

Next **Generation** NYCHA Sustainability Agenda



NESEA Building Energy NYC | Nov. 3, 2016



NYCHA houses 1 in 12 New Yorkers



77,000
SENIORS

62 YEARS OLD OR OLDER



110,000
CHILDREN

UNDER 18 YEARS OLD



\$23,000

AVERAGE
HOUSEHOLD
INCOME



61%

ARE EMPLOYED
(OF NON-DISABLED,
WORKING AGE ADULTS)



40%

OF HEADS OF HOUSEHOLDS
ARE 62 YEARS OLD OR OLDER



25%

OF NYCHA EMPLOYEES
ARE RESIDENTS OF
PUBLIC HOUSING



41%

ON FIXED INCOME
(SOC. SEC., SSI, PENSION, OTHER)



12%

RECEIVE PUBLIC
ASSISTANCE

NYCHA's housing stock large and varied...



328

DEVELOPMENTS



MADE UP OF 2,550 BUILDINGS

THAT CONSIST OF  178,000 APARTMENTS

CONTAINING OVER  175 MILLION SQUARE FEET OF SPACE

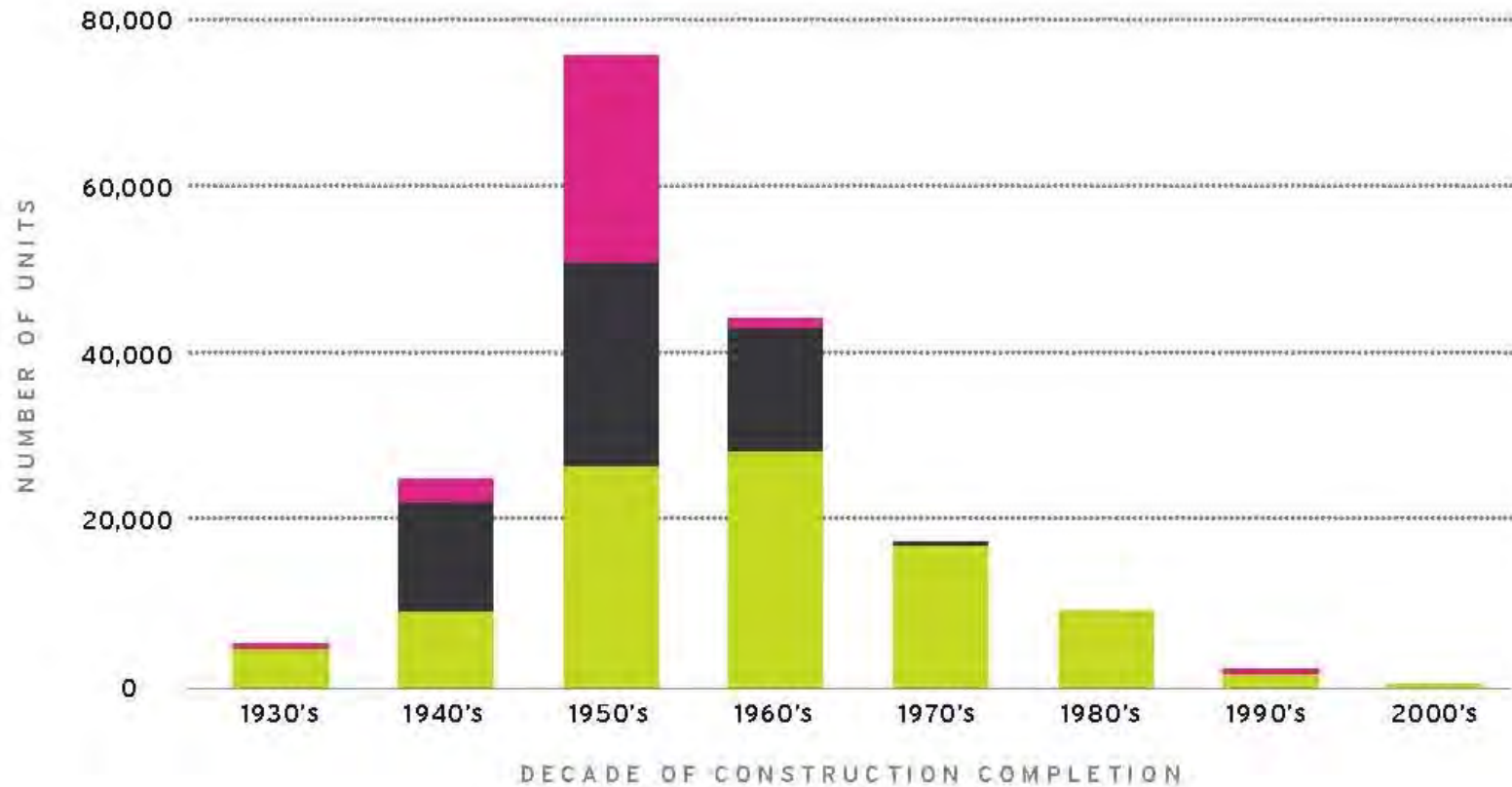
60% OF NYCHA'S BUILDING ARE **50+ YEARS OLD**



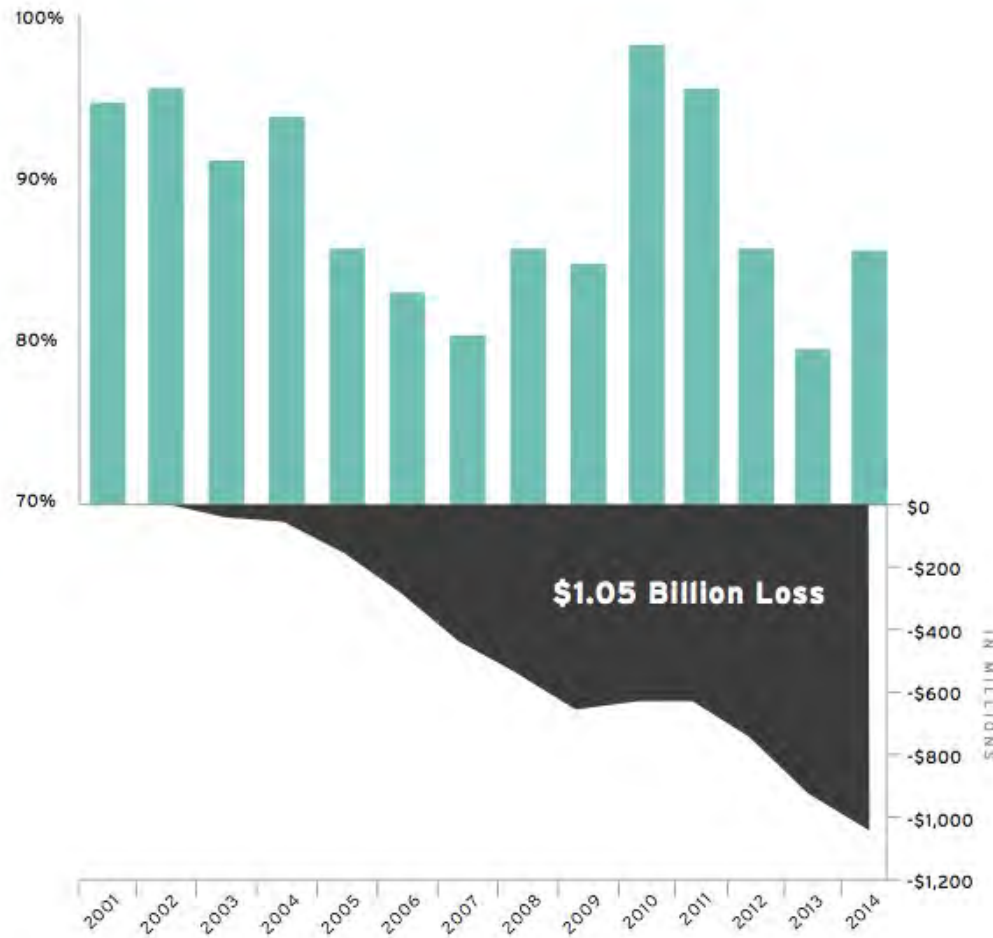
THE LARGEST DEVELOPMENT: A **26-BUILDING APARTMENT COMPLEX** WITH 7,000 RESIDENTS

