

DRIVING TRANSFORMATION TO ENERGY EFFICIENT BUILDINGS

Policies and Actions



In collaboration with:



WORLD GREEN BUILDING COUNCIL

Written by:

Katrina Managan, Program Manager, Institute for Building Efficiency
Monica Araya, Senior Visiting Fellow, Institute for Building Efficiency
Jennifer Layke, Director, Institute for Building Efficiency

THE INSTITUTE FOR BUILDING EFFICIENCY

An Initiative of Johnson Controls



The Institute for Building Efficiency is an initiative of Johnson Controls providing information and analysis of technologies, policies, and practices for efficient, high performance buildings and smart energy systems around the world.



Existing Building Retrofits



Green Buildings



Smart Grids & Smart Buildings



Renewable & Distributed Energy



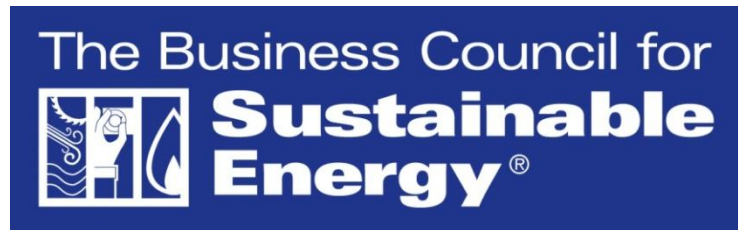
Clean Energy Finance



Energy & Climate Policy

PROJECT PARTNERS

Driving Transformation Together



WORLD **GREEN** BUILDING COUNCIL

CONTENTS OF THE REPORT

13 Sections Plus Case Studies



Big Picture

- Opportunity
- Transform Buildings
- NAMAs

Policy Options

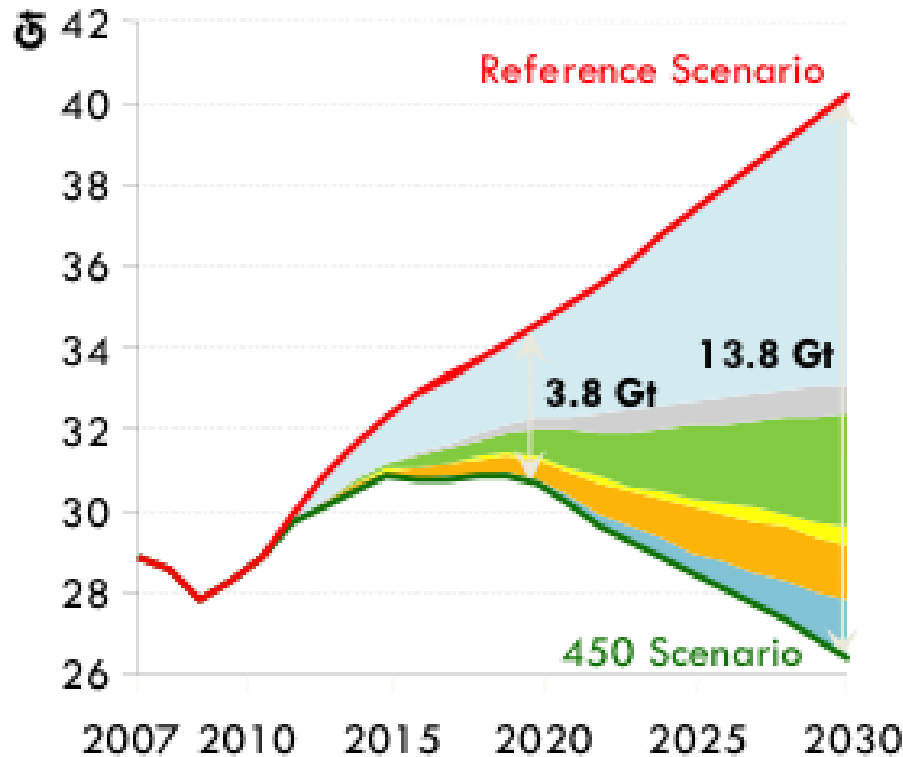
- Codes
- Targets
- Awareness
- Incentives
- Utilities
- Capacity Building

