

Review of “Prefeasibility Study for the Development of a Potential Regional Hydro Power Project” Nepal

Presentation at

SAARC Dissemination Workshop

On

Study for Development of a Potential Regional Hydro Power Plant in South Asia

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by

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Terms of Reference of the External Reviewer

Terms of reference of the External Reviewer is to provide comprehensive comments and suggestions according to the TORs of the “Feasibility Study of a Potential Regional Hydro Power Plant “ study as set by SAARC Energy Centre

General Comments

Cross border exchange of power

The Study needs to cover the following:

- Power generation in seller country.
- Power transmission in the seller country.
- Power transmission in intermediate country (if any), and
- Power transmission in the buyer country.

Cross border exchange of power

Cross border power supply needs assessment of the relevant laws, policies and regulation for successful implementation of:

- Exchange of power through Grid connectivity between the two or more countries.
- Joint venture (JV) investment in power generation (if any).
- Requirement for royalties by one or more country.
- Requirements for public investments in one or more country.
- Power sharing arrangement.

Regional Scope of Power Supply

- Nepal has peak and base deficit, whereas Bhutan has surplus power. As such, Bhutan can supply power to its neighboring countries, India, Pakistan and Bangladesh.
- Considering the surplus power in Bhutan, the study should take at least one project from Bhutan, which may be short term solution to bring immediate benefit through regional power trading.
- Power generation projects in Nepal may be considered as long term solutions as it has an extensive hydro potential.

CDM/ Carbon Benefit

- Historical track record of receiving carbon reduction revenue of a similar project needs to be included as reference in the study report to make it more realistic.
- The financial model assumes the carbon reduction revenue without mentioning period. The period of receiving revenues is particularly important to incorporate in the financial model after realistic confirmation.

Comments According to TOR

Identify three suitable project Sites and Access to Project Site

- Nepal is facing acute power shortage but Bhutan is a power surplus country. As such, at least one project from Bhutan should be undertaken under this study.
- Road access to the power generating sites are not clear. It is suggested to depict the sites using Google map and clarifying the existing roads and the roads need to be constructed.

Location of the project and Policies and Laws

- Location of the project with respect to the transmission route alternatives and substations are not clearly defined. This should be covered in the report for all the three countries specifying the existing and projected transmission lines.
- Local policies, laws and regulations pertaining to export of power to the SAARC member states; etc are not clearly defined. This should be addressed under a separate chapter.

Estimates of Cost and energy production

- The cost estimates and energy production estimates are well covered.
- Transmission line availability and their spare capacities (if any) need to be determined. The new transmission lines in the different countries are missing. Cost estimate of all the new transmission lines need to be included.
- One suggested alternative site in Bhutan needs to be included in the report. Therefore, the report should have two sites in Nepal and one site in Bhutan.

Develop revenue expectations in PPA

- The power tariff at generating station bus-bar is assumed in the study report for determining the revenue expectation but
- Both generation and transmission tariffs along with other ancillary cost needs to be reflected in the tariff for the end users.

Evaluate financing options

The investments to be segregated :

- Public Investment (stating the country that needs to make the investment).
- Private Investment for generation and transmission separately (stating the country in which the investment will be made).
- The contracting parties need to be identified, with the investment environment, regulations and laws.
- The power sharing mechanism/business model needs to capture