



# *Global Energy Trends*

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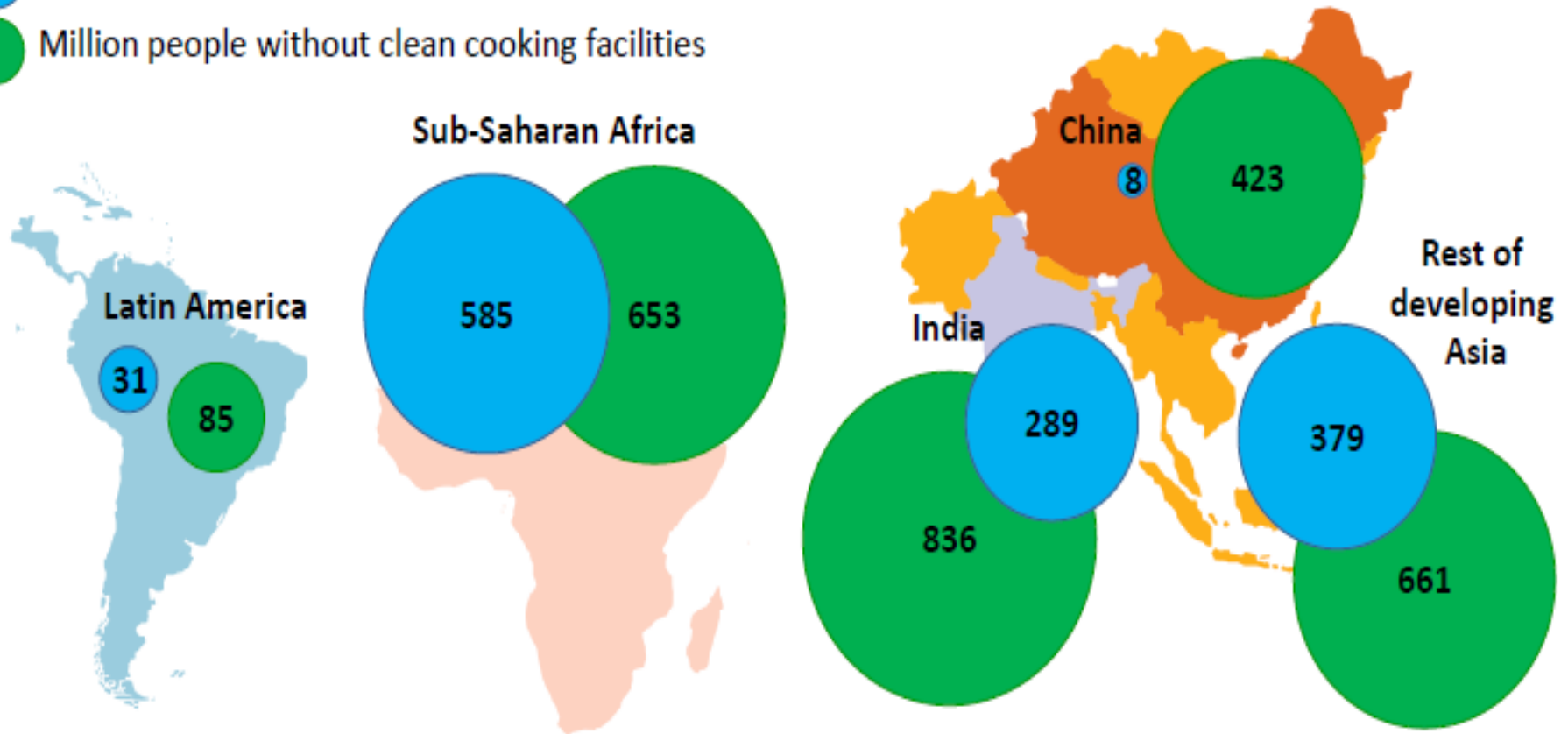
# Energy Access and Energy Poverty

- The world still has 1.4 billion people without access to electricity.
- Nearly 3 billion use traditional solid fuels for cooking and heating, causing four deaths every minute.
- Electricity shortages in many developing countries are growing in frequency and intensity, limiting economic development and poverty reduction efforts.
- Without modern energy, factories and businesses—large and small—cannot function efficiently; hospitals and schools cannot operate fully or safely; basic services that people in rich countries take for granted cannot be offered.



