NYC's Ambitious Energy Code How Does It Stack Up?

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WHY ENERGY CODES?

science

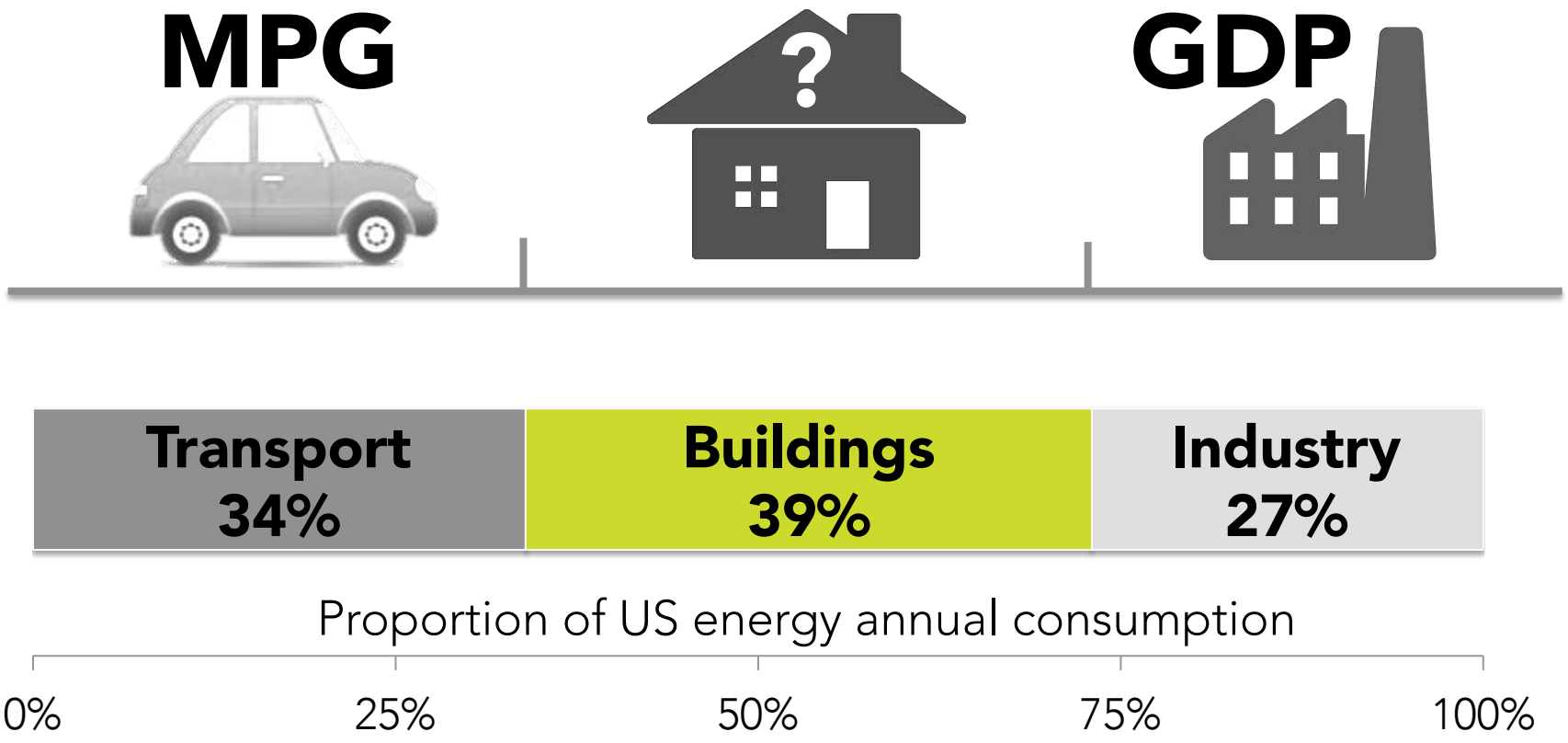
Theory

design / engineering

REGULATING SYSTEMS

Buildings – largest consumer with many stakeholders

What's our metric?



