



NYSERDA

Creating the Next Generation of Affordable Housing

LIFE 2016 Statewide Conference

May 26, 2016

Reforming the Energy Vision (REV)

Governor Cuomo's comprehensive strategy to build a clean, resilient and affordable energy system for all New Yorkers.

- Reforming the Utility Regulatory System
- Evolution of NYS Clean Energy Programs
- Leading by Example with the State's assets

2015 New York State Energy Plan

40% **Reduction**
in GHG emissions from 1990 levels

50% **Generation**
of electricity must come from renewable energy sources

23% **Decrease**
in energy consumption in buildings from 2012 levels

Need for deep retrofits at large scale
→ Solutions for tenanted buildings

Clean Energy Fund (CEF)

- 10-year, \$5 billion State funding commitment that supports REV
- Reshapes New York's energy efficiency, clean energy and energy innovation programs
- Reduced cost of clean energy
- Accelerates adoption of energy efficiency to reduce load
- Increases renewable energy to meet demand
- Mobilizes private investment in clean energy

Affordable Housing, a Sector with Specific Needs

- Preservation with increasing capital constraints
- For residents: health, comfort, affordability
- Impossibility to relocate tenants

Needs can be addressed through deep energy retrofits if solutions can be brought to scale

The Design-Build Competition

- Announced in Governor Cuomo's 2016 State of the State Policy Book
- Part of an objective to bring deep energy retrofits to at least 100,000 affordable housing units by 2025
- Subject to approval by the New York State Department of Public Service
- Inspired by Dutch program Energiesprong
- Focused initially on multifamily affordable housing

New York Design- Build Competition

Goals of the Initiative

- Create a self-sustaining private-sector deep retrofit market, operating at scale
 - Deep retrofits of tenanted buildings
 - Industry designed technical solutions
 - Implement solutions on a large scale to drive industrialization and reduce costs
- Simultaneously address financial and regulatory barriers

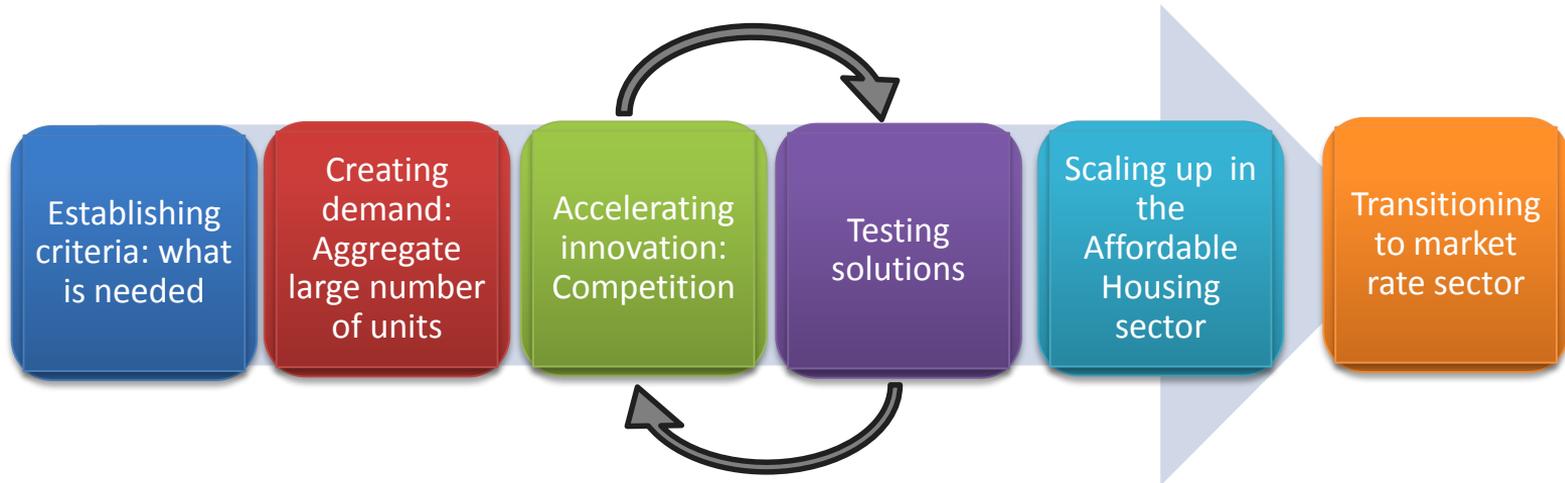
Potential Benefits for Tenants and Owners

