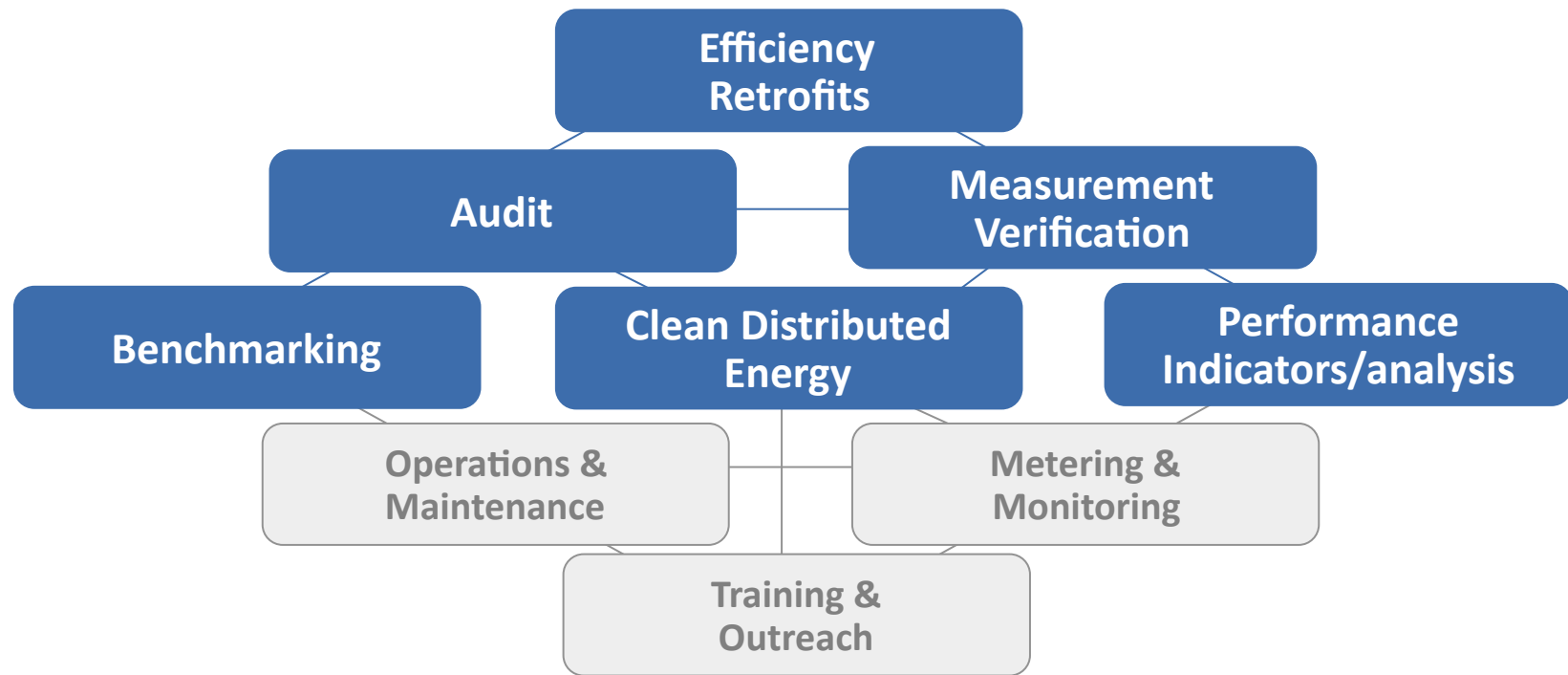


Most of the City's efficiency opportunities lie in existing buildings

- Over half of the 30 x 17 reductions will come from energy efficiency efforts in the City's 4000 existing buildings
 - Retrofitting building systems
 - Improving operations and maintenance (O&M) of facilities
- Given scale and diversity of buildings and scarcity of resources, implementation follows a strategic, data-driven approach...