TIGHTENING ALL THE SCREWS

GREAT BUILDING ENERGY POLICY

1. Encourages design innovation and education throughout industry
2. Communicates progress toward energy goals
3. Helps to lower actual energy usage

WHO ARE THE INNOVATORS?

PROMOTING EDUCATION

New York City

- Mandating best practices
- Blower door testing in 2016 update
- Moves market in right direction, some discomfort in learning process

PROMOTING EDUCATION

European Union craftsmen and labor education program

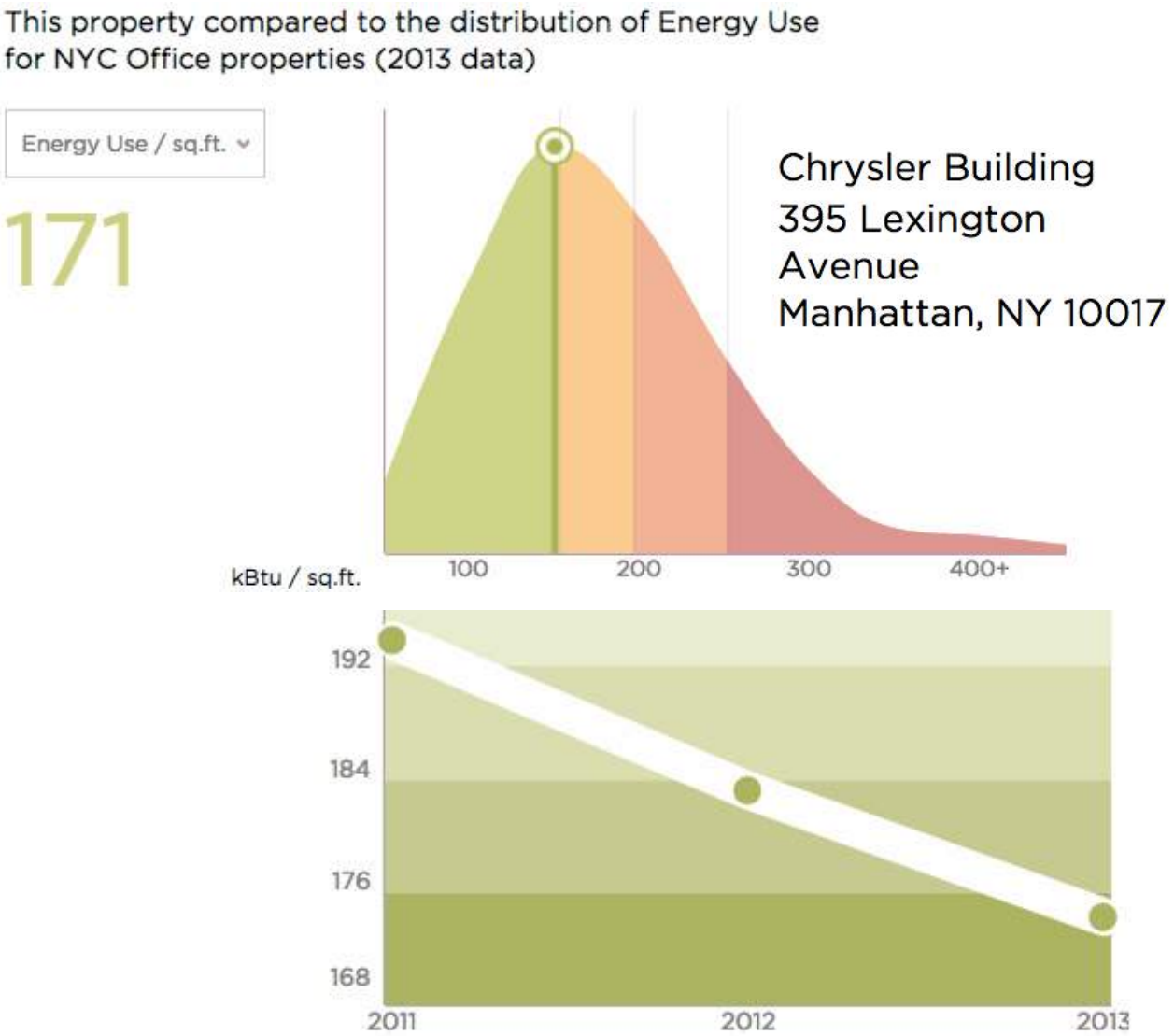
- 30 countries participate
- Identify and fill skill gaps to meet 2020 targets (NZEB)
- Best practices aggregated and standardized for all

