

A **holistic approach**, combined with a realistic phasing plan, makes decarbonization technically and economically feasible.



# Resource Efficient Decarbonization

HUDSON SQUARE PROPERTIES

Rudín



Omni New York LLC



Jonathan Rose Companies

SILVERSTEIN  
PROPERTIES

Brookfield



Durst



beam  
LIVING

bxp

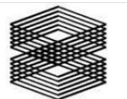


AMALGAMATED HOUSING COOPERATIVE

LM Development  
Partners

LeFrak Organization

Equity Residential

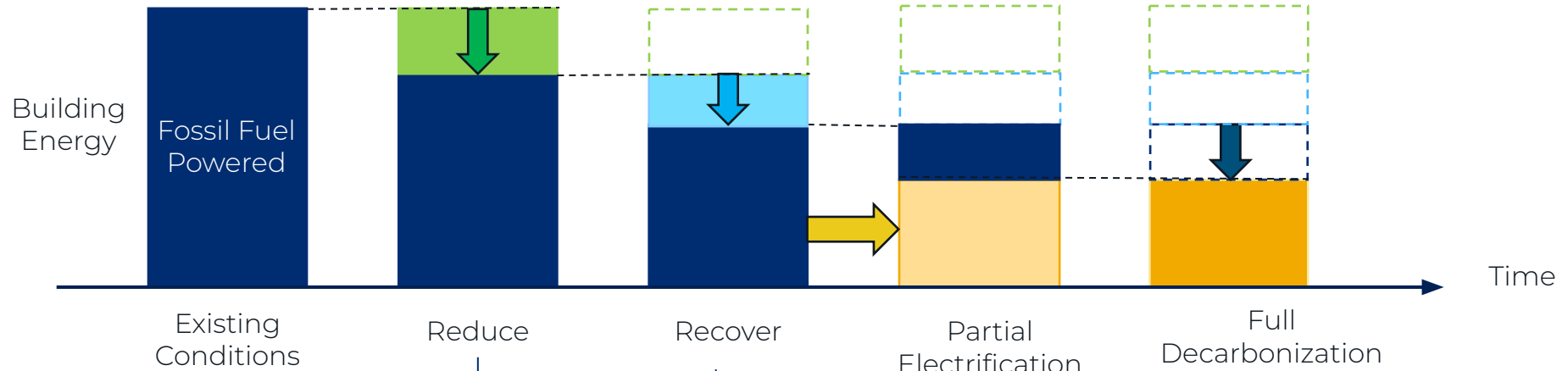


TISHMAN SPEYER

EMPIRE STATE  
REALTY TRUST

VORNADO  
REALTY TRUST

# Resource Efficient Decarbonization



## Reduce Energy Load

- Building Envelope Improvements
- Control Optimization
- Ventilation Improvements
- Dedicated Outside Air System
- Hydronic Distribution
- Lower Heating Supply Temp.
- Terminal Units Replacement

## Recover Wasted Heat

- Waterside Heat Recovery
- Airside Heat Recovery
- Wastewater Heat Recovery
- Thermal Energy Networks

## Partial Electrification

Replace fossil fuel inputs and prioritize the techno-economic portion of load

- Air Source Heat Pumps
- Water Source Heat Pumps
- Geothermal
- Thermal Layering
- Domestic Hot Water

## Full Decarbonization

In-time, replace or remove the remaining peak load equipment

- Heat Pumps
- Thermal Storage
- District Thermal Network
- Grid-interactivity

# Our Toolkit is Growing.

REPORT JUN 5, 2023

## Understanding Direct Pay and Transferability for Tax Credits in the Inflation Reduction Act

The Inflation Reduction Act's tax credit monetization provisions have the potential to transform the landscape of clean energy finance.

Department of Energy

## Biden-Harris Administration Announces \$6 Billion to Transform America's Industrial Sector, Strengthen Domestic Manufacturing, and Slash Planet-Warming Emissions

MARCH 25, 2024

CLIMATE

## EPA awards \$20 billion in green bank grants for clean energy projects nationwide

## Inside the IRA's historic, high-stakes investment in energy efficiency

The Inflation Reduction Act made an \$8.8B investment in home energy efficiency. Now, it's up to states to figure out how to put the money into practice.

