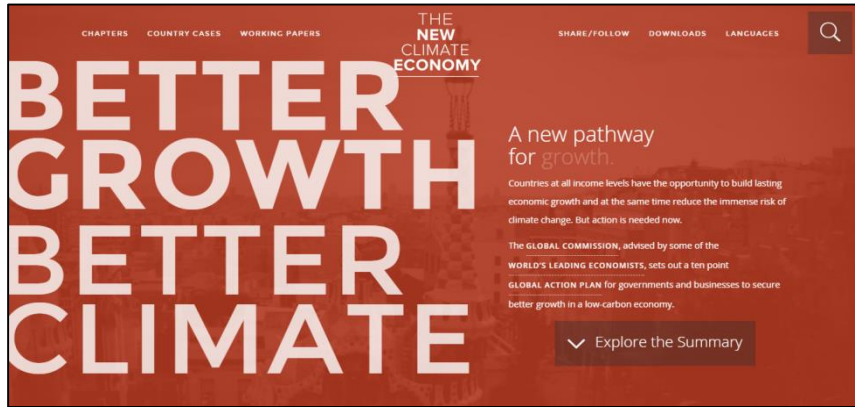




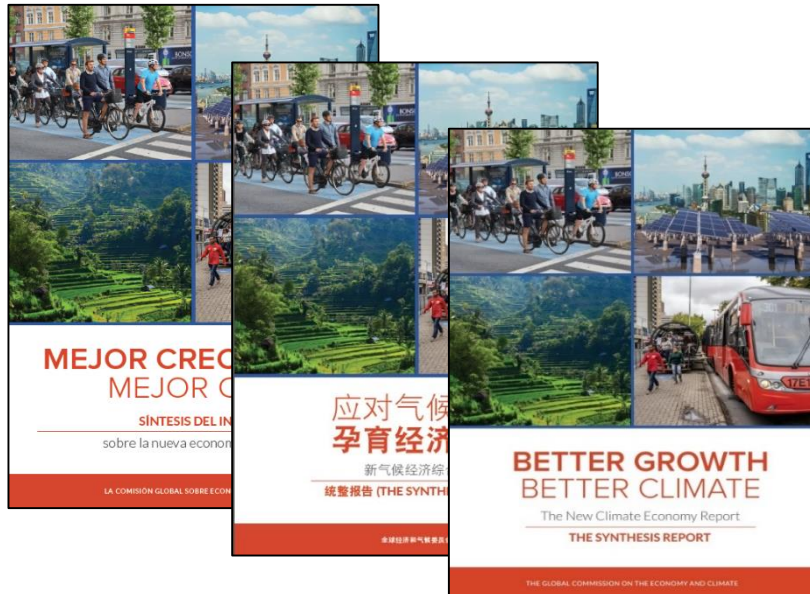
THE GLOBAL COMMISSION ON THE ECONOMY AND CLIMATE

Better Growth, Better Climate: The New Climate Economy Report

Online interactive report



Synthesis report in multiple languages



Commissioned by 7 countries:

Colombia, Ethiopia, Indonesia, Norway, Sweden, South Korea, United Kingdom

Led by a Global Commission: 23 former heads of state, CEOs and heads of international institutions. Chaired by Felipe Calderon, former President of Mexico

Overseen by an **Economic Advisory Panel** of 14 world leading economists, chaired by **Professor Lord Nicholas Stern**

Delivered by 8 research institutes:



Included contributions from **120+ organisations**

Members of the Global Commission



Felipe Calderón (Chair)
Former President of Mexico



Ingrid Bonde
CFO and Deputy
CEO of Vattenfall



Sharan Burrow
General Secretary of the
International Trade Union
Confederation



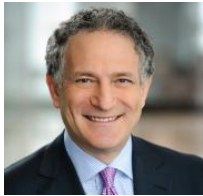
Chen Yuan
Governor of the China
Development Bank



Helen Clark
Administrator of the UNDP



Luísa Diogo
Former Prime Minister of
Mozambique



Dan Doctoroff
Former CEO of Bloomberg



S. (Kris) Gopalakrishnan
Co-founder of Infosys



Angel Gurría
Secretary General of the OECD



Chad Holliday
Chairman of Shell



Sri Mulyani Indrawati
Managing Director and COO
of the World Bank



Caio Koch Weser
Vice Chairman of
Deutsche Bank



Ricardo Lagos
Former President of Chile



Michel Liès
CEO of Swiss Re



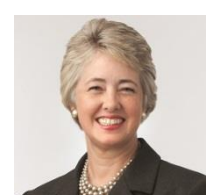
Trevor Manuel
Former Planning Minister
of South Africa



Takehiko Nakao
President of the Asian
Development Bank



Eduardo Paes
Mayor of Rio de Janeiro



Annise Parker
Mayor of Houston



Paul Polman
CEO of Unilever
The Global Commission on the



Nicholas Stern (Vice-Chair)
Professor at the London School of
Economics and Political Science



Jens Stoltenberg
Former Prime Minister
of Norway



Jean Pascal Tricoire
CEO of Schneider
Electric



Maria van der Hoeven
Executive Director,
International Energy Agency



Zhu Levin
Former CEO -China
International Capital Corporation

Main findings of the Commission:

- Economic growth and climate mitigation can be achieved together. We do not need to choose.
- A growing number of businesses, cities and countries are demonstrating this. Recent technological and policy developments mean that even more opportunities are available today.
- About US\$ 90 trillion will be invested in infrastructure to 2030 – need to choose if it is low-carbon and climate resilient. Low-carbon would not cost much more, and fuel savings could fully offset additional investment costs.
- But if we lock-in the wrong path, we risk significant economic and social impacts of climate change. Need to act urgently.
- There are multiple economic benefits of action, e.g. reduced health costs from air pollution, less congestion & road deaths, enhanced energy, water and food security. In many cases these will outweigh the costs of action.