THE SMALLEST DEVELOPMENT: A **SINGLE-STORY SENIOR BUILDING** WITH 13 RESIDENTS

And it is aging.

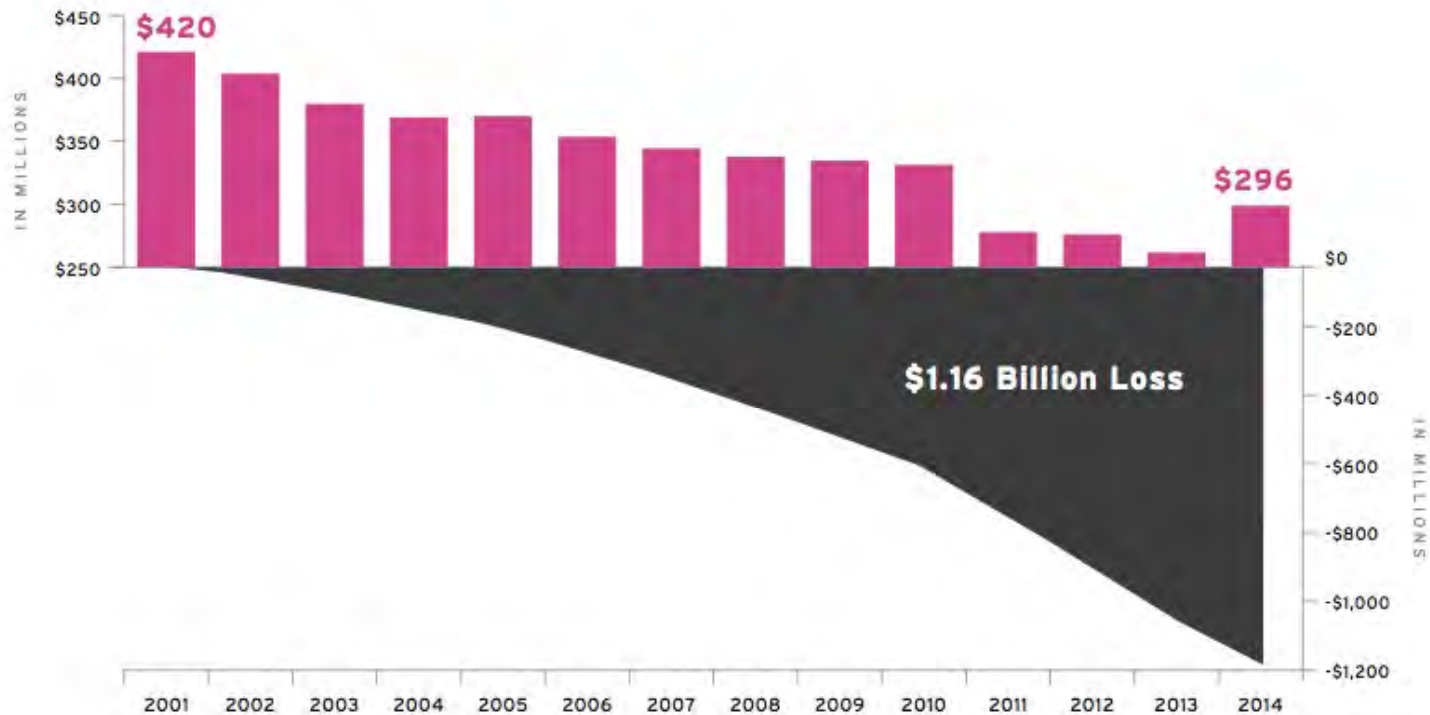


\$1 billion loss in operating funding since 2001



Data Source: NYCHA Finance

30% loss in capital funding since 2001



Data Source: NYCHA Finance

■ Annual Federal Capital Grant
■ Cumulative Loss versus 2001 Funding Level

NextGeneration NYCHA

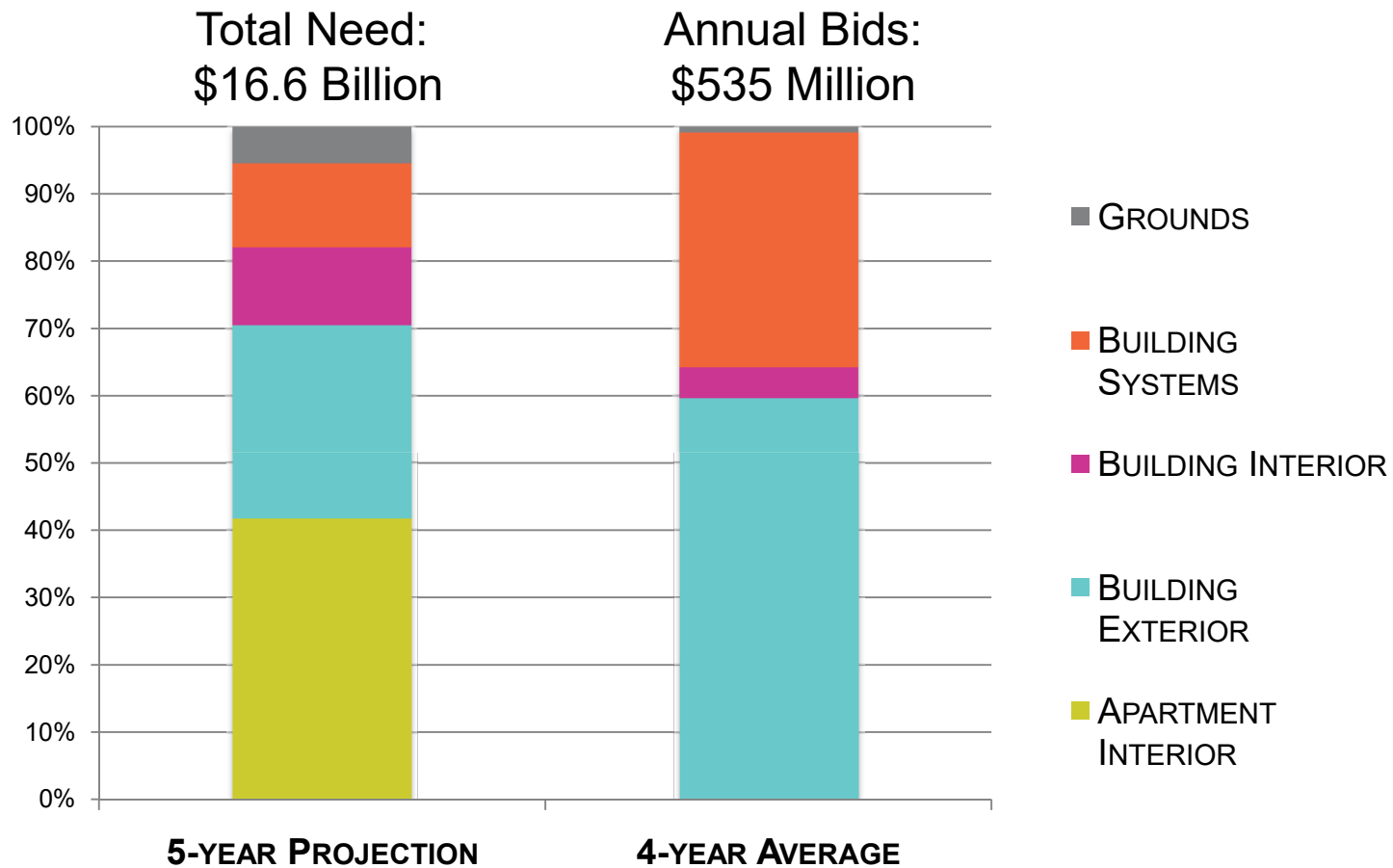
Safe Clean Connected Communities

The Authority's **10-year strategic roadmap** to

1. Achieve short-term financial stability and diversify funding for the long term
2. Operate as an efficient and effective landlord
3. (Re)build, expand, and preserve public and affordable housing
4. Engage residents and connect them to best-in-class social services



Capital needs far outstrip available funds



NextGeneration NYCHA

Vision for Safe, Clean & Connected Communities



FUND GOAL:
CHANGE THE WAY NYCHA IS FUNDED

- PAY LESS** TO NYC
- DO A BETTER JOB** COLLECTING RENT AND FEES
- MAKE WISER USE** OF GROUND FLOOR SPACE
- REDUCE** CENTRAL OFFICE COSTS



OPERATE GOAL:
CHANGE THE WAY NYCHA OPERATES

- GO DIGITAL** AND **USE TECH** TO UPGRADE SERVICE
- LOCALIZE DECISION-MAKING TO **HEIGHTEN CUSTOMERS' SATISFACTION**
- PURSUE SUSTAINABILITY** FOR A CLEANER AND GREENER NYCHA
- IMPROVE** SAFETY AND SECURITY



(RE)BUILD GOAL:
CHANGE HOW NYCHA LOOKS

- USE DATA** TO DRIVE CAPITAL DECISIONS
- PROVIDE LAND** FOR NYC'S AFFORDABLE HOUSING GOALS
- MAXIMIZE FEDERAL PROGRAMS** TO RENOVATE AND PRESERVE BUILDINGS
- CHOOSE AND USE GOOD DESIGN**



ENGAGE GOAL:
CHANGE HOW NYCHA ENGAGES WITH RESIDENTS

- IMPROVE RESIDENT AND COMMUNITY SERVICES** WITH A NEW TYPE OF ENGAGEMENT
- CREATE A NONPROFIT ORGANIZATION** TO FUND SOCIAL SERVICES
