



A GREENER, GREATER NEW YORK



New York City
Economic Development
Corporation

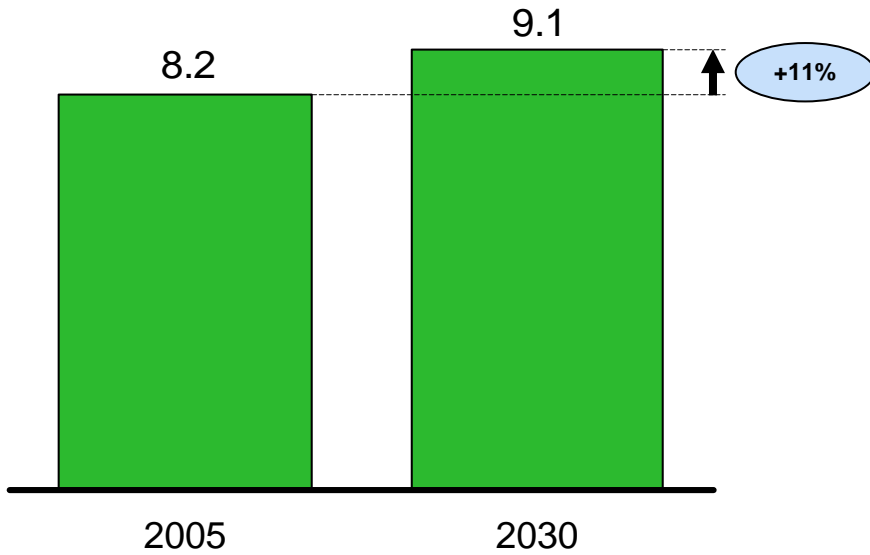
Energy



- **Population and economic growth will strain the City's energy infrastructure**
- **Three challenges must be overcome to improve the consequences of growth**
- **We're recommending an aggressive, integrated plan that puts PlaNYC's targets within reach**
- **This recommended plan requires significant effort, capital, and political will, but over the long-run, would provide significant and measurable City benefits**

- 1. The case for action – improving the long-term consequences of NYC’s growth on power and heat infrastructure**
2. Challenges the City faces in reforming energy supply and demand
3. Our plan for achieving PlaNYC energy goals

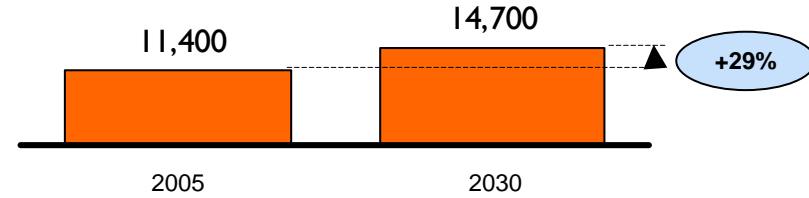
New York City population forecast Millions of residents



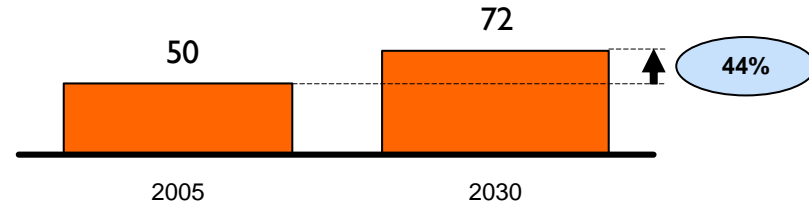
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Increased use of appliances and air conditioning

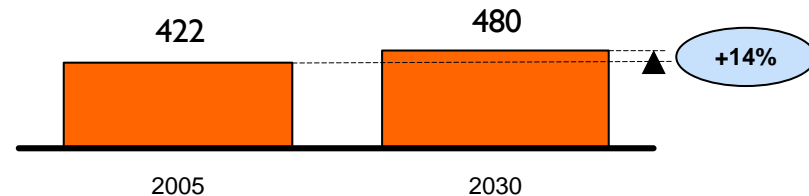
Electrical capacity requirement forecast Summer peak load, MW



