

# **Development Policy Loan (DPL) to Support Inclusive Green Growth and Sustainable Development in Himachal Pradesh**

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**Clean Technology Fund**

**May 2013**

# Shifting Growth Paradigm

- Himachal Pradesh (HP) geographical disadvantages
- Relatively strong performance indicators among Indian states
- Paradigm shift from current growth strategy
- Growth sustainability hinges on three major transitions
  - Enabling environment for private sector investment
  - Productive employment
  - Natural resources management

# Importance of Hydropower

## - At the **national level**

- Carbon intensity of the power sector
- Balancing reserve
- Peak power requirements
- Energy security

## - At **Himachal Pradesh state level**

- “Power House” of the Nation
- Potential ~27.5 GW (~25% of India’s hydropower potential)
- ~22.5 GW at various stages of development, mainly by private sector
- Proximity to high demand states
- Model for other states
- Source of state revenue

# Barriers to Hydropower in HP

- Long processing time for obtaining environment and forest clearances
- Civil society and stakeholder concerns
- Lack of appropriate project identification
- Land acquisition and contractual problems
- Absence of adequate power evacuation and transmission infrastructure
- Unavailability of centralized and reliable hydrological database
- Lack of access infrastructure
- Financing cost

# HP DPL project

- **Objective:** achieve CO2 emissions reductions through the establishment of adequate policy framework for increased environmentally and socially acceptable hydropower development
- **Type of investment:** policy-based budget support
- **Scope of activities:** policy reforms to reduce risk during implementation and subsequent delays in commissioning of hydropower projects
- **Expected outcomes**
  - Increased hydropower capacity
  - GHG emissions savings
  - Improved energy security, reduced coal imports, lower cost of power generation, environmental and social co-benefits

## - **Potential for GHG emissions savings**

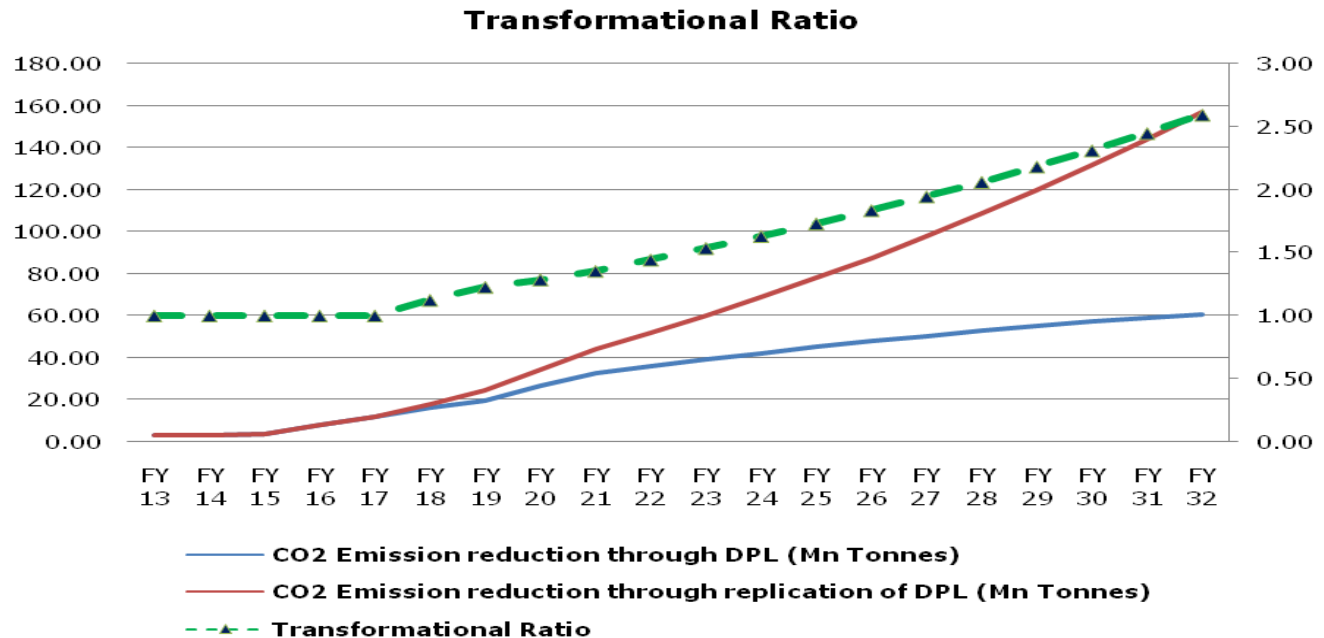
- Large emission reduction potential from fast-tracking development of ~17.6 GW of hydropower capacity by 2032
- Savings of ~662 MtCO<sub>2</sub> from avoided coal generation by 2032

## - **Cost-effectiveness**

- Potential to leverage significant co-financing at regional/national levels
- 0.15 \$/tCO<sub>2</sub> (regional), 0.08 \$/tCO<sub>2</sub> (national)
- Reduced cost of generation expected from faster implementation

- **Demonstration potential at scale**

- DPL project will give immense benefits in terms of avoided CO<sub>2</sub> emissions by 2032
- High replication potential will result in 34GW of added hydropower capacity in other resource rich states such as Sikkim, Uttarakhand, Arunachal Pradesh, etc.