BUILD UP SKILLS BETA

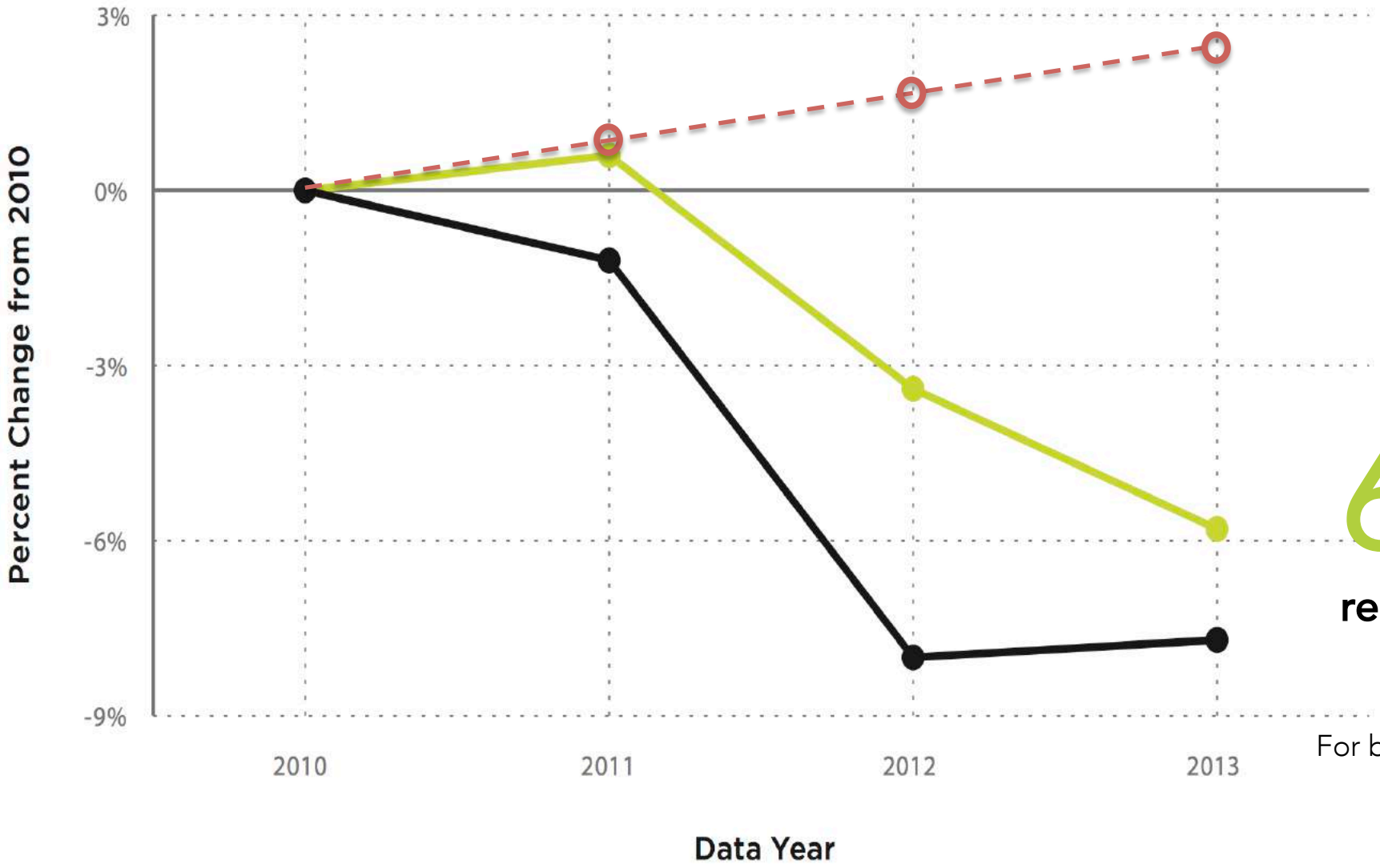
COMMUNICATING PROGRESS

New York City

- LL84 – Benchmarking
  - How much energy does your building use each year?
  - Metered.nyc →
- LL87 – Energy Audits
  - What is using energy in your building?