Electrical consumption forecast Millions of MWh per year



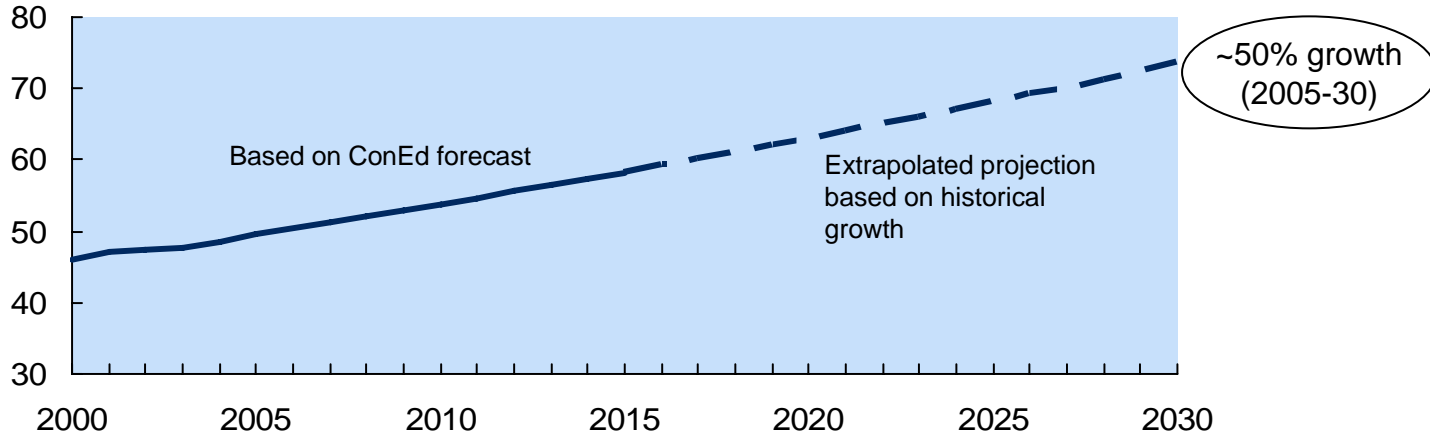
Heating fuels demand forecast Million MMBtu per year



