# The role of PPPs in scaling up financial flows in the post-Kyoto regime

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# Climate finance needs

- **Resources to address climate change need to be scaled up considerably over the next few decades both in developed and developing countries** *(medium evidence, high agreement). IPCC WGIII AR5*
- International financial support pledges from COP15 to COP 19:
  - Every two years statements on plans for delivering USD 100 billion /year by 2020 to developing countries
  - Pledges funds are to be new, additional to previous flow, and may come from a wide variety of sources, public and private, bilateral and multilateral, & alternative sources
- Stabilizing greenhouse gases (GHGs) concentrations will require low-carbon investment in developing countries of some $139-175 billion per annum by 2030.
- $70-100 billion could annually be needed over the next 40 years to finance adaptation to the inevitable impacts of climate change in developing countries

# Future investment needs to stabilize $CO_2$

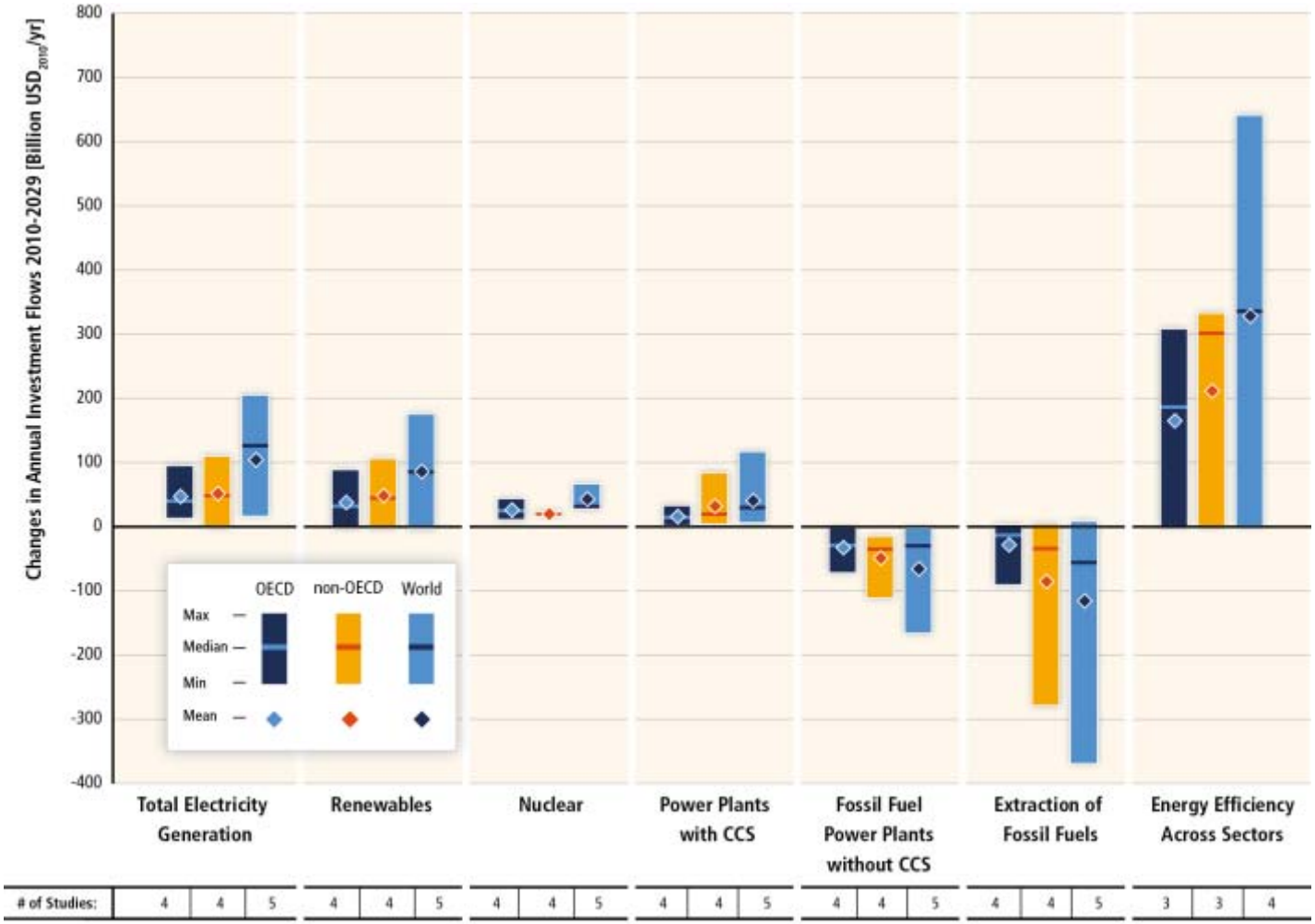



**Figure SPM.9. WGIII AR5**

# PPPs and climate change (I)

- The Public-Private partnership (PPP) model have already been used as a risk sharing structure to bring private funds on the table in several contexts would usually not have being presented
- Only limited efforts have been made to investigate existing business models capable to attract the private sector investment in climate mitigation and adaptation projects.

