

Catalyzing sustainable economic growth while reducing emissions – insights from the New Climate Economy

PARTNERSHIPS FOR BETTER GROWTH AND A BETTER CLIMATE

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WORLD RESOURCES INSTITUTE

The Global New Climate Economy Partnership

Global Commission

Former President of Mexico, Felipe Calderón, Chair

24 members, including former heads of government and finance ministers, and leaders in business, finance and economics, from 20 countries

Economic Advisory Panel

14 leading economists

Professor Lord Nicholas Stern, Chair

Two Nobel prize winners: **Daniel Kahneman** and **Michael Spence**

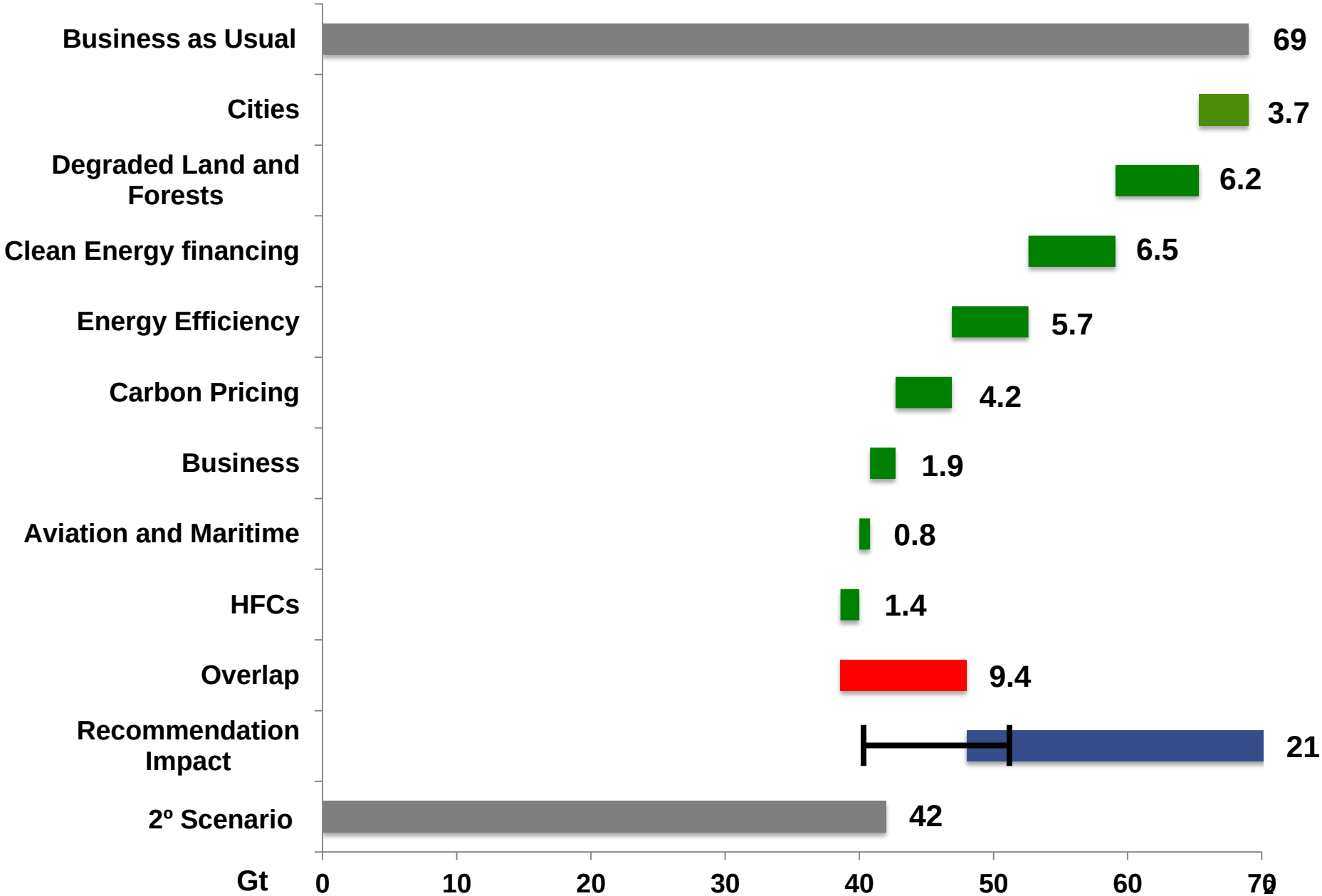
7 Commissioning Countries

Colombia
Ethiopia
Indonesia
Norway
Sweden
South Korea
United Kingdom

8 Partner Research Institutes

Climate Policy Initiative (USA)
Ethiopian Development and Research Institute
Indian Centre for Research on Economic Relations (ICRIER)
Global Green Growth Institute (South Korea)
London School of Economics (UK)
Stockholm Environment Institute (Sweden)
Tsinghua University (China)
World Resource Institute (USA)

Actions needed to help achieve a 2°C target



The false dilemma

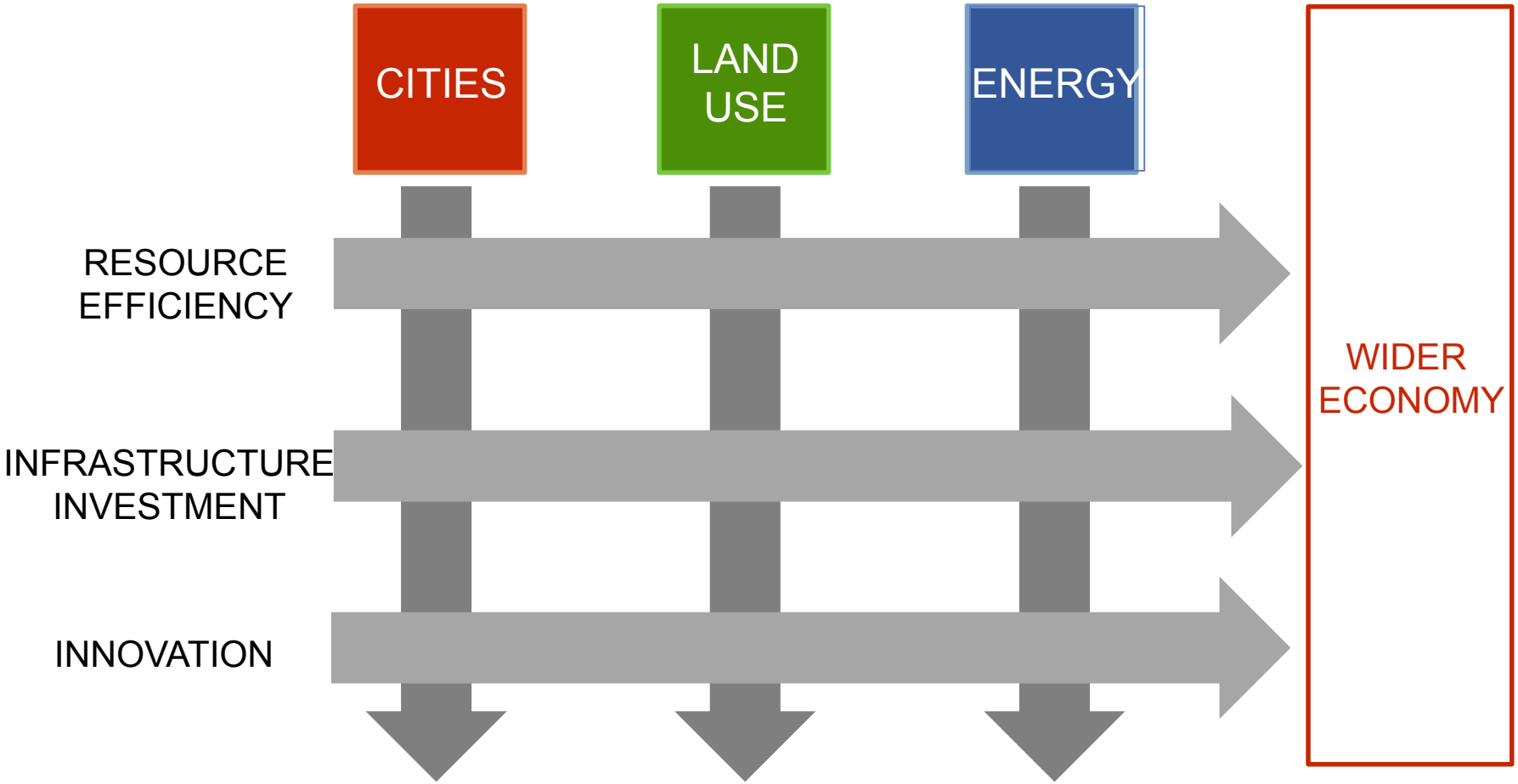
VS

Promoting Economic Growth

Fighting Climate Change

It is possible to have better growth and a better climate at the same time

Key drivers of growth and climate performance



HIGH QUALITY, RESILIENT, INCLUSIVE = BETTER GROWTH

10 transformative actions

1. Integrate climate risk into strategic decisions
2. Secure a strong international climate agreement
3. End perverse subsidies
4. Price carbon to send a clear market signal
5. Scale-up low-carbon innovation
6. Reduce the cost of capital for low-carbon investment
7. Move toward connected and compact cities
8. End deforestation
9. Restore degraded lands
10. Phase out unabated coal fast