The Global Commission recommends 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 Action Plan (2014)

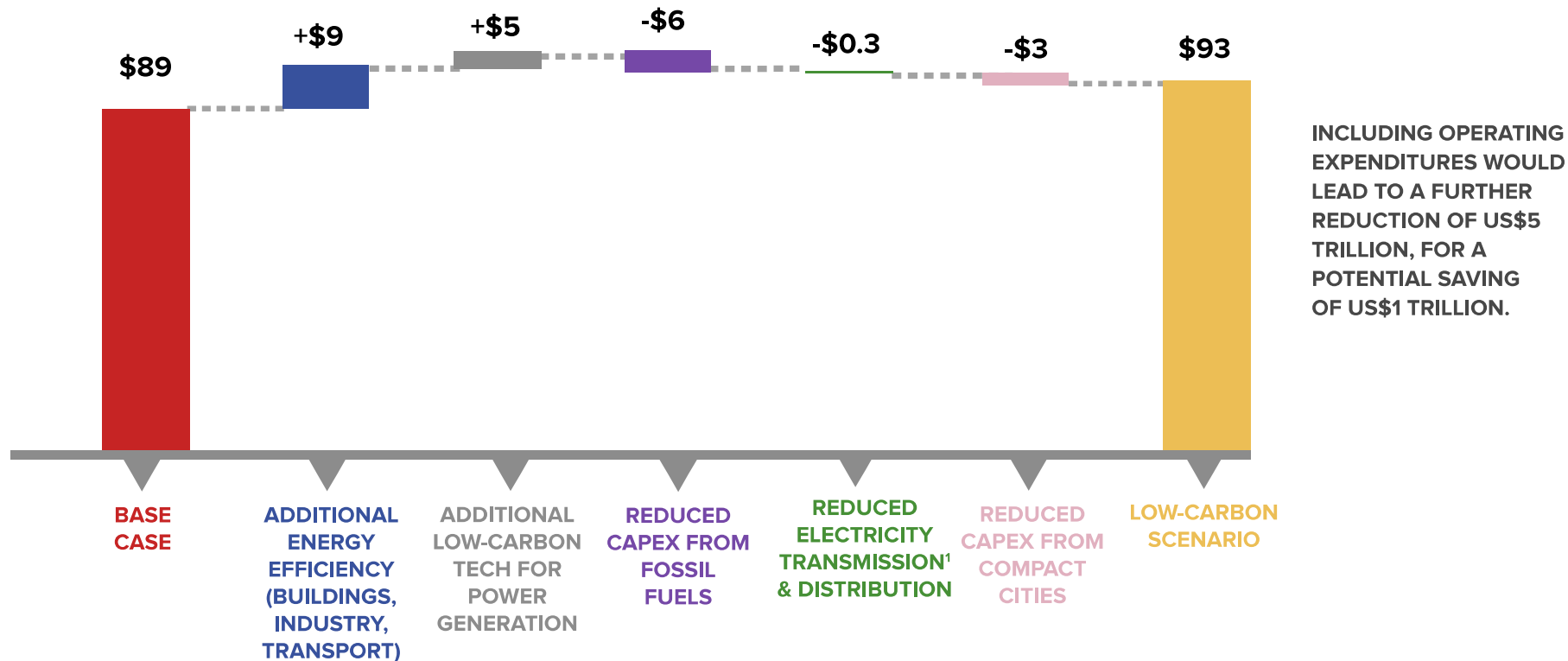
1. Integrate climate risk into strategic decisions



INVESTMENT: Infrastructure capital spend is estimated to be marginally higher in a low-carbon scenario

