



New Delhi | Washington DC

ICRIER 2015 G20 Conference

Panel on Scaling up Private Investments in Clean Energy Infrastructure

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Discussion notes - Pierre Jacquet - GDN

Outline

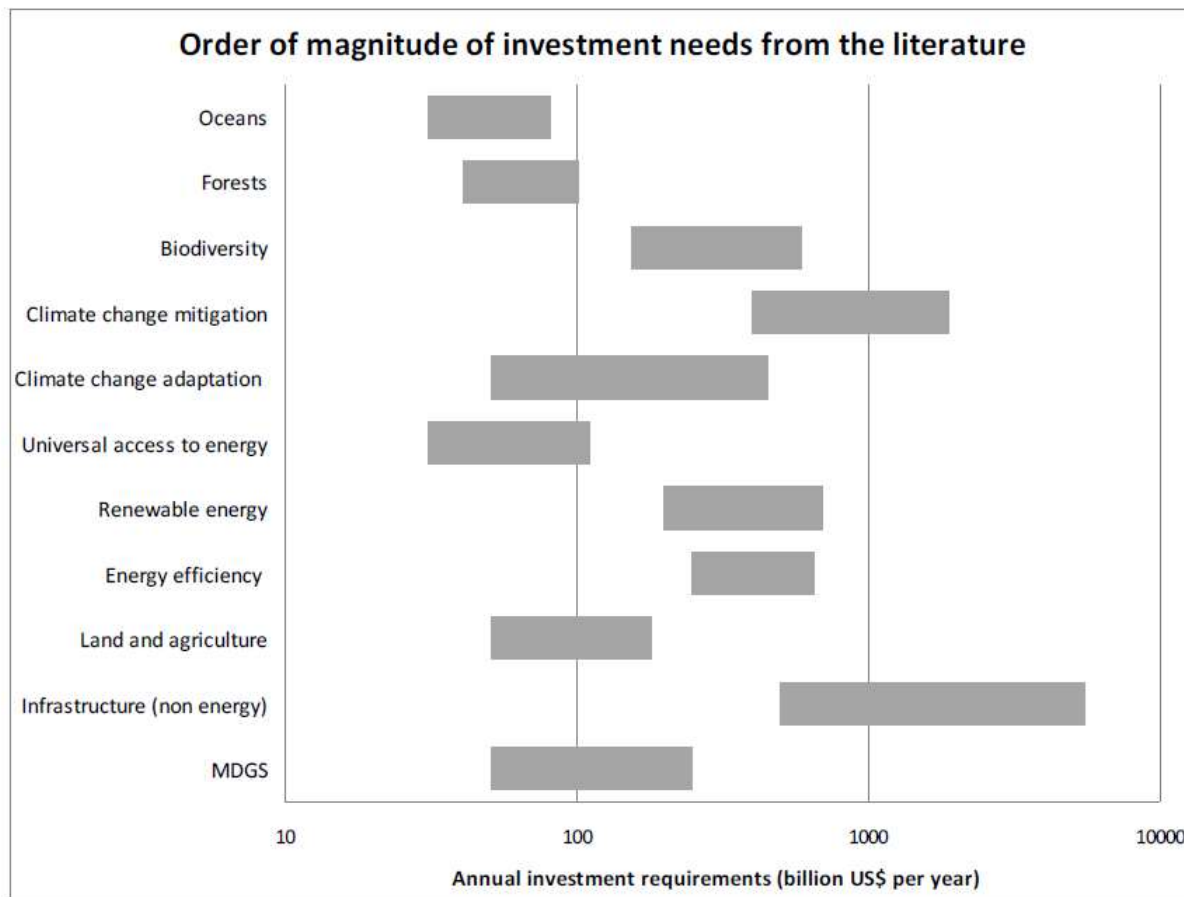
- Financing Clean Energy
- Where are the incentives for the Private Sector?
- A new role for Public Finance
- Beyond Renewables

Financing Clean Energy: a “system” approach

- Estimates of needed investments: but is this the right approach?
- Public investment constrained by economic crisis and existing level of public debts
- Global savings amount to US\$ 22 trillion a year : Overall, no problem of financial resources, but problem of resource allocation
- Unfettered markets won't allocate resources in line with energy policy green objectives!