- Improved quality of life for tenants: health & comfort
 - Better quality and more valuable buildings
 - Lower net cost of rehab per unit → major asset improvement strategy
 - Lower maintenance and operation costs
 - No additional upfront costs
- Preserving affordability

Potential NYS Multifamily Market Size

- Affordable Housing: 660,000+ units
 - Market Rate: 1.8 million units
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- ➔ Big enough for multiple players
 - ➔ Multi-billion dollars potential in avoided utility costs

A Targeted but Comprehensive Initiative



Adapt Regulatory Framework (codes, utility allowances, ECP, ...)

Create/adapt necessary financial tools

Build up supply chain

What is Available vs. What is Needed

Today:

- Private companies tell building owners what is available for retrofits

Tomorrow:

- Owners collectively define criteria for retrofits
- Private companies innovate to meet this demand

Defining What is Needed

Possible criteria:

- **Attractiveness:** Quality of life and appearance of house improved
- **High Energy Performance**
- **Limited disruption to tenants** → Reduced on-site intervention time
- **Cost effectiveness:** Can be financed and paid nearly entirely by the resulting energy savings/reduced maintenance cost
- **Warranty:** Energy performance guaranteed over several decades

Creating Demand: Aggregation

High volume: 100,000+ units by 2025

→ Long term Market

Start with Affordable Housing:

- Enable demand aggregation: partnerships with AH agencies
- High needs = high opportunities + big potential for improvement

Creating Demand: Aggregation

Defining where to start:

- Homogenous typology → High impact
- Coordinate intervention with planned substantial rehabs