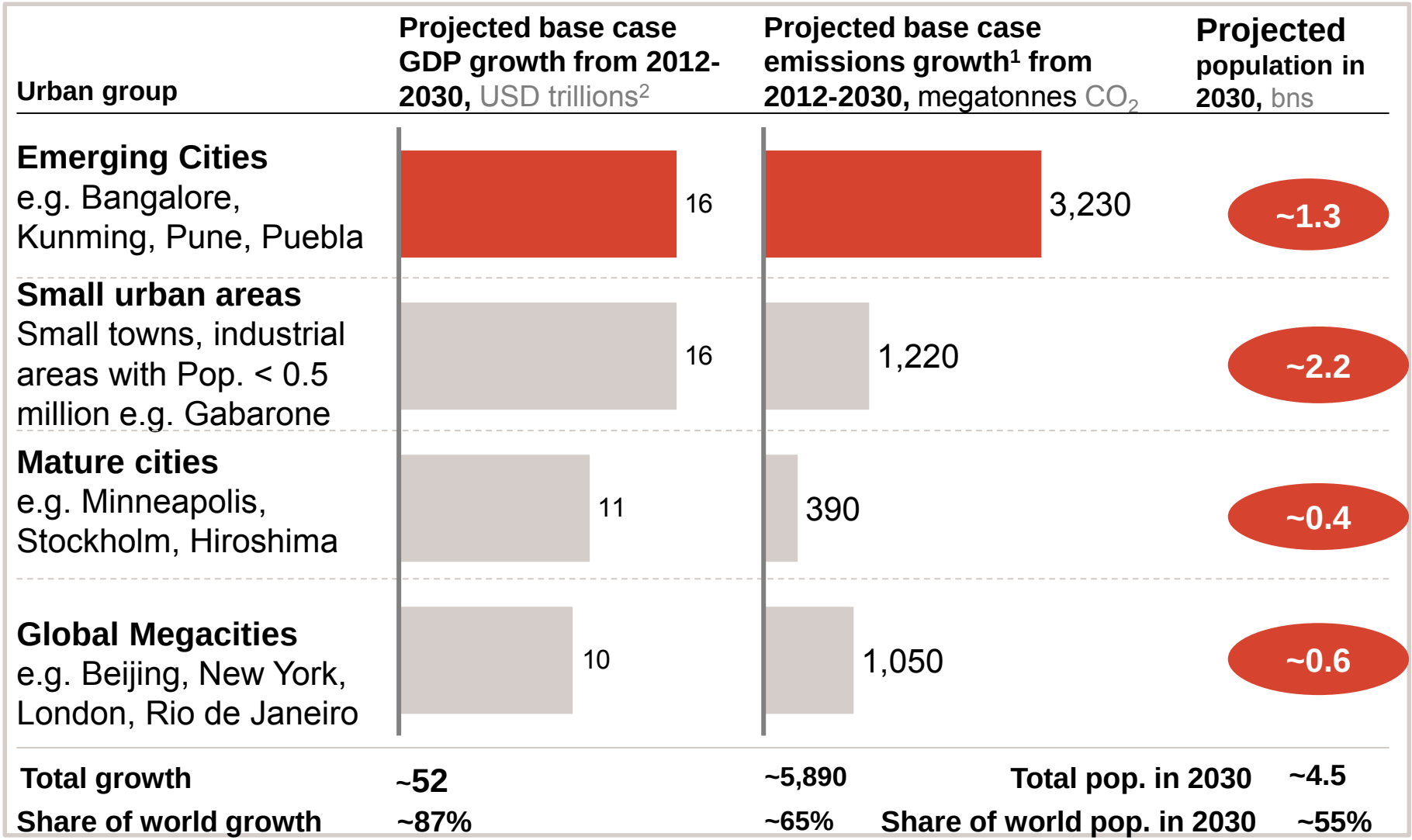
Source: NCE. For details please see the NCE Global Ac

$3 trillion

Savings in global infrastructure spending to 2030 from more compact, connected urban development

Source: New Climate Economy analysis.

Less than 500 cities by 2030 across three groups will account for 60% of GDP but also half of energy related emissions



1 Energy assumptions are consistent with IEA's Current Policies scenario 2 At 2012 prices and exchange rates

THE NEW CLIMATE ECONOMY
The Global Commission on the Economy and Climate

Source: Oxford Economics and LSE Cities; Modelling based on 750 cities emissions and GDP data. Small urban areas include 26 cities in the Oxford Economics Global 750 Cities dataset with populations < 0.5m people and those areas classified as 'urban' in the UN World Urbanization Prospects dataset.

3C's: New Model of Urban Development

1. **Compact** urban growth

Managed expansion, mixed-use urban form, good quality urban design

2. **Connected** infrastructure

Smarter transport systems, smarter utilities and grids, smart buildings

3. **Coordinated** governance

Integrated land use and transport authorities, integrated planning, PPPs

Compact, connected, and coordinated urban development can boost growth, reduce costs, and deliver wider benefits

1. **Greater productivity and growth - from agglomeration**
2. **Reduced infrastructure capital requirements**
3. **Cost savings in the transport sector**
4. **Health benefits from improved air quality**
5. **Multiple co-benefits: Jobs, reduced congestion, energy security**
6. **Lower carbon emissions**

Source: World Bank (2014), Arrington et al (2008), ADB, CAI, and Chreod (2013), Oxford Economics and LSE Cities (2014)

City Recommendations of the Global Commission (1)

1. BETTER URBANISATION	• Make better planned urban development a central element of national economic development strategies
2. FISCAL AUTONOMY	• Consider greater fiscal autonomy for cities to unleash investment in smarter urban infrastructure
3. TAX REFORM	• Eliminate fuel subsidies, consider congestion charging, land and development taxes, density bonuses
4. REGULATORY REFORM	• Establish minimum density standards, maximum parking requirements, growth boundaries

City Recommendations of Global Commission (2)

5. REDIRECT INVESTMENT

- Redirect existing infrastructure funding towards more compact, connected and coordinated urban infrastructure, including MDB financing