- CONNECT RESIDENTS TO **QUALITY JOB OPPORTUNITIES**

NextGeneration NYCHA

Comprehensive Sustainability Agenda

NYCHA's **commitment** as a landlord to create healthy and comfortable homes that will withstand the challenge of climate change

An **invitation** to residents and surrounding communities to work with NYCHA to realize a shared long- term vision of equity, sustainability, and resiliency



NextGeneration NYCHA

OPERATE AS AN EFFECTIVE AND EFFICIENT LANDLORD

Create **healthy indoor environments**

Efficiently provide **comfortable and reliable heat and hot water**

Improve **water management**

Adopt a comprehensive **waste management plan**

NextGeneration NYCHA

Energy Commitments

Reduce energy intensity by 20% by 2025

- Large-scale retrofits via HUD EPC
- Scattered-site retrofits: non-HUD funding

Install 25 MW of renewable generation capacity

- Solar & DG PPAs
- Resiliency

Priority Outcome

Healthy Indoor Environments

43% of NYCHA developments are located in the areas of New York City that see the most asthma hospitalizations.¹

They house **151,000** residents
38,000 children under 15



New York City plans to have the **best air quality** among all large US cities by 2030.



NYCHA can't control outdoor air pollution, but its sustainability strategies can improve indoor air quality.

- Highest rate of asthma hospitalizations in NYC
- NYCHA development

Data Sources: NYC Department of Health and Mental Hygiene - Environment and Health Data Portal / United Hospital Fund Boundaries: NYCHA Department of Research and Management Analysis

Priority Outcome

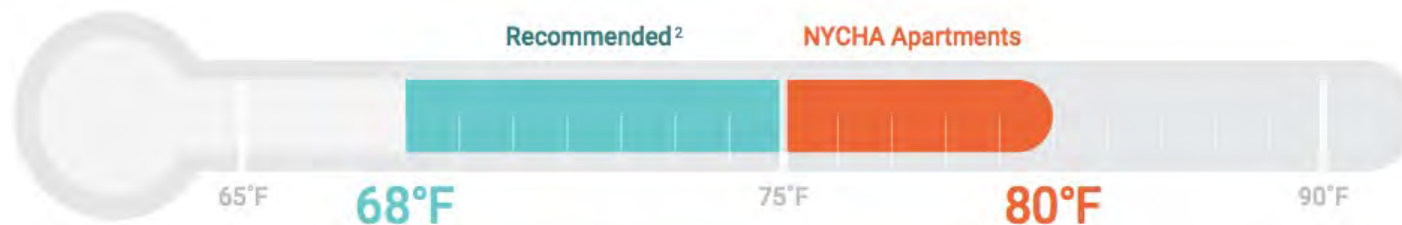
Comfortable & Reliable Heat


92% of apartments are heated with steam, the most inefficient way to heat buildings.