COMMUNICATING PROGRESS



Building GHG Emissions
% change

Building Energy Use (Weather Normalized Source)
% change

The 'Business-as-Usual' case projected 1% / year GHG growth
% change

6% **reduction** in energy

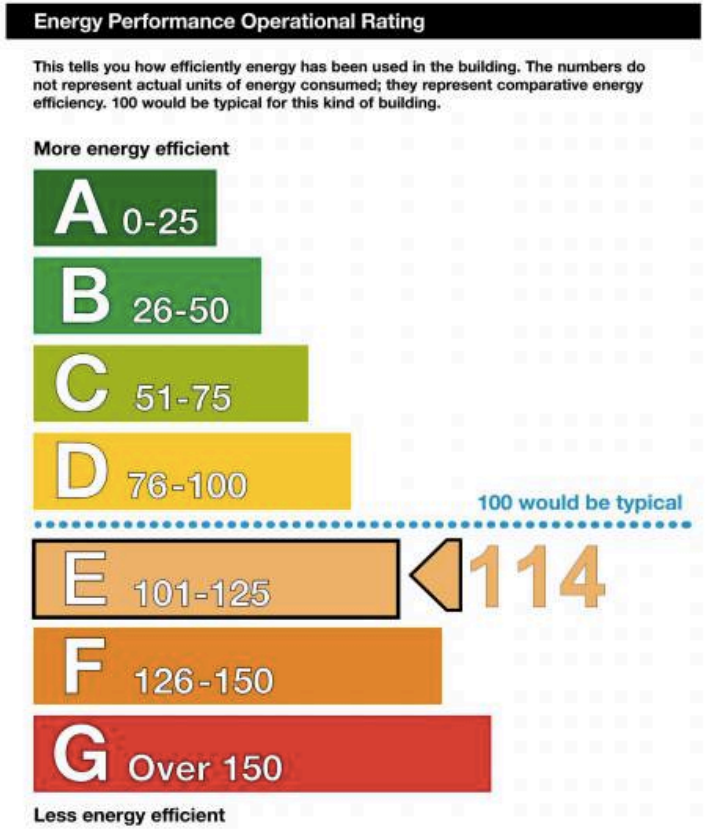
8% **reduction** in ghg emissions

For buildings benchmarking all 4 years.