6. PLANNING AND GOVERNANCE

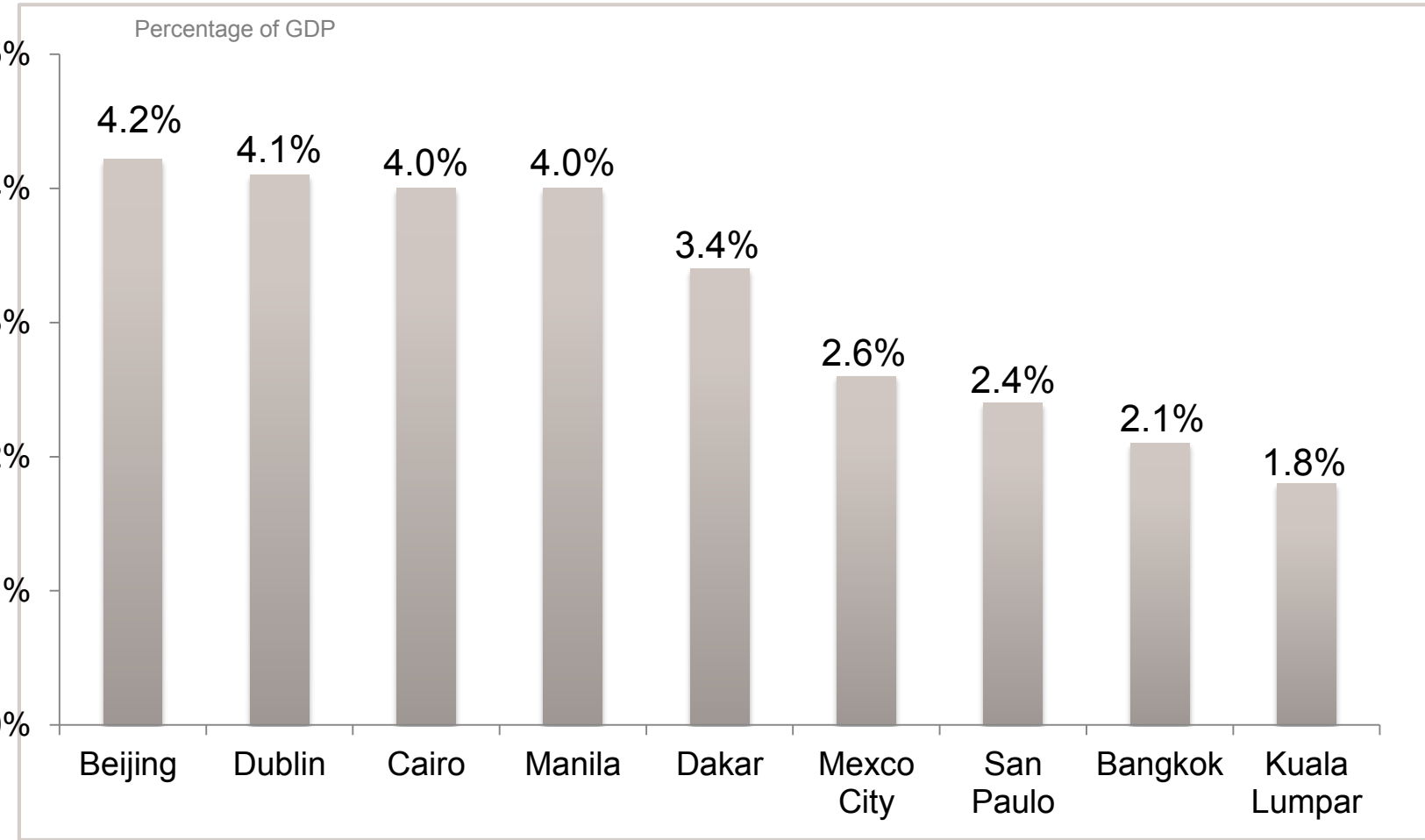
- Strengthen role of strategic planning at national, regional, and city levels including setting up integrated land use and transport authorities

7. FINANCING MODELS

- Enhancing source revenue to boost creditworthiness, 'city bonds,' review Land Value Capture

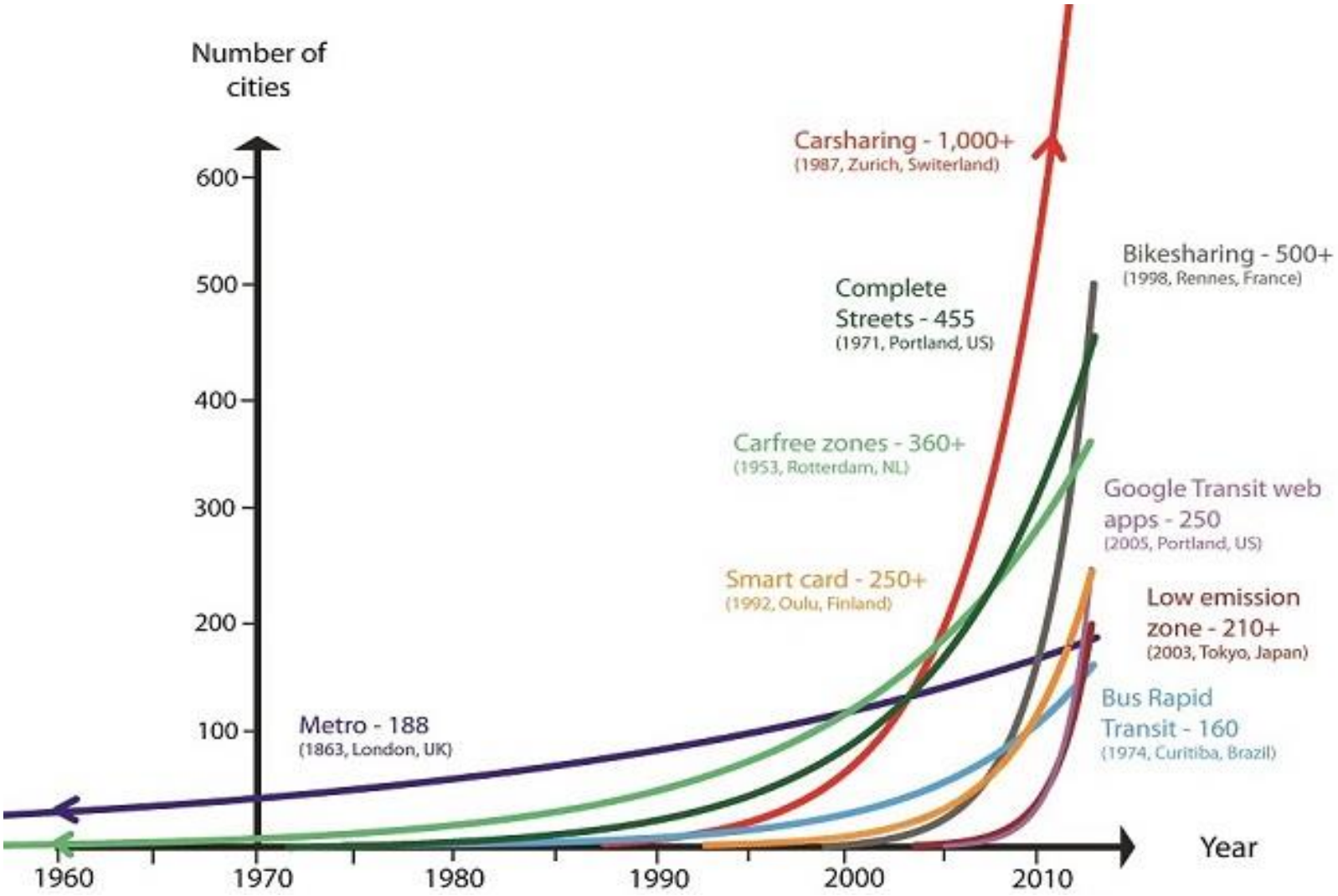
Traffic congestion is costing some cities greater than 4% of GDP

Cost of traffic congestion as a percentage of GDP in selected cities



Sources: IBM Institute for Business Value, Smarter cities for smarter growth. Li-Zeng Mao, Hong-Ge Zhu, and Li-Ren Duan (2012) The Social Cost of Traffic Congestion and Countermeasures in Beijing. Sustainable Transportation Systems: pp. 68-76.

