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Nepal's Water Resources at a Glance



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Presentation outline

- **Nepal's water potential**
- **Water resources management**
- **Irrigation, hydropower, water supply, etc.**
- **Policies and plans**
- **Bilateral aspects**

Nepal in Region



Nepal's water potential

- **Annual flow available = 225 BCM**
(Nepal contributes 71% of lean season flow of Ganges)
- **Annual Groundwater = 12 BCM**
- **Hydropower potential= 83,000 MW**
(being reassessed; >150,000 MW)
- **Irrigation potential = 1.7 M ha**
(dictated by availability of land & topography)

Water resources management

- **Traditionally, community managed**
- **Village heads and kings resolved the conflicts**
- **Civil Code 1853 had many conflict resolving provisions**
- **Different departments gradually came into being**
- **Some of these agencies still exist**

Irrigation

- People's participation stressed since mid-eighties
- Demand driven approach followed
- Improvement in FMISs emphasized
- Recent trend is to focus both on large & small irrigation projects
- New irrigation techniques to cover minor areas also introduced



Irrigation and Agriculture Potential

Development Region	Potential Agriculture Area	Potential Irrigable Area
	(ha)	(ha)
Eastern	749,000	521,769
Central	716,000	541,984
Western	521,000	322,486
Mid-Western	398,000	223,069
Far Western	257,000	156,531
Total	2,641,000	1,765,839

Hydropower

- Hydropower is synonymous with power
- Started as early as 1911, one of the earliest Asia – 500 kW Pharping Hydropower station
- Private sector investment introduced since 1992
- Dismal progress despite huge potential and acute load shedding
- Primary reason is that sector reform is taking a very long time

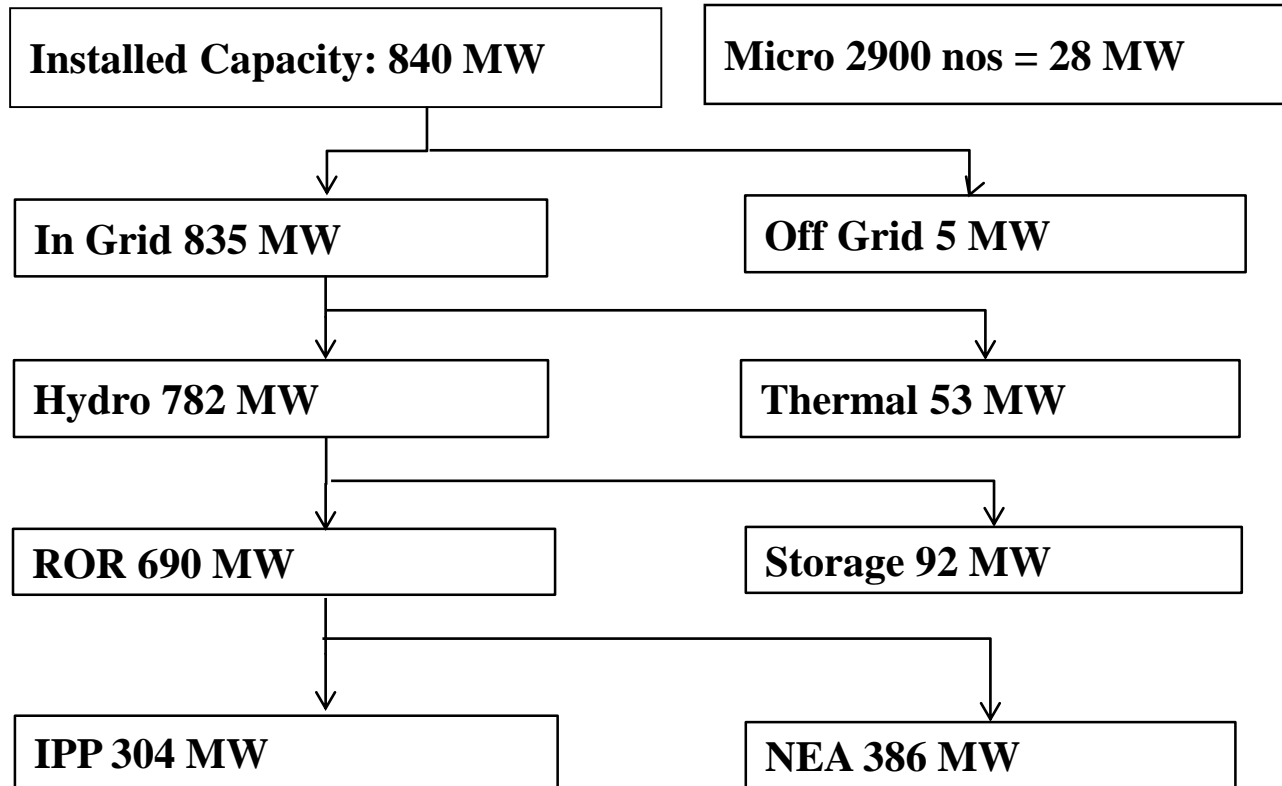
Headpond of Pharping power station



Kulekhani dam and reservoir



Hydropower development scenario



**Economic
Hydropower
Potential : 43 GW**

**Commercial Solar
Power Potential: 3
GW**

**Wind Energy
Potential : Yet to be
mapped**

Electricity Supplied (2013/14) : 4632 GWh

Water Induced Disaster Management

- In case of water induced disasters, dependency is still on the State
- A new department established- DWIDP/DWIMP
- Capacity of communities are yet to be enhanced in flood fighting
- Private sector participation in reclamation envisaged, but the concept yet to be implemented

Typical land erosion problem in Terai



Rescuing in Floods



Water supply and sanitation

- Special attention paid to this sector
- Now a separate – Ministry of Water Supply and Sanitation
- Basic water supply services provided to almost all
- Now efforts are geared to provide improved services
- Kathmandu is a separate case, a mega project – Melamchi WSSP is under implementation

Traditional way of using public spouts



Another example of public spouts



For a last couple of decades, sanitation is degraded



But efforts are also being made for improvement



Policies and Plans

- Water Resources Strategy, 2002 and National Water Plan, 2005 formulated with a time horizon of 25 years (2002-2027)
- But the targets - far from being met, *thanks to long political transition*
- Now Basin Plans are being formulated
- Together, Irrigation Master Plan and Hydropower Master Plans are also being upgraded
- And integrated water resources policy and new water resources act are being formulated

Bilateral aspects

- **Storage projects- to reap full benefits**
- **Downstream benefit- an issue**
 - **Pancheshwar (5000 + MW being initiated)**
 - **Karnali & Koshi – other large projects (10,800 MW & 3,400 MW respectively)**
- **Building consensus within Nepal and outside- taking long time**

THANK YOU