1,379 boilers provide NYCHA's heat. Each has a life expectancy of 30 years. 45% are already 25+ years old.

Apartments are overheated because outdoor temperature sensors can't tell when it's hot inside—only that it's cold outside.

Winter-time indoor temperature

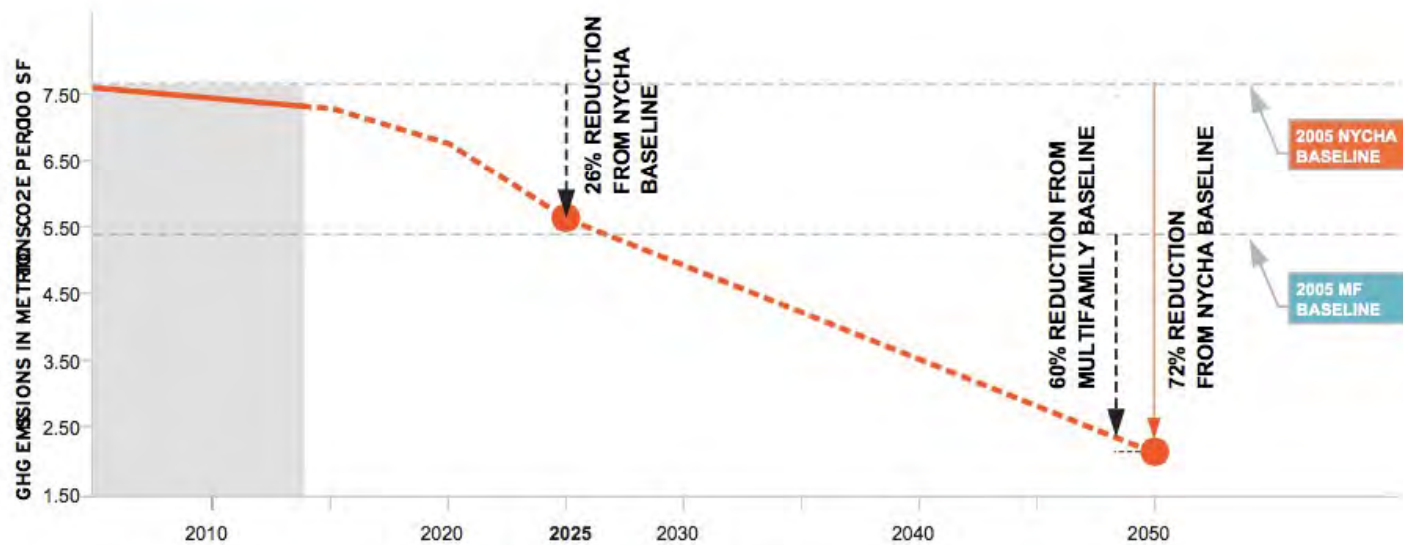


 That's like keeping the lights on inside because it's dark outside—even when you're sleeping or not home.

Priority Outcome

Get on the path to 80 X 50 GHG goals

Pathway for Reductions in Greenhouse Gas Emissions from NYCHA Portfolio

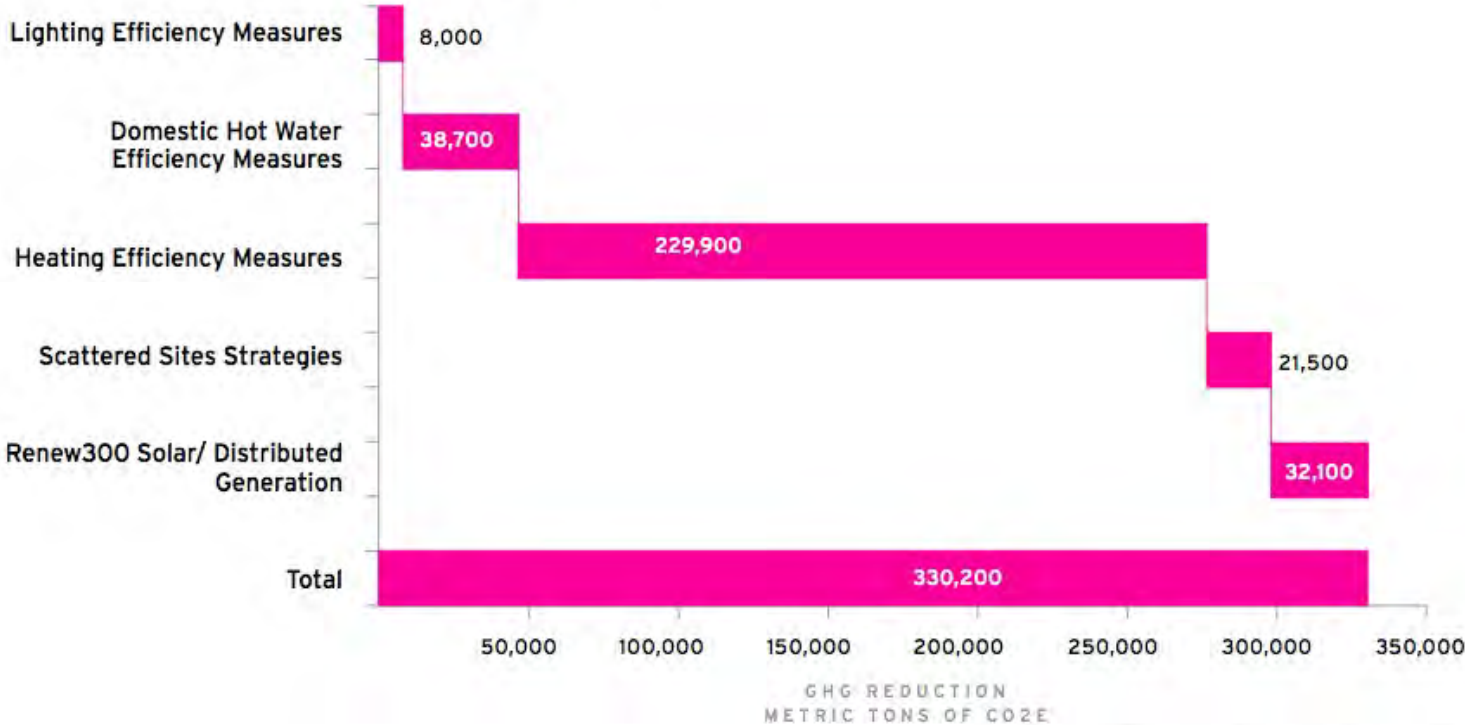


Source: Mayor's Office of Sustainability and NYCHA Dept. of Energy and Sustainability

2025 Goals

Heating is critical.

