Benchmarking New York
what the results are showing us

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Benchmarking: What is it and why should we do it?

**What?**

- A way of measuring how efficiently a building uses energy (and water)
- EPA’s Portfolio Manager – an online tool
- Input information: Monthly energy use, building attributes, information about use
- Output metrics: Energy use per square foot, a rating, CO2

**Why?**

- Pervasive lack of information on how well our buildings are performing
- Even building owners and managers don’t know
- The market needs to value energy efficiency
- “Right to Know” for tenants, prospective purchasers, etc.
New York’s benchmarking ordinance impacts 2% of the buildings that represent 50% of the built area

KEY FEATURES OF ORDINANCE:

• Applies to all types of properties > 50,000 sq. ft.

• Captures 15,300* properties and 2.6 billion sq. ft.

• Part of the Greener, Greater Buildings Plan, which includes mandatory audits, RCx, commercial tenant metering, & lighting upgrades

• Annual requirement

• Public disclosure

• Requires both energy and water use

* Includes 12,600 private sector & 2,700 public sector buildings
The first year’s compliance rates were very high – 75%

Figure 30: Compliance Rates by Borough

- Manhattan: 83% compliance
- Brooklyn: 69% compliance
- Queens: 72% compliance
- The Bronx: 71% compliance

Percentages of compliant properties in each borough; size of each pie chart is proportional to the total number of covered properties in each borough.

Figure 31: Compliance Rates by Sector

- Residential
- Office
- Hotels
- Hospitals
- Cultural
- Misc.
- Retail
- Telecommunication
- Industrial
- Garages
- Religious

Source: NYC Mayor’s Office

New York now has data on 12,000 large properties equaling over 2 Billion sq ft.
Consultants played a major role in the benchmarking, which represented dozens of new jobs.

Figure 36: Percentage of Properties Benchmarked by Consultants

The circles represent the cumulative percent of properties benchmarked by an increasing number of consultants, arranged such that the consultant with the largest percentage comes first, followed by the next largest, and so on.

Source: NYC Mayor's Office

Figure 37: Distribution of Multifamily EUIs Obtained by 18 Consultants

Source: University of Pennsylvania
New York cities buildings perform significantly above the national average, but are in line with the Northeast.
The very wide range of energy use indicates that significant citywide savings will be very cost effective.
We can target the worst performing neighborhoods, which use more than twice the energy per square foot as the best.

**Figure 20: Median EUI by Zip Code, Multifamily (min. 5 properties per zip code)**

Legend
- Parks
- Total Building Observations < 5
- No Data

**Median EUI**
- < 71.9
- 71.9 - 124.2
- 124.3 - 143.4
- 143.5 - 175.5
- > 175.5

Source: New York University
We can see other patterns -- how age impacts energy use, water usage, etc.

**Figure 24: Median Energy Use Per Sq Ft by Building Type and Age Group**

**Figure 29: Scatter Plot of Water Usage for Multifamily and Office Buildings**
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This information on building systems will enable us to make much more sense of the bench-marking scores
We are at the beginning of a knowledge revolution that is going to happen very quickly ... next steps

CEP Data:
- Benchmarking
  - City databases
- RCx
- Audits
  - Leading by Example
  - Challenges
  - EE Financing
  - Utilities (?)
- Retrofit
  - Data
- E M + V (Lite)
  - Data

CEP Data:
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- RCx
- Audits
  - Leading by Example Challenges
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Note that arrows show types of questions that can start to be asked – such as the relationship of predicted costs or savings to actual. The arrows show some of the main questions that can be answered by the data, but they are not exhaustive.