**GLOBAL INVESTMENT REQUIREMENTS; 2015 TO 2030,
US\$ TRILLION, CONSTANT 2010 DOLLARS**

Indicative figures only
High rates of uncertainty

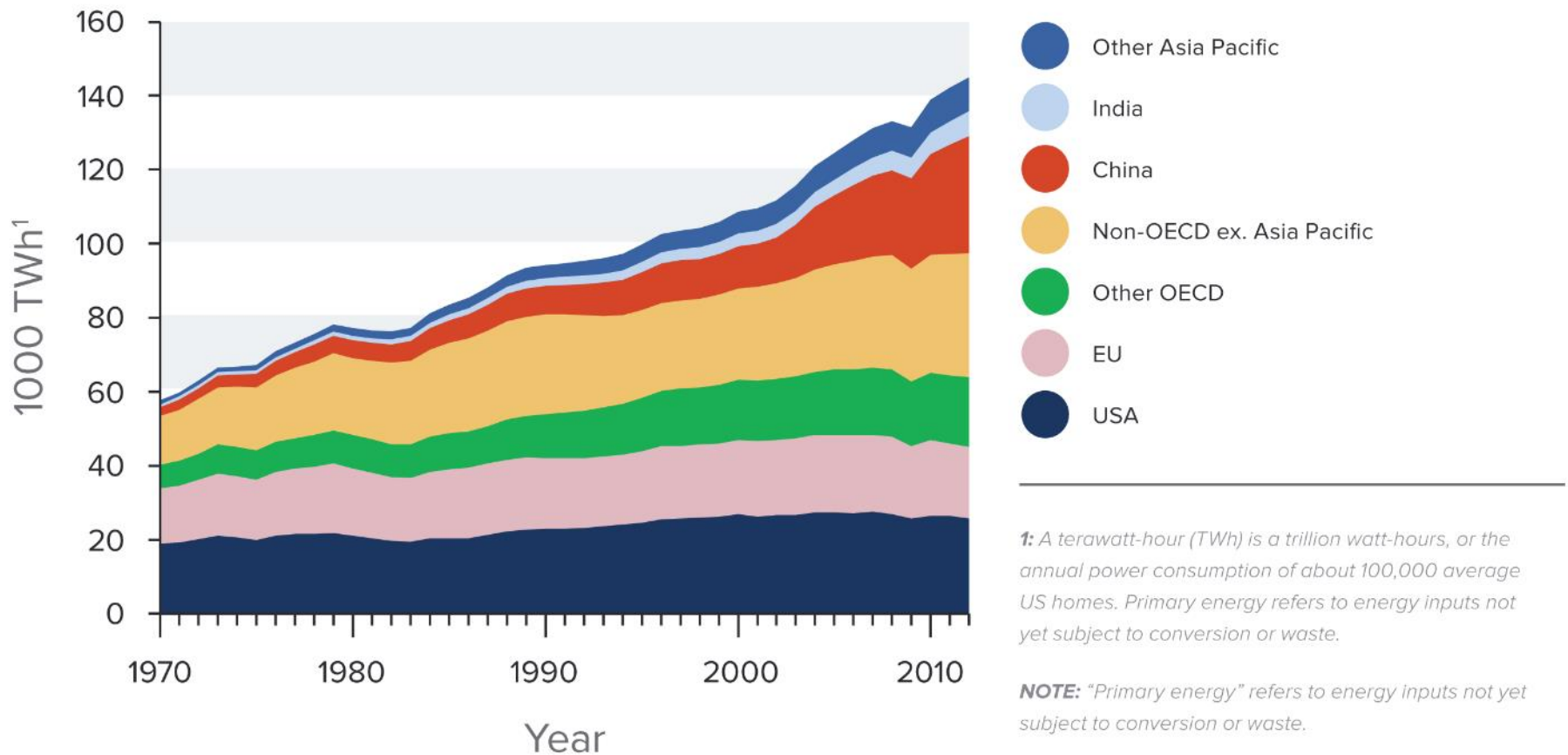


Source: OECD (2006, 2012), IEA ETP (2012), modelling by Climate Policy Initiative (CPI) for New Climate Economy, and New Climate Economy analysis.

2. Secure a strong international agreement



ENERGY: Growth in energy use has shifted to fast-growing Asian countries

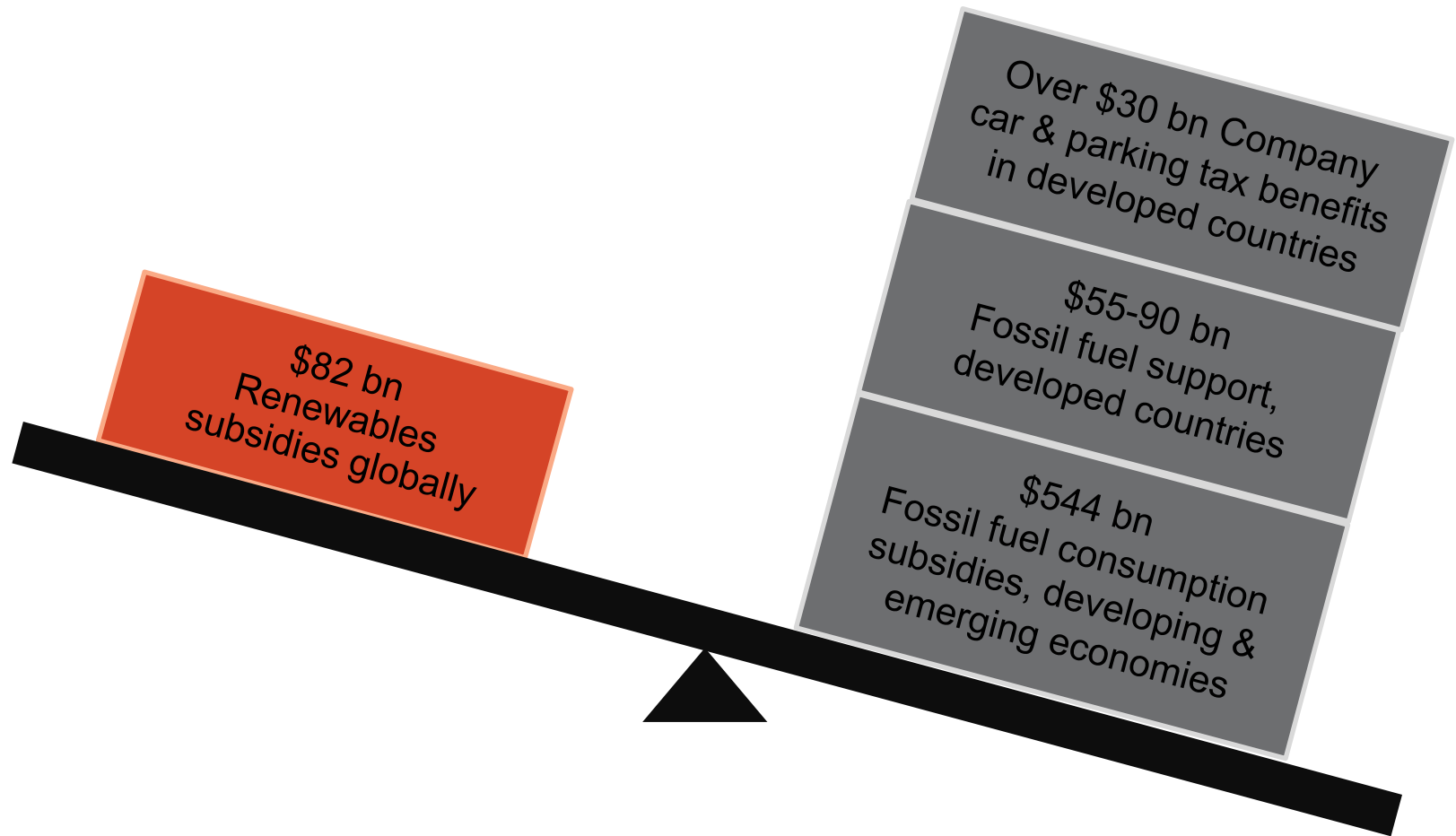


Source: BP Statistical Review of World Energy 2013

3. End perverse subsidies



POLICIES: There are significant subsidies to the high-carbon economy



Sources: OECD (2013), Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels; IEA (2013), World Energy Outlook; IEA (2013), OECD (2014, forthcoming)