Crucial problem is one of resource allocation! Given the amount of savings available, even a small shift in allocation can have enormous consequences

Estimates of required SD Investments



Source: UNTT Background Paper 1, x-axis in logarithmic scale

Incentives (and Disincentives) for Private Investment

- Evolution of relative prices is hardly conducive to shifting toward renewables (price of carbon, price of hydrocarbons)
- Pushing the next technology frontier?
 - But how to bear the short term cost in a highly competitive environment, in which the cost of access to energy is an important aspect
 - Intertemporal uncertainty: when will the choice pay back?
- Uncertainty about government policies, in a context still characterized by uncertainty and by the interplay of various parochial interest groups
- What can governments do?

A New Role for Public Finance

- Beyond financing research
- Coherence, credibility and time-consistency of policies
- Work on Information
 - Example: Obama's announcement of \$ 4bn program and creation of an Office of technology transition. No investment decisions, no direct engagement, but provision of information : role of market builder
- Risk sharing instruments
 - Subsidies, guarantees...
- Targeted instruments (performance, social objectives...)

Role of Catalyst (and incentive-provider) through various instruments, to increase expected profitability for the private sector – This applies beyond Clean Energy

Blended Finance

Category	Description	Examples	Prevalence	
Loans	<ul style="list-style-type: none"> Majority of ODA-eligible, bilateral loans are provided from government to government for investments in economic infrastructure and water and sanitation infrastructure, and are provided to middle income countries Development Finance Institutions (DFIs) also make loans directly to the private sector. While many DFIs operate below a commercial rate of return, the majority of their activity is not ODA eligible. 		High	
Direct Market Interventions	<ul style="list-style-type: none"> A direct transfer of resources from donors to the private sector, either through grants, or through equity investment. 	Viability gap funding	Financial contribution to make investment commercially viable	Low
		Challenge funds and innovation ventures	Competitive process to award funding for innovative projects, and to support expansion to scale for those proving success	Medium
		Equity	Transfer of resources in return for an ownership stake	Low /medium
		First-loss funding	Funding generally designated as a subordinate equity interest	Low
Risk Based Instruments	<ul style="list-style-type: none"> Donors take on some portion of the risks associated with private sector or partner government activity. Credit is thereby made available, or the cost of credit is reduced 	Credit guarantees	Provision to protect financier from default	Low
		Political-risk insurance	Protection against select (rare but costly) policy-oriented risks	Low
Performance Based Instruments	<ul style="list-style-type: none"> Future commitments by governments or donors to transfer resources to the private sector upon pre-specified conditions being met. Provide the private sector with flexibility in delivering outcomes (rather than outputs) and can, for example, facilitate credible government commitment to payment schedules when there are large upfront private sector investments required. 	Advanced market commitments (AMCs)	An ex-ante commitment for public purchase of supply	Pilot
		Social or development impact bonds	Contingent contract with a particular investor for repayment on delivery of impact-based results	Pilot
Public Private Partnerships	<ul style="list-style-type: none"> A modality of cooperation with the private sector based on a combination of instruments or negotiated outcomes Require other inputs (such as experience, expertise and bankable projects) in addition to the employment of the financial instruments listed. Donors can facilitate PPPs by: <ul style="list-style-type: none"> Providing technical assistance and/or project preparation facilities that offer support to both government and the private sector Directing multilateral organisations to bolster their efforts at facilitating PPPs Providing other financial incentives to make PPPs more attractive 		Medium	