Design and Implementation

- Financial Path
- Track Results
- Get Started

OPPORTUNITY

Efficiency: The largest abatement potential to 2030



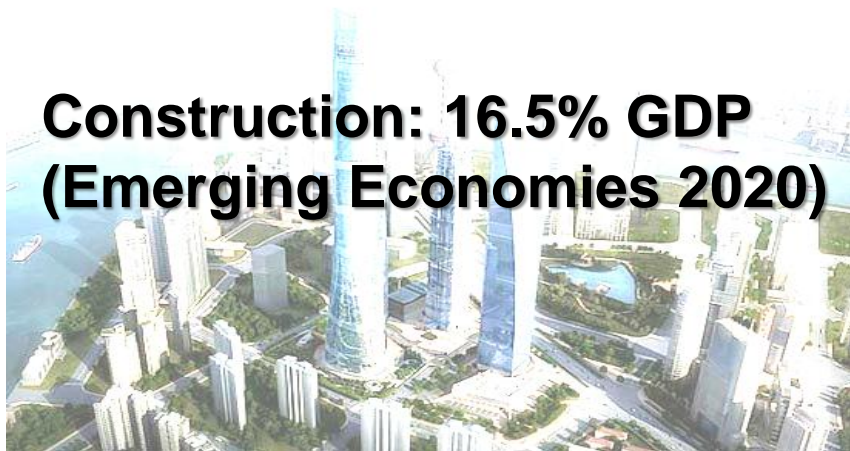
	Share of abatement %	
	2020	2030
Efficiency	65	57
End-use	59	52
Power plants	6	5
Renewables	18	20
Biofuels	1	3
Nuclear	13	10
CCS	3	10