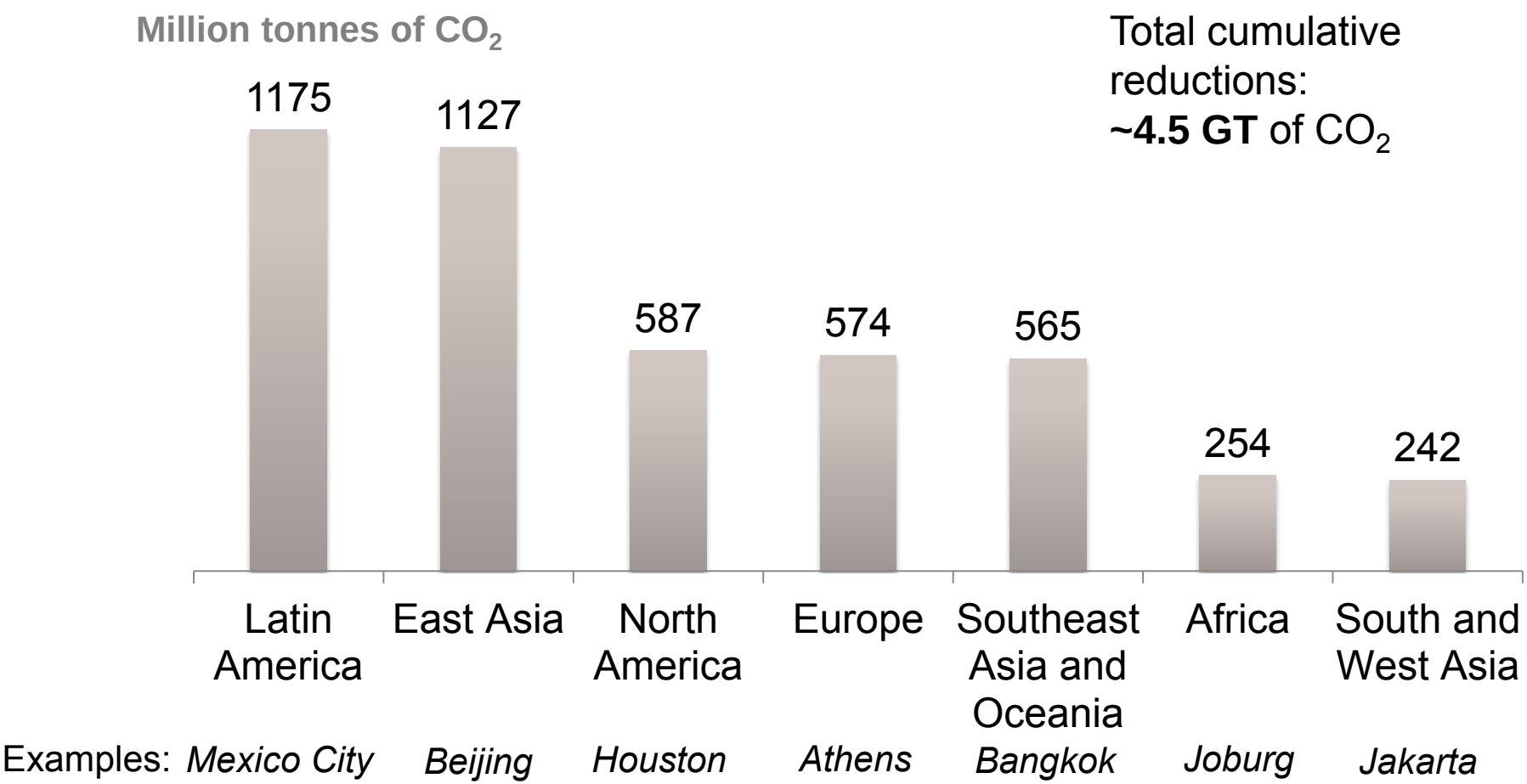
A range of smart transport systems have taken off in numerous cities worldwide since 2000



Source: Embarq 2013

C40 cities: Radical shifts in transport modes can support enhanced connectivity but also significant emission reductions

Potential cumulative reductions in carbon emissions from reducing car ownership levels to those of leading benchmark cities in region, 2012-2030

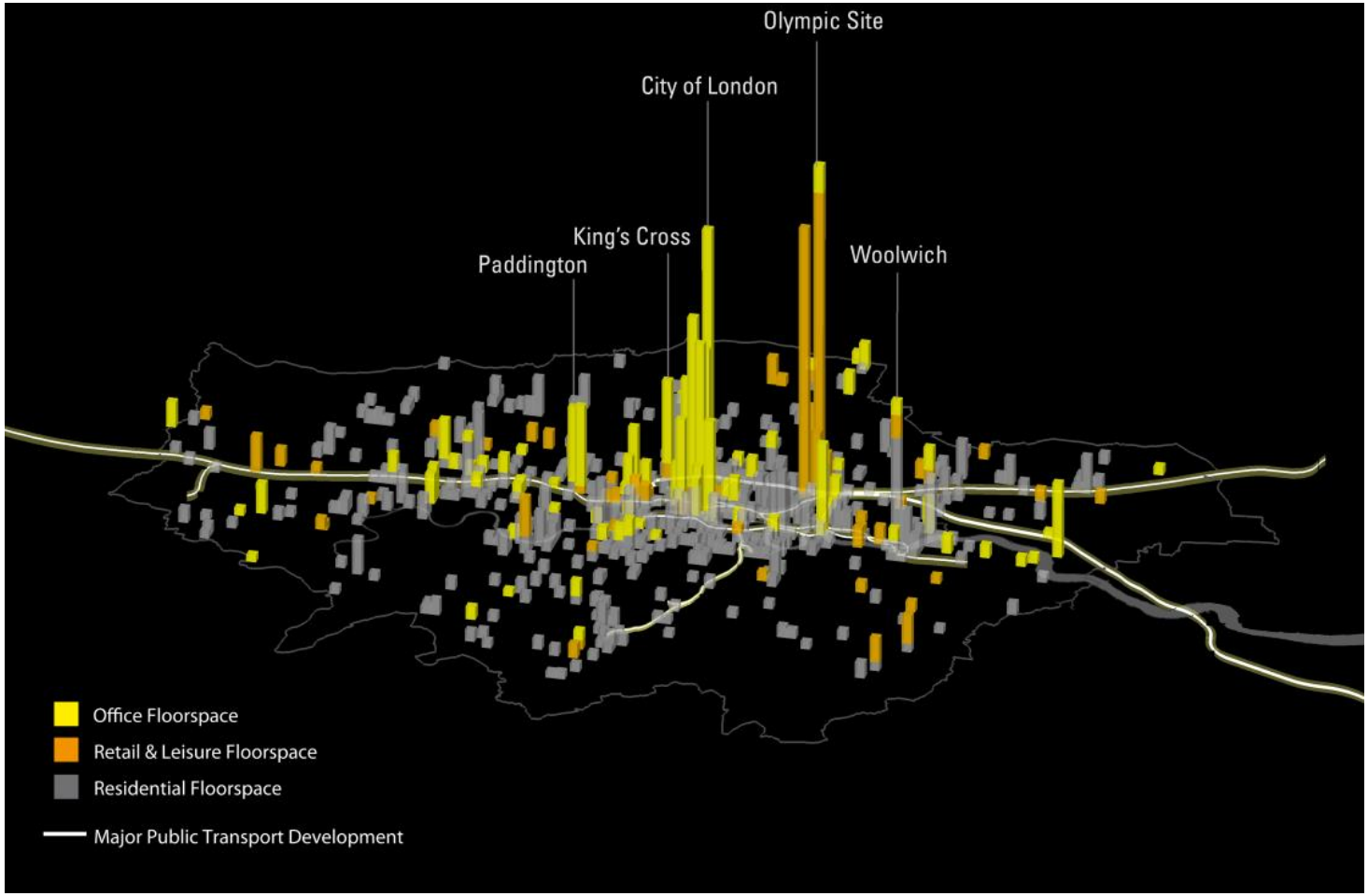


Source: Oxford Economics and LSE Cities.
Note: This dataset does not include the data from the following 4 cities: Changwon, Heidelburg, Venice and Yokohama

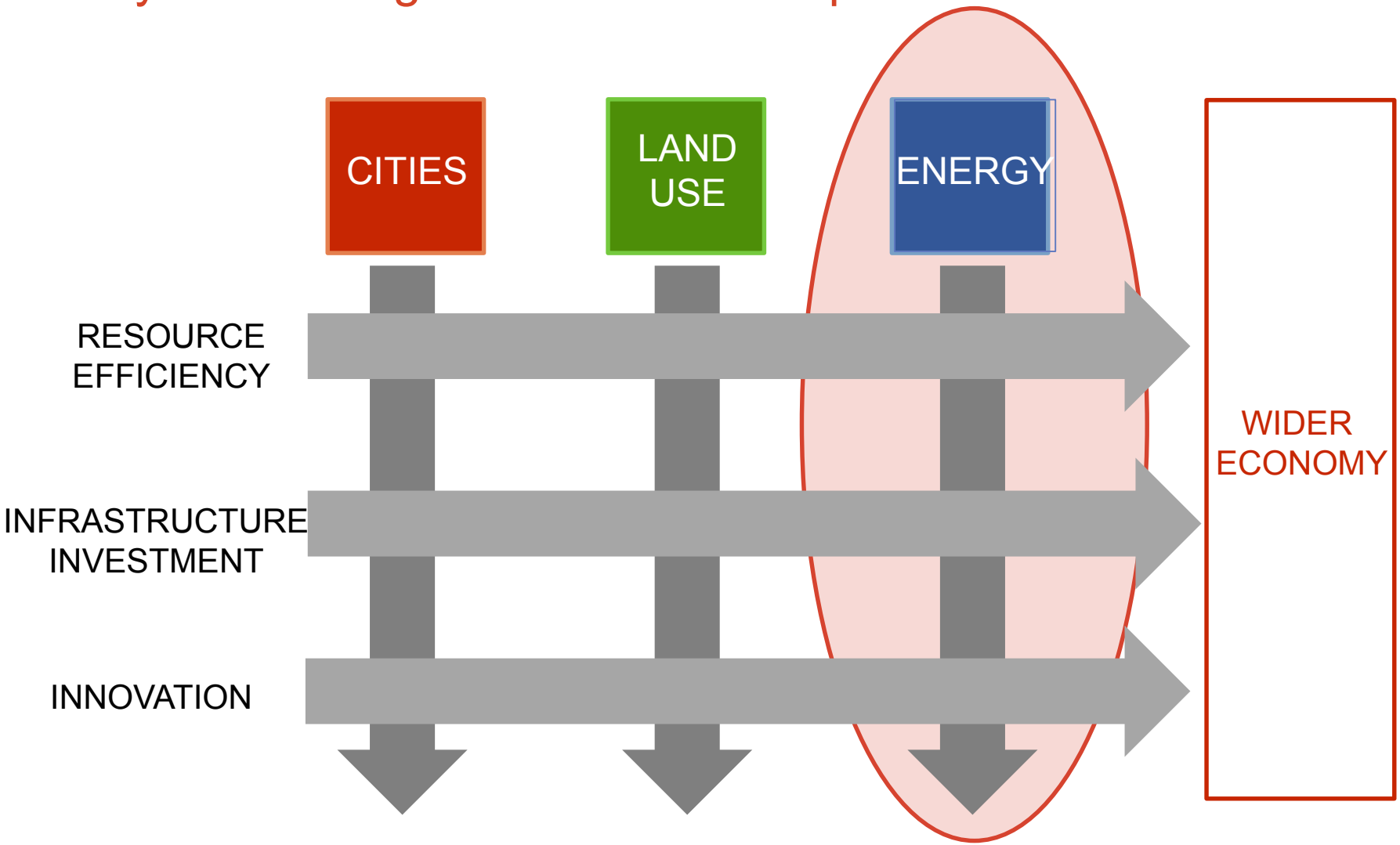
Re-densification is already happening in some leading, better planned cities and is an emerging trend in other cities as well