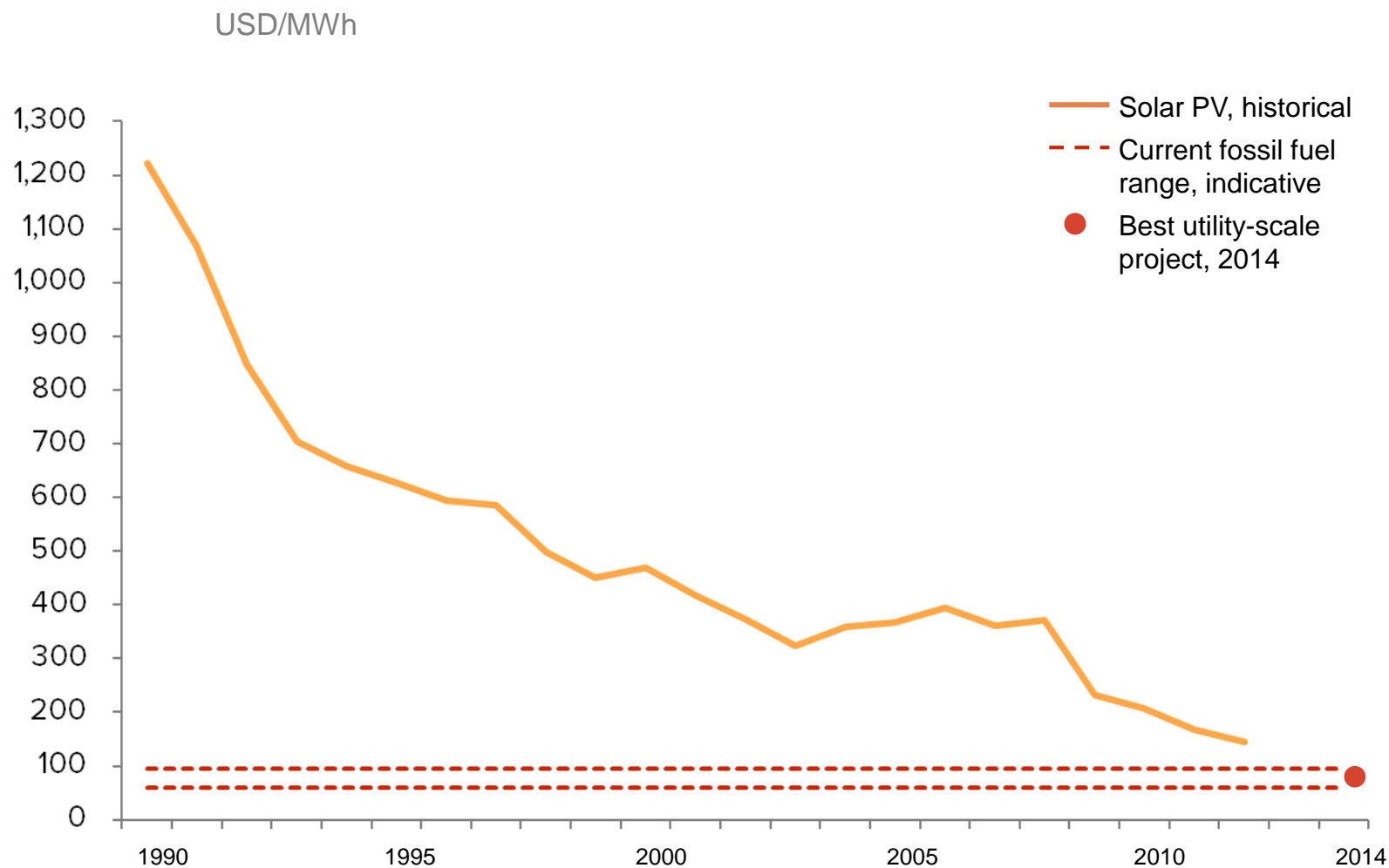
4. Price carbon to send a clear market signal



5. Scale-up low carbon innovation



ENERGY: The cost of solar PV is dropping fast



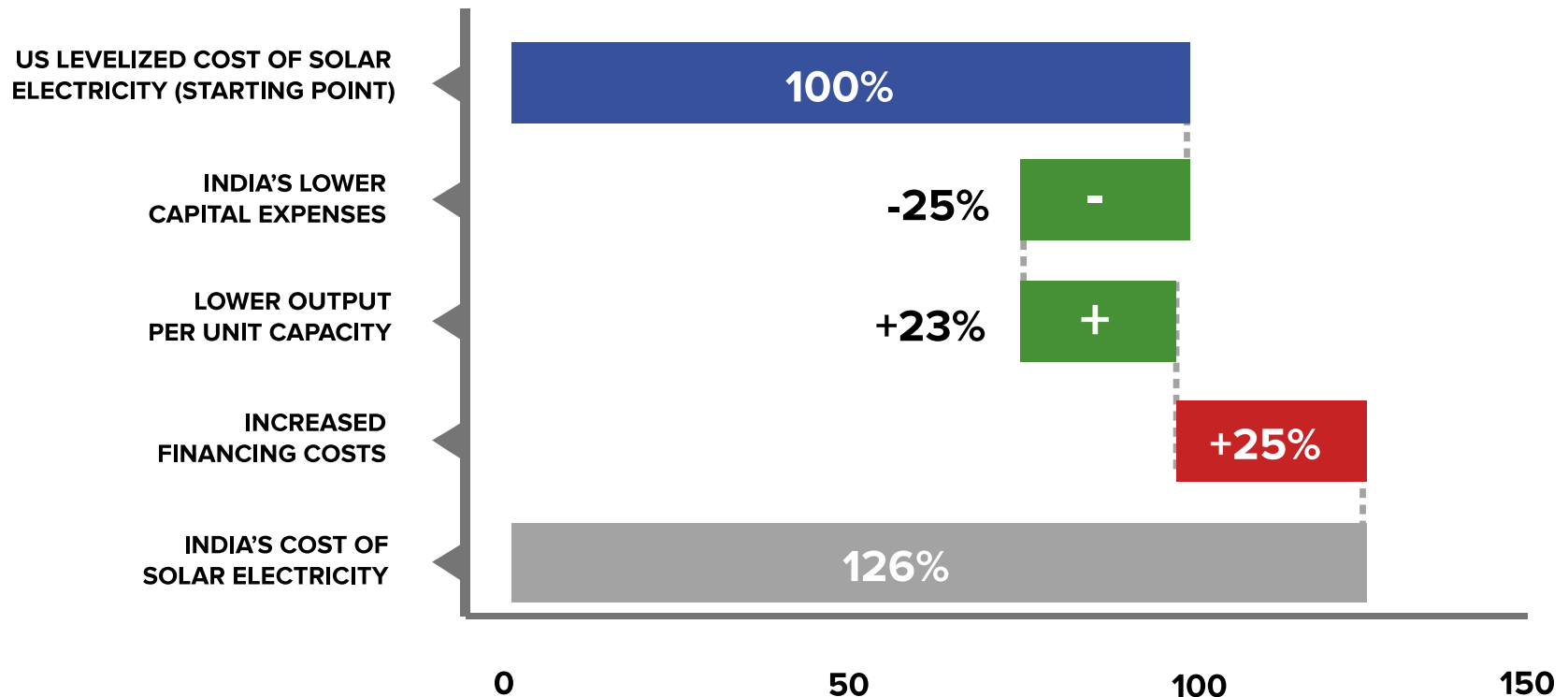
Sources: Citi Research 2012; G. F Nemet, "Beyond the learning curve", Energy Policy 34, 3218-3232 (2006)