# The PPP business model

- The Public-Private Partnership (PPP) model brings private and public parties together in a long-term *formal* union
  - *The term public-private partnership ("PPP") is not defined at Community level. In general, the term refers to forms of cooperation between public authorities and the world of business which aim to ensure the funding, construction, renovation, management or maintenance of an infrastructure or the provision of a service (EC 2004)*
- Complex but flexible model characterised by a “functional definition” (EC, 2004 and IMF, 2008):
  - Long-term duration
  - Combination of public and private sources of funding
  - Definition of partners’ roles
  - Risk allocation according to capacity

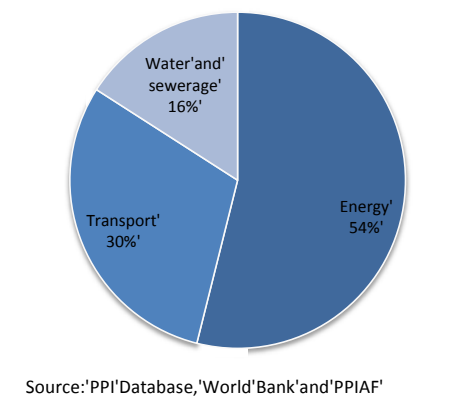
# PPPs and climate change (II)

- The analysis performed over two decades panel data confirms the international climate agreements among the key drivers of PPP energy investments in developing countries
- On the contrary PPP investments in water and transport infrastructures appeared not stimulated by the Kyoto Protocol
- We analysed a representative sample of 4324 PPP projects in low- and middle-income countries in three main sectors (WB PPIAF Project Database http://ppi.worldbank.org/)

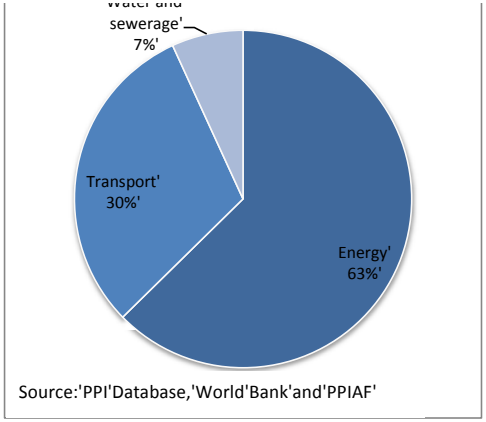
# Analysis of existing PPPs

Table 4 Selected PPPs projects by region and sector (number of projects and total investment commitments in constant 2011 US$ million)

