



WORLD  
RESOURCES  
INSTITUTE

# TRANSFORMING BUILDINGS FOR SUSTAINABLE CITIES

*3<sup>rd</sup> Livable Cities Symposium November 19, 2015  
Jennifer Layke, Director Building Efficiency Initiative  
WRI Ross Center for Sustainable Cities*

# CITIES ARE MADE OF *BUILDINGS*

**50%**

or more of the land  
area of nearly all  
cities are buildings

**Buildings are the largest physical  
and financial asset in cities**

# THE BUILDINGS SECTOR'S CONTRIBUTION TO CLIMATE CHANGE

**1/4**

**Of global energy  
demand**

**1/3**

**Of global GHG  
emissions**

# PERCENTAGE OF ENERGY CONSUMPTION BY THE BUILDING SECTOR IN THE DEVELOPING WORLD

**Mexico: 18%**

**Brazil:  
15%**

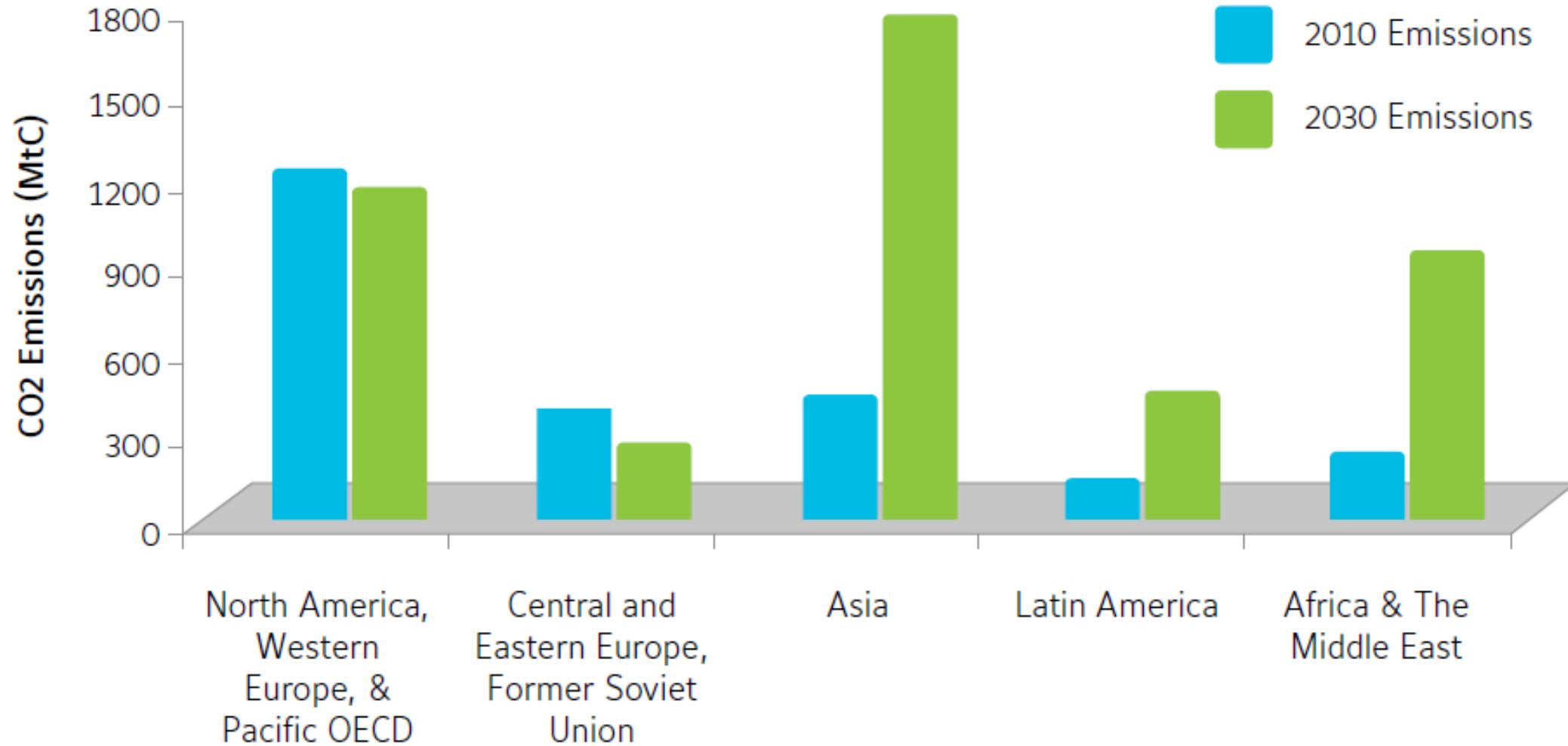
**Turkey:  
36%**

**India:  
39%**

**China:  
23%**

**Indonesia: 23%**

# AND EMISSIONS FROM THE BUILDING SECTOR ARE RISING DRAMATICALLY AS CITIES ARE BUILT



# THE BUILDINGS SECTOR'S CONTRIBUTION TO CLIMATE CHANGE

**With business as usual  
practices, by 2050 emissions  
from buildings could**

**Double**

# CONSTRUCTION A HUGE FORCE IN THE WORLD ECONOMY

**10%**

Of global GDP

**10%**

Of global workforce

**16.7%**

GDP estimation for  
emerging markets by 2025



## BUT HUGE OPPORTUNITIES EXIST

# 1/3

**The reduction in global building energy demand possible by 2050 if existing best practices are implemented at scale**



# THE BRIDGE TO BETTER BUILDINGS

New partnerships can enable implementation of ambitious policy and market development strategies to address barriers, bridge the efficiency gap, and avoid lock-in of inefficient and unhealthy building stock.



# ACTIONS AND POLICIES FOR BUILDING EFFICIENCY

<b>Codes &amp; Standards</b>	<ul style="list-style-type: none"><li>• Building energy codes and product standards establish minimum requirements for energy performance.</li></ul>
<b>Targets</b>	<ul style="list-style-type: none"><li>• Targets to align interests and spur action to improve efficiency in the building sector.</li></ul>
<b>Performance Info &amp; Certifications</b>	<ul style="list-style-type: none"><li>• Data, baselines, disclosure and certifications for market differentiation of building performance or attributes.</li></ul>
<b>Finance &amp; Incentives</b>	<ul style="list-style-type: none"><li>• Programs and incentives to provide funding to building efficiency improvements.</li></ul>
<b>Government Leadership Programs</b>	<ul style="list-style-type: none"><li>• Programs to support government efficiency, including public building retrofits and innovative procurement.</li></ul>
<b>Building Owner &amp; Occupant Actions</b>	<ul style="list-style-type: none"><li>• Building operations, occupant behavior.</li></ul>