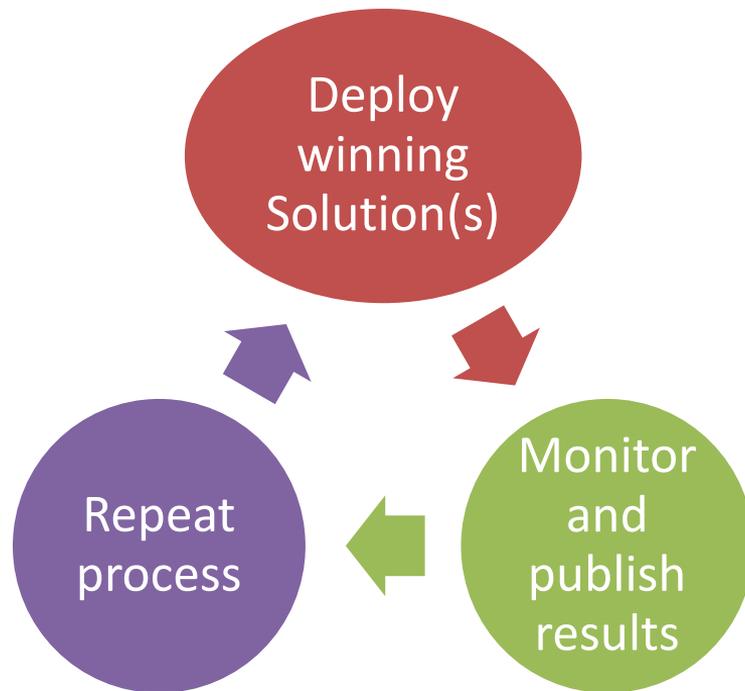
Creating the right environment

Concurrently with design/pilot implementation

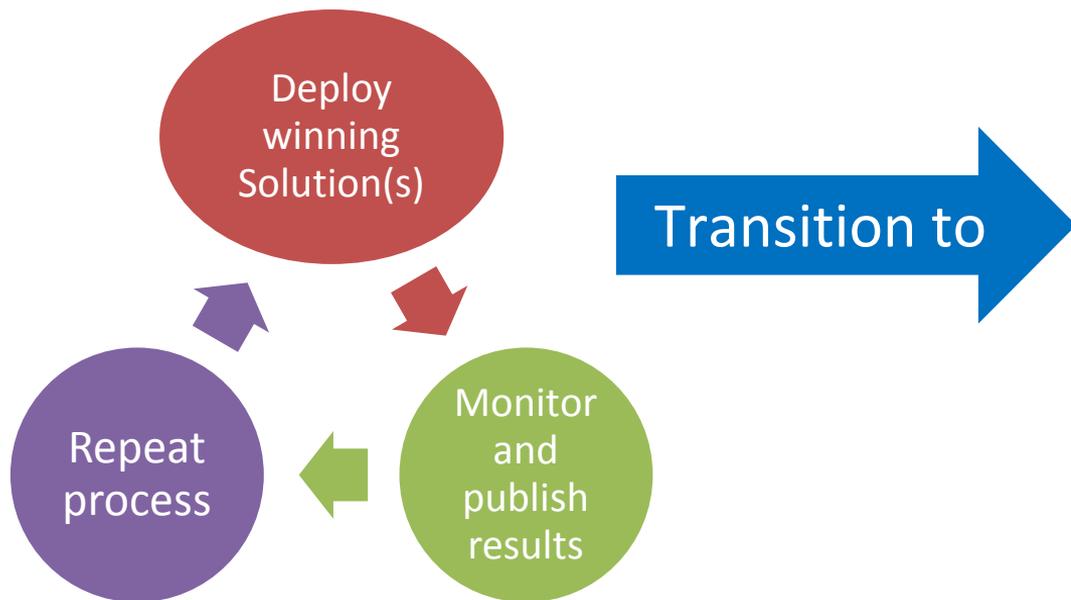
- Regulatory framework – address regulatory barriers
- Financial tools (underwriting, social bonds, insurance backstop, HUD, etc.)
- Supply chain development

Accelerating Innovation and Testing Solutions

- Technology agnostic
- Several rounds of “open” competition
- Each round becomes more ambitious