Retrofit buildings based on comprehensive energy audits

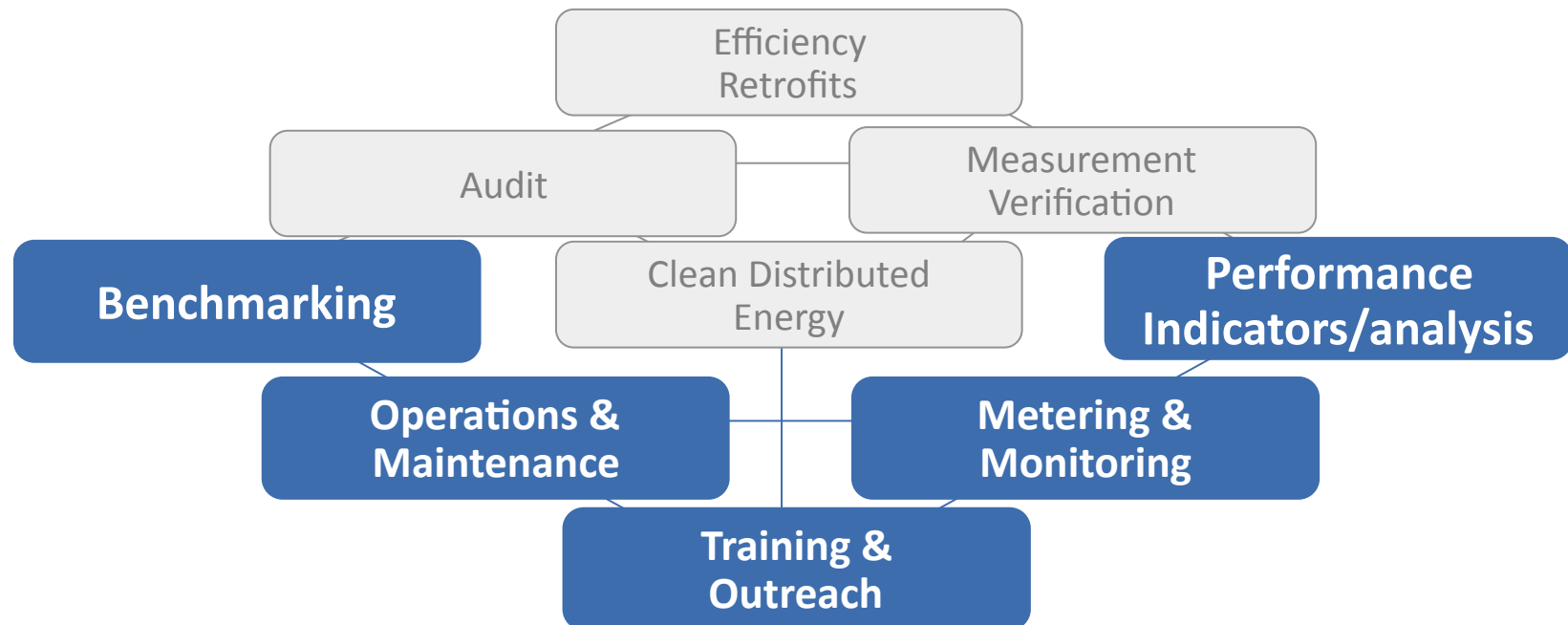


- Use benchmark data to prioritize facilities
- Conduct comprehensive energy audits to identify all cost-effective measures in each building
- Implement those measures with with best paybacks
- Tie retrofit efforts to improved O&M and retro-commissioning
- Analyze results regularly

Provide Support & Motivation for Improved O&M

Goal: Improve O&M in buildings to reduce energy use and emissions

- Prioritize facilities in need of attention and track progress
- Repair and maintain equipment
- Train facility staff and educate all building users
- Use real-time data to inform operational decisions and better manage peak loads
- Track performance for accountability and recognition