| | Energy | | Transport | | Water and sewerage | | Total | |
|---|---|---|---|---|---|---|---|---|
| Region | N. of projects | Total Investment commitment | N. of projects | Total Investment commitment | N. of projects | Total Investment commitment | N. of projects | Total Investment commitment |
| East Asia and Pacific | 745 | 182,100 | 352 | 102,184 | 410 | 39,159 | 1,507 | 323,443 |
| Europe and Central Asia | 408 | 113,710 | 58 | 23,418 | 33 | 4,170 | 499 | 141,299 |
| Latin America and the Caribbean | 631 | 249,786 | 461 | 151,200 | 212 | 35,046 | 1,304 | 436,032 |
| Middle East and North Africa | 38 | 28,520 | 27 | 7,873 | 13 | 4,033 | 78 | 40,426 |
| South Asia | 377 | 153,755 | 315 | 68,309 | 7 | 391 | 699 | 222,455 |
| Sub-Saharan Africa | 133 | 31,995 | 90 | 16,958 | 14 | 327 | 237 | 49,280 |
| **Total** | **2,332** | **759,867** | **1,303** | **369,941** | **689** | **83,126** | **4,324** | **1,212,935** |




a) number of new projects

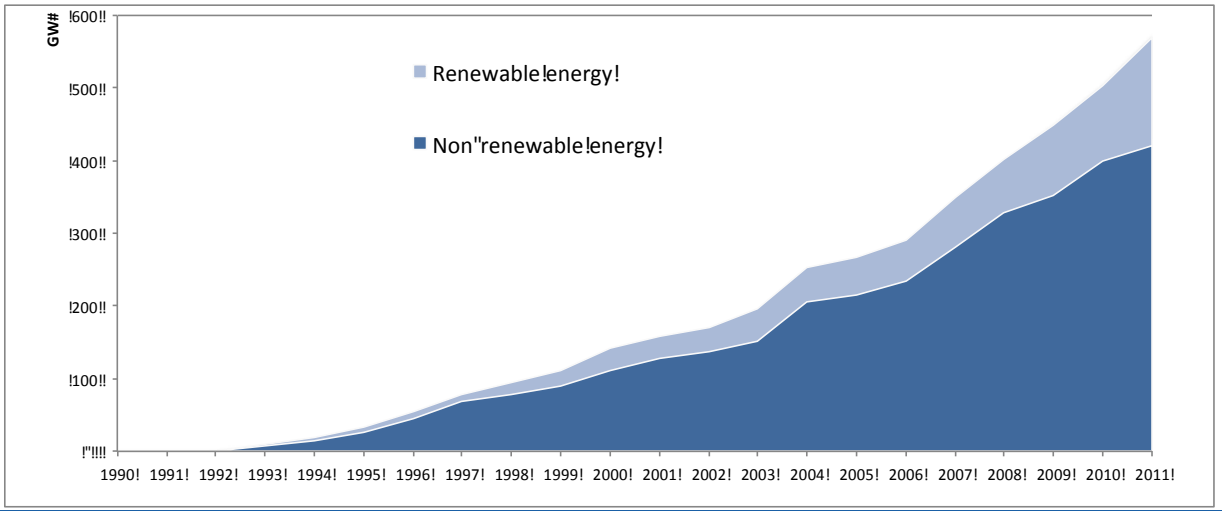



b. total investments commitments

# The energy case

- Electricity generation and renewable energy sectors confirm their great potential in terms of capacity to attract private finance *via* PPPs
- Around 1500 new facilities in the 2 decades and 570GW installed capacity (US$520 billion) of which 150 GW in renewable energy projects (US$190 billion)