*ILLUSTRATIVE
POWER EXAMPLE*

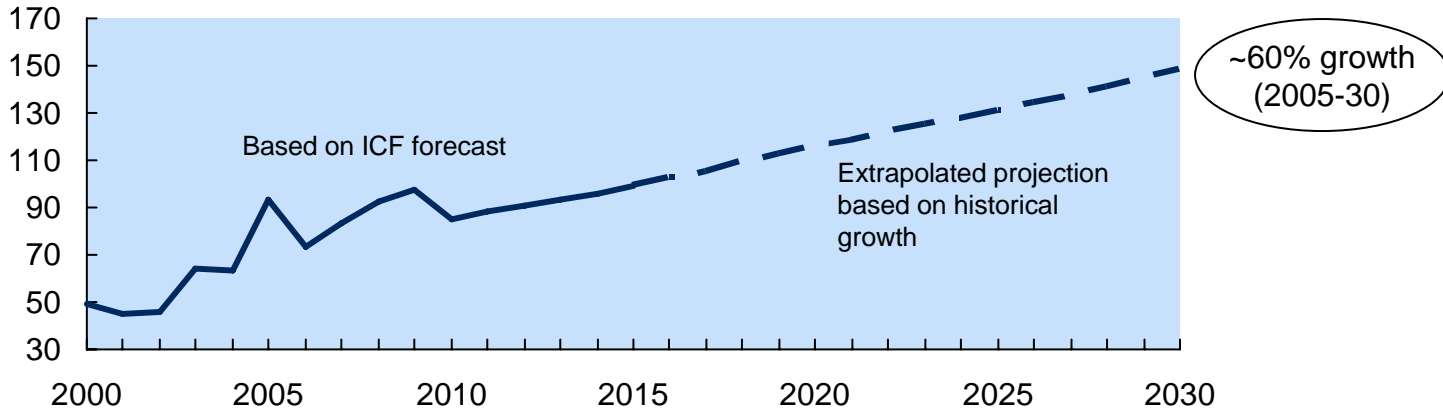
NYC Power demand

Millions of MWh



Wholesale power prices

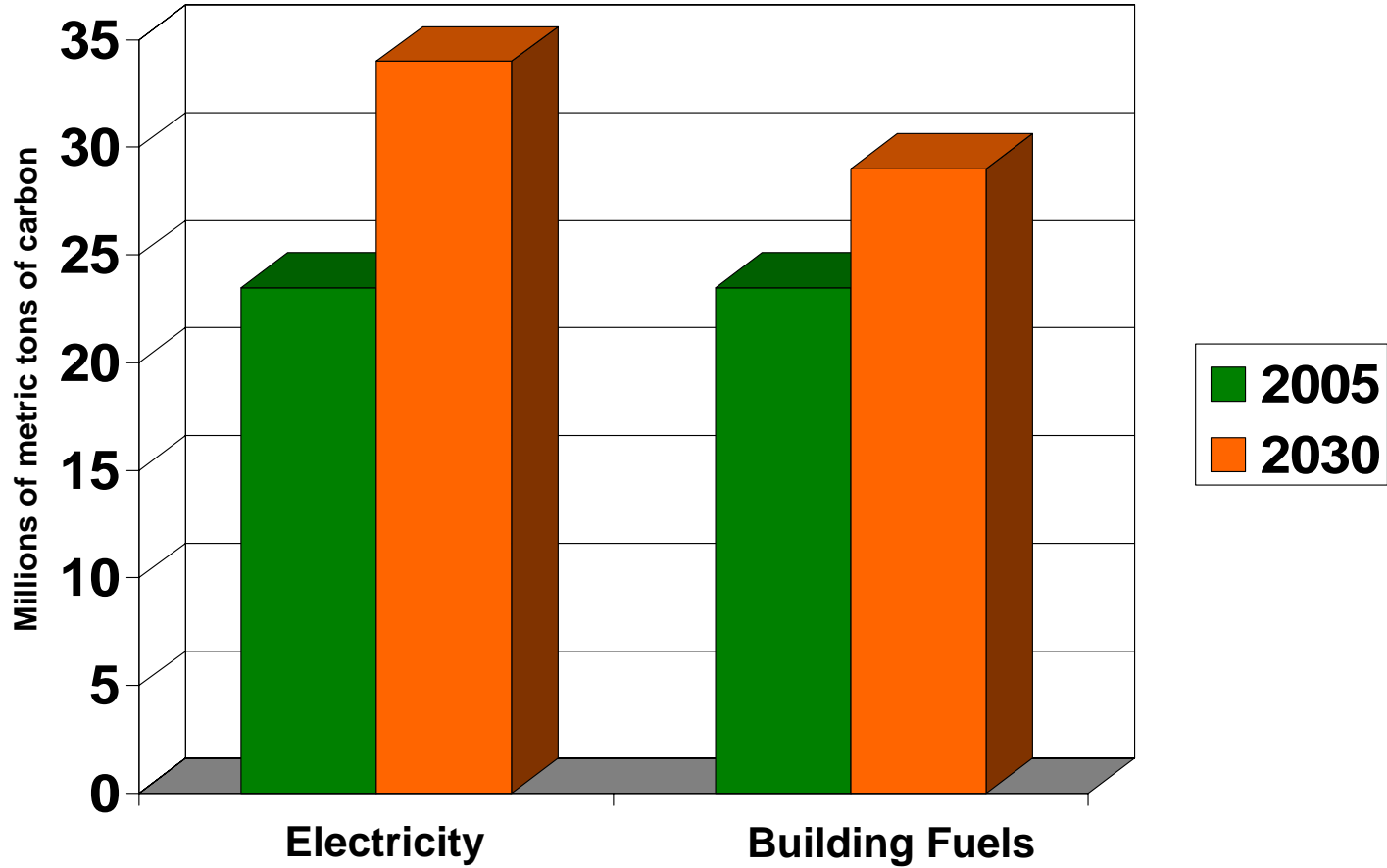
\$/MWh (nominal) – assuming constant real gas price after 2009



Could represent a 125-175% increase in City power expenses alone (4% CAGR)

ESTIMATES

- Assumptions**
- Based on business as usual power and heating demand growth
 - Includes impact of :
 - Changing Renewable Portfolio Standards (RPS)
 - RGGI ~\$4/ton carbon tax around 2010
 - National carbon tax ~\$10/ton by 2015