GHG emissions reduction through 2025 by energy conservation measure



Source: NYCHA Dept. of Energy and Sustainability

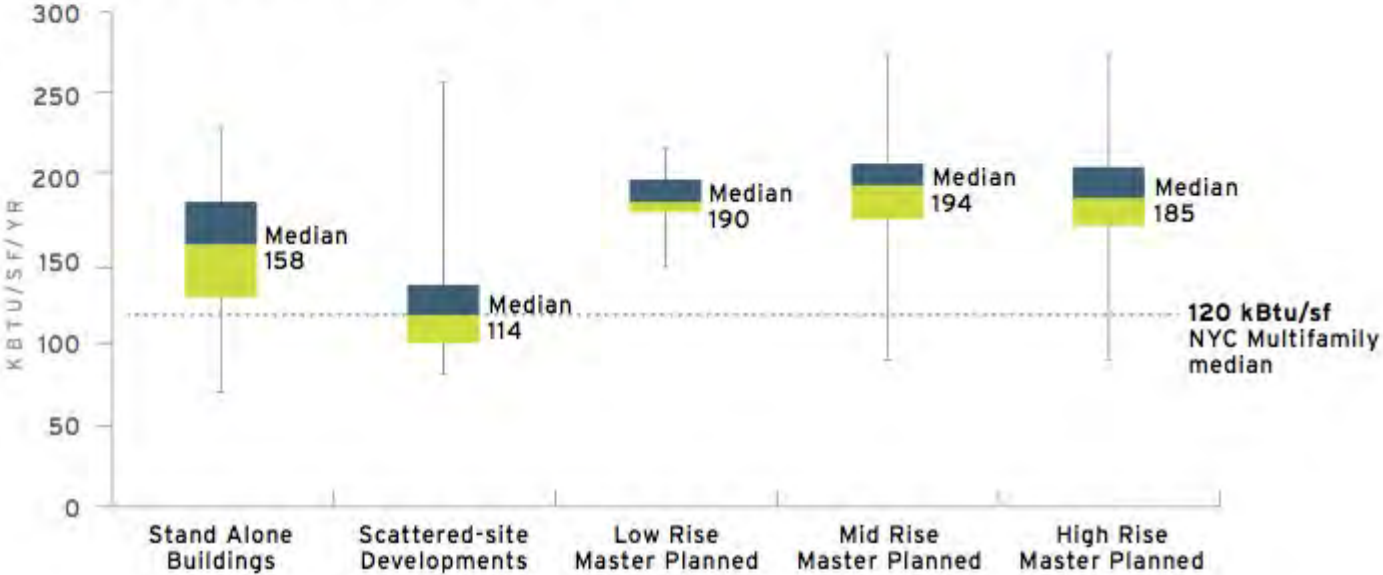
2025 Goals

Various starting points

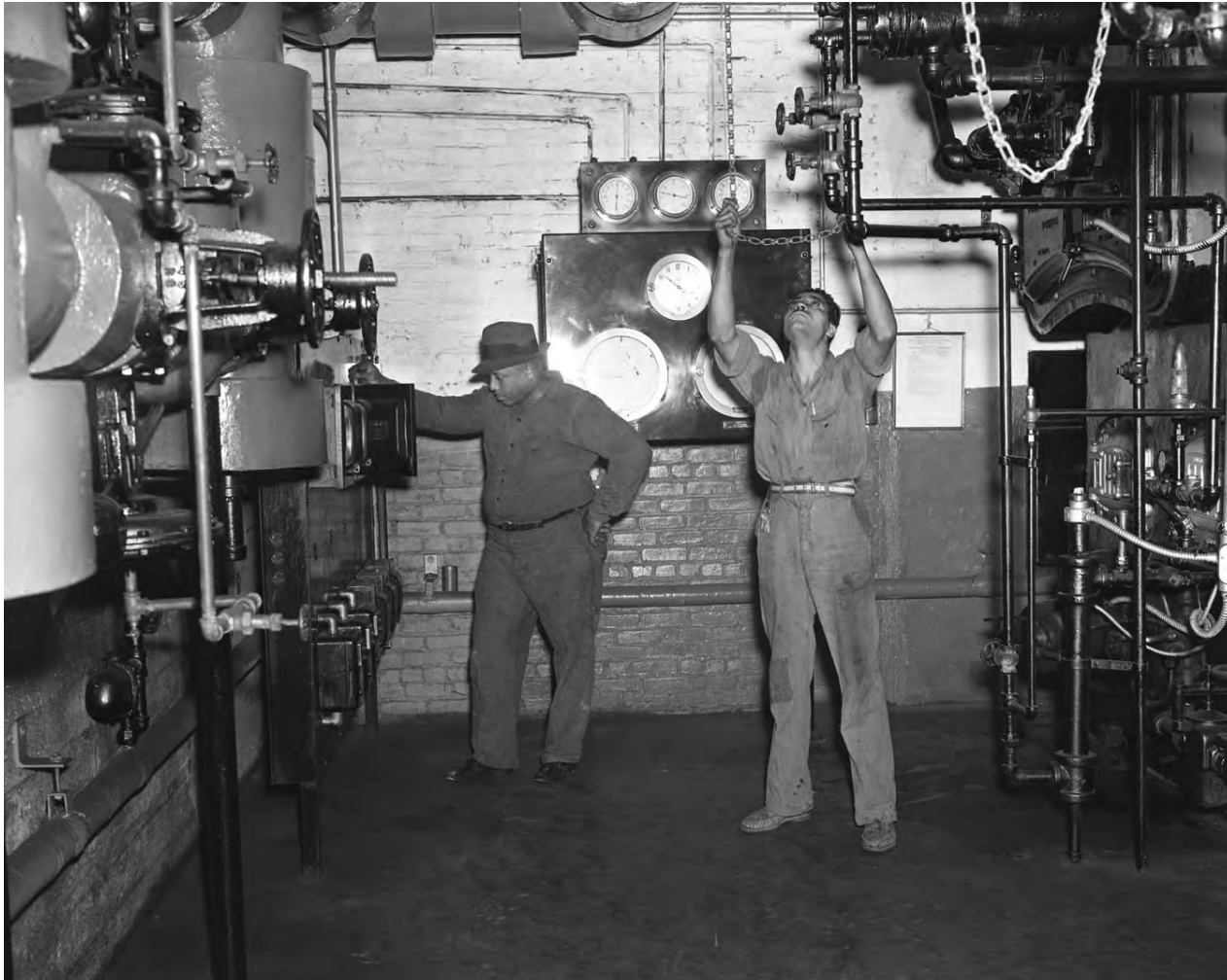
Energy Intensity Varies by Development Type

Master planned developments use more energy on average than single buildings or scattered site developments.