<b>Technical &amp; Financial Services Capacity</b>	<ul style="list-style-type: none"><li>• Market development and skilled workforce for private providers of building construction, services &amp; equipment</li></ul>
<b>Utility Actions</b>	<ul style="list-style-type: none"><li>• Planning and programs by utility companies for energy efficiency improvement.</li></ul>

# SUSTAINABLE ENERGY FOR ALL (SE4ALL)

**Launched in 2011, SE4ALL has three objectives by 2030:**

- Ensure universal access to modern energy services
- Double the rate of improvement in energy efficiency
- Double the share of renewable energy in the global energy mix

# GLOBAL ENERGY EFFICIENCY ACCELERATOR PLATFORM

## Transport and Motor Fuel Efficiency

Improve the fuel economy capacity of the global car fleet



## Lighting

Global market transformation to efficient lighting



## Appliances & Equipment

Global market transformation to efficient appliances & equipment



## Building Efficiency

Promote sustainable building policies & practices worldwide



## District Energy

Support national & municipal governments to develop or scale-up district energy systems



## Industrial EE

Implementing Energy Management Systems, technologies & practices



## Power Sector

Improving the efficiency of generation, transmission, distribution & end-use



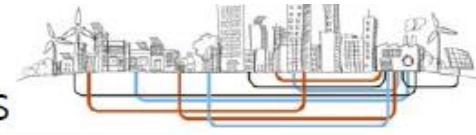
## Finance

Accelerating investment in energy efficiency



# DISTRICT ENERGY

## The Impact of Leapfrogging to Modern District Energy Systems



Savings on electricity bills increase purchasing power

Free power generation capacity for development



Meet Tomorrow's Energy Needs by Leapfrogging to Modern District Energy Systems Today!



Reduce CO<sub>2</sub> emissions & mitigate climate change

Accelerate economic development



# EFFICIENT BUILDINGS ARE HEALTHIER FOR PEOPLE

**4.3 million**

Deaths per year from exposure to household pollution

Inefficient energy use in buildings is the **primary contributor** to deaths from outdoor air pollution in the most heavily populated places

# A NEW ERA FOR PEOPLE-CENTERED CITIES

*Productive buildings as integrative centers of urban systems and services (energy, water, waste, transportation)*



# FIRST EVER BUILDINGS DAY AT COP21 IN PARIS



Towards a Global Alliance  
for Buildings and Construction

## BUILDINGS DAY

At COP 21

December 3



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UN HABITAT  
FOR A BETTER URBAN FUTURE



CTCN

ADEME



Agence de l'Environnement  
et de la Maîtrise de l'Énergie



I.C.L.E.I  
Local  
Governments  
for Sustainability