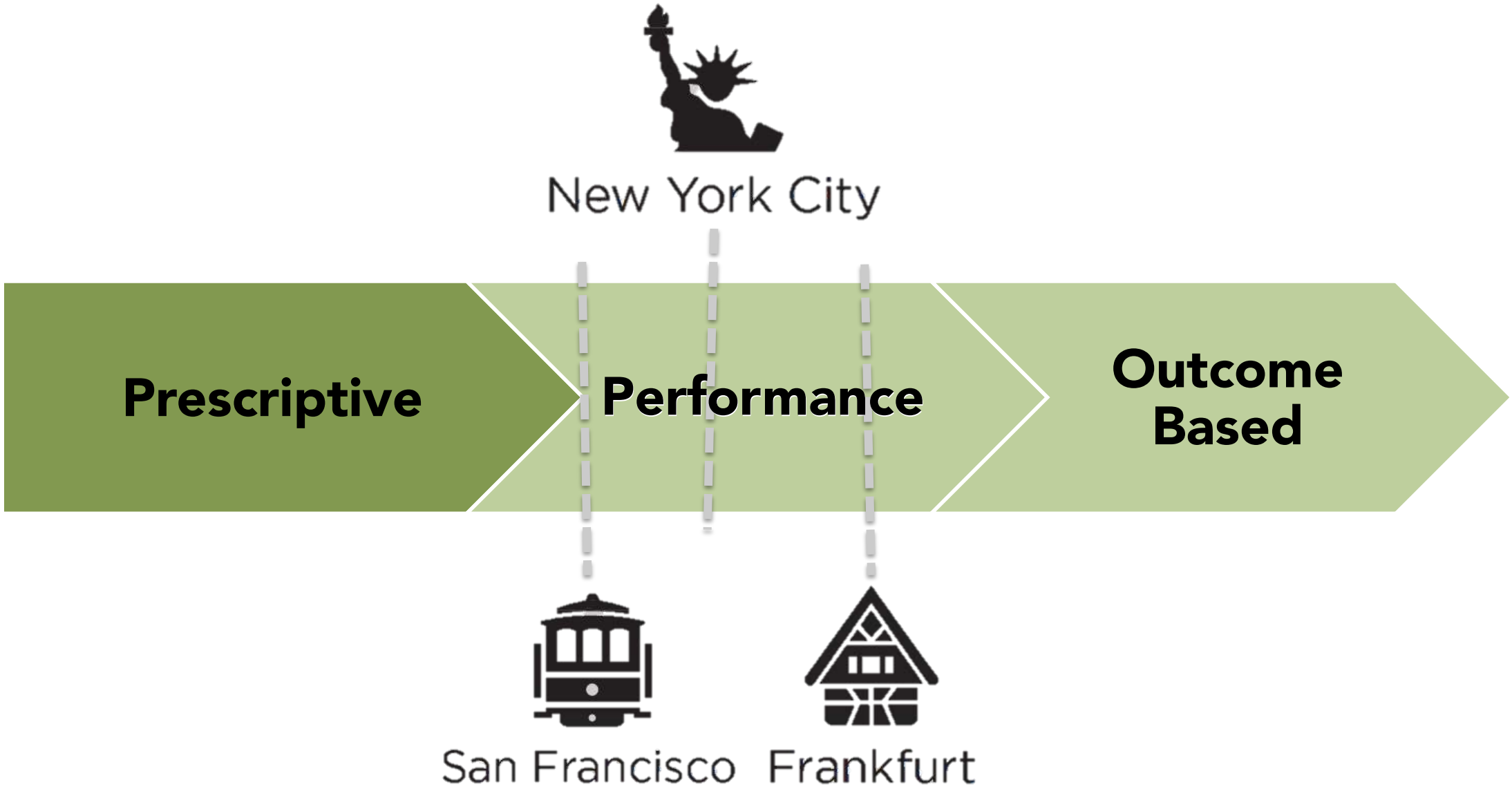
COMMUNICATING PROGRESS

London

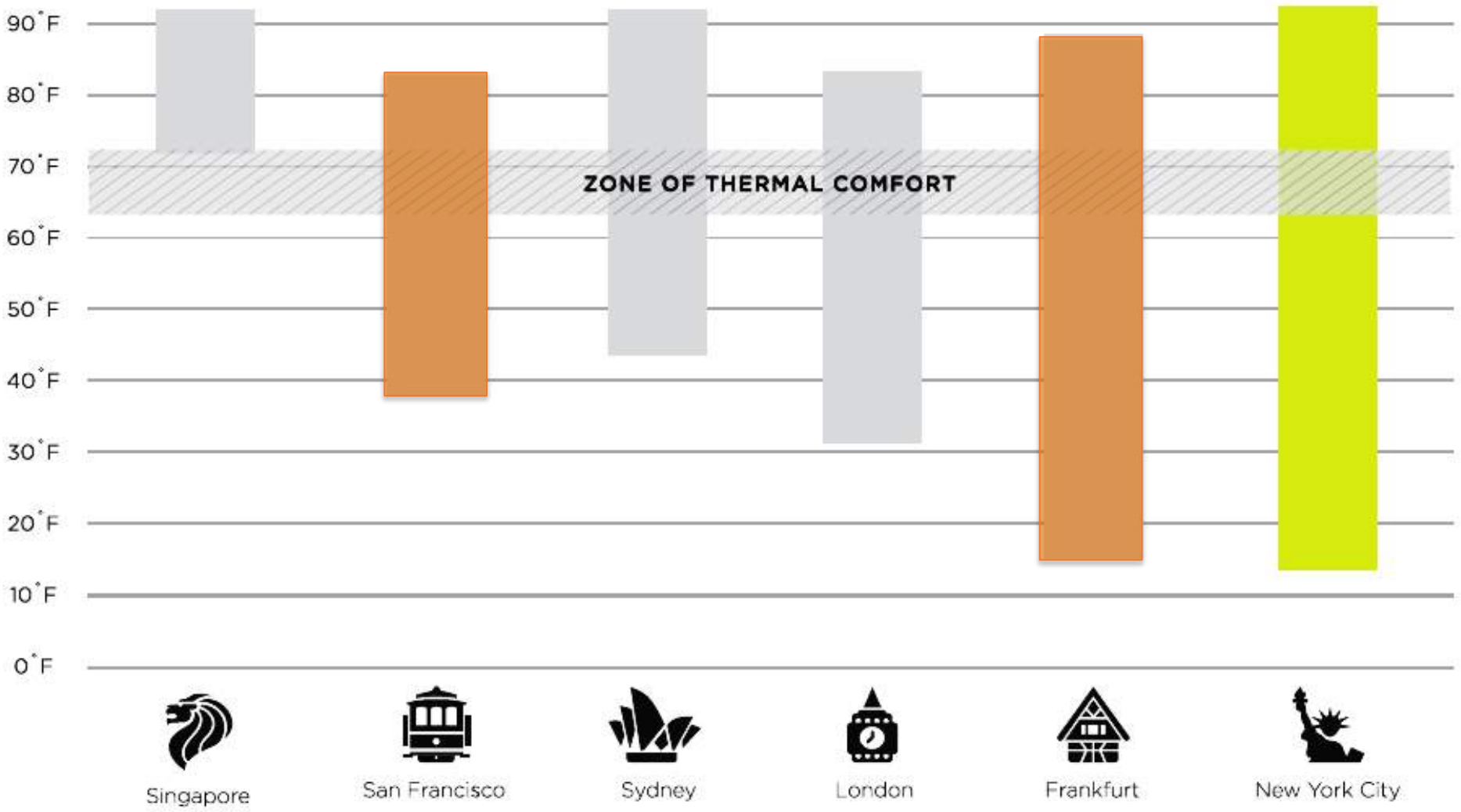
- Building labeling – similar to NYC restaurant grades
- Incorporate minimum energy performance at sale or lease