OPPORTUNITY

Efficient Buildings and the Economy



**Construction: 16.5% GDP
(Emerging Economies 2020)**



**Buildings Use
80% of Electricity
40% of Energy**

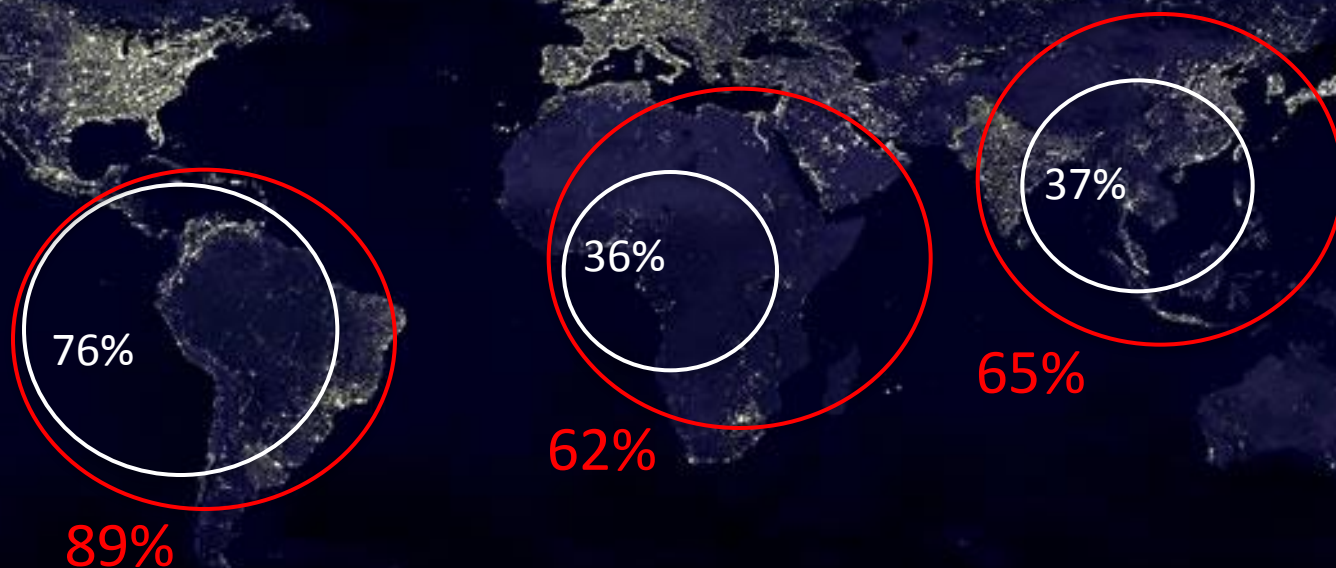


Reduce Fuel Poverty



OPPORTUNITY

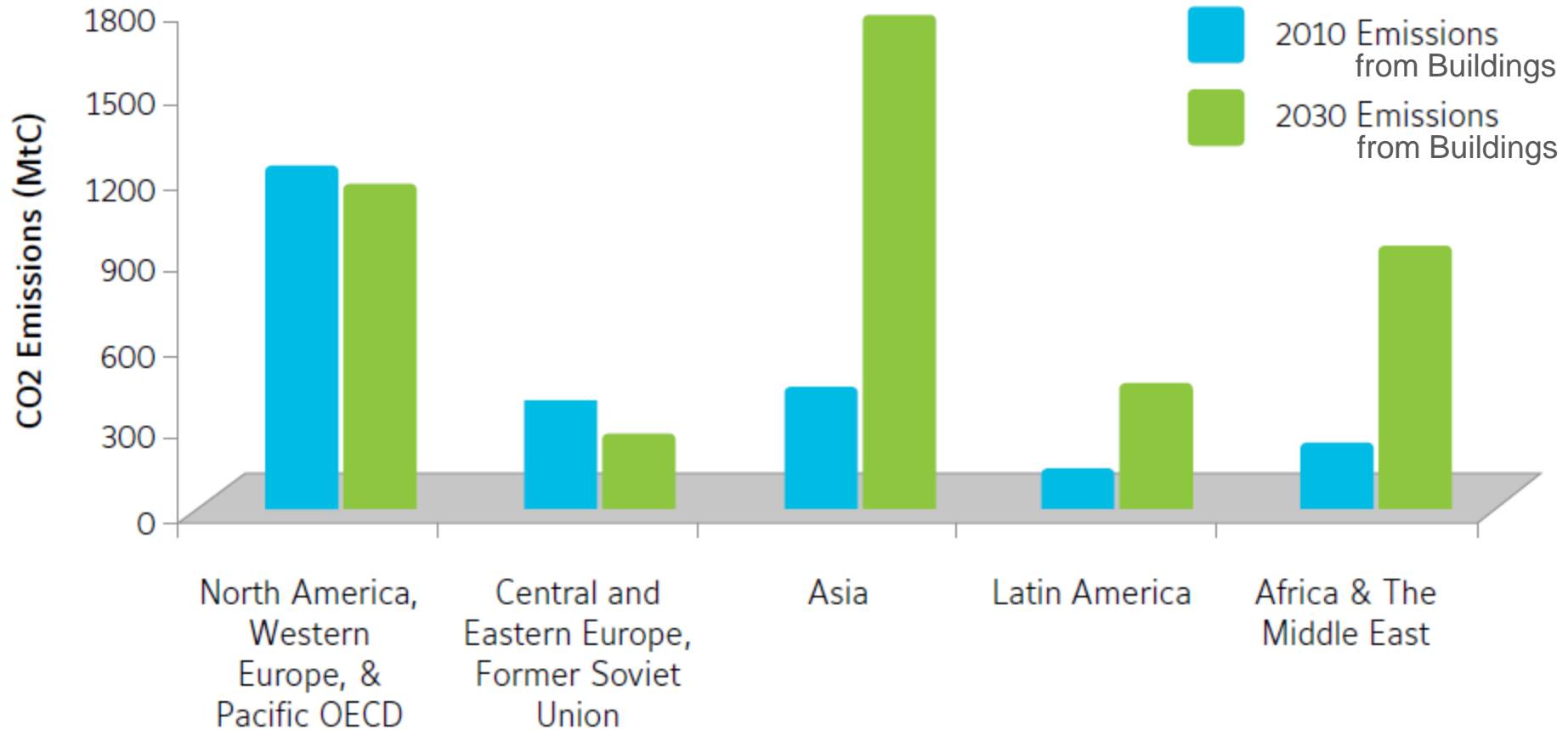
Population Growing in Urban Areas



Percent Population in Urban Areas 2000
Percent Population in Urban Areas 2050

OPPORTUNITY

Building Emissions Rising in Asia, Latin America, Africa & the Middle East



NAMAS

Pathways to Low-Carbon Growth

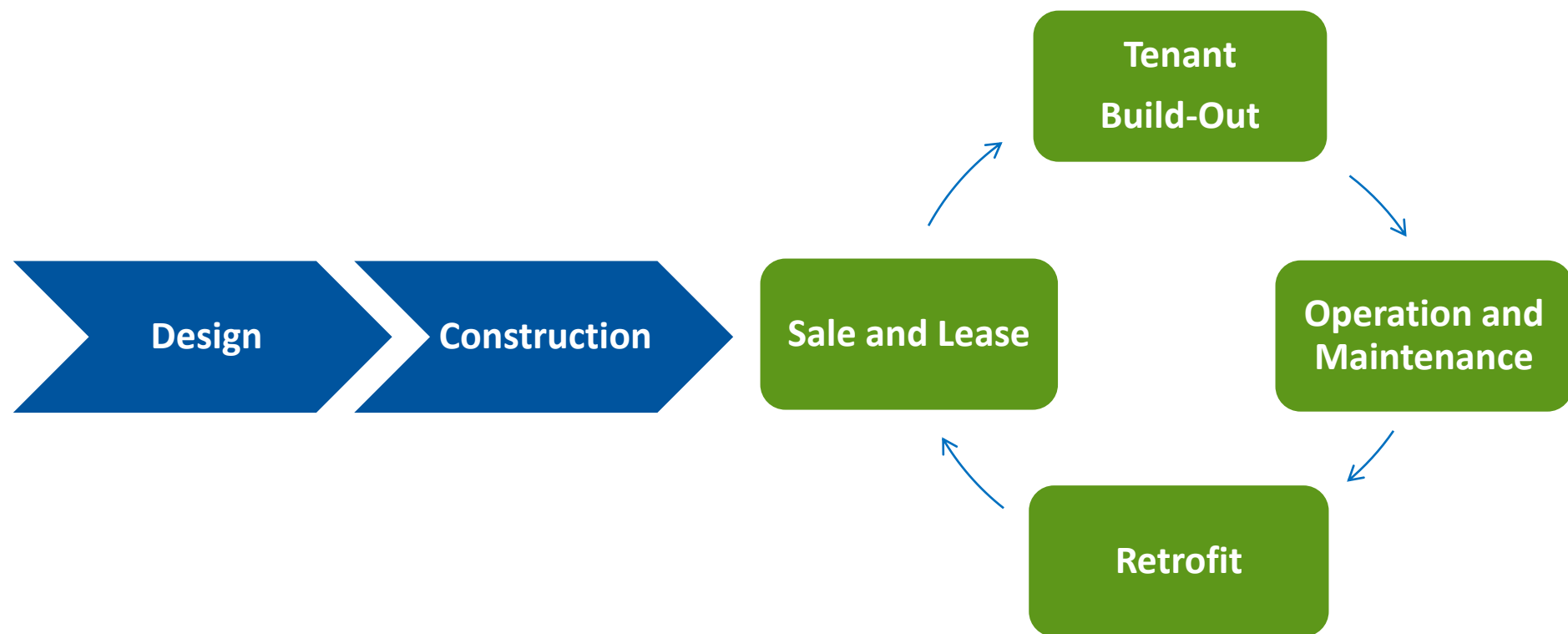


- Developing countries are designing and implementing nationally appropriate mitigation actions (NAMAs) as part as their voluntary efforts to meet country-driven climate objectives
 - Only 22 submissions included energy efficiency (March 2011)
 - Only 10 submissions mentioned buildings explicitly (March 2011)
- Examples:
 - Singapore
 - Mongolia
- Opportunity for financial support through UNFCCC:
 - Green Climate Fund
 - Climate Technology Center & Network
- **Cities** - innovation and action



TRANSFORM BUILDINGS

The Lifecycle of a Building



TRANSFORM BUILDINGS

Barriers to Energy Efficiency



Market

- Split incentives
- Transaction Costs
- Dispersed Market Involving Many Sectors
- Price Distortions in Energy Market

Financial

- Up-front Cost, Constrained Budgets
- Perception of Investment Risk
- Low Financial Institution Awareness
- Lack of External Finance
- Small Transaction Size