# Energy Poverty by Region

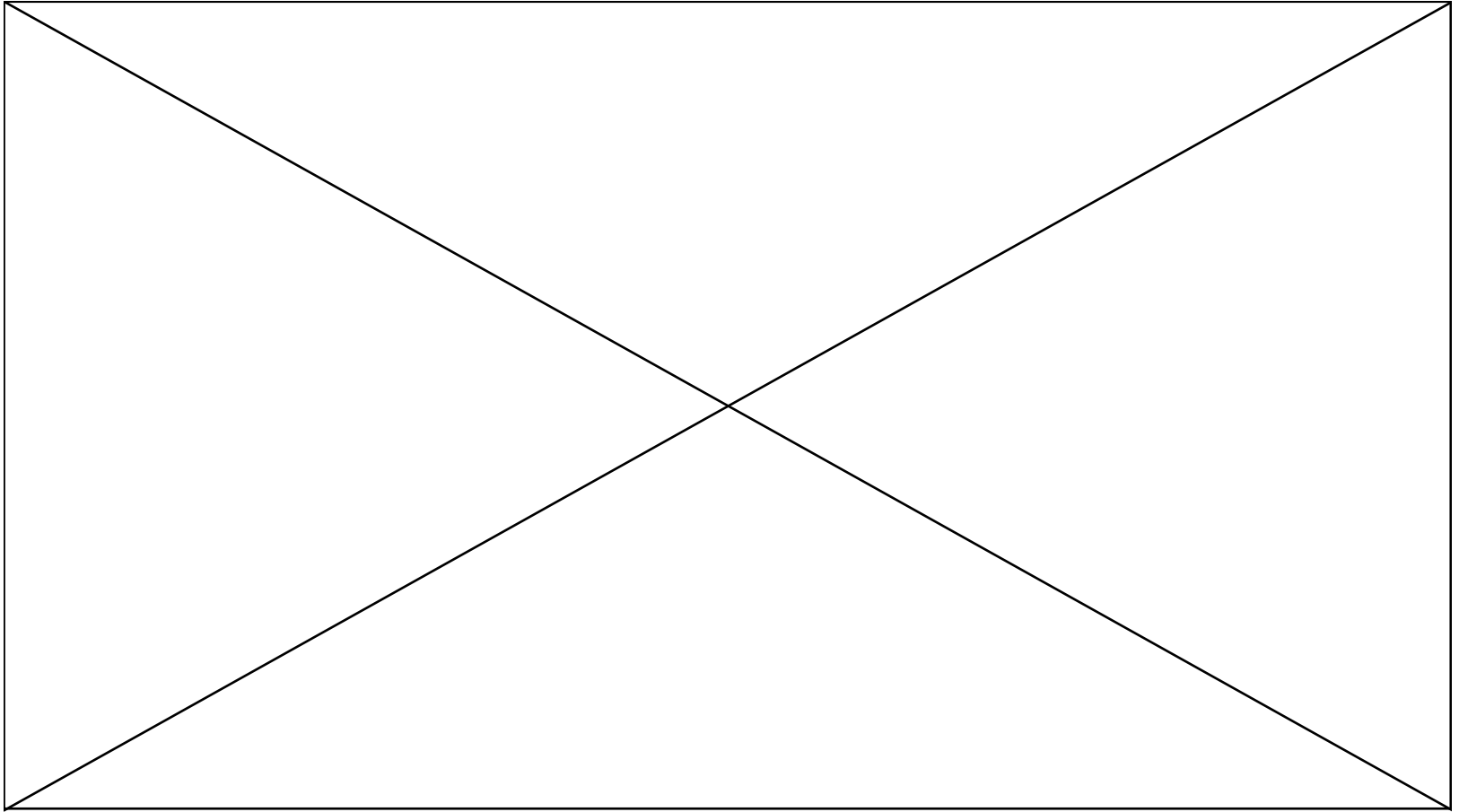
- Million people without electricity
- Million people without clean cooking facilities