6. Reduce the cost of capital for low-carbon investment



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

LEVELISED COST OF SOLAR POWER, US INDEXED AT 100



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/>

7. Move toward connected and compact cities



CITIES: Rapidly growing urban areas are key drivers of economic growth and emissions



**52% of
population**



80% of GDP



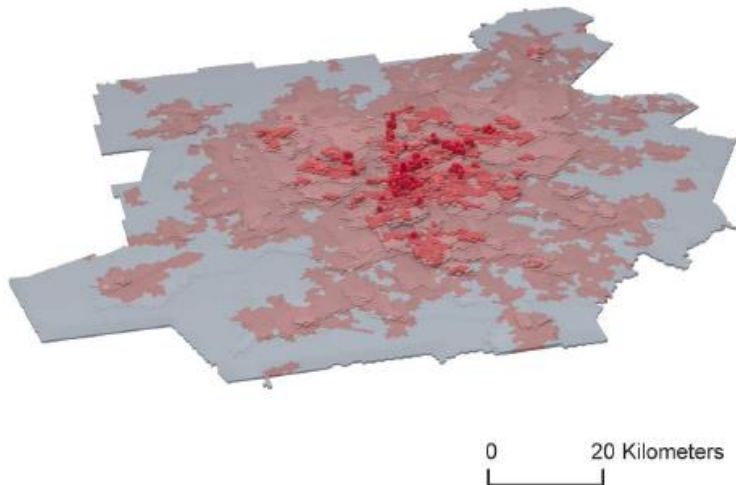
**70% of energy
consumption**

Sources: Population split from 2011, GDP split estimate from Grubler et al 2007 cited in GEA 2012, Energy use split from GEA 2005, Emissions from World Energy Outlook 2006

CITIES: A different model of urban development is possible: Atlanta and Barcelona have similar populations and wealth levels but very different carbon productivities

ATLANTA

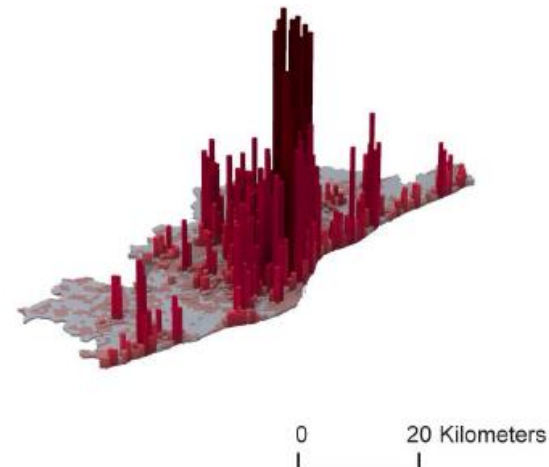
Atlanta's built-up area



Population: 5.26 million
Total area: 16,605 km²
Urban area: 7692 km²
Transport carbon emissions: 6.9 tonnes CO₂ p.c.

BARCELONA

Barcelona's built-up area



Population: 5 million
Total area: 3263 km²
Urban area: 648 km²
Transport carbon emissions: 1.2 tonnes CO₂ p.c.

Source: LSE research, drawing on data from Atlanta Regional Commission (2014), Autoritat del Transport Metropolita (Area de Barcelona) (2013), GenCat (2013), UCSB (2014), D'Onofrio (2014), based on latest data.