New development in London (LSE Cities 2012)

Floorspace additions between 2004 and 2011



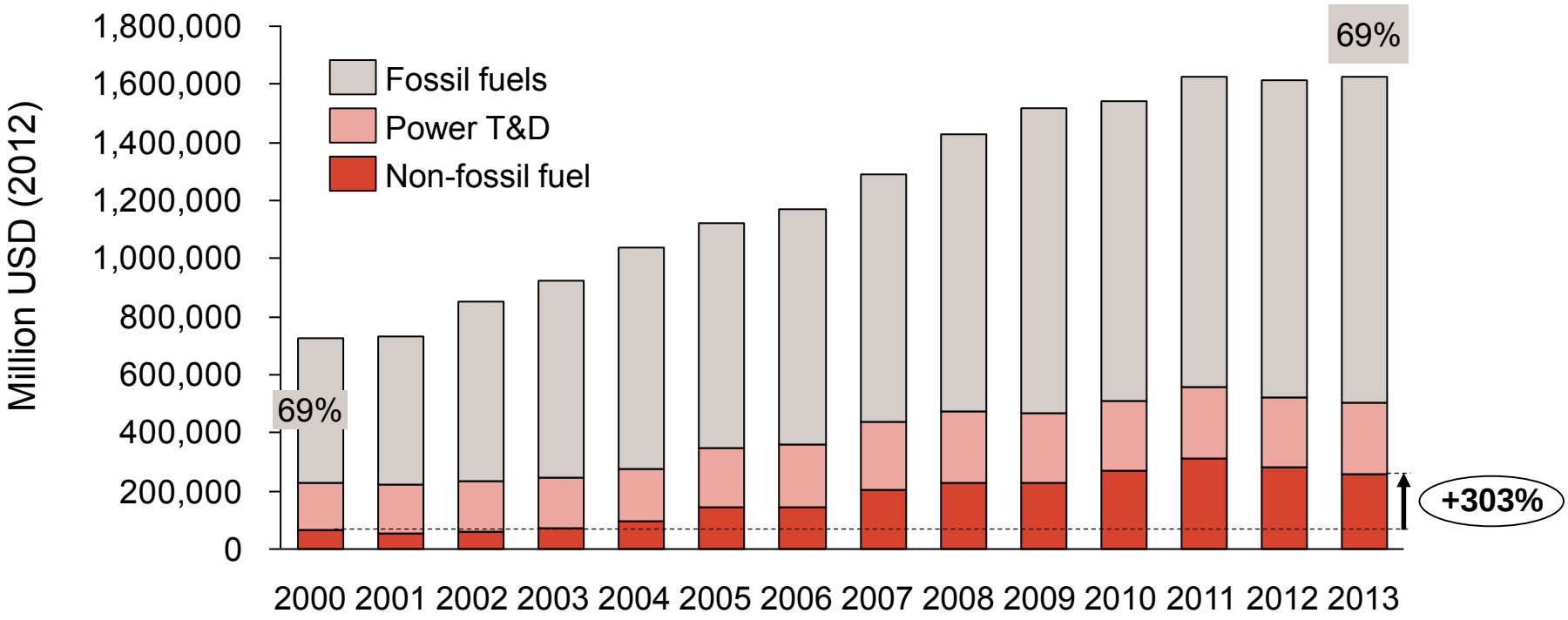
Key drivers of growth and climate performance



HIGH QUALITY, RESILIENT, INCLUSIVE = BETTER GROWTH

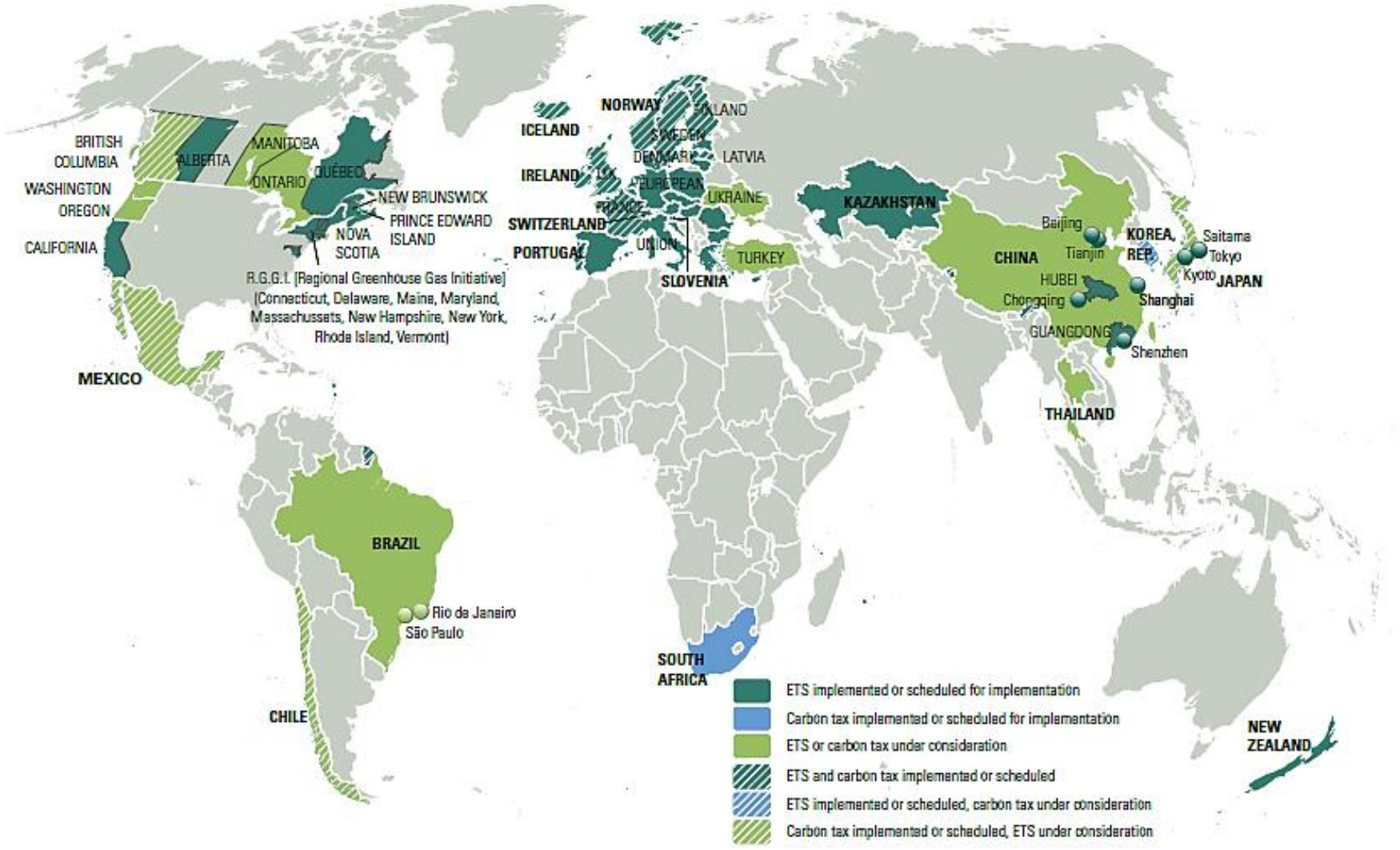
ENERGY: Investments in low-carbon energy have increased, but 2/3 still goes to fossil fuels

Investment in global energy supply by fossil fuel, non-fossil fuel (renewable energy, nuclear, biofuels) and transmission & distribution in the power sector.