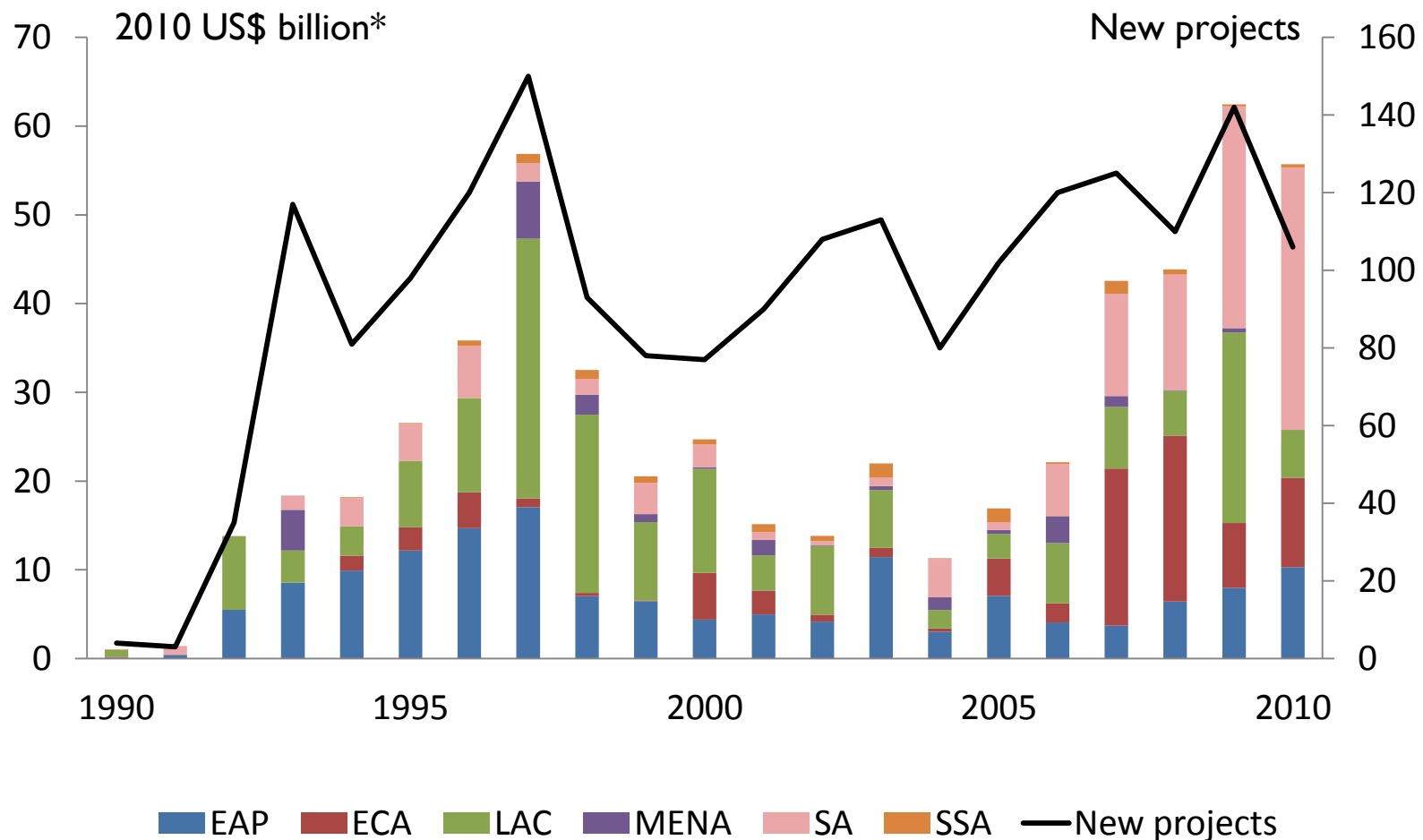
# UN Sustainable Energy for All

- **UN General Assembly in Dec 2010 declared 2012 the “International Year of Sustainable Energy for All.”**
  
- **Secretary-General Ban Ki-Moon on Sep 20 launched a new global initiative to make sustainable energy universally available with three targets for 2030:**
  - **Achieve universal access to modern energy services.**
  - **Double the rate of energy efficiency improvement.**
  - **Double the share of renewable energy.**

# Africa's Energy Future



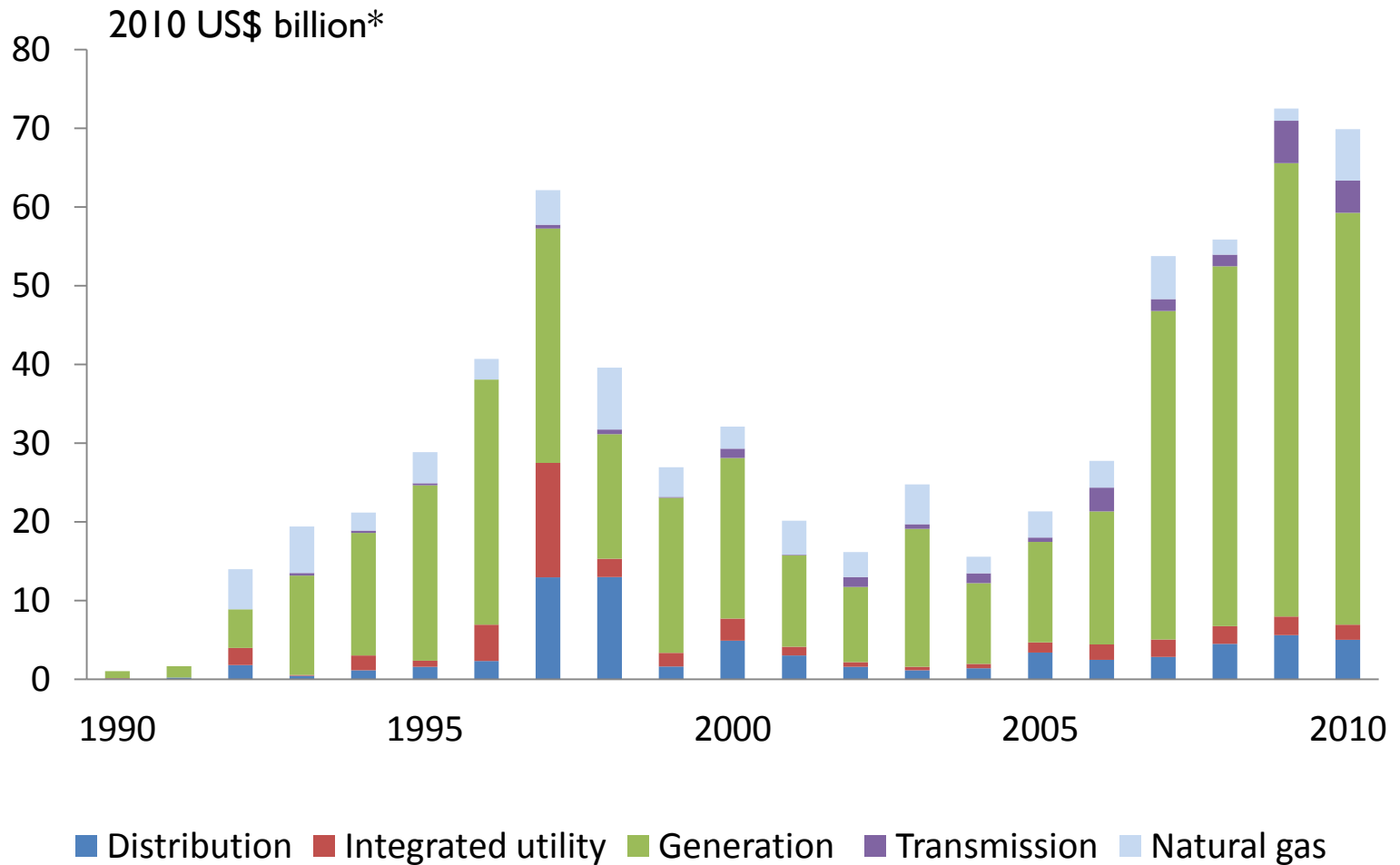
# Investment in energy projects with private participation in developing countries, by region, 1990–2010



