A Case Study

Rahughat Hydroelectricity Project

Boosting Cross Border Electricity Trade in BBIN/M Region: Dialogue Leading to Actions, 19 Jan 2018, New Delhi

Dikshya Singh
Research Officer

South Asia Watch on Trade, Economics and Environment
BACKGROUND

- Nepal's energy imports from India (2016-17): 2,175.04GWh (22.35 pc growth)
- Power Trade Agreement 2014 between Nepal and India not limited to trading of electricity, it specifically encourages investment between the two countries in power sector
- Indian promoters hold 85 pc of total licenses issued
- Three export-oriented projects in pipeline: 900 MW Arun III (PDA completed); 900 MW Upper Karnali; 600 MW Upper Marshyangdi II
Objective:
To assess the overall socio-economic benefits or costs accrued to the local community brought about by energy cooperation

Rationale for selecting Rahughat HEP
Energy cooperation: debt financing
Ex-ante study so project under construction necessary
# Salient Features of the Project*

<table>
<thead>
<tr>
<th></th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installed capacity</strong></td>
<td>2x20 MW</td>
</tr>
<tr>
<td><strong>Transmission Line</strong></td>
<td>LILO of 220KV transmission line from Dana substation to Kusma at PH gantry 600m</td>
</tr>
<tr>
<td><strong>Access road</strong></td>
<td>12.5 km</td>
</tr>
<tr>
<td><strong>Project Cost</strong></td>
<td>US$ 84 million</td>
</tr>
<tr>
<td><strong>Total annual energy generation</strong></td>
<td>247.89 GWh</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Myagdi district, 300km from Kathmandu; 100 km from Pokhara Airport</td>
</tr>
<tr>
<td><strong>Affected VDCs</strong></td>
<td>Myagdi district: <strong>Dangnam, Jhi, Rakhupiple</strong>, Patlekhet, Ghatan; Parbat district: <strong>Mallaj Majhphant</strong></td>
</tr>
<tr>
<td><strong>Affected settlements</strong></td>
<td>Galeshwor, Mauwaphant, Dagnam, Bagaincha, Bukla, Goluk, Dharkharka, Jhi, Bhirkuna and Nepane villages</td>
</tr>
<tr>
<td><strong>Land acquired</strong></td>
<td>29.39 hectare</td>
</tr>
</tbody>
</table>

*Source: IEE and SIEE reports of the project*
A Brief Timeline of Rahughat Hydroelectricity Project

1997
NEA first identified the Raghuganga river as a potential site for hydropower generation

1998
The Environmental Impact Assessment of the project was completed

2007
Finance was secured for the project through EXIM Bank

2010
NEA invited bids for civil work
Contract awarded to IVRCL Ltd

2012
Contract for consultancy services for the construction of main civil works awarded to WAPCOS Ltd in association with Tata Consulting Engineers Ltd and Larson & Turbo Ltd

2013
NEA Board negotiated a compensation paid to the contractor but work stalled

2014
IVRCL Ltd filed a case against the NEA at a court in Nepal to prevent termination of the contract

2015
Capacity of the project optimised to 40 MW
NEA issued "Notice for Termination" to the contractor
Notice for fresh tender announced

2017
NEA registered Raghuganga Hydropower Company Ltd at the Office of Company Registrar
Contractor is yet to be decided
METHODOLOGY

• Case Study Method (ex-ante)
• Key Informant Interviews
• Focused Group Discussions: 2 FGDs at Rakhu Piple and Mauwaphant
• Household survey (based on convenience sampling) : 25 females
• Location: Beni, Mallaj Majhphant, Bagaicha, Rakhu Piple and Mauwaphant
LIMITATIONS

• No export-oriented hydropower project under construction during the study period
• Discontinued work of Rahughat HEP
• Affected areas already electrified, so no direct benefit with regard to electricity access
• Retrospective responses required so respondents had problem recalling information
• Limitations set by resources
**DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS**

<table>
<thead>
<tr>
<th>VDC</th>
<th>Population</th>
<th>Sex Ratio</th>
<th>Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dagnam</td>
<td>1089</td>
<td>76.79</td>
<td>58.21</td>
</tr>
<tr>
<td>Jhin</td>
<td>1131</td>
<td>69.31</td>
<td>65.4</td>
</tr>
<tr>
<td>Piple</td>
<td>3936</td>
<td>77.54</td>
<td>60.29</td>
</tr>
<tr>
<td>Majhphant Mallaj</td>
<td>8087</td>
<td>82.84</td>
<td>65.08</td>
</tr>
</tbody>
</table>

Source: CBS 2014

- Only about 10 households in Jhin and Dagnam do not have access to electricity *(anecdotal information)*
- All seasonal dirt-road connecting Dagnam to Beni-Jomsom Highway
- Nearest hospital in Beni (3 km from Galeshwor) but each VDC has sub-health post with an attendant
- There are 25 schools in total but only one high school
### Income distribution of respondents (%)

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;300,000</td>
<td>48</td>
</tr>
<tr>
<td>300,000-600,000</td>
<td>40</td>
</tr>
<tr>
<td>&gt;600,000</td>
<td>12</td>
</tr>
</tbody>
</table>

### Income source of respondents

<table>
<thead>
<tr>
<th>Income Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>100</td>
</tr>
<tr>
<td>Goat Rearing</td>
<td>52</td>
</tr>
<tr>
<td>Cattle Rearing</td>
<td>16</td>
</tr>
<tr>
<td>Service in Govt. Sector</td>
<td>12</td>
</tr>
<tr>
<td>Business &amp; Trading</td>
<td>8</td>
</tr>
<tr>
<td>Remittance and...</td>
<td>48</td>
</tr>
<tr>
<td>Investment in...</td>
<td>4</td>
</tr>
</tbody>
</table>
ECONOMIC IMPACTS

• Improved access to roads: 12.5 km (10 km functional) of all weather road connecting villages to Beni-Jomsom Highway

• Employment opportunities: local jobs created but fewer than expected; wage rate offered NPR 300 (lower than prevalent rate)

• Increase in economic opportunities: moderate spike in businesses at small grocery shops but bigger impact in Beni

• Land acquisition created riches for 198 households: at rate of NPR 4 m/acre (prevalent rate NPR 2.5m/acre); no impact on agriculture
SOCIAL IMPACTS

• Access to energy has decreased drudgery especially for women
• Still lack of social amenities such as schools and health centers is a problem
• The project will install pipelines to drinking water resources, help set up a secondary school, donate an ambulance, among others, once the works resume
WAY FORWARD

- Locals expect creation of more economic opportunities once the project works resume at Rahughat HEP.
- Employing greater number of locals is necessary for creating direct benefits and sense of ownership towards the project.
- Instead of projects promising social amenities such as schools and ambulances to the locals better engagement in skills training necessary, else projects only bring short-term boom.
- Promotion of local equity sharing (issuing shares to the people from affected areas) model may help the locals reap bigger financial benefits.
- Gender-targeted efforts towards benefit-sharing is necessary to ensure women are not left out.
- Rahughat HEP’s contractor issue necessitates review of contract awarding rules and arbitration procedures in Nepal in case of cross-border energy cooperation.
THANK YOU