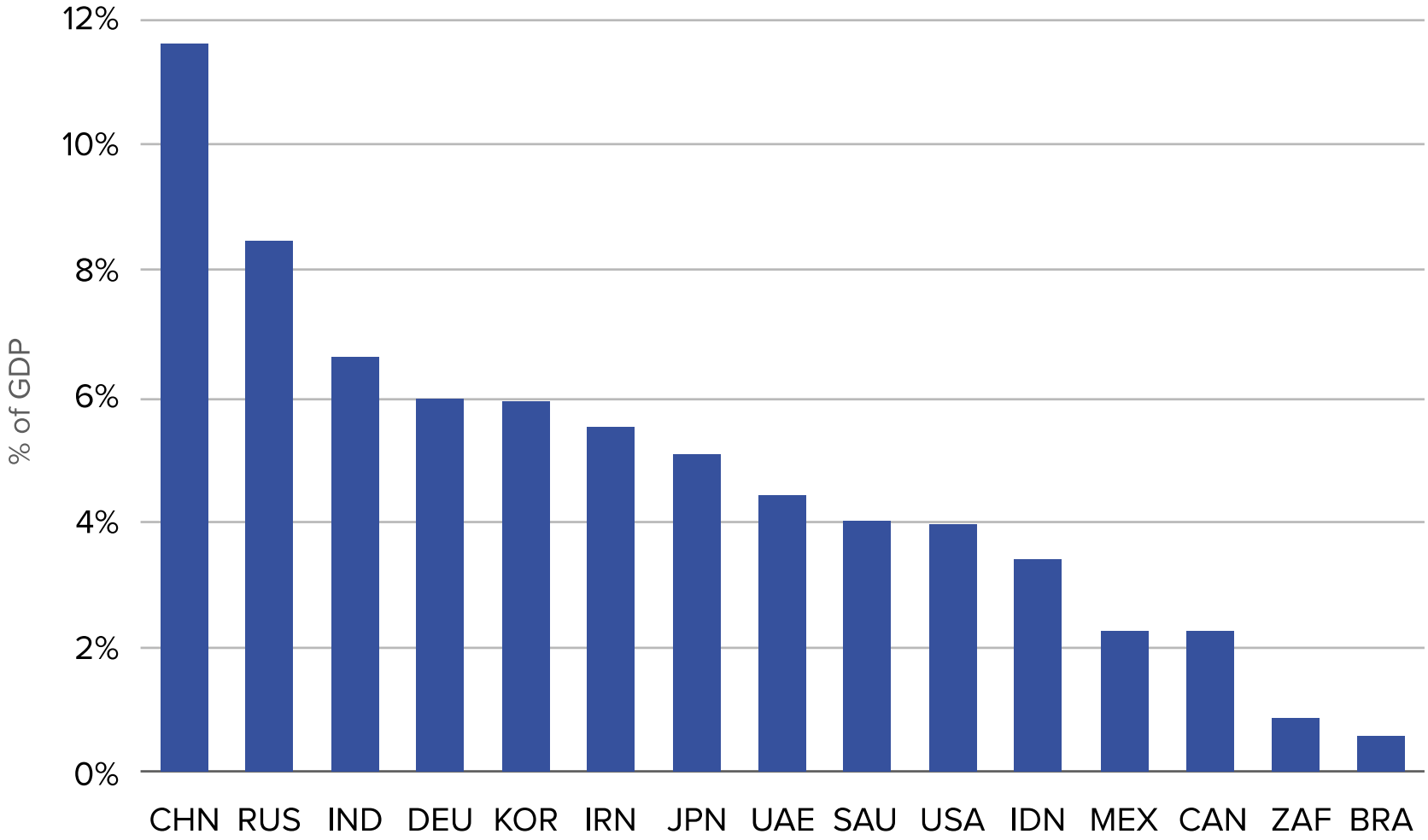
Source: IEA (2014): World Energy Investment Outlook.

CARBON PRICING: 40 national and over 20 sub-national carbon pricing schemes underway or being launched



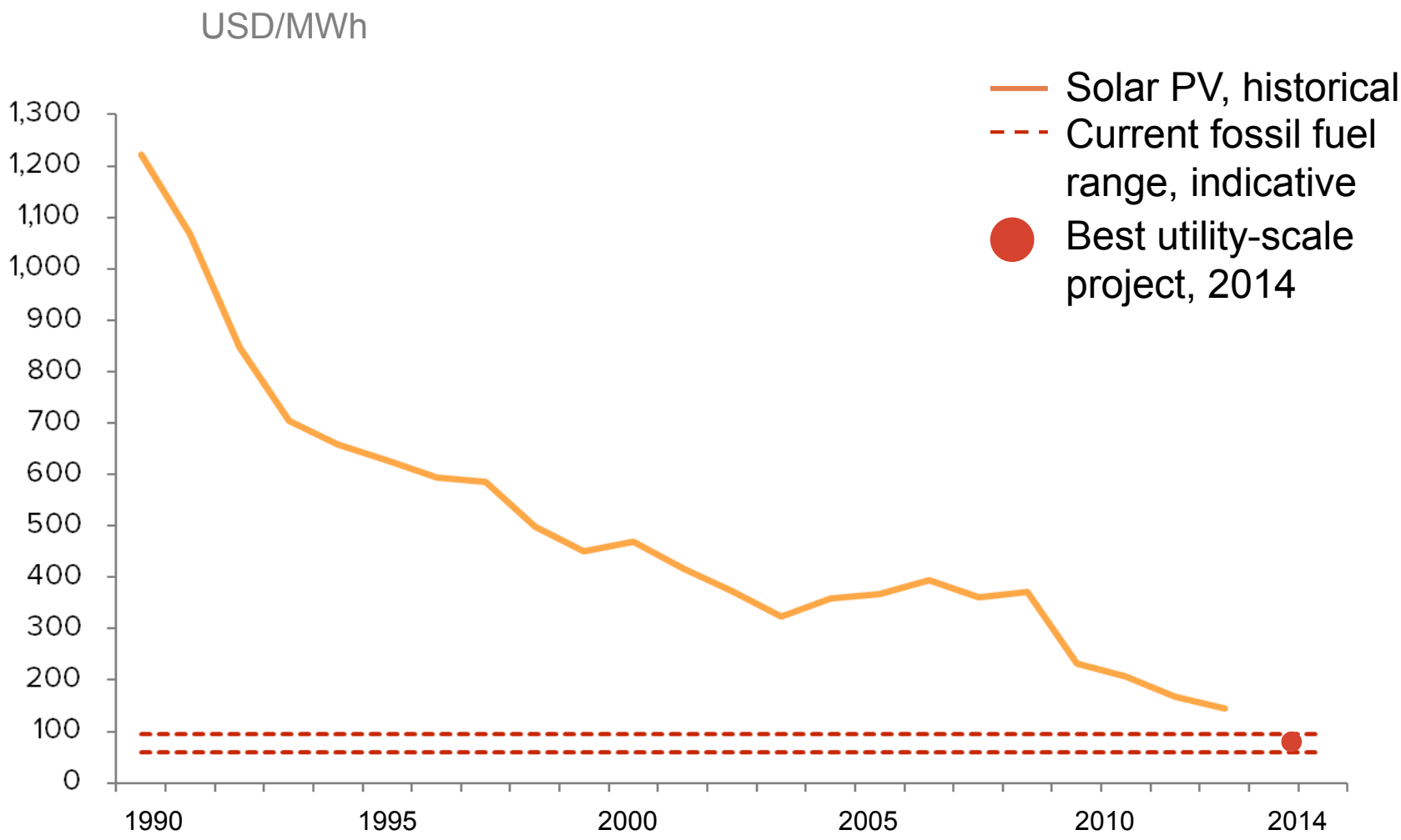
Source: The World Bank, 2015. *Carbon Pricing Watch 2015: An advance brief from the State and Trends of Carbon Pricing 2015 report*

