Session:

Hydropower investment
How can risk and reward be balanced?

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For more information:  www.hydropower.org/congress
Hydropower Investment:
ADB’s Experiences in Nepal

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Outline

• ADB Energy Policy 2009
• Hydropower sector in Nepal
• Space for development partners
• ADB’s supports
• Final remarks
ADB Energy Policy 2009

Objective:
To help DMCs provide reliable, adequate, and affordable energy for inclusive growth in a socially, economically, and environmentally sustainable way.

Three Pillars:
- Promoting energy efficiency and renewable energy
- Maximizing access to energy for all
- Promoting energy sector reform, capacity-building & governance
Energy Policy 2009....

Hydropower: renewable, clean, highly efficient, substantially reliable, and flexible.

ADB’s supports on hydropower through:

• Investment in sustainable hydropower (ADB’s Safeguards Policy 2009)
• Sector reform
• Regional cooperation (GMS, South Asia)
• Public and private partnership (PPP)
• Knowledge sharing
2008 to 2014, ADB invested a total of US $27.9 billion in energy related investments. $3.1 billion in hydropower, including $0.9 billion through ADB’s private sector operations.
ADB’s investment in hydropower

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Hydro Project Financing 1990-2014

Installed Capacity (MW)
Financing ($ million)

Installed Capacity (MW)

Hydropower sector in Nepal

Status as of FY 2014:
- Electricity access: 65%; consumption per capita: 102 kWh/year
- Demand and supply gap:
  - Total installed capacity of 783MW
  - Hydropower: 734MW (reduced to 250-300MW in dry season)
    - 88% are ROR type (642MW)
    - 35% are invested by private sector (256MW)
  - Peak demand 1,200MW. (4,500MW in 2030)
- Total 83GW hydropower potential (43GW economically viable)
- Huge chance for power trading with neighboring countries (India, Bangladesh)

Three Years Interim Plan (2010-2013) by 2027:
- 4000MW (mainly hydropower) for domestic use,
- 100% electrification rate with 75% through grid and 25% via off grid,
- 400kWh of per capita consumption,
- significant export of electricity.
Hydropower sector in Nepal

Issues and challenges:
- Weak financial viability and sustainability of the sector (NEA)
  - Tariff does not reflect cost (USC 8/kWh; USC10/kWh)
  - Weak operation and maintenance with high system losses
- Weak policy framework, absence of a fully empowered regulator
- Lack of planning (Gen, TL, DL, and cross-border)
- Lack of power evacuation facilities

Hence, slow and limited private and foreign investment
Spaces for DP’s supports

• Support for enabling investment environment
  – Creating an effective regulatory environment
  – Enhancing relevant policies and legislations
  – Supporting management reforms and strengthening of NEA
  – Improving awareness on regional power trade and facilitating policy dialogue among countries
  – Establishing a coherent approach to planning generation and transmission

• Public sector investment window
  – Facilitating large investments in HPP through pooling resources of many DPs
  – Financing transmission infrastructure
  – Provide GoN contribution to PPP projects

• Private sector window
  – Direct investment (equity, debt)
  – Provision of guarantees (lowering risks, attracting more funds, B-Loan)
ADB’s supports

- **Investment in sustainable hydropower**
  - Micro-large, ROR-Storage, in compliance with SPS 2009

- **Strengthening Sector Performance**
  - Independent regulation (NERC)
  - Management reform of NEA for higher efficiency
  - Planning

- **Private Sector Participation**
  - Large HPP with storage on PPP

- **Regional Cooperation**
  - The new cross border transmission links and enhanced capacity of existing cross border transmission lines.
  - Developing SASEC regional electricity generation and transmission master plan
  - Supporting establishment of power trading company
ADB power projects in Nepal

• 144 MW Kali Gandagi A HPP (1996), $160 mil
• Energy Access and Efficiency Improve. (2009), $70 mil
• Electricity Transmission Expansion and Supply Improvement Project (2011), $75 mil, co-fin. $25 mil
• 140 MW Tanahu HPP (2013), $150 mil, co-fin. $280 m
ADB power projects in Nepal

- Project preparatory facility (2013) $21m
  - Detailed design for large storage HPP (350-450MW) on PPP;
  - Detailed design for the 2\textsuperscript{nd} cross border TL, loan of $ 100 mil in 2018

- SASEC Power System Expansion Project (2014), $180m, co-fin. $192m

- Hydroelectricity Finance Facility planned in 2015, $70m

- Program loan to be co-financed with WB in 2016, $60m

- Large HPP based on PPP (350-450MW) in 2018, $400m
ADB power projects in Nepal
Final Remarks

• Continue efforts with other DPs, particularly WB, to support government develop enabling environment for investors
• Good practice on development of storage type HPP on PPP
• Good cooperation model for governments, private sectors and financial institutions for sustainable hydropower development
Thank you

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