Energy Efficiency Operations & Maintenance Plan

TOOLS

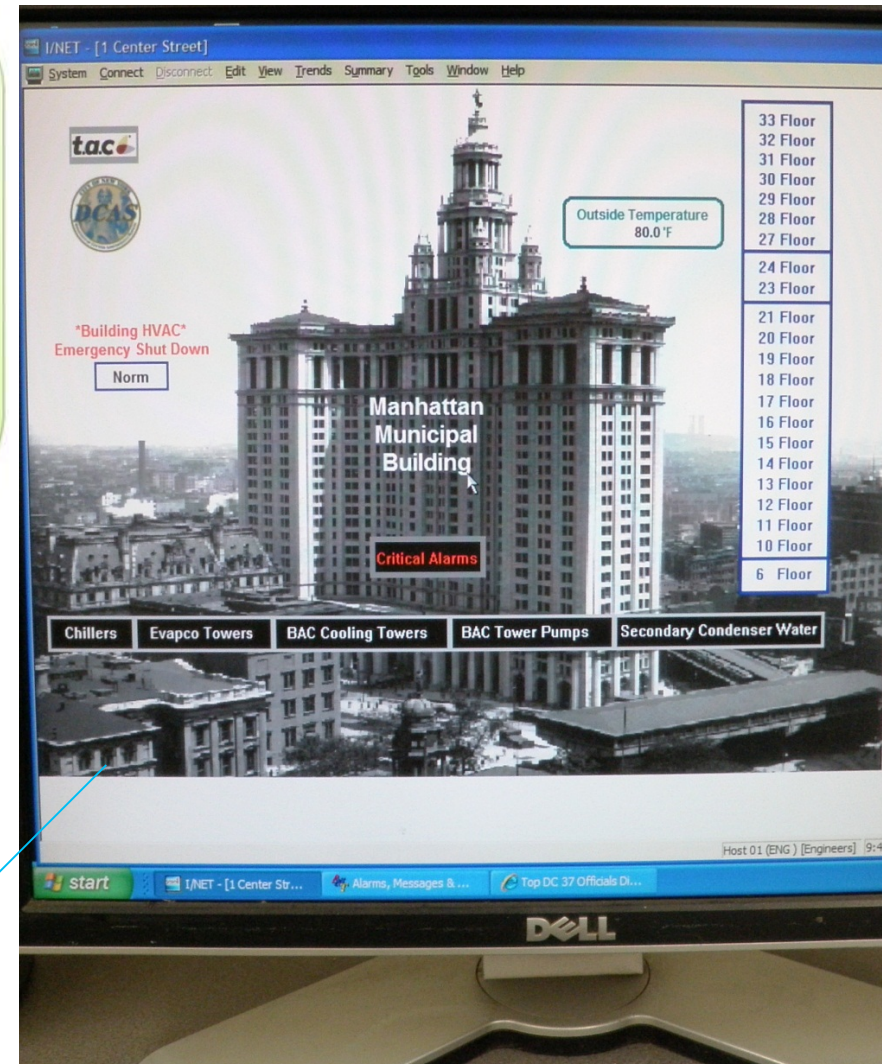
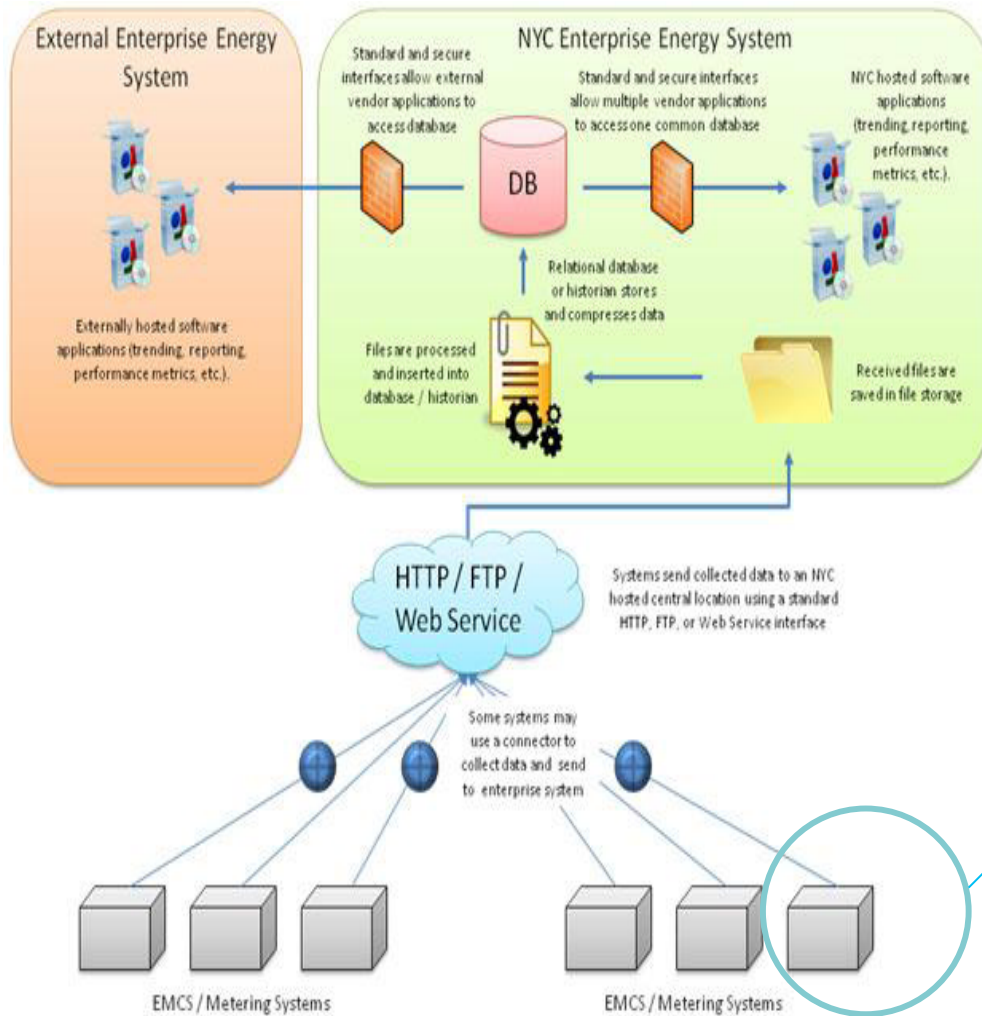
- Energy Managers
- Service contracts
- CMMS for PM planning
- O&M Planning Application
 - Maintain building information
 - Track meter reading data
 - Maintain PM logs
- Energy Enterprise Metering System*
- Outreach Strategy*

