Nepal

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Challenges and Measures to Meet the Challenges

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Water Resources

Nepal possesses abundant hydropower potential with big rivers from perennial source the Himalaya. Nepal has formulated and implemented various measures to harness her hydropower potential.

- Four Major River Basins: Koshi, Gandaki, Karnali & Mahakali
- 6000 rivers & rivulets and 5,358 natural lakes including glacial lakes

Hydropower Potential

<table>
<thead>
<tr>
<th>Type</th>
<th>Potential (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical Hydropower potential</td>
<td>83290</td>
</tr>
<tr>
<td>Technical Hydropower potential</td>
<td>45160</td>
</tr>
<tr>
<td>Economic Hydropower potential</td>
<td>42133</td>
</tr>
</tbody>
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Institutional Arrangements

A number of institutions exist in the energy sector.

- Commissions: National Planning Commission, Water and Energy Commission, Electricity Tariff Fixation Commission
- Board: Investment Board

Corporation and Others: Alternative Energy Promotion Centre (AEPC), Nepal Oil Corporation, Nepal Electricity Authority, Independent Power Producers

Governling Laws, Policies, Documents

- Water Resources Act, 1992
- Electricity Act and regulation, 1992/93
- Nepal Electricity Authority Act, 1984
- Electricity Tariff Fixation Rules, 1993
- Rural Energy Policy, 2006
- Hydropower Development Policy, 2001
- Nepal: Rapid Assessment and Gap Analysis 2013
- Sustainable Energy for All Country Action Agenda Nepal (Draft) 2016.

**Bilateral / Regional Agreements**

- SAARC Energy Framework, 2014 (Regional)
- Electric Power Trade, Cross-Border Transmission Interconnection and Grid Connectivity Agreement, 2014 (Bilateral) (Nepal-India)

**Policy Initiatives**


- **Gradual Unbundling of NEA and Establishment of Regulatory Regime**
  - Generation mix: Power (Storage: 40-50%, PROR: 15-20%, ROR: 25-30%, Other Sources: 5-10%)
  - Transmission and Distribution System

- **Electricity Sector Reform**
  - Financial Arrangement and Procurement
  - ROW compensation mechanism
  - Community support program inbuilt in IEs/EIAs

- **Electricity Service to All Population of Nepal**

- **Planning Guideline**
Major Hydropower Projects under construction

- Upper Tamakoshi 456 MW
- Rasuwagadi 111 MW
- Upper Trisuli 3A 60 MW
- Chamelia 30 MW
- Kulekhani-III 14 MW
- Middle Bhotekoshi 102 MW

Nepal Energy Efficiency Programme (NEEP)

Nepal-German TC Programme

Executing Agency: Ministry of Energy (MoEN)

Project Period: 2014 to 2017, (NEEP-2)

Major Components Of NEEP-2

- Policy Formulation
- Energy Efficiency Market
- Clean Cooking
Challenges/Gaps – Ensure Access to Affordable Reliable, sustainable and Modern Energy for All

- Inadequate power supply- load shedding
- Power sector reform
- Absence of regulator
- Coordination between stakeholders
- Inadequate capacity of local banks to fund in hydropower/off-grid projects
- Lack of policy and dedicated institution for energy efficiency
- Finance and risk management
- Human resources development
- Domination of RoR hydropower projects
- Insufficient transmission infrastructures required for hydropower development
- High technical loss and electricity theft
- Local obstruction on energy/hydropower projects

Measures to address the challenges

Government of Nepal approved "National Energy Crisis Mitigation Concept Paper and Electricity Decade Action Plan 2016" in February 2016. The Action Plan aims to solve the challenges and issues in hydropower/energy development in Nepal. It has the goal of developing 10,000 MW electricity in 10 years. The action plan categorizes major programs/actions as 4 sections/ headings.

They are:

1. **Legal Reform:**
   a. New Electricity Bill
   b. Energy Crisis Mitigation Bill
   c. Electricity Regularity Commission Bill
   d. VAT/Income Tax
2. **Policy Reform:**
   b. 15% Local Banks Investment to HPP
   c. Generation Mix
      - Storage 40-50%
      - PROR 15-21%
      - ROR 25-30%
      - Alternative energy 5-10%
   d. Shares to Local People
   e. Yearly Compensation – ROW land acquisition
   f. Revision of valuation of land acquisition for HPP
   g. Community support program (0.75-0.5% of project cost)
   h. Rural electrification (Energy For All)
   i. Solar and wind power (10% of grid power)
   j. Power conservation program, technical audit of large consumers
   k. Solar energy programs

3. **Administrative**
   a. Working visa and work permit simplification
   b. Project security
   c. PPA in foreign currency
   d. Expansion of transmission lines
   e. Simplification of environmental clearance

4. **Structural**
   a. Central and district Level co-ordination committee
   b. Generation company
   c. Power trading company
   d. Monitoring mechanism
Others:

a) Human Resource development-Training, studies, seminar, technical assistance

b) Finance and risk management- project development agreement, public private partnership, HPP investment company

Areas of Bilateral, Regional, Global Partnerships

- Investment promotion
- Project finance
- Human resource development
- Technical assistance
- Capacity building
- Technology transfer
- Sharing best practices
- Energy security
- Regional energy trade
- Energy efficiency

Thank You