ENERGY CODE EVOLUTION



CLIMATE


90˚F
80˚F
70˚F
60˚F
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40˚F
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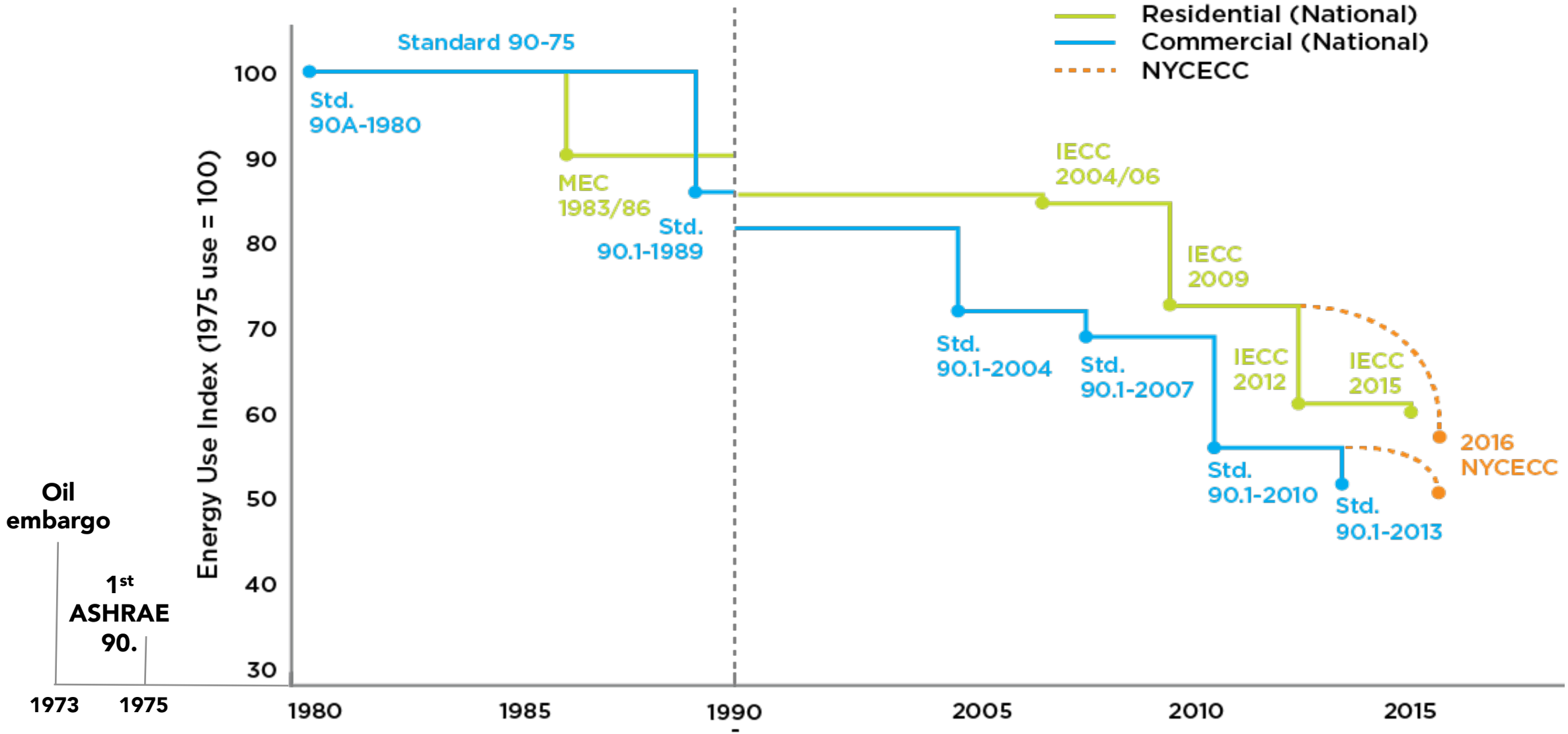
ZONE OF THERMAL COMFORT
Singapore
San Francisco
Sydney
London
Frankfurt
New York City