MOTIVATION

- Conditional funding for Energy Managers
- Performance reporting
- Posting performance
- Annual efficiency targets (total btu/sf)
- Conditional flexible funding
- Staff awards/recognition

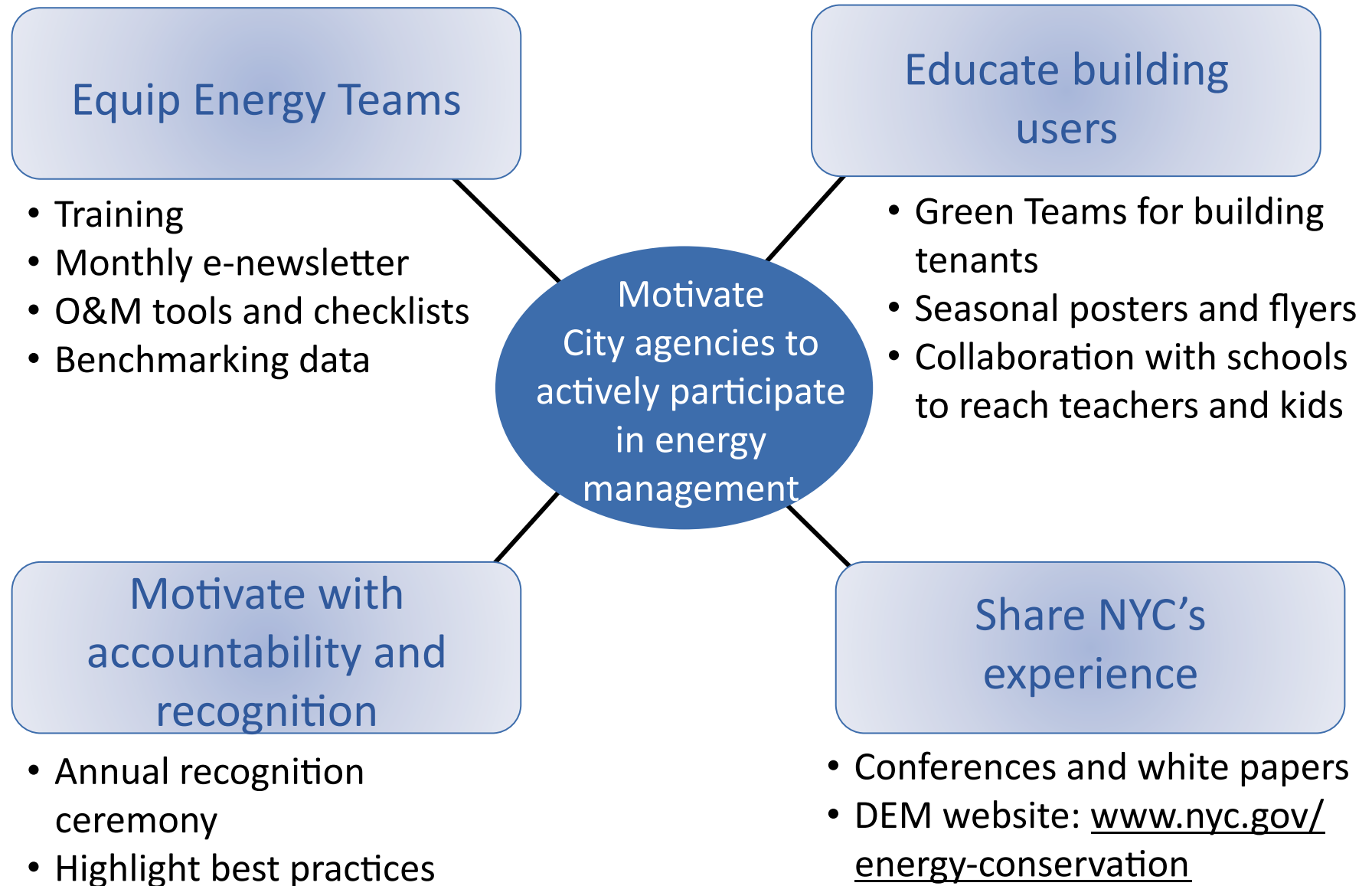
*Highlighted on next two slides

Energy Enterprise Metering & Monitoring System



Smart meters work with Building Management Systems to automate facility operations.

Outreach Strategy



Still moving forward on emissions reductions from non-building sources

- Fleet replacements with hybrids and electric vehicles
- Methane capture at Wastewater Treatment Plants
- Cobrahead streetlight replacements



Status as of November 2010

- **Completed 97 retrofit projects**, saving the City \$4 M in energy costs and 17,100 mt of GHG emissions
- **Have 216 retrofits and 74 energy audits** underway, saving more than \$24.6 M in costs and 76,300 mt in emissions
- **Benchmarked all City buildings over 10,000 sf** (~3,000 covering 27 agencies)
- **Created Energy Efficiency Operations & Maintenance (O&M) Plan and implementation tools**, following a pilot on 16 buildings that resulted in 11% energy reduction
- **Began feasibility studies for new cogeneration projects** at multiple City sites
- Kicked-off **Citywide metering and monitoring infrastructure deployment**
- Completed study verifying real energy savings from energy retrofits.
- **Upcoming milestones:** Release RFPs for a solar power purchase agreement and for additional ESCO services