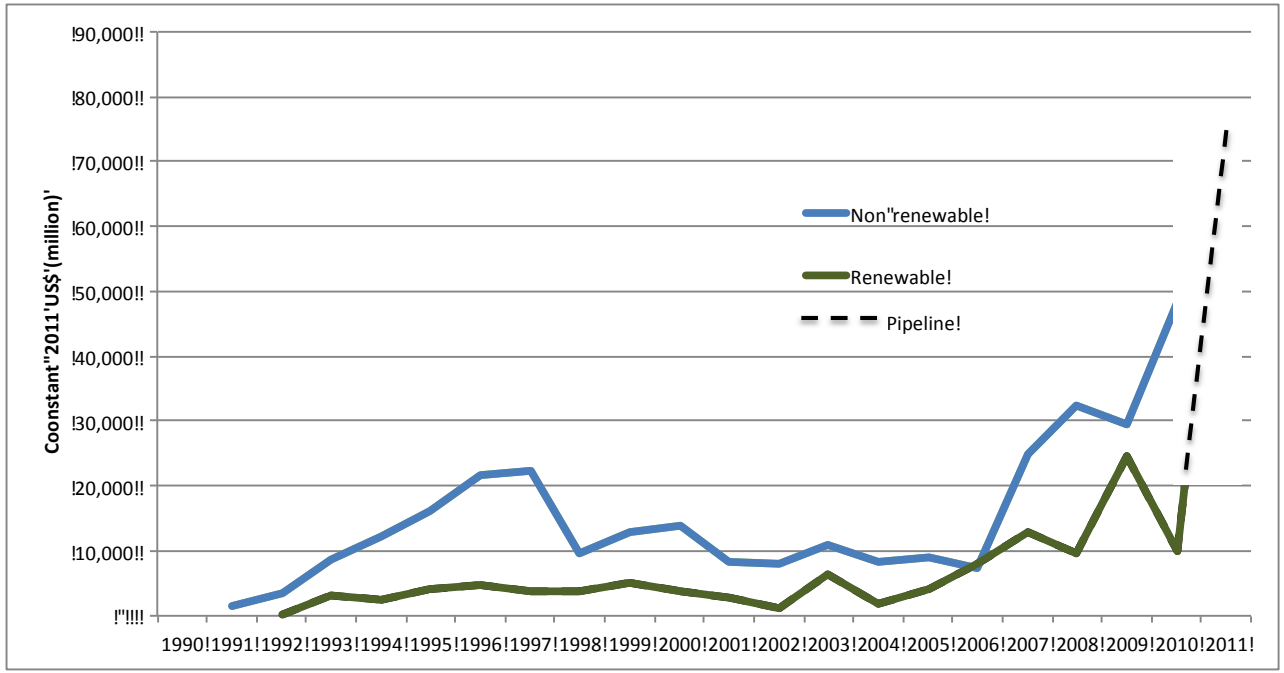
Figure 16 Installed capacity of PPP energy generation projects



# Shift towards renewable PPPs

- PPPs are able to capture the progressive shift towards low-carbon sources of energy in developing nations

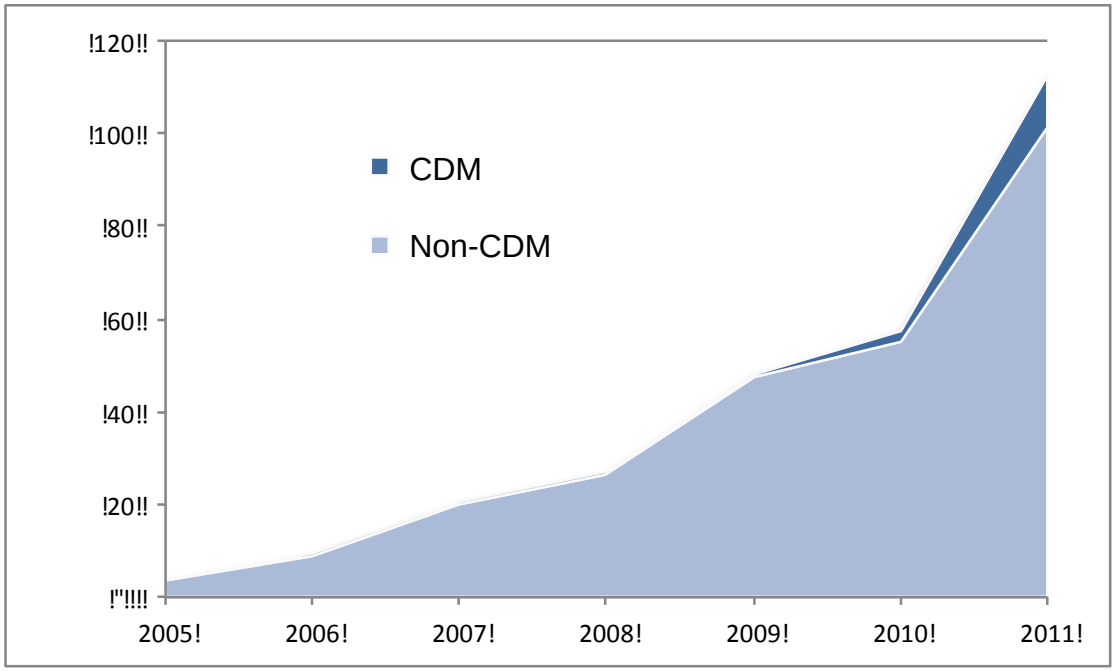
**Figure' 18' Renewable' and' nonIrenewable' PPP' energy' projects' in' the' electricity' generation' segment'(total'annual'investment'commitments'Iincluding'pipeline)'**