Source: World Bank and PPIAF, PPI Project Database.

\* Adjusted by US CPI.

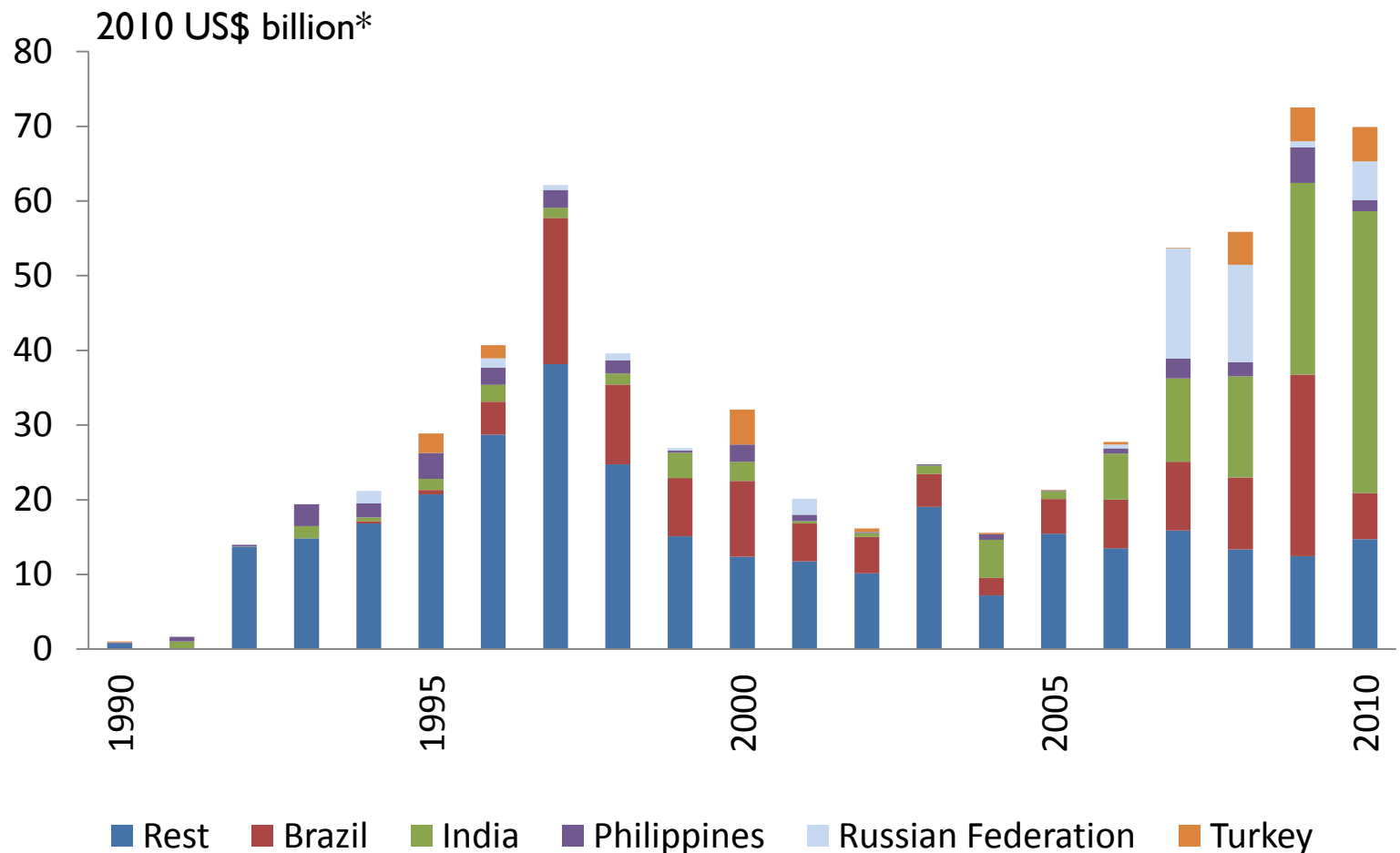
# Investment in energy projects with private participation in developing countries, by type of business, 1990–2010