ENERGY: Economic value of premature deaths from PM2.5 air pollution



Source: NCE estimate, based on WHO mortality data

ENERGY: The cost of solar PV is dropping fast

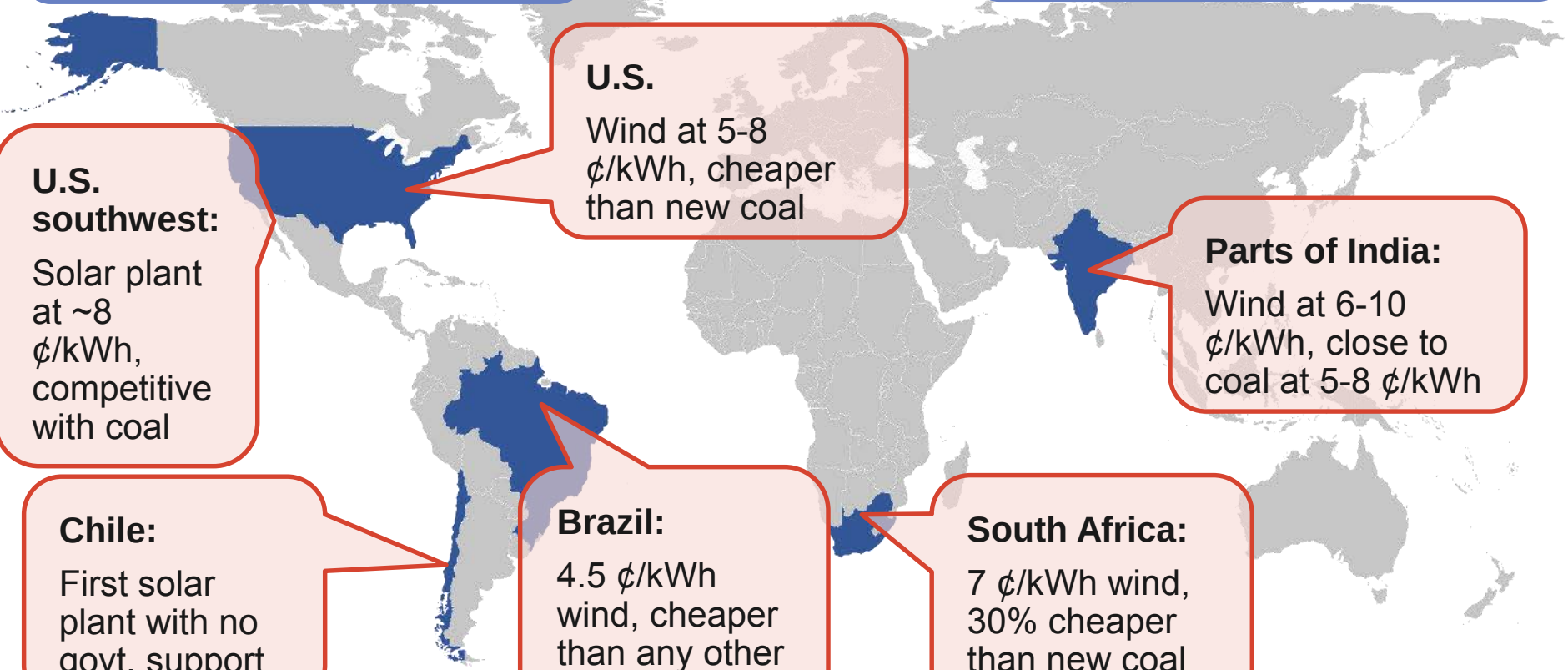


Sources: Citi Research 2012; G. F Nemet, "Beyond the learning curve", Energy Policy 34, 3218-3232 (2006)

ENERGY: Wind and solar power have become cost-competitive in several markets, even without subsidies

Rooftop solar cheaper than electricity retail rates in **at least 11 countries**

Wind also reported competitive with coal in **Australia**, **Chile**, **Mexico**, **New Zealand**, **Turkey**.



U.S.

Wind at 5-8 ¢/kWh, cheaper than new coal

U.S. southwest:

Solar plant at ~8 ¢/kWh, competitive with coal

Parts of India:

Wind at 6-10 ¢/kWh, close to coal at 5-8 ¢/kWh

Chile:

First solar plant with no govt. support

Brazil:

4.5 ¢/kWh wind, cheaper than any other source

South Africa:

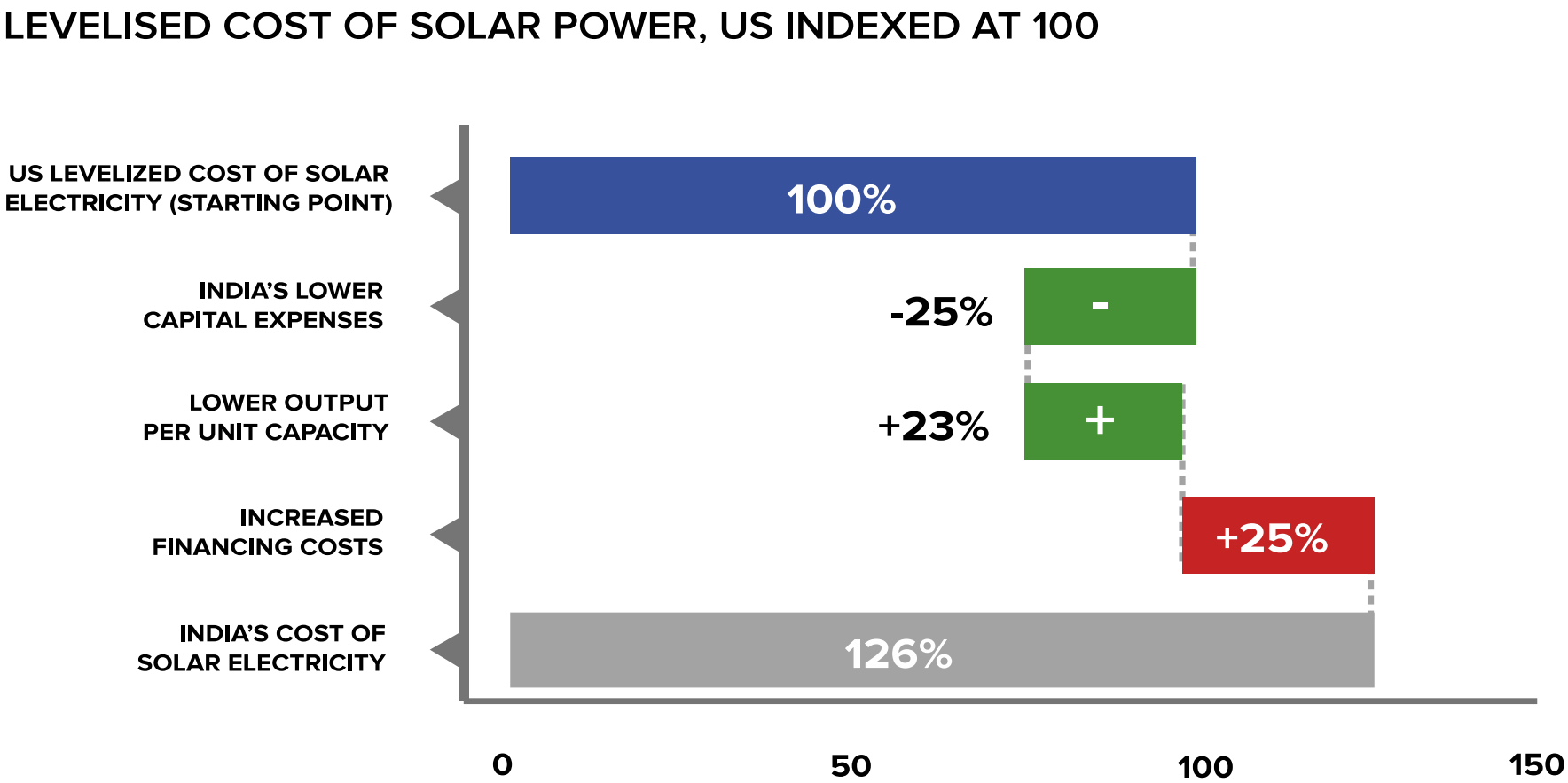
7 ¢/kWh wind, 30% cheaper than new coal

Source: REN21 Renewables 2014 Global Status Report; Deutsche Bank Markets Research; IEA 2013 Wind Roadmap.