# PPPs and the carbon market

- We found  that the business model has been tested in the carbon market (10,9GW installed as CDM)

**Figure 27 Installed capacity of PPP and CDM projects in renewable energy in the period 2005-2011**



# PPPs and Innovation

- PPP model demonstrates ability to overcome financial and technological barriers and to attract private finance in high-tech climate related projects :
  - CC Mitigation: Ouarzazate Concentrated Solar Power Station. A complex risk sharing structure involving concessional finance
  - CC Adaptation: SMART Tunnel in Kuala Lumpur. An innovative solution for climate disaster risk reduction
  - Water: Case studies gave evidence of the unlocked potential of this sector in achieving CC adaptation co-benefits: Metro Manila water concessions, Urban Water concessions in Cochabamba.

# Conclusions

- **Mainstreaming climate change into PPPs**
  - The PPP model is already part of the adopted solution when referring to infrastructure investments.
- **Integration of climate and PPP practices**
  - More integration among the climate and PPP practices would be desirable. There is small emphasis on the contribution that PPPs can provide to CC policies from both sides.
- **Implementation of databases**
  - A better integration of databases, and the creation of a specific climate PPPs focus would help future research and dissemination of lessons learned.
- **Ad-hoc climate change PPPs**
  - Ad hoc sector oriented climate change PPPs promotion should be adopted by governments and PPPs focal points. NAPs or NAMAs can be the right place for a PPPs portfolio definition

# Thank you

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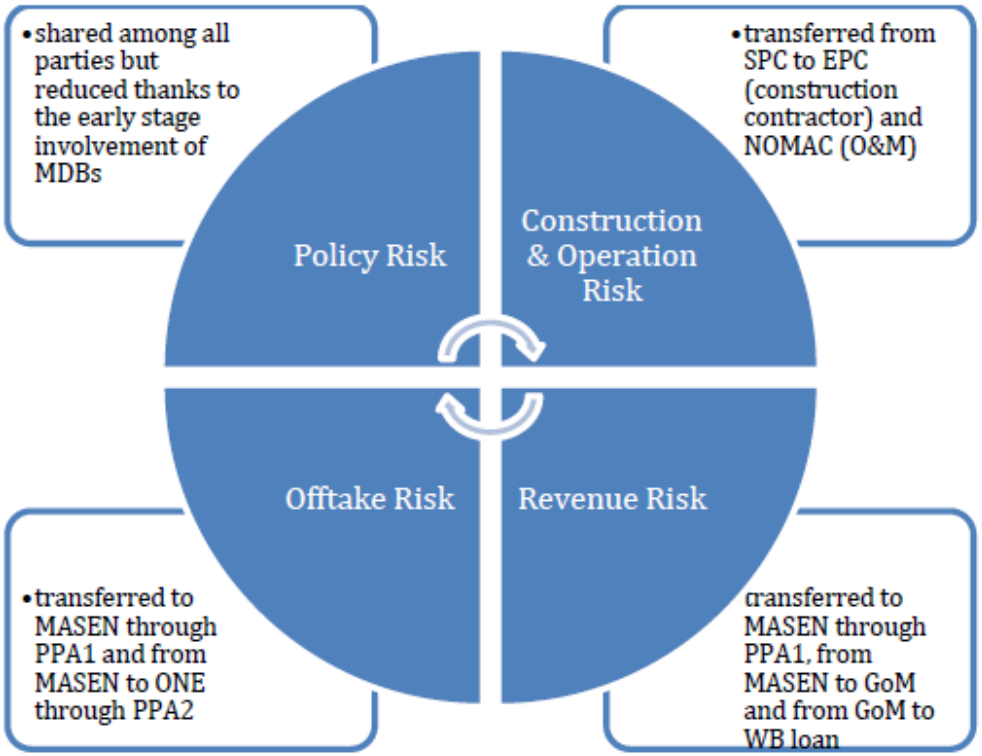
# Ouarzazate CSP Station