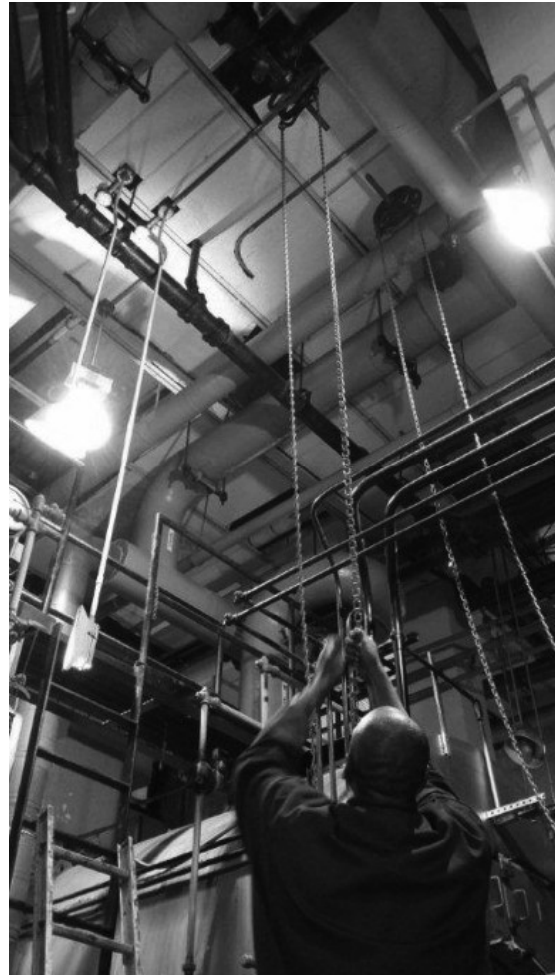
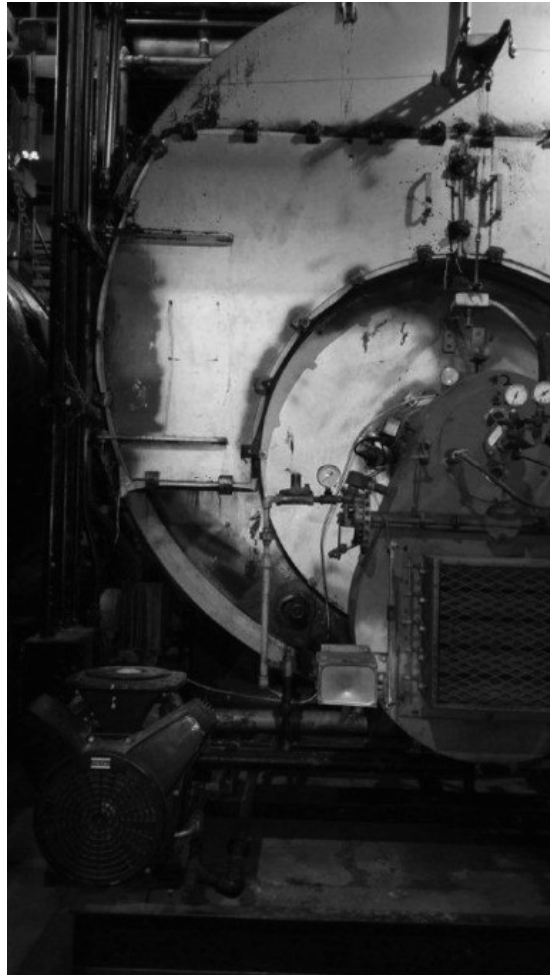
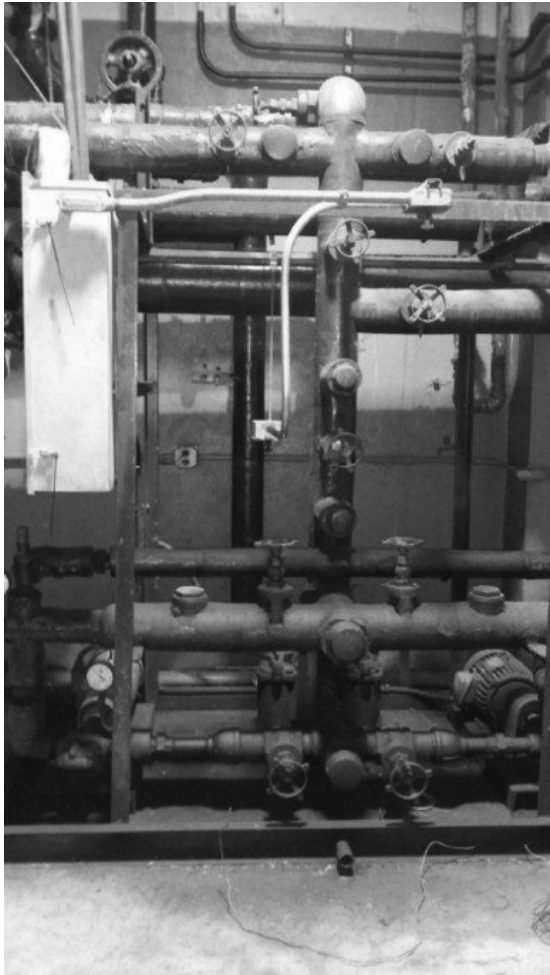
Master-planned sites use campus-scale steam systems; scattered site buildings tend to use hot water heat.



What was state of the art in 1939



By and large, still there.