Technical

- Lack of Technical Capacity in Market
- Lack of Affordable Technology in Market

Awareness

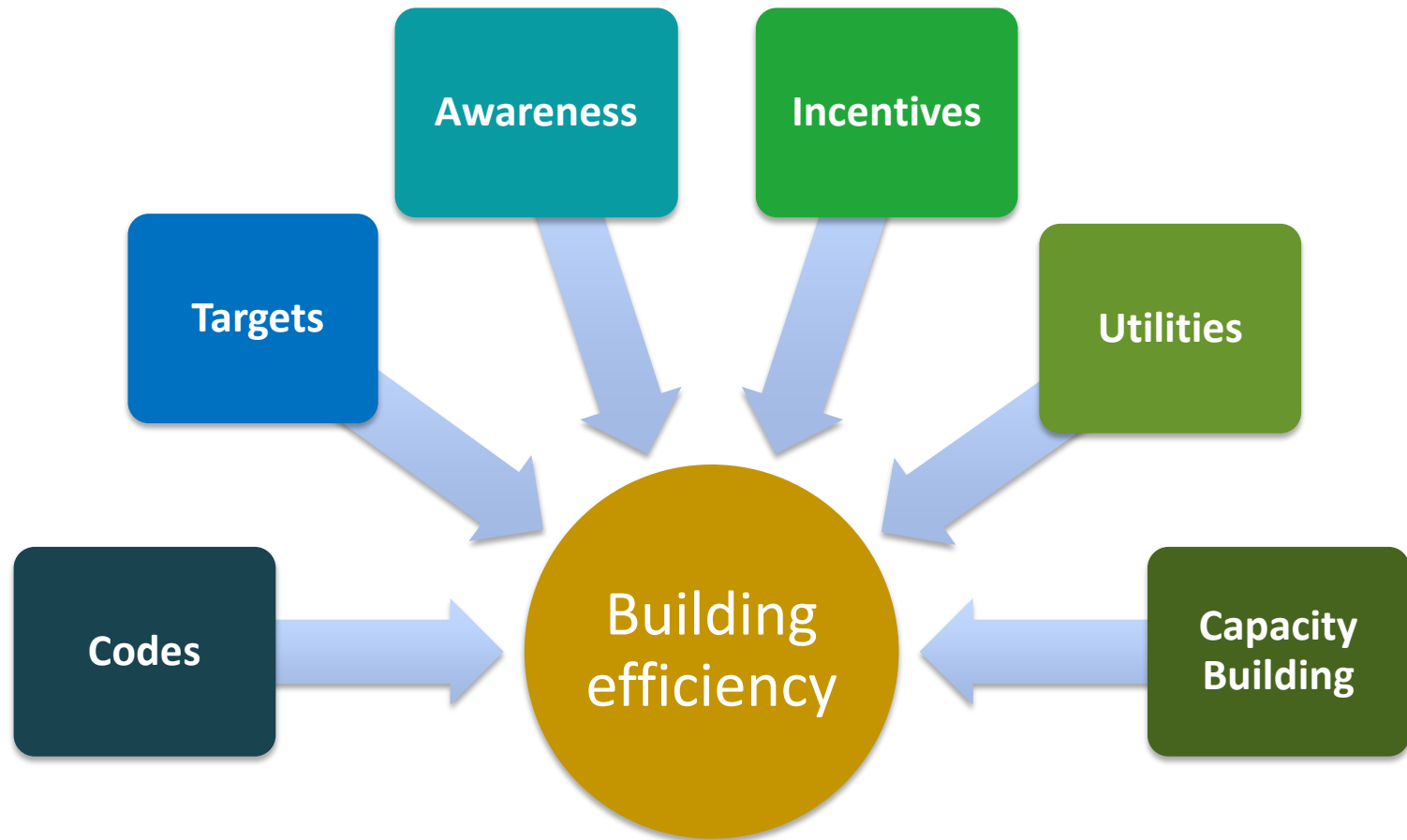
- Lack of Information about Energy Performance and Improvement Opportunities

Institutional

- Low Government Capacity on New Policy
- Inter-agency Coordination Challenges
- Little Public-Private Coordination

TRANSFORM BUILDINGS

Policies can enable transformation



GET STARTED

Pillars of a pathway for building-efficiency policy



What?

Scoping

Targets

Priorities

How?

Action Plan

Capacity

Finance

Who?

Institutions

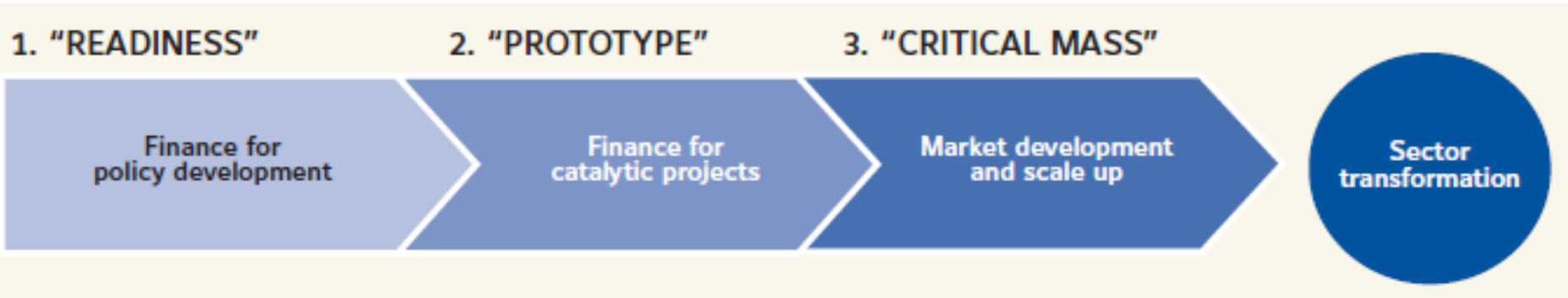
Stakeholders

Governance

ACHIEVING RESULTS



- Design policy and action approach
- Design a finance pathway



- Track results – for M&V and MRV purposes
 - Policy Level
 - Building Level
 - Tenant Level

POLICIES HELP BRIDGE THE EFFICIENCY GAP



www.InstituteBE.com