



The David and Lucile Packard Foundation Headquarters | Los Altos, CA *Photo: Jeremy Bittermann*

# Scaling the Impact of Passive House through Energy Codes and Policies

Mark Lyles, NBI

2019 PHIUS Conference

**nbi** new buildings  
institute

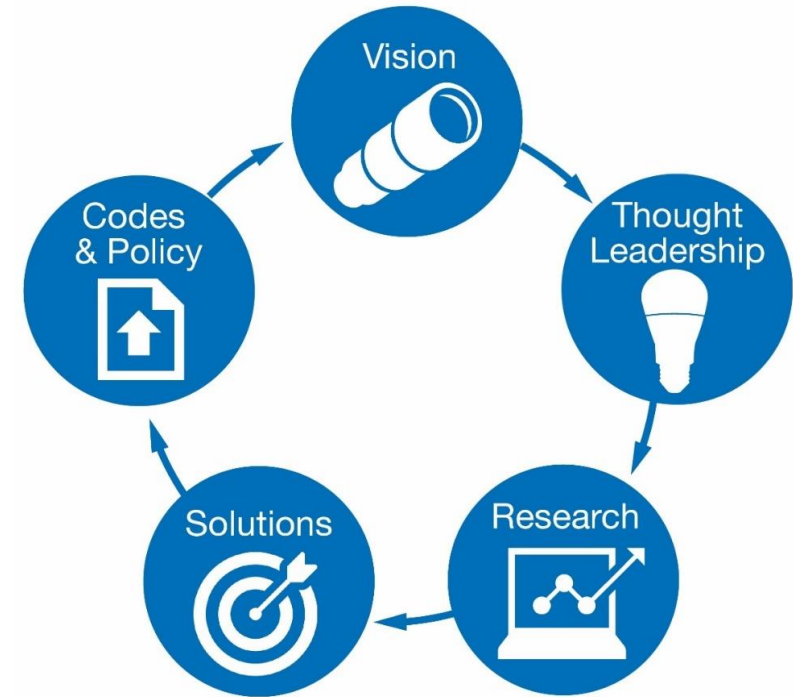
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# About New Buildings Institute

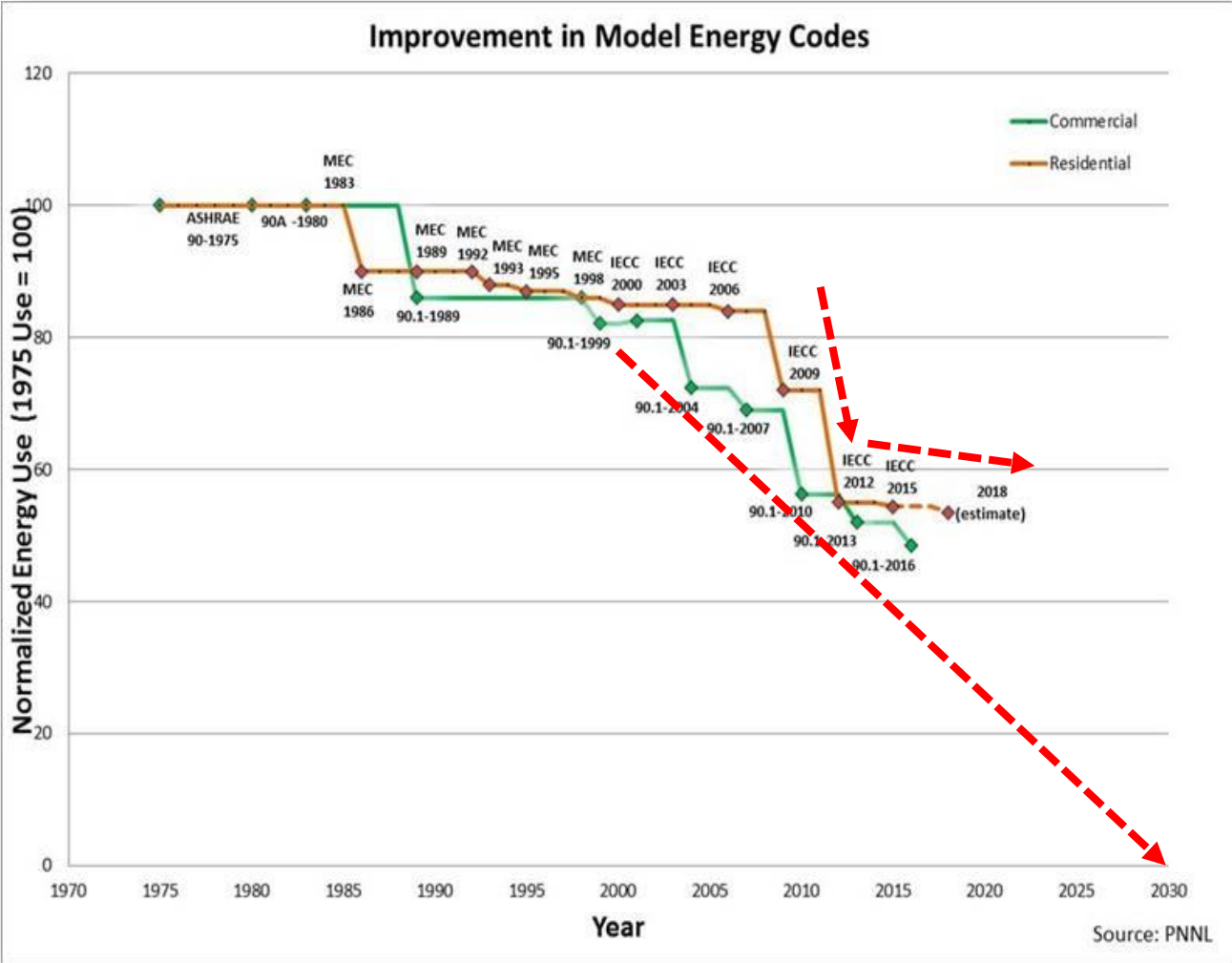
## Our Program Areas:

1. Building & Program Innovation
2. Zero Energy Leadership & Market Development
3. Advancing Codes & Policy

## Our Theory of Market Change:

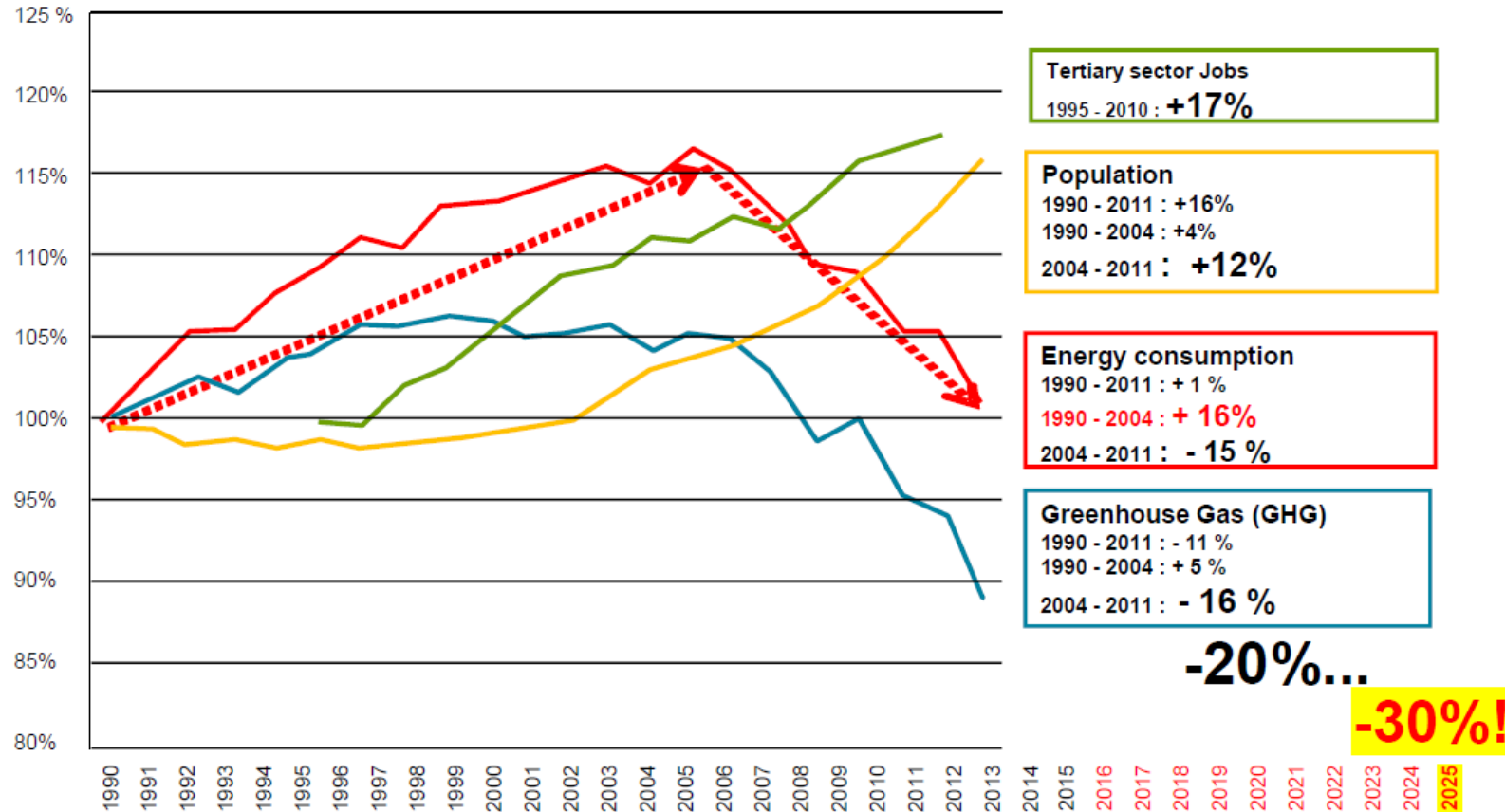


# Current Approach is Limited

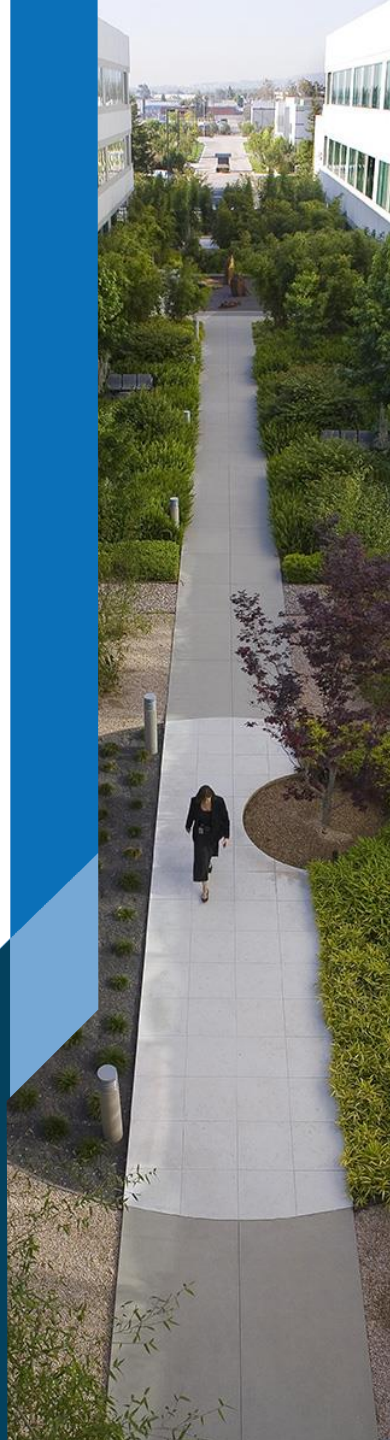


# Passive House Code Opportunity

Energy consumption & Greenhouse Gas evolution in Brussels  
(With Climate correction)



Source: Sebastian Moreno-Vacca



# Two Code Strategies

## 1. Alternative Compliance Path

- Often as part of an optional stretch or reach code
- Can be incentivized as a “beyond-code” program
- Helps build market visibility and acceptance