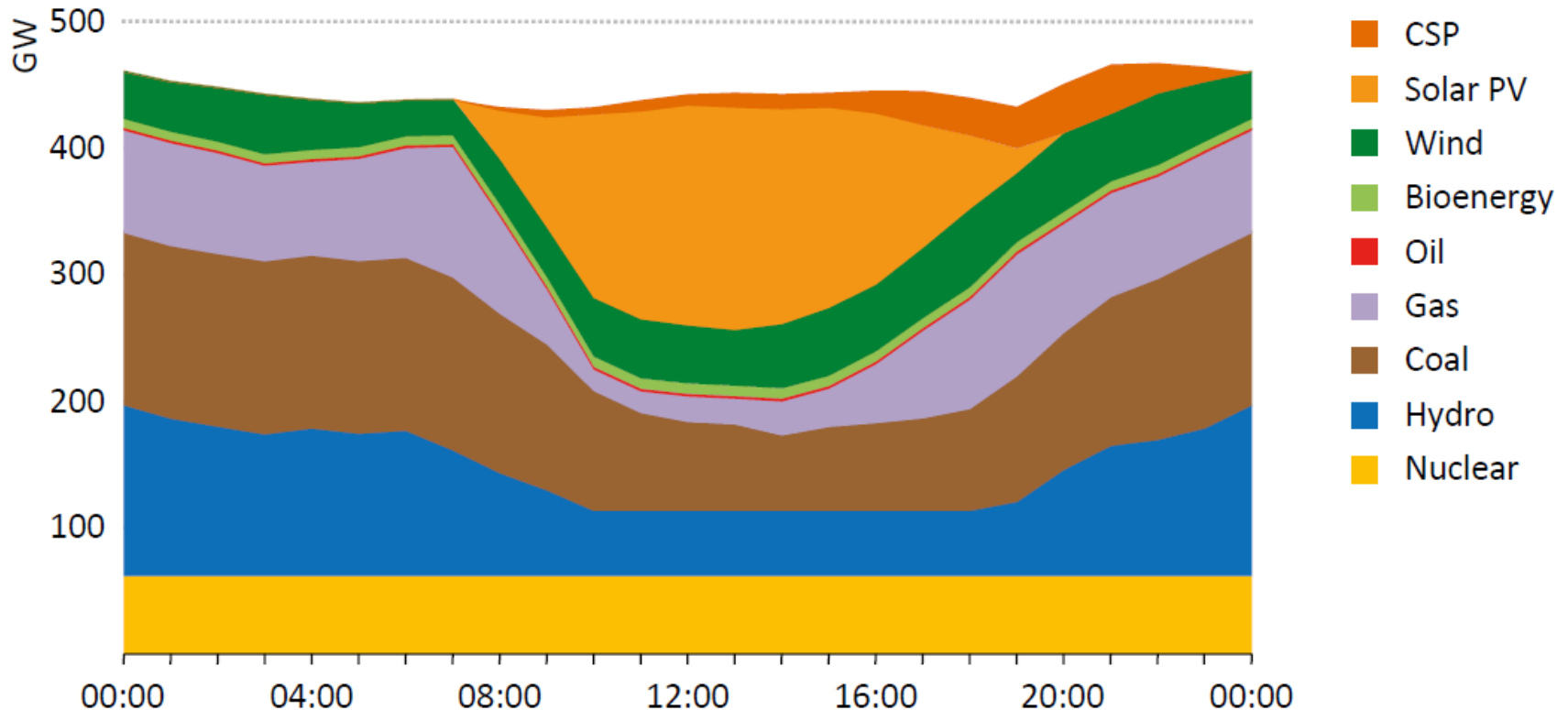
Source: Reproduced from *Report of the Intergovernmental Committee of Experts on Sustainable Development Finance*, 8 August 2014 (Table 1, p. 39)

Beyond Renewables

- Focus on electricity production
 - Increase in share of renewables implies a much greater flexibility in the current power system
 - Output from renewable energies depends on momentary availability, and the rest of the system needs to accommodate this by the variation in the use of other resources
 - Integration of high levels of “variable renewables” calls for grid interconnections, and for building the capacity of the rest of the power system to provide larger and more rapid increases and decreases in output
 - So substantial market reforms and investments are needed in the conventional power plants as well
- Demand side measures will be part of any solution with large renewable share. They include regulation, pricing measures, but also energy savings across the board
- Hydropower is the most flexible conventional source; Hydro-rich countries such as Brazil and Canada are well-positioned to integrate high levels of variable renewables.

Example: Load Curve in India in 2040

(Balancing Supply and Demand over whole India (full grid integration) - Scenario of reducing CO2 emissions under 450ppm)



Notes: The illustrative load curve is based on measured hourly load data in India in June 2012. Increasing demand for cooling or other evolving electricity demands could alter the pattern of electricity demand.

Conclusion

- Engaging the private sector to invest more in clean energy requires deliberate and consistent public policy action
- More coherence and credibility in public policy objectives
- Use of public finance not to invest or engage directly, but as a catalyst:
 - Promoting information
 - Using innovative, risk-sharing financial instruments
 - Helping “build the market”
- Consistency across the whole range of energy policy, with complementary reforms and investments in conventional energy

Cultural, institutional, competence challenge for public policy

Thank You