Source: World Bank and PPIAF, PPI Project Database.

\* Adjusted by US CPI.

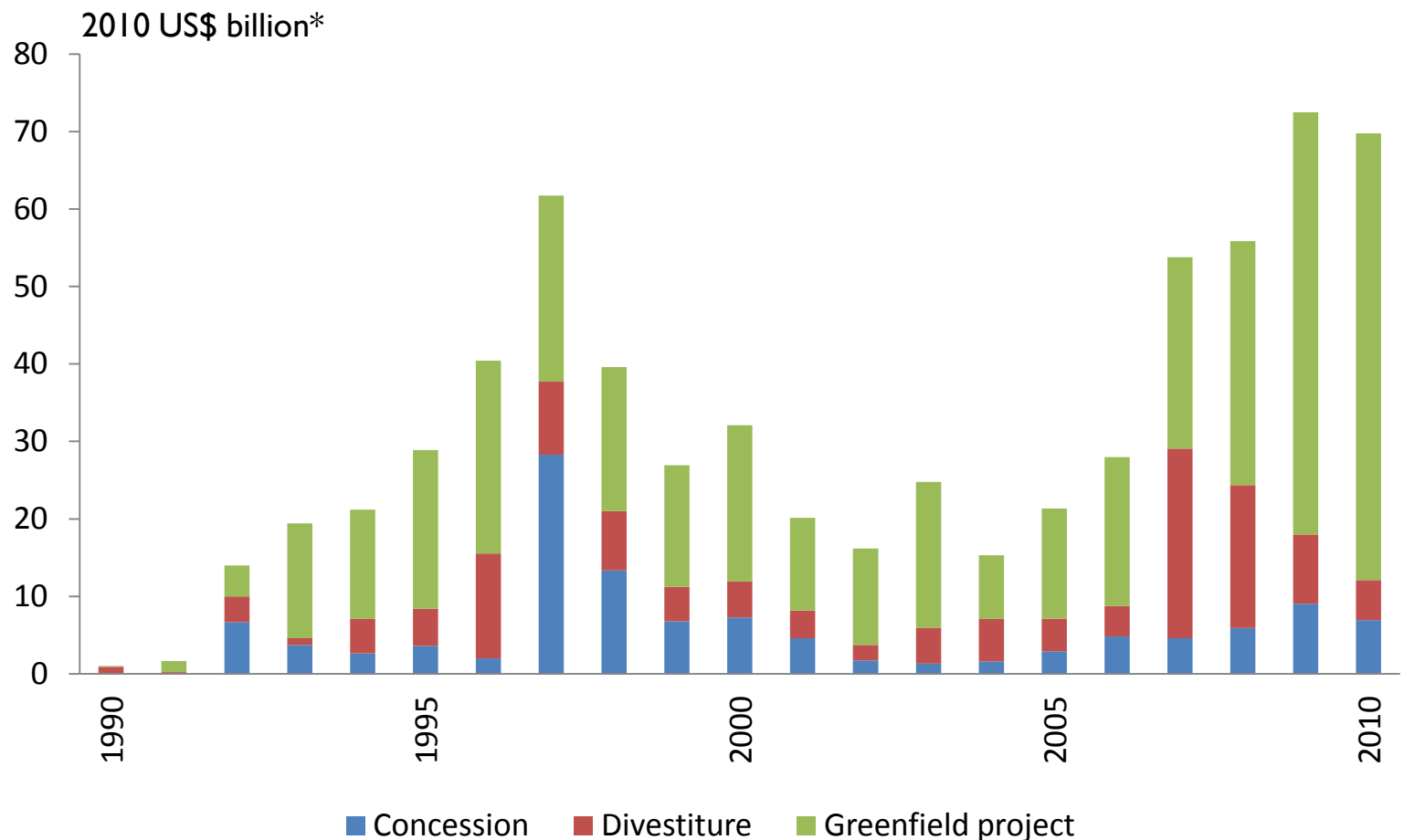
# Investment in energy projects with private participation in developing countries, by main recipients, 1990–2010



Source: World Bank and PPIAF, PPI Project Database.