## - **Development impact**

- Environmental and social co-benefits
- Increased deployment of renewable energy generation
- Lower cost of power generation
- Improved energy security
- Reduction in coal imports
- Increased employment

## - **Implementation potential**

- Strong institutional framework and political support

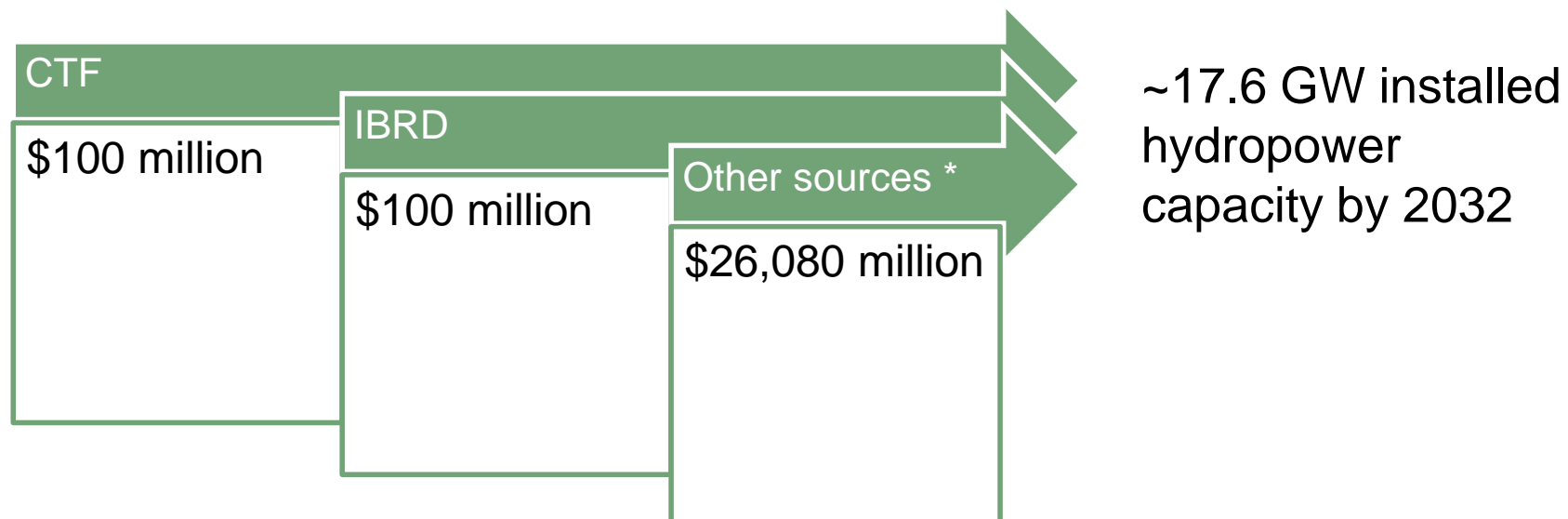
## - **Additional costs and risk premium**

- DPL essential to carry out policy reforms that will reduce risk and subsequent delays in commissioning of hydropower projects



# Expected co-financing

- CTF investment leverage ratio 1:260



\* Mainly from private sector equity investors and commercial banking channels

# Results Framework

	CTF HP DPL Project	Scale-up: HP State Impact	Scale-up: National Impact	India's Long Term Program in the Context of HP
<b>Hydropower generation capacity (MW)</b>	2,867 MW by 2014	17,631 MW by 2032	51,492 MW by 2032	10,000 MW by 2020
<b>GHG avoided (tCO2/lifetime)</b>	176.28 million	662.41 million	1,255 million	412 million
<b>Financing/leveraging amount (\$ million)</b>	\$4,408 million <ul style="list-style-type: none"> <li>• \$100 million CTF</li> <li>• \$100 million IBRD</li> <li>• \$1,262 million equity financing</li> <li>• \$2,946 million debt financing</li> </ul>	\$26,080 million <ul style="list-style-type: none"> <li>• \$100 million CTF</li> <li>• \$100 million IBRD</li> <li>• \$7,764 million equity financing</li> <li>• \$18,116 million debt financing</li> </ul>	\$75,784 million <ul style="list-style-type: none"> <li>• \$100 million CTF</li> <li>• \$100 million IBRD</li> <li>• \$22,675 million equity financing</li> <li>• \$52,909 million debt financing</li> </ul>	\$10,034 million <ul style="list-style-type: none"> <li>• \$100 million CTF</li> <li>• \$100 million IBRD</li> <li>• \$2,950 million equity financing</li> <li>• \$6,884 million debt financing</li> </ul>
<b>Environmental co-benefits</b>	Lower local pollution due to savings in GHG emissions			
<b>Improved energy security</b>	Increased share of hydropower, increase in variable renewable energy (VRE) share as hydropower can be used for balancing reserve			
<b>Other co-benefits</b>	Avoided coal imports by ~10% in 2032 (also \$1,728 million savings), increased employment, revenue for the state			

**THANK YOU**