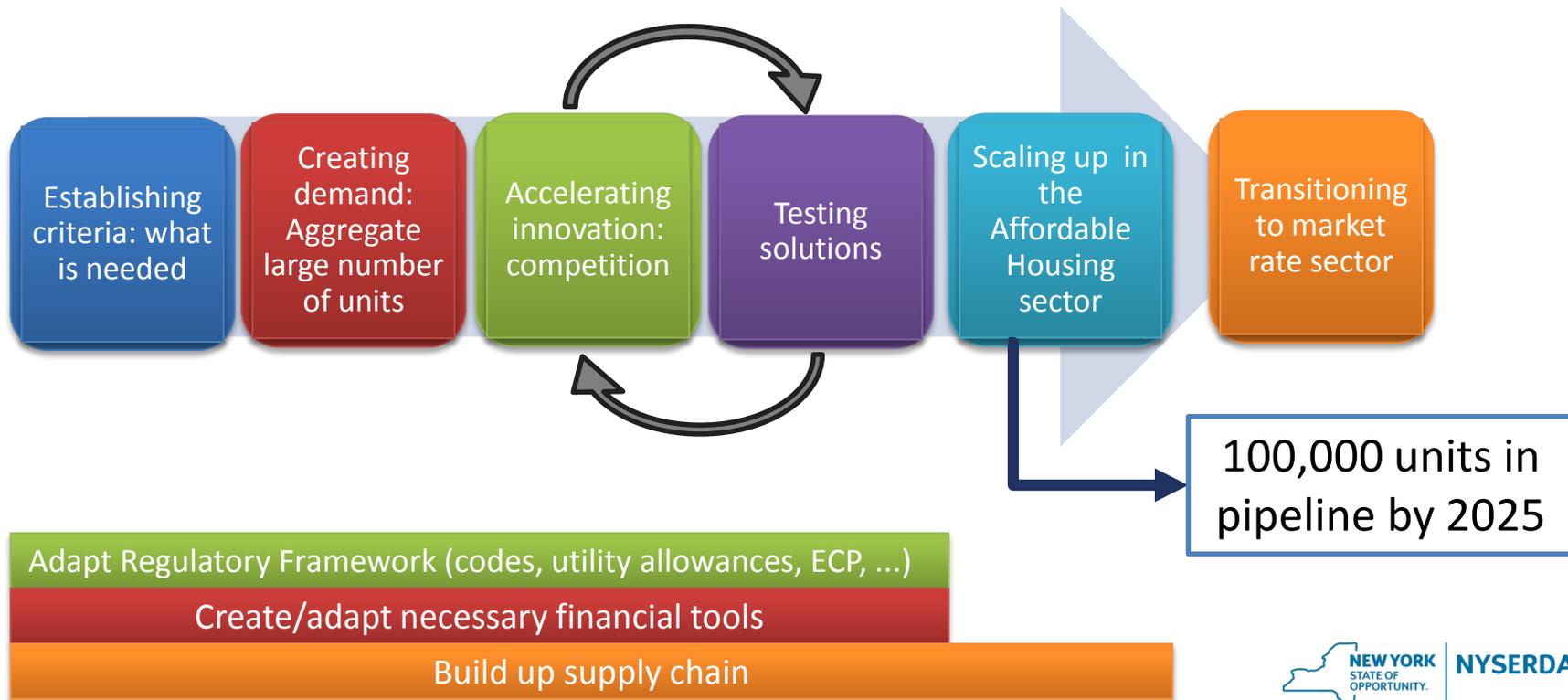


Scaling Up in Affordable Housing and Market Rate Sectors



- Additional building types
- Market rate sector

A Targeted but Comprehensive Initiative



The Dutch Way

Energiesprong or Transition Zero

Criteria Used in the Netherlands

Called for the design of an industrialized refurbishment concept or retrofit package that would meet 5 criteria:

- Net Zero
- Can be paid nearly entirely by the resulting energy savings
- Warranty: Energy performance guaranteed over 30 to 40 years
- Retrofit to net zero level in 1-Week
- Quality of life and appearance of house improved

Creating a Deep Retrofits Market

- 27 social housing authorities
- 111,000 units for winners
- 40 consortia of suppliers + developers
- Several rounds of open competition
- Now bought by private market
- Under review for expansion to UK and France

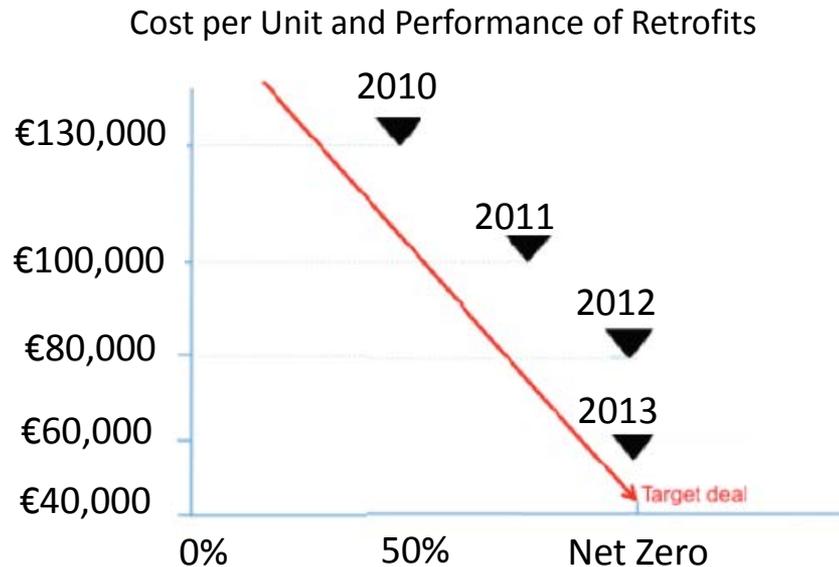
Outcome

Industrialized process and mass customization

- 3D scanning
- Off site manufacturing
- Limited time onsite (1-week)
- Solutions currently available for low-rise buildings