\* Adjusted by US CPI.

# Investment in energy projects with private participation in developing countries, by type of PPI, 1990–2010



Source: World Bank and PPIAF, PPI Project Database.

\* Adjusted by US CPI.

## Top sponsors in PPI developing country energy projects 2005-10

Sponsor	Total Investment Commitments *	Projects	Region
E.ON	11,847	5	ECA
SUEZ	10,171	13	EAP, ECA, and LAC
Reliance ADA Group	10,006	8	India
Jaiprakash Associates Ltd	8,995	7	India
Lanco Group	6,924	12	India
Odebrecht SA	6,815	3	LAC
Construcoes e Comercio Camargo Correa	5,610	2	LAC
Adani Group	6,539	4	India
B C Jindal Group	6,039	2	India
Tata Enterprises	5,691	4	India
AES Corporation	5,402	15	Global

Source: World Bank and PPIAF, PPI Project Database.

\* Nominal million of US\$.

## What to expect?

- Re-evaluation of climate impacts on energy strategy and policy underway in many countries
- Climate risks magnify existing energy constraints, and intensify nexus with food and water
- Expect significant transformation of global energy markets in next ten years
- Matched by structural shifts in financing to drive green growth



# Main Challenges to Realizing Scale-up

- **For countries and project developers/sponsors**
  - Geo-political challenges require multi-country cooperation
  - Upfront developmental costs high, as are creditworthiness and long-term payment risks
  - Lack of capacity to develop, prepare, finance and execute
  - Policy and regulatory clarity and certainty
- **For commercial banks/MDBs/IFIs**
  - Weak sectors and non-creditworthy public utilities make public-private partnerships (PPP) and commercial financing difficult
  - Asymmetric standards for environmental and social safeguards raise transaction costs

# WBG knowledge, financing, convening to.....

- Facilitate regional energy opportunities
- Build credible regulation (transparent, principled, predictable over time and not politicized)
- Improve governance and financial balance of power companies
- Strengthen capacity and increase resources for preparation of a strong pipeline of bankable projects
- Collectively adopt global standards for project implementation
- Make electrification a national priority going beyond politics and drive it as a campaign
- **Exhort private sector, local civil society organizations and communities to step forward and join the campaign**

- Additional slides (for discussion)

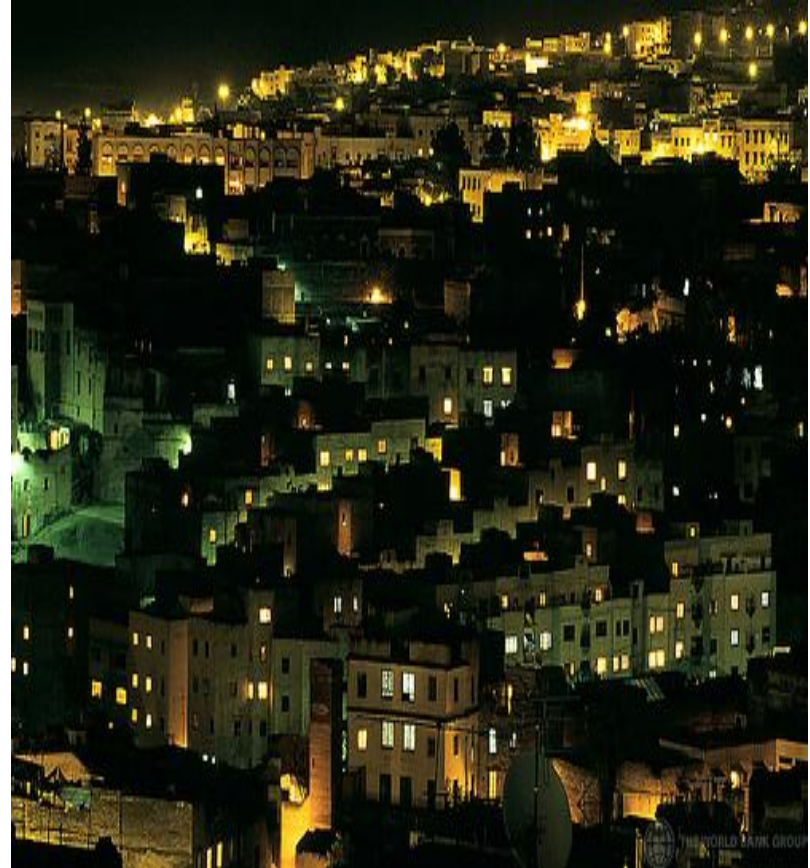
## Balancing Access and Climate Change

- In a 'business-as-usual' scenario, energy-related CO<sub>2</sub> emissions will almost double by 2050 .
- Meeting the energy needs of developing countries and arresting climate change will require global action and cooperation.
- Energy-saving policies and energy with low lifecycle GHG emissions will be important for meeting future energy needs sustainably.



