Sustainable Hydropower Development

Trung Son hydropower project, Vietnam

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The role of hydropower

The Clean Energy Transition

- **RE deployment needs to accelerate drastically**

- **Private sector mobilization will be key** to meet the RE investment challenge ahead of us

- Private sector participation is contingent on the power sector *Foundations* and sustainable power grid
The role of hydropower

Hydropower is key in the Clean Energy Transition

Double the current hydropower installed capacity

In 2050 Hydropower will need to be third largest single energy source

Hydropower currently provides 16% of electricity worldwide

Reservoir in existing hydropower plants combined equals to approximately 2500 times the current installed batteries including EV’s

HOW ARE WE GOING TO MEET THIS INCREASE IN DEMAND

The role of hydropower

The Clean Energy Transition

- Hydropower plays dual roles of reliable baseload power source and support for integrating variable renewable energy.

- Hydropower provides large scale energy storage necessary to provide fast response for system stability.

- Hydropower and Pumped Storage Hydropower plays a role in the clean energy transition in countries where there are system constraints to scaling up variable renewable energy.
Existing Hydropower

Current Hydropower fleet is aging

By 2030 more than 20% of the current hydropower fleet will be more than 55 years old

Rehabilitation including modernization is needed

This will create a need of more than US $300 billions in investments until 2030 – Rehabilitation only
How to scale up Hydropower

Significant potential remains untapped

Long project preparation and Risk influence the appetite from private sector

Between 2011 and 2020 around 27% of installed hydropower capacity was done by the private sector

Private sector more active in smaller power projects

Challenges to attract the private sector is the - lack of financial sustainable Off Takers
Enabling environment

Government policies
  - Enabling environment for investment
  - Financial incentives and support mechanism

Legal framework
  - Definition hydropower resource
  - Ownership and protection
  - Institutional framework
  - E&S

Social acceptance
  - Changes to the environment and health
  - Education
  - Gender Equality
  - Stake-holders engagement
WB is committed to supporting sustainable hydropower

- The WBG will support countries in developing **sustainable and resilient hydropower**, while not damaging the ecosystems, and the associated **water storage** needed, including through **regional cooperation** to advance complementary investments across countries.”

- “the WBG is committed to supporting countries to develop and finance hydropower projects that are **well suited to local conditions and are resilient to climate change.**”

- The WB supports hydropower when part of the **low-carbon development pathway** of a country / region.
How is WB supporting Hydropower

Removing barriers, unlock untapped potential and support transformational projects

**UpStream Support:**
strengthening planning, regulatory and institutional capacity

**Downstream Support:**
technical assistance, risk mitigation and/or direct financing for specific transformational projects
How is WB supporting Hydropower

Upstream support:

- **Least cost** and **low-carbon** development plans
- Pre-feasibility **studies** and **E&S assessments**
- Project development **structuring**
- Sector interventions for **bankability of a project offtake**
- **Capacity building**
- **Dam safety** assessments
- Bank prepared, Grants and/or loans.
How is WB supporting Hydropower

Downstream support:

De-risking project preparation and/or construction and demonstrating sustainable impact

- Transformational projects
- Decarbonization pathway
- In accordance with country/regional masterplan and/or Least Cost Development Plan
- Strong sectorial engagement
ESMAP

The Clean Energy Transition

- ESMAP is one of the oldest MDTFs at the World Bank, established in 1983 to respond to the aftermath of the global energy crisis of the 1970s
- A partnership between the World Bank and 22 partners
- To help low and middle-income countries reduce poverty and boost growth through sustainable energy solutions with analytical and advisory services
- Fully integrated within the World Bank’s country financing and policy dialogue in the energy sector.
- Helps to shape World Bank Group strategies and programs to achieve the WBG Climate Change Action Plan targets and SDG7.
ESMAP – Hydropower development facility

HDF Objective

• Build a portfolio and pipeline of sustainable hydropower projects in recognition of the critical role it plays in system balancing and water resource management

• Support low to middle income countries to develop and manage next generation of greenfield and rehabilitation/upgrade/modernization projects

• Accelerate deployment of sustainable hydropower that is critical for VRE integration
ESMAP
The Clean Energy Transition

- **Upstream** means grants for activities that leads to a pipeline of sustainable project. For example roadmaps for rehabilitation

- **Capacity building and project management** grants seek to ensure the lifetime sustainability of the projects through strengthening the Client’s capabilities

- **Project implementation** grants seek to enhance and tailor strategies for the project such as financing methods, identification of risks and establishment of potential risk sharing mechanisms etc.

- **Environmental and Social impact** (E&S) seek to support Clients to use and implement the Bank’s ESF

- **Feasibility studies** seek to ensure comprehensive assessments of the technical and commercial viability of the projects through developing new or additional studies where they need strengthening
Thank you