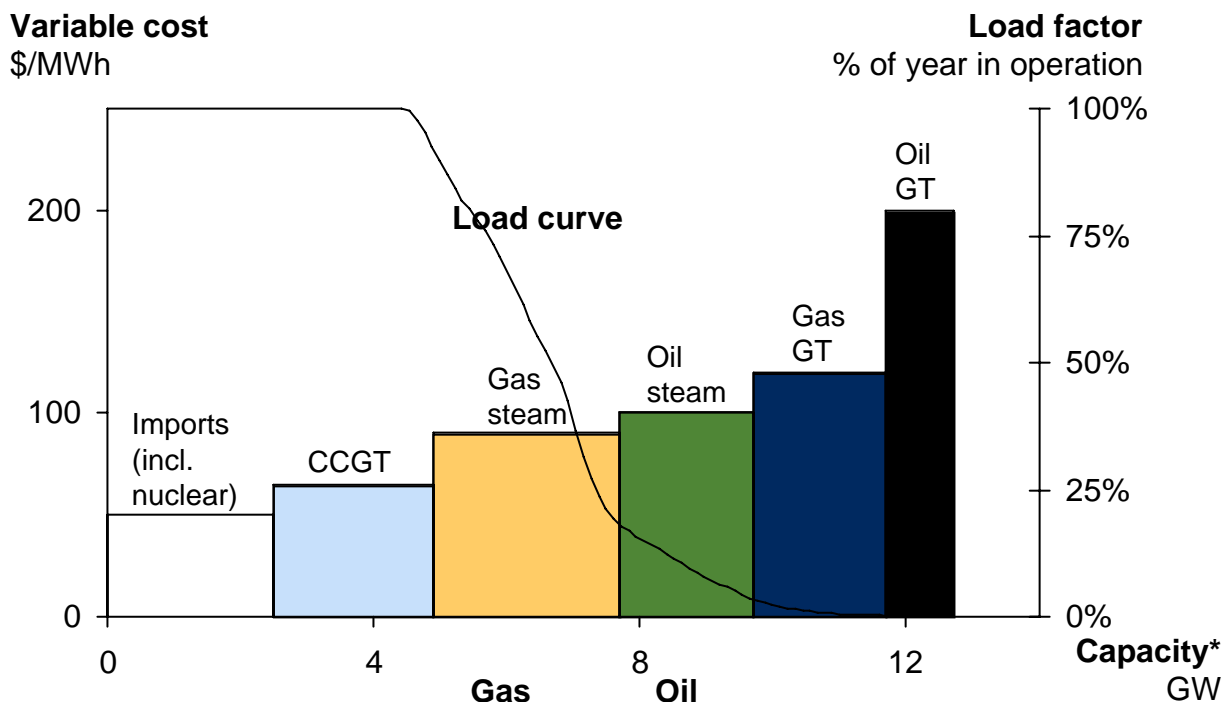


1. The case for action – improving the long-term consequences of NYC’s growth on power and heat infrastructure

- 2. Challenges the City faces in reforming energy supply and demand**

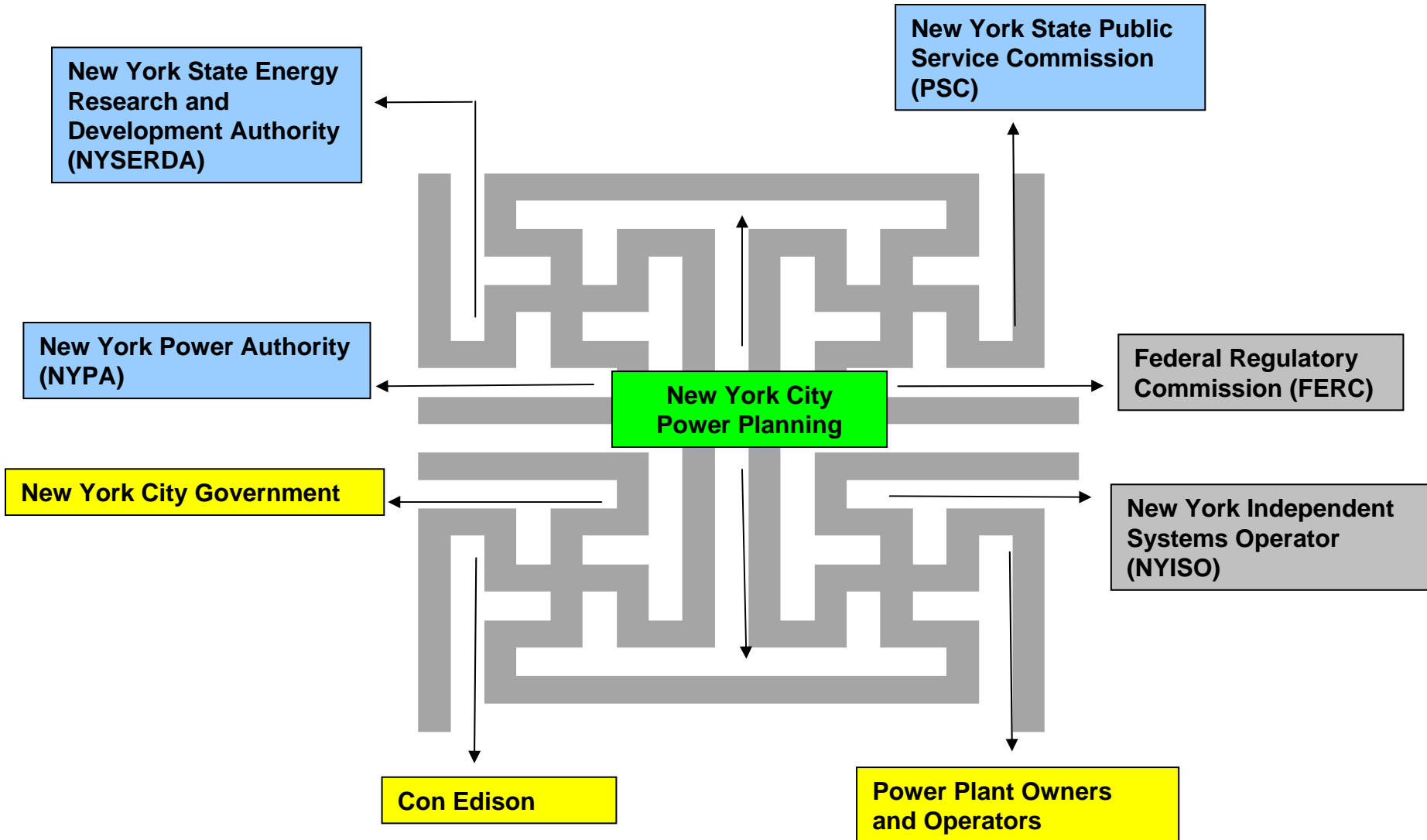
3. Our plan for achieving PlaNYC energy goals