## Managing Uncertainties

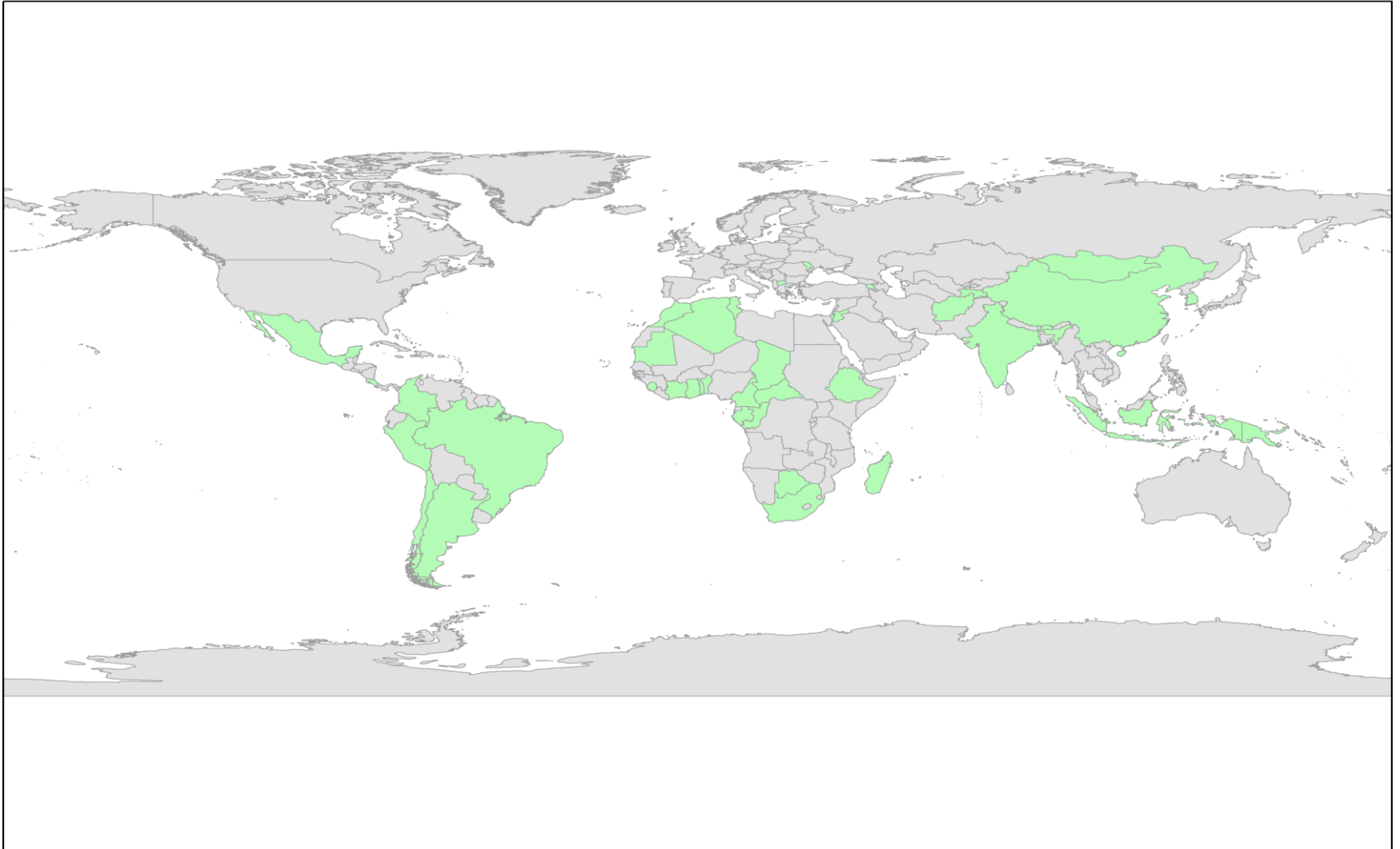
- **The oil price fluctuations since 2004 demonstrated the importance of –**
  - **Diversifying energy mix**
  - **Energy conservation and energy efficiency**
  - **Being prepared for high energy price volatility and possible future shocks.**
  
- **The global financial crisis has also increased uncertainty in investments, while reducing available resources for development assistance and investment flows.**



- **An efficient, reliable, and low-cost energy sector is critical for key services and equitable economic development**
- **Sound operational and financial performance is essential**
- **Improved capacity and governance are needed for better sector performance and ability to address climate change**
- **For the very poor, the most important determinant of access to and use of modern energy is their cash income**



## 90 Countries have registered Mitigation Plans with UNFCCC



## Implications of Shifts

- **Climate-driven green growth promising, but policy/regulation rigidities constrain energy investments**
- **RE is highly capital-intensive (2-3X), making financing even more challenging**
- **Is there appetite for major reforms?**



## Key priorities then.....

- **Policy/regulation fixes for incentives, certainty, performance**
- **Innovation in technology, business models, and financing**
- **Climate financing for capital and cost buy-downs**
- **Government commitments and capacity building**
- **Surgical use of institutional financing to de-risk projects and leverage private capital**