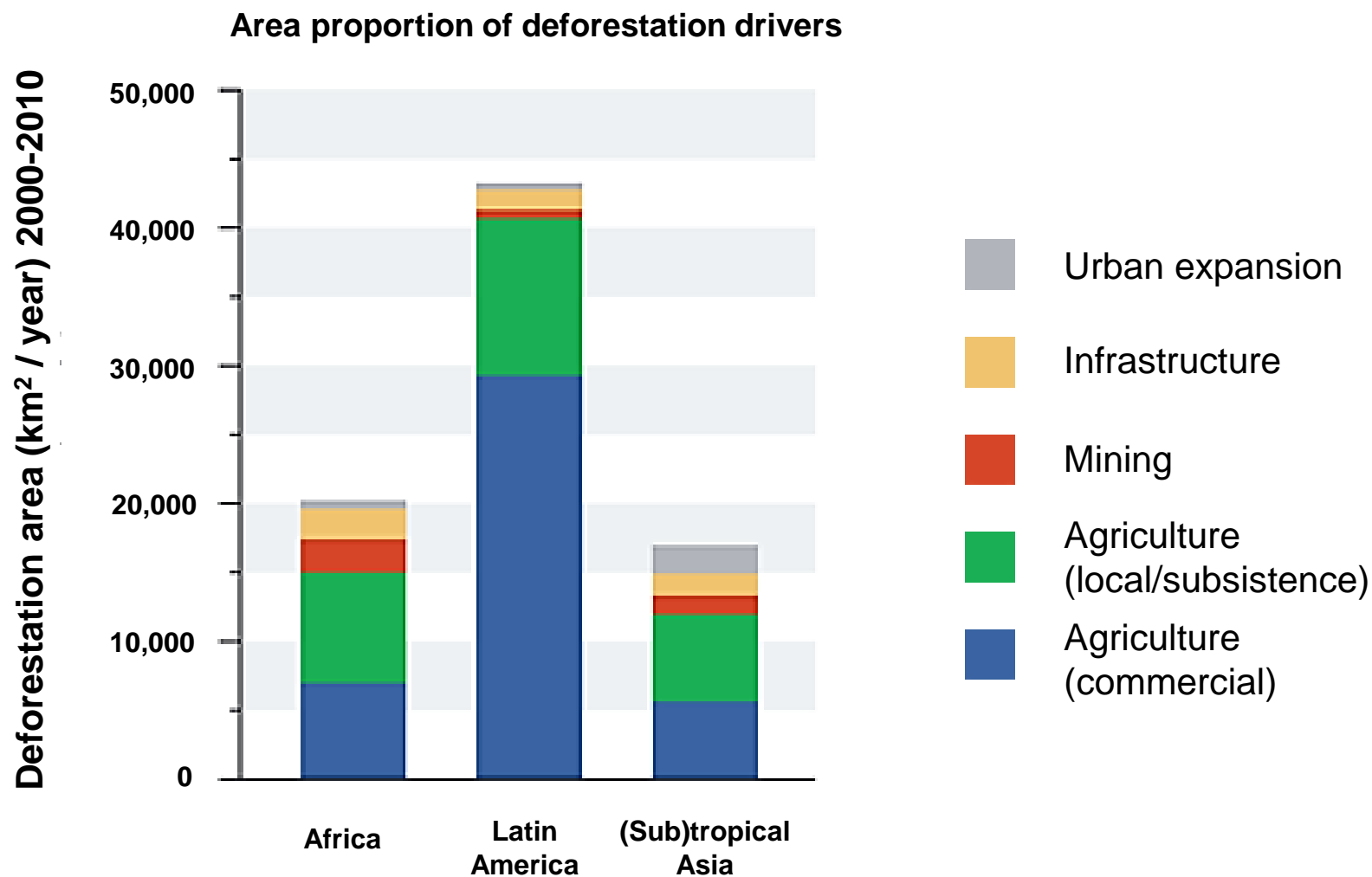
THE NEW CLIMATE ECONOMY

The Global Commission on the Economy and Climate

8. End deforestation



LAND USE: 5.2 Mha of forest is lost each year



Source: Kissinger, G., M. Herold, and V. de Sy. 2012. Drivers of deforestation and forest degradation: A synthesis report for REDD+ policymakers.

9. Restore degraded lands



LAND USE: China's Loess Plateau shows how an agricultural landscape approach can deliver economic and climate benefits



1990



2012

- Lifted more than 2.5 million people out of poverty, boosting farm incomes from \$70 to \$200 pp pa
- Average grain yields increased by 60% over 10 years
- Stopped Yellow River silting, reduced air borne dust to Beijing, and increased soil carbon storage

Source: World Bank project completion evaluations of the Loess Plateau Watershed Habilitation Projects I and II, 1999 and 2005.

THE NEW CLIMATE ECONOMY

The Global Commission on the Economy and Climate

LAND USE: Over 300 million ha of degraded land could be restored in Sub-Saharan Africa; the Niger case highlights the possibility



1980s

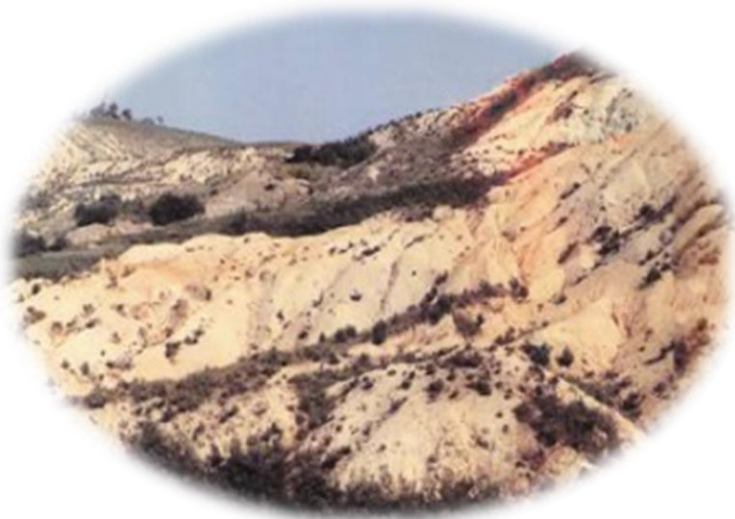


Present Day

- Significantly improved agricultural productivity on 5 Mha and could be scaled further
- Farmers produce at least 100 kg/ha more now than before; more than doubled farm income for over one million households
- Agroforestry technique sequesters 1.6-10 tCO₂e/ha

Source: WRI analysis using the following datasets: Protected areas: IUCN and UNEP. 2013. The World Database on Protected Areas (WDPA). Cambridge, UK: UNEP-WCMC. Croplands: Fritz, S. and L. See. 2013. Global Hybrid Cropland. Laxenburg, Austria: IIASA and IFPRI. Precipitation isohyets: FAO/UNEP Desertification and Mapping Project. 1986. Africa Mean Annual Rainfall. Geneva, Switzerland: UNEP/GRID. Impact for Niger Zinder case from worldagroforestry.org.