Reducing power prices and CO₂ requires displacing inefficient plants



	CCGT	Gas steam	Oil steam	Gas GT	Oil GT
Average age, yrs**	7	43	39	24	37
Total capacity, GW	2.4	2.8	2.0	2.0	1.0
Capacity factor	76%	21%	29%	18%	5%
Heat rate, Btu/kWh**	8,100	11,300	12,900	11,700	13,100

Power planning involves a maze of state and federal entities



Description

Split incentives

- Different parties “own” capital investments and savings

“I won’t fund new appliances, my tenants reap all the savings!”

Fragmentation of consumer base

- Consumers highly dispersed and partially hidden behind master-meters

Transaction costs/ Capital constraints

- Capital constraints on big-ticket investments
- Competing investment priorities

“Before I spend money on this, I need to keep my business running”

Consumer education

- Lack of information on energy efficiency programs
- Low consumer awareness of CO₂ impact

“Who knows how much I can save with retro-commissioning?”

Inconvenience

- Bureaucratic challenges with funding and contracting of work
- Energy efficiency products are often not the most convenient or readily accessible

“Dinner for two is more expensive than my monthly ConEd bill!”

Generational equity

- Costs of climate change incurred by next generation

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1 Improve Energy Planning – Establish a New York City Energy Planning Board



Reduce NYC's energy consumption

Expand NYC's clean power supply

Modernize electricity delivery infrastructure

- 2 Reduce energy consumption by City government
- 3 Strengthen energy building codes for NYC
- 4 Create an energy efficiency authority for NYC (NYCEEA)
- 5 Prioritize five key areas for targeted incentives
- 6 Expand peak load management
- 7 Launch an energy awareness and training campaign

- 8 Facilitate repowering, construct power plants and dedicated transmission lines
- 9 Expand Clean Distributed Generation
- 10 Support expansion of natural gas infrastructure
- 11 Foster the market for renewable energy

- 12 Accelerate reliability improvements to the city's grid
- 13 Facilitate grid repairs through improved coordination and joint bidding
- 14 Support Con Edison's efforts to modernize the grid



HELP MAKE NYC GREENER.

- Change your light bulbs to CFLs
- Buy ENERGY STAR appliances
- Don't air condition an empty room
- Unplug chargers and appliances when not in use
- Switch to green power through your energy provider
- Walk or take public transportation
- Recycle your glass, metal, paper and plastic
- Bring your own cloth bag to the grocery store
- Use green cleaning products
- Switch to paperless bank statements and online bill paying



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