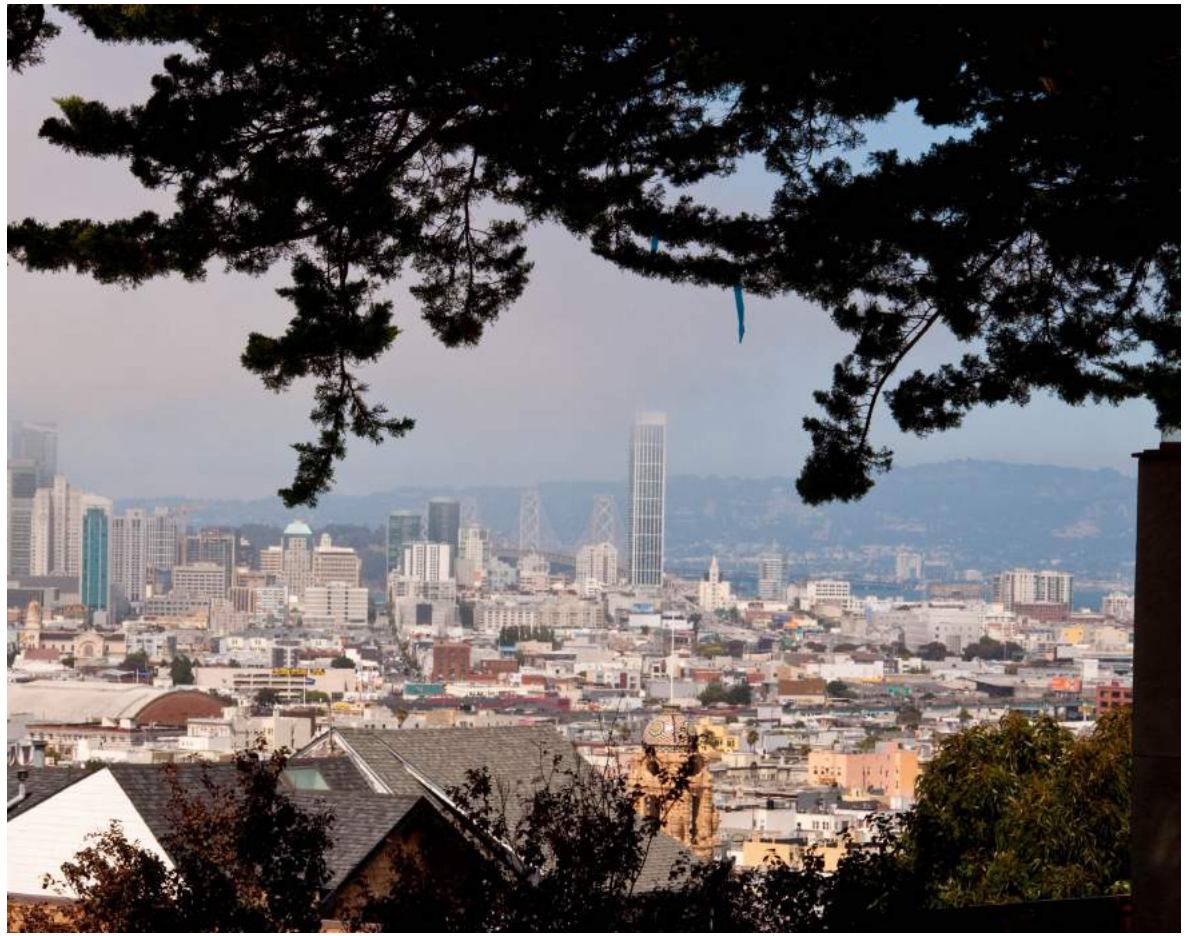
NEW YORK CITY



SAN FRANCISCO

Title 24 and Time Dependent Value

- Aiming for net-zero in 2030
- Code designed for whole-building energy simulation
- Energy metric tied to cost of delivery



FRANKFURT

Pushing Performance

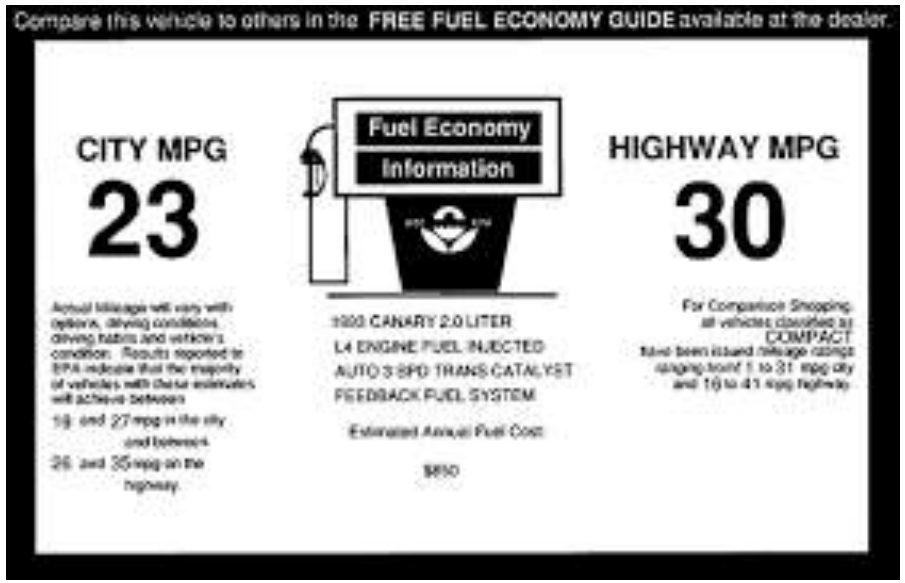
- Aiming for carbon neutrality in 2050
- Graduated from prescriptive 15 years ago – focus on energy
- Passive House certification mandatory for public buildings*

*designers can get out of the mandate by designing to 30% below base building

**Brussel's has taken this a step further!

OUTCOME BASED CODE

1. Helps to lower actual energy usage
2. Maximizes innovation and enables enforcement



HOW WE STACK UP

We're doing well, but there's room for improvement:

- Education
- Communication
- Simplification