LAND USE: South Korea expanded full forest cover from 35% to 64% of total land area between 1953 and 2007



1953



2007

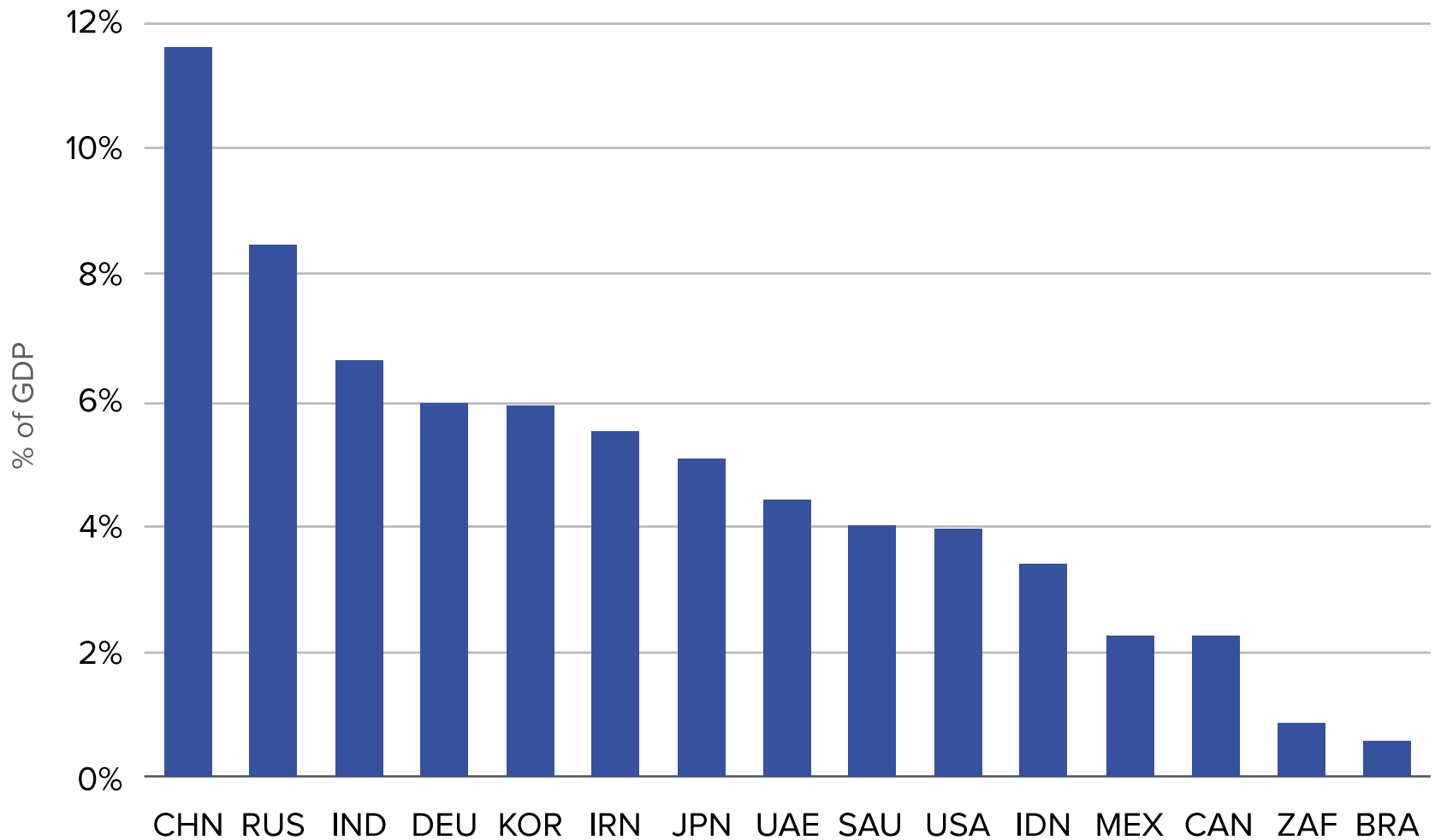
South Korea's forests yield \$94 billion annually in public benefits through air and water quality improvements, recreation, flood prevention, and others