## 2. Full Code Approach

- Required for all (or most buildings)
- Supported by a broad array of support mechanisms and tools



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# PH Alternative Compliance Path

- Option for single family homes and low-rise multifamily that directly references PHI/PHIUS
- Use PHI/PHIUS approved software to meet space heating and cooling demand limits
- Meet PHI/PHIUS air leakage requirements
- Final Certificate of Occupancy based on proof of certification



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# Notable Examples

- Massachusetts Stretch Code (2016)
- Proposed for the Denver Green Code (2019)
- NYStretch Energy Code – 2020
- Proposed for the 2022 California Energy Code (Title 24)



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# Full Code Path

- Applies to a broader range of commercial buildings
- Often implemented as a predicted energy target approach focused on thermal energy demand
- PH standards serve as the technical basis for setting targets but does not require certification
- Key “mandatory” code elements retained as backstop requirements





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# Notable Examples

- BC Step Code
- Washington DC's Appendix Z (shout out!)
- ASHRAE Passive Building Design Standard (under development)



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# Filling in the Missing Pieces

- Requires broad support from a range of energy modeling protocols, tools and guides
- Robust project verification support mechanisms for code officials
- Training and support resources to improve envelop design and effectiveness (thermal bridging/infiltration)
- Tell the story of these buildings by tracking their growth and highlighting their success



# Share your Projects

## Be a Zero Hero!

Submit your zero energy project information and share your numbers today



Take your place as a #ZeroHero and leader in advanced energy building performance by adding to the Getting to Zero Buildings Database!

### NBI Getting to Zero Buildings Database

Use the filters on the left to filter projects in the map, and/or select a bubble on the map to filter the table below. Click on the **Analysis** tab above to see the big picture and create customized charts.

Reset Filters ↻

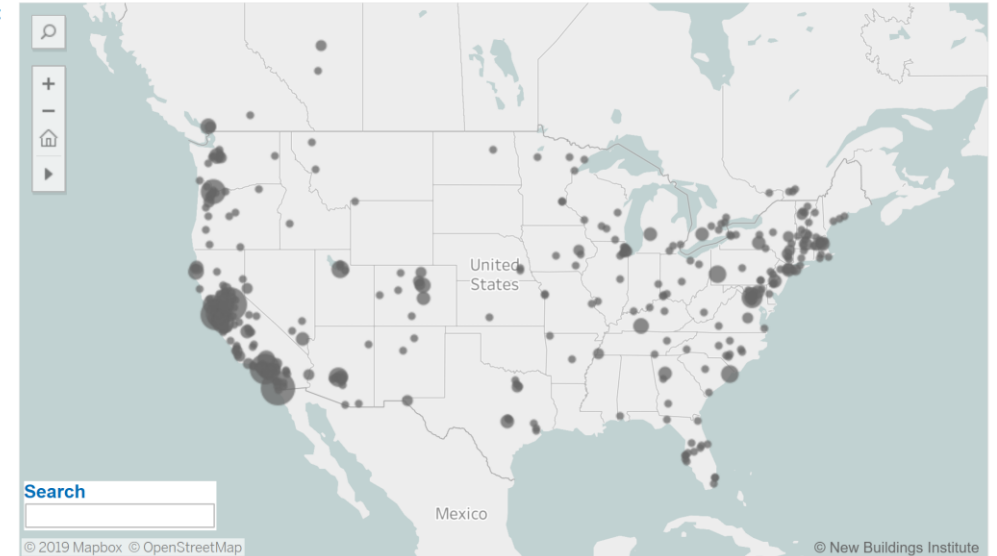
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<input checked="" type="checkbox"/> Verified	114

State or Province
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<input checked="" type="checkbox"/> Health Care (Outpatient)
<input checked="" type="checkbox"/> Lodging
<input checked="" type="checkbox"/> Mercantile (Enclosed and...)
<input checked="" type="checkbox"/> Mercantile (Retail Other t...)
<input checked="" type="checkbox"/> Multifamily



<https://newbuildings.org/project-registry/>

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# Thanks!

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