- A MDBs climate PPP project
- Main features:
  - 25-years BOOT (financial closure Nov. 2012)
  - One of the largest CSP plants (first phase 160MW)
  - Estimated avoidance of 240,000 $tCO_2$ per year
  - One of the first Climate Investment Fund (CTF) projects
  - It involves US$900 Mln of concessional finance provided by 7 lenders

# Ouarzazate CSP Station

- A good example of:
  - a complex risk sharing and transfer structure
  - a well coordinated public procurement phase



# SMART Tunnel in Kuala Lumpur

- Main features:
  - 40-years BOT (financial closure 2003)
  - The tunnel operates as toll road or water tunnel
  - British Construction Industry Award in 2008 and the UN Habitat Scroll of Honour Award in 2011
- 2 main objectives:
  - mitigate the impact of seasonal flash floods
  - relieve the city of the traffic congestion
- A good example on how the user-fee PPP business model can serve the adaptation agenda
- It addresses the need to design new infrastructural solutions to mitigate adverse CC impacts

# SMART Tunnel in Kuala Lumpur (2)

- It demonstrates the capacity to attract private capital and ingenuity in high-tech investments and in long-lasting partnership with the public
- Clear objectives led to a successful project
  - It paved the way for the definition of a PPP national framework under the 9$^{Th}$ Malaysian Development Plan
  - Infrastructure improvement and upgrading through PPPs are part of the Malaysian plan to reduce the carbon footprint of Malaysian cities in the second decades of this century

# Water PPPs

- Water PPPs are among the first PPP projects that have been developed in developing countries to provide water services and improve access to water. Despite the great importance of the water sector in the climate change context the analysis of PPP panel data showed that water PPPs are not driven by the climate global agenda.
- The analysis of best and worst case studies gave evidence of the unlocked potential of this sector in achieving CC adaptation co-benefits
  - Metro Manila water concessions
  - Urban Water concessions in Cochabamba

# Metro Manila Water Concessions

- The concessions encountered financial difficulties, the strong cooperation and public commitment to clear contractual targets were crucial
  - Extension of water services and reduction of water losses
  - 13% of water losses in East Manila and water connections increased of 48% since 2006 in West Manila

- Water sufficiency is a strategic priority of the Philippines National Climate Change Action Plan 2011-2028
- Concessionaires are now working with US NCAR to integrate CC risks and CC adaptation analysis into investment planning

# Urban water concessions in Cochabamba

- The 40-years *Agua del Tunari* ROT concession survived only 7 months with a dramatic escalation of events in 2000
- Main failure components:
  - Inadequate institutional capacity in managing the entire PPP process
    - Failed competitive bidding, direct negotiation
  - Lack of communication with all stakeholder parties
  - Too ambitious objectives
    - Water services rehab and Misicuni dam construction

# Urban water concessions in Cochabamba today

- The new *Agua para Todos* PPP is successfully operating with a *Public Private Community Partnership* since 2005
  - After 5 years of implementation of the partnership 25,000 people had access to modern water services.
  - Agua para Todos won the 2005 SEED Award
  - All the previous failure components were successfully addressed