CLEAN ENERGY: Invest at least US$1 trillion a year

- Public-private cooperation to finance clean energy could make renewable electricity 20% cheaper in developed economies and 30% cheaper in emerging economies
- $270B invested in renewables in 2014 bought 36% more capacity than $279B in 2011

ENERGY: Financing costs for solar power eliminate natural cost advantages in India

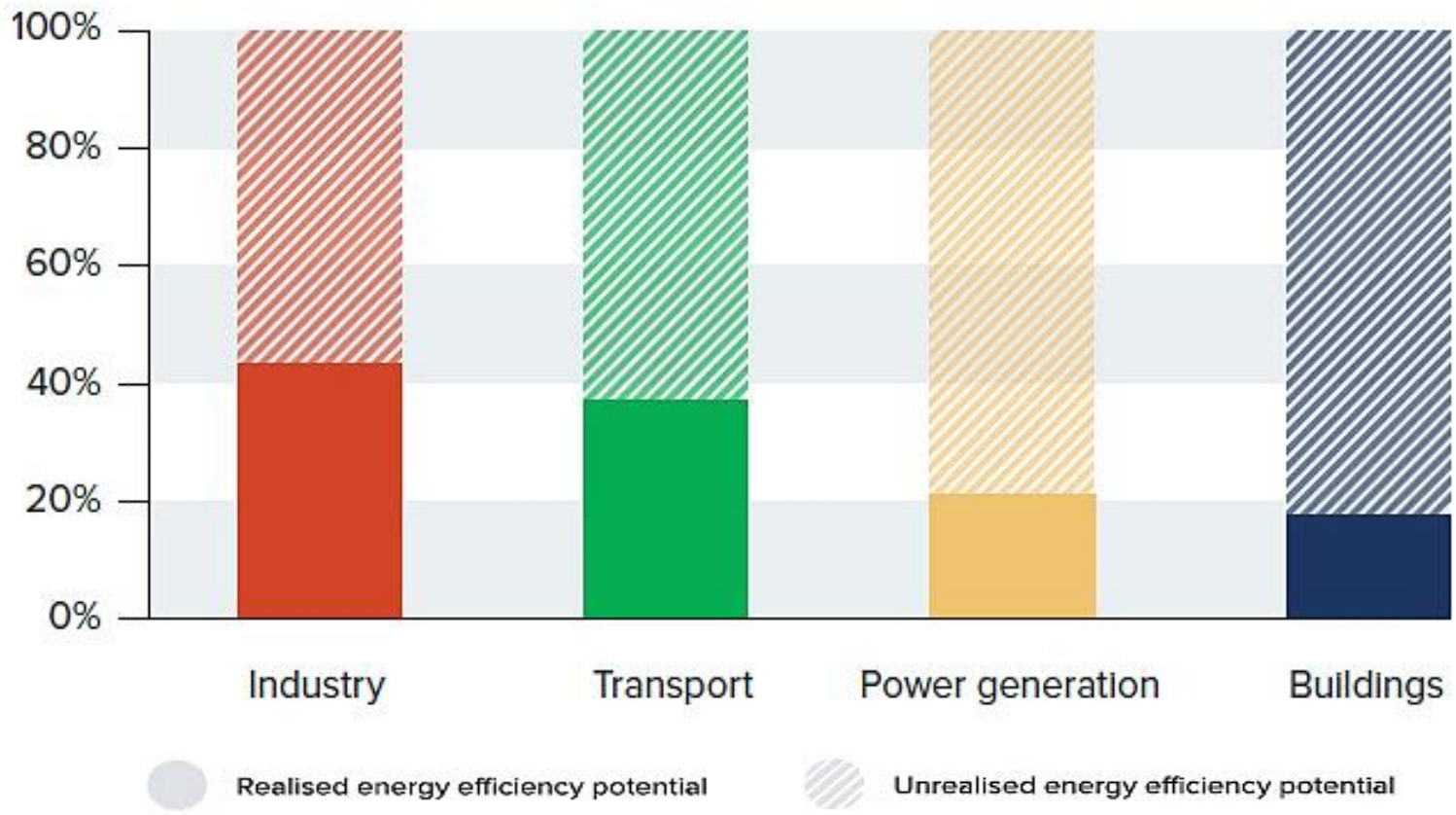


Source: Climate Policy Initiative, 2012. *Meeting India's Renewable Energy Targets: The Financing Challenge*. Available from: http://climatepolicyinitiative.org/publication/meeting-indias-renewable-energy-targets-the-financing-challenge/

ENERGY EFFICIENCY: Raise standards to global best

- *It could boost economic output by US$ 18 trillion by 2035*
- *Over 168 institutions and 145 initiatives around the world are focused on energy efficiency*
- *G20 countries produce 94% of vehicles – potential market shift with higher fuel efficiency standards*

EFFICIENCY: Up to 2/3rds of energy efficiency potential will remain untapped without action

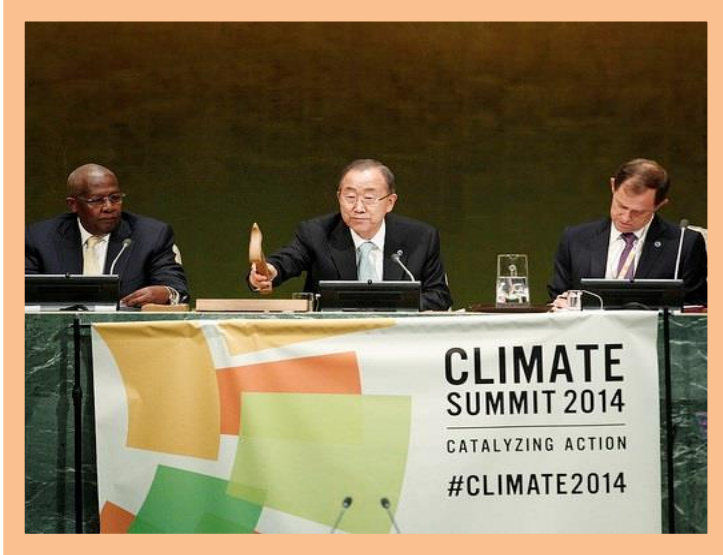


IEA, 2014. *Capturing the Multiple Benefits of Energy Efficiency*. International Energy Agency, Paris. Available at: http://www.iea.org/bookshop/475-Capturing_the_Multiple_Benefits_of_Energy_Efficiency.

UN Sustainable Energy for All

One Goal:

Achieving Sustainable Energy for All by 2030



Three Objectives:

- ENSURING *universal access* TO MODERN ENERGY SERVICES.
- DOUBLING THE GLOBAL RATE OF IMPROVEMENT IN *energy efficiency.*
- DOUBLING THE SHARE OF *renewable energy* IN THE GLOBAL ENERGY MIX.

SUSTAINABLE ENERGY FOR ALL

Energy Efficiency Accelerators

The Global Energy Efficiency Accelerator Platform was established to support specific sector-based energy efficiency accelerators

Lighting

Global market transformation to efficient lighting

en.lighten

Appliances & Equipment

Global market transformation to efficient appliances & equipment

efficient appliances & equipment

Vehicle Fuel Efficiency

Improve the fuel economy capacity of the global car fleet

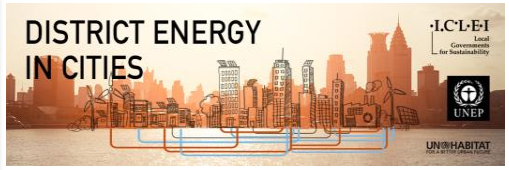
GFEI
GLOBAL FUEL ECONOMY INITIATIVE

Buildings

Promote sustainable building policies & practices worldwide

District Energy

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



Industry

Implementing Energy Management Systems, technologies & practices

Power and Finance Sector Accelerators under development

SUSTAINABLE ENERGY FOR ALL

Global Building Efficiency Accelerator

Coordinating partner:

WORLD RESOURCES INSTITUTE | WRI ROSS CENTER FOR SUSTAINABLE CITIES

Subnational Jurisdictions:

NGOs/Associations/Multilaterals:

Service Providers/Companies:

SUSTAINABLE ENERGY FOR ALL

New Climate Economy

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