Results

- First 200 houses piloted in 2010
→ 50% energy improvements
- Today: Net Zero buildings at 40% lower cost of initial pilots
- Several thousands expected by end of 2016



https://www.youtube.com/watch?v=l3WBT2eAArI&feature=player_detailpage

















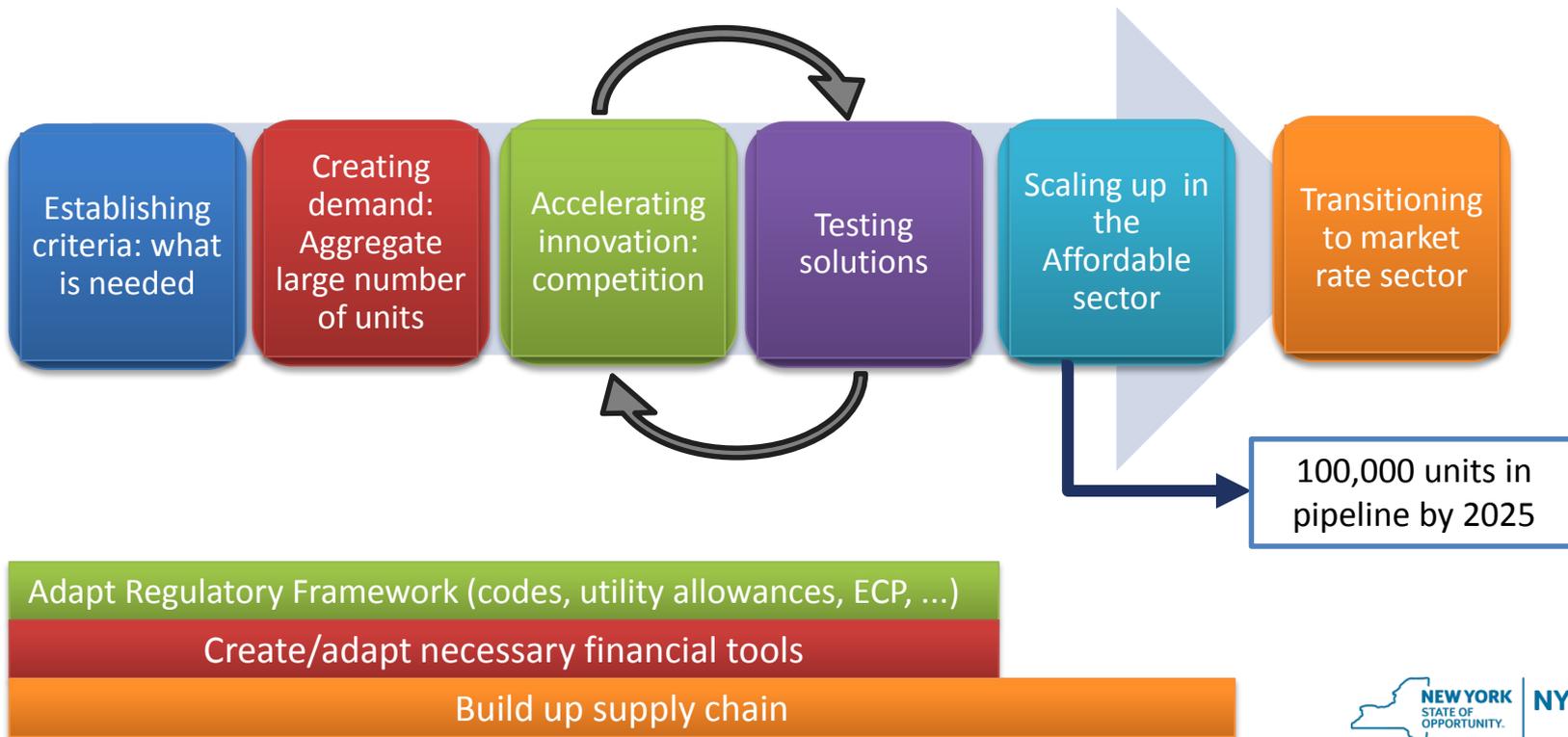








Questions?



Thank You

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