# But...



# Properties Below and Above the 2030 LL97 Limits

Negative percentages indicate properties already meeting 2030 emissions limits.

Choose a Data Year:

2022

2021

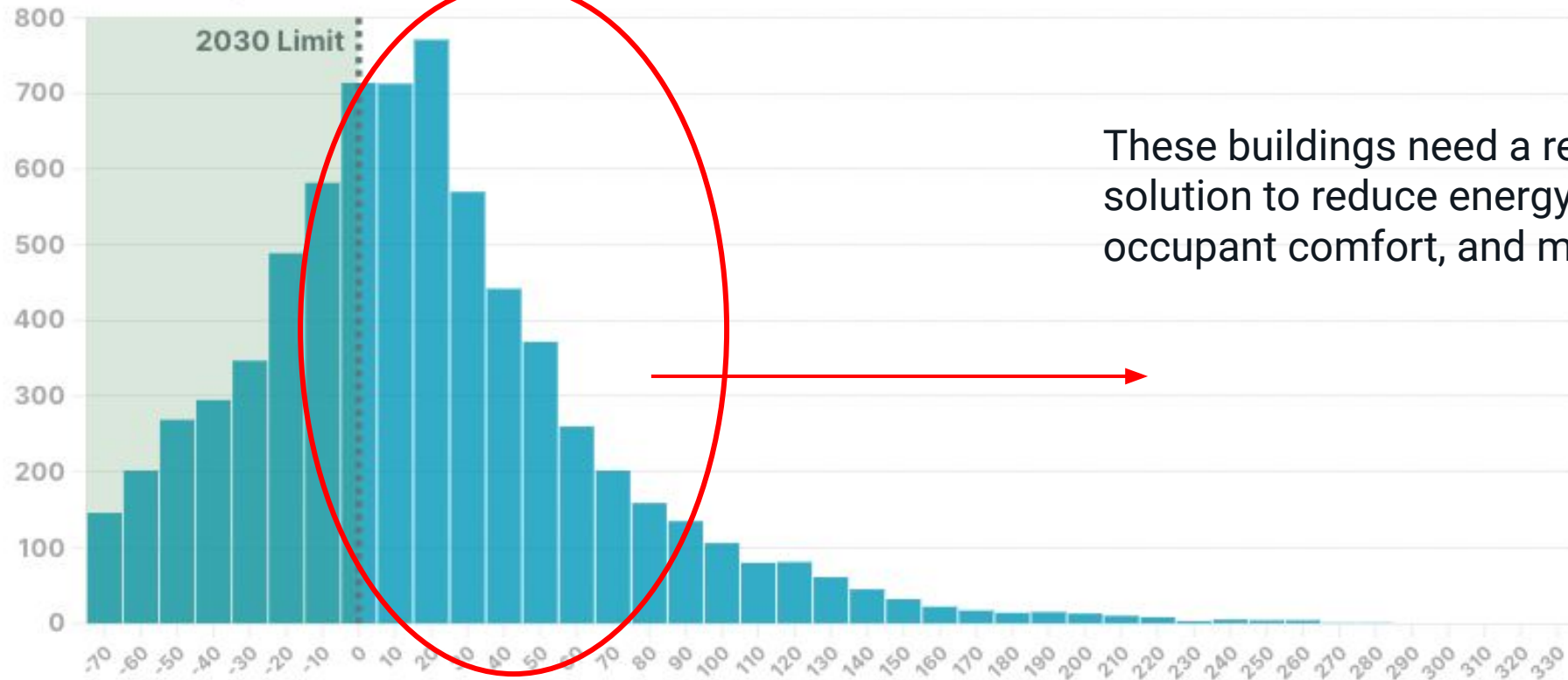
2019

Choose a Sector:

Multifamily

Office

Number of Properties



These buildings need a resource efficient solution to reduce energy costs, improve occupant comfort, and modernize.

**K.I.S.S. - Keep It Simple Stupid**



**Great advice... Hurts my feelings every time**





## Planning for a zero emissions future.

Regarding Building Decarbonization, to achieve New York Climate, Health and Equity goals under the CLCPA, a critical obstacle to collectively overcome in the next 12 months is...

Creating simple, resource-efficient decarbonization solutions for multifamily buildings



*Large building owners and their engineering experts are deploying effective retrofit approaches to decarbonize over time.*