Source: Government of South Korea

10. Phase out unabated coal fast



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



Source: NCE estimate, based on WHO mortality data

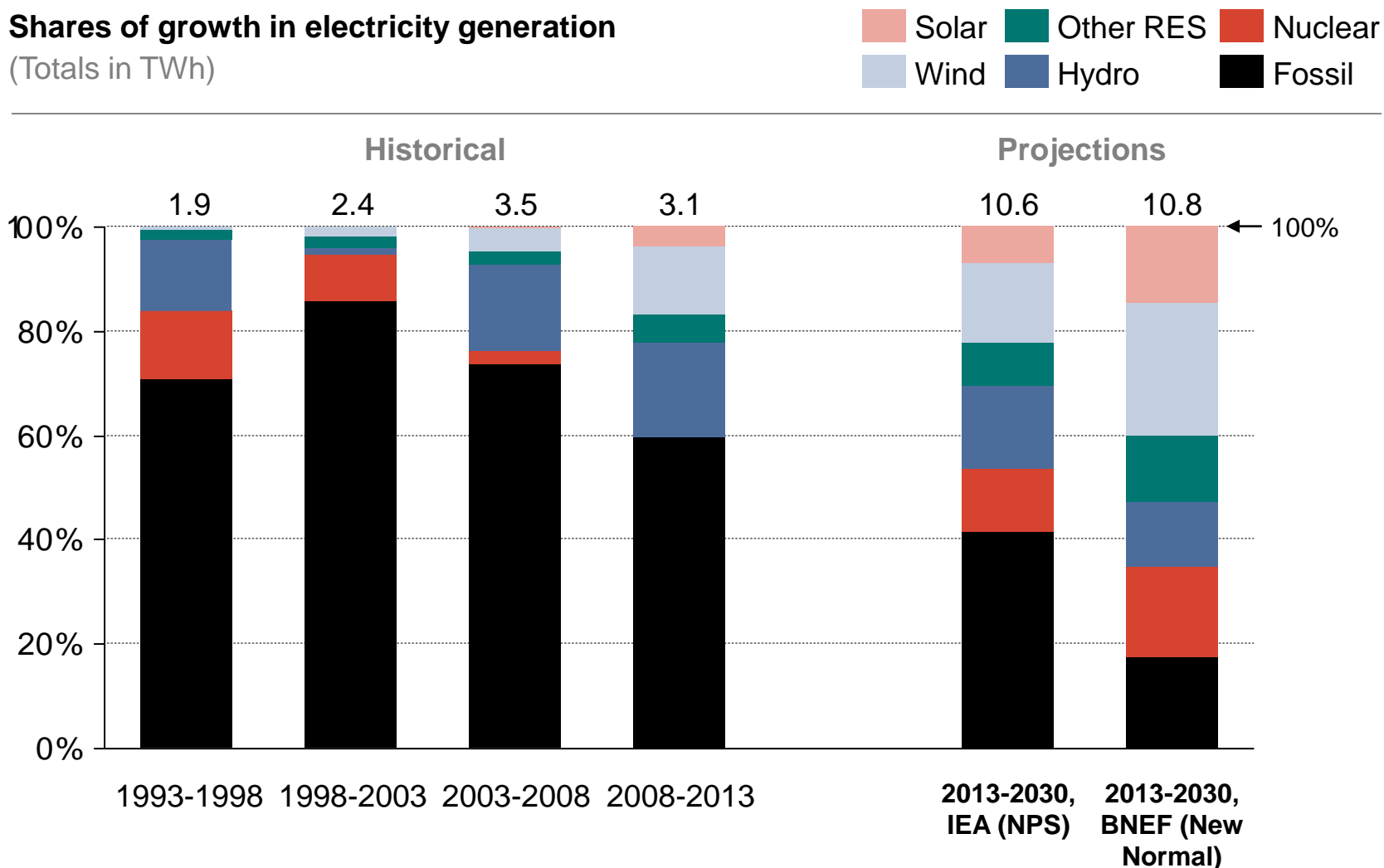


THE GLOBAL COMMISSION ON THE ECONOMY AND CLIMATE

ENERGY: Renewables' accelerating share of growth in electricity production has shifted expectations

Shares of growth in electricity generation

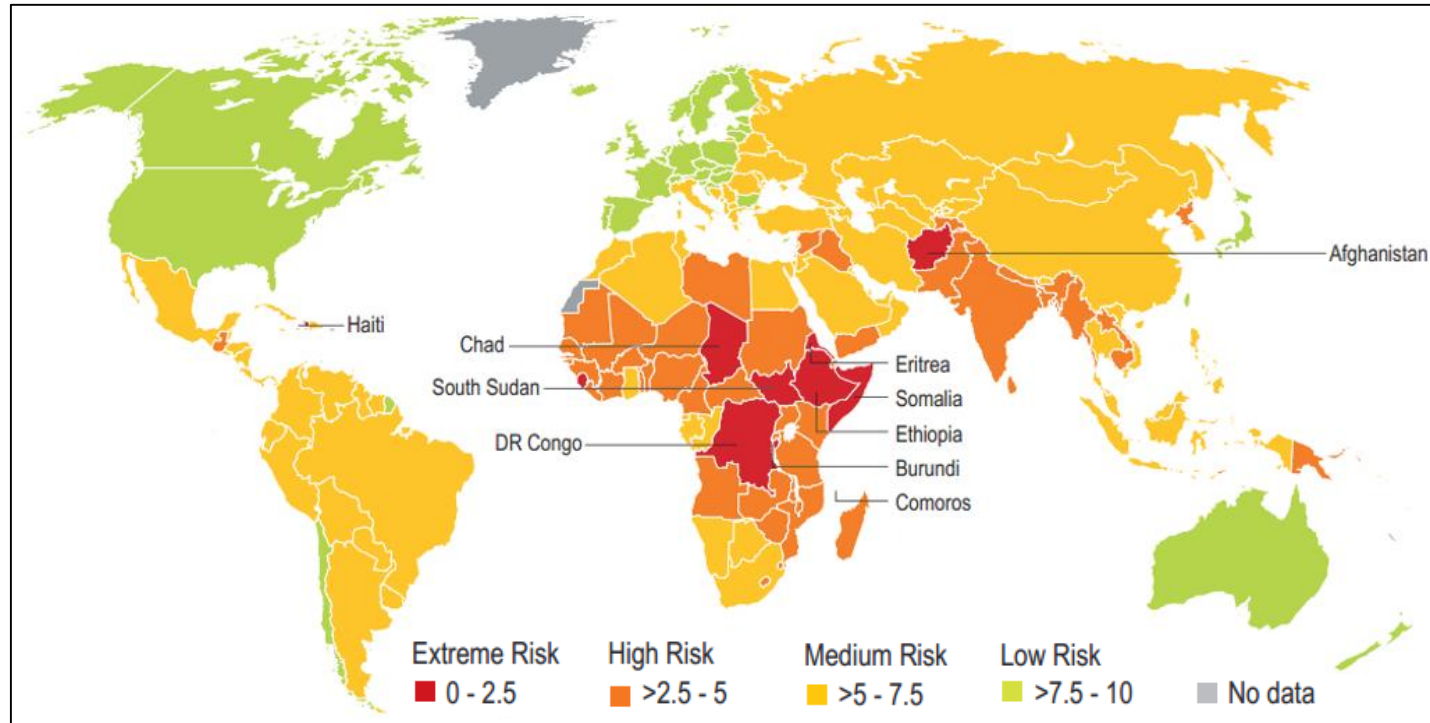
(Totals in TWh)



Source: Historical: BP Statistical Review of World Energy 2014; Projections: IEA World Energy Outlook 2013; Bloomberg New Energy Finance, Global Renewable Energy Market Outlook 2013 (Fact Pack). Projections were interpolated to start at 2013.

LAND USE: 800 million people were food insecure in 2012

Food Security Risk in 2012



To meet demand in 2050, the world will need **70% more crop calories, 90% more meat, and 80% more dairy**

Sources: Maplecroft's Food Security Risk Index 2013; Searchinger, T., et al., 2013. Creating a Sustainable Food Future: A Menu of Solutions to Sustainably Feed More than 9 Billion People by 2050. World Resources Report 2013-14: Interim Findings. World Resources Institute, the World Bank, United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), Washington, DC.

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. southwest:

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

U.S.

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

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

Parts of India:

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

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