## Barriers

- **Untargeted subsidies**
  - Tariffs and prices below cost recovery
  - Mounting burden on government budget
  - Vested interest groups defending subsidies
  
- **Weak regulatory framework and enforcement**
  - Incomplete / unclear legislation
  - Weak monitoring and enforcement
  - Non-payment by consumers
  - Commercial malpractice – competition leading to race to the bottom

## Consequences

- **Poor investment climate**
  
- **Infrastructure in state of disrepair**
  - Lack of maintenance
  - Little modernization
  
- **Weak incentive for energy efficiency improvement**
  
- **The poor all too often end up paying for market distortions because of black marketing of subsidized fuels, short-selling, etc.**

# Addressing barriers

- **Strengthen regulatory framework**
  - Clear, in line with international good practice
- **Build capacity for monitoring and enforcement**
  - Separation of commercial operation from regulation
  - Establishment of strong regulator
  - Enforcement so that those who engage in commercial malpractice are driven out
- **Institute fair and efficient economic regulation where necessary**
- **Work toward healthy competition, ensuring that efficiency gains are passed onto consumers in the form of lower prices**
- **Replace subsidies with social protection programs, or target subsidies to the vulnerable where appropriate (e.g., lifeline rates)**
- **Lower barriers to entry where possible**
  - Third party access
  - Hospitality arrangements

# Rural Electrification in Bangladesh

- Rural Electrification and Renewable Energy Development (RERED) program launched in 2002 with WB support
- More than 270,000 solar home systems installed since 2002, with a monthly installation rate of 18,000 systems
  - ✓ Innovative financing schemes involving micro-credit institutions
  - ✓ Strict quality control of technical standards for the equipment
  - ✓ Streamlined follow-up maintenance
  - ✓ Focus on consumer awareness



**RERED second phase aims to install 1 million home systems by 2012 and promote biogas, biomass, and PV-based mini-grids.**

# Lighting Africa

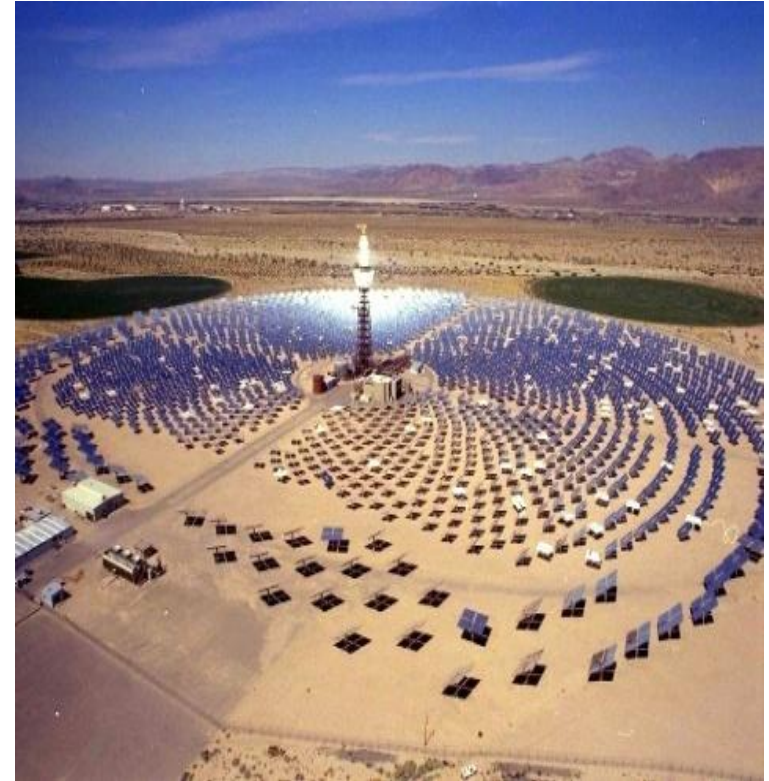
- WB-IFC joint initiative to mobilize the private sector to develop and disseminate modern lighting solutions using LED and other technologies
- Program target is to develop markets for initial sales of 500,000 off-grid lighting products by 2012, serving more than 2.5 million people
- Technical assistance and seed funding is made available to entrepreneurs to develop low-cost, high-quality lighting products



**Lighting Africa's vision is to build a commercial platform for the lighting sector that can serve 250 million people in Sub-Saharan Africa by 2030**

## Large-scale Solar Power

- The World Bank is scaling up support for large-scale solar thermal and PV systems in a number of countries.
- In Egypt and Morocco, WB is supporting demonstration projects on integrated solar combined cycle (ISCC) power generation technology.
- WB is mainstreaming PV deployment for off-grid rural electrification (e.g. project in Bangladesh deploying more than one million solar home systems)



**WB is developing a large-scale program in the Middle East and North Africa region for concentrating solar power technology using CTF and other instruments.**