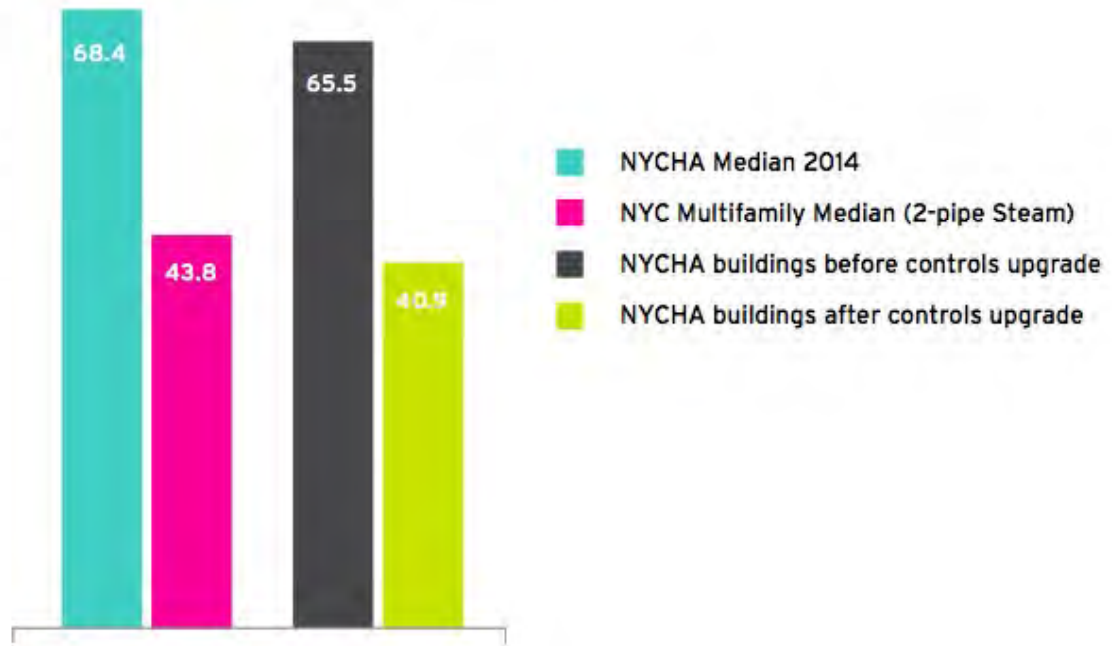


80 x 50

2025 Goals: Heating is critical

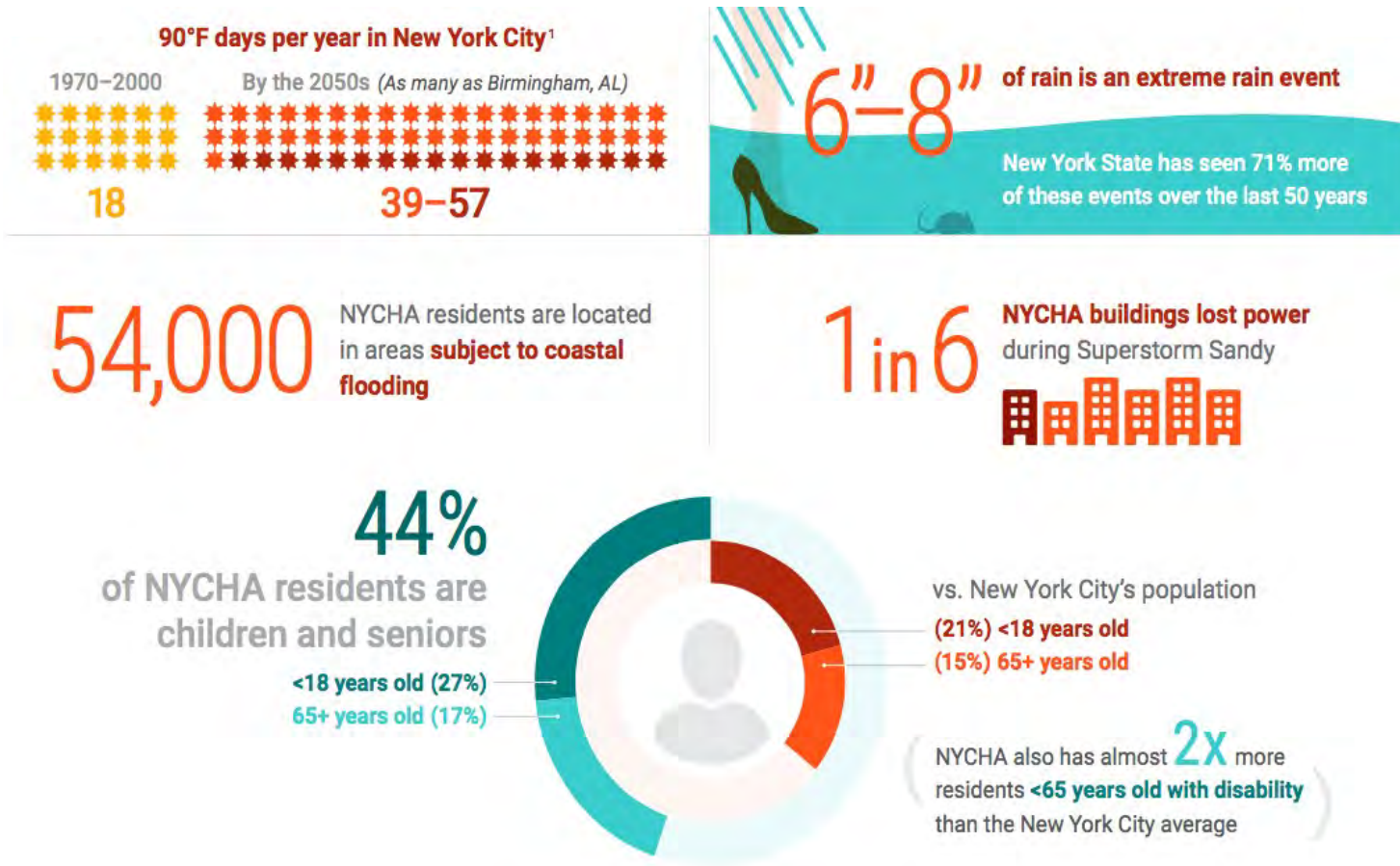
NYCHA's Heating Energy Use Intensity Can Be Improved Through Controls Upgrades

Heating Energy Use Intensity (kBTU/sf) before and after installation of indoor temperature feedback controls, compared to portfolio-wide median in 2014, and NYC multifamily median



Priority Outcome

Climate Resiliency



Capital Improvements

Master-Planned Sites



Invest \$300 million via a series of large EPCs.

Scope of work: heating distribution controls, ventilation, and electric and water efficiency.



4 EPCs in development, serving 130 developments.

120,000 units in EPCs by 2018

Master-Planned sites at Polo Grounds in Harlem and Williamsburg Houses in Brooklyn.

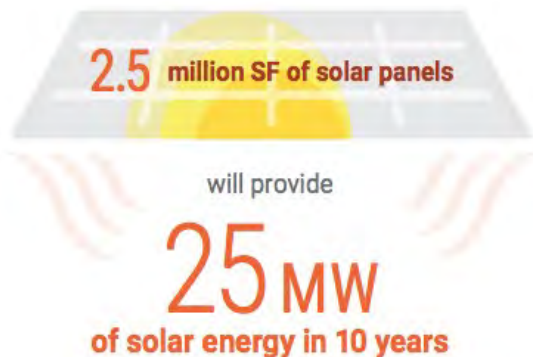
Renewables

Three tracks toward Renew300

Solar RFPs contributing to 25 MW by 2025

Red Hook Microgrid and Cogeneration Plant
via Public Private Partnership

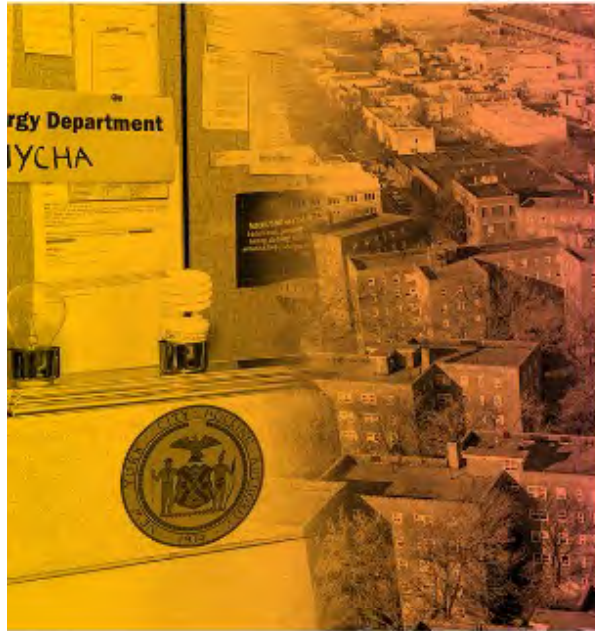
Support City in community –scale clean and
distributed energy systems



CALL FOR INNOVATIONS

Provide innovative solutions to improve the lives of New Yorkers.





call for innovations:

Reducing the Electrical
Load in NYCHA Buildings

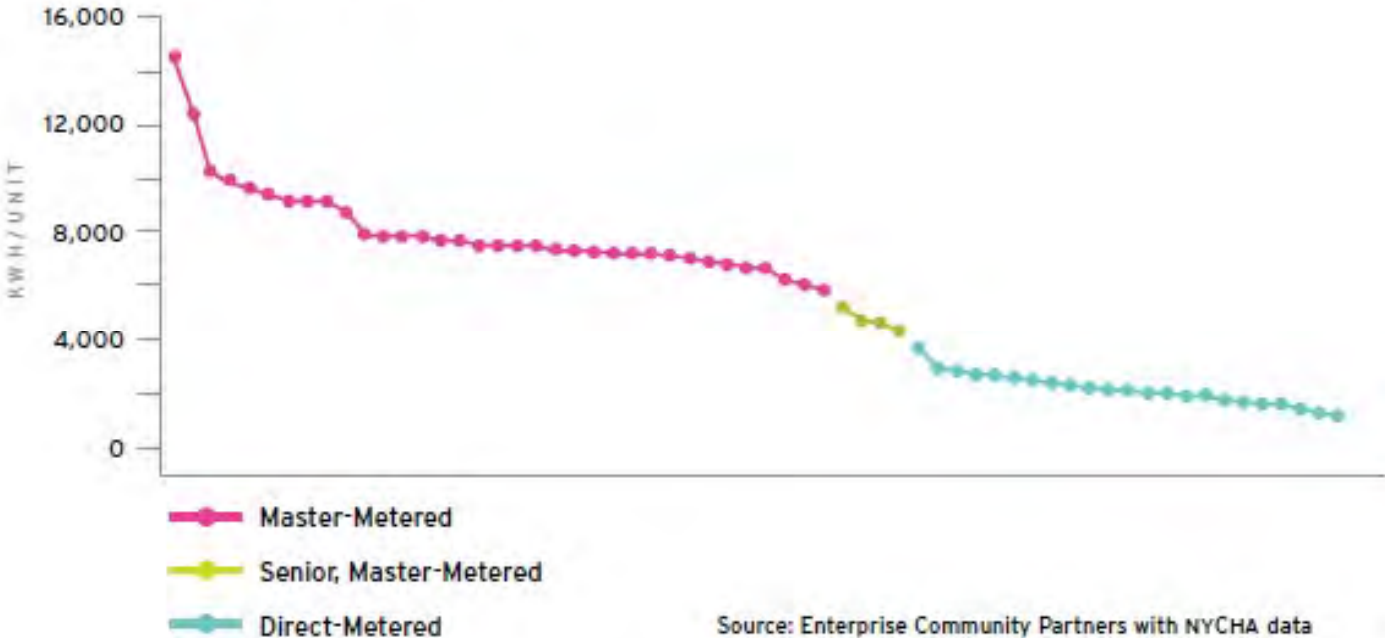


The New York City Housing Authority (NYCHA) seeks solutions that will reduce electrical demand in developments that are master-metered for electricity.

<http://j.mp/cfi-electric>

Master-metered developments use 4 times the electricity of direct-metered developments

Comparison of electricity consumption at 62 developments in Brooklyn from August 2013 to July 2014

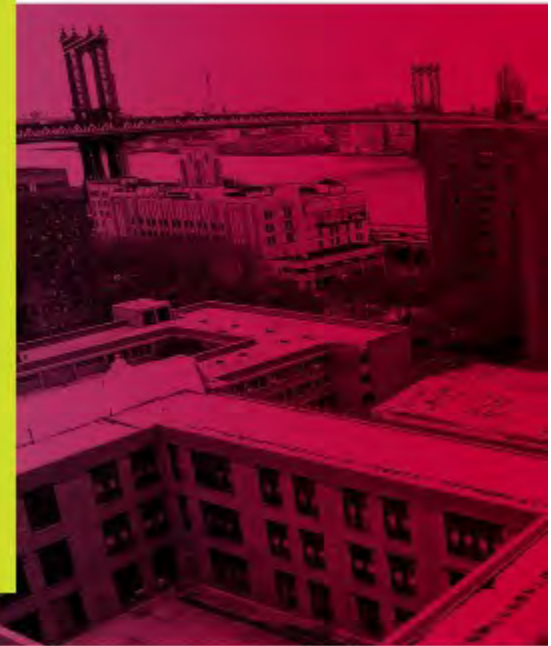


Source: Enterprise Community Partners with NYCHA data



call for innovations:

Reducing the Heat Load
in NYCHA Buildings
Connected to the Utility's
District Steam System



The New York City Housing Authority (NYCHA) seeks one or more technical solutions to implement pilot projects that will reduce energy loads from heat and hot water and produce utility cost savings in 16 housing developments that are connected to Consolidated Edison (ConEd) district steam heat

<http://j.mp/cfi-steam>

\$1

Gas

vs

\$3

ConEd
Steam

NextGeneration NYCHA

Sustainability Agenda

Bomee Jung

Vice President, Energy & Sustainability

bomee.jung@nycha.nyc.gov

Full agenda is available for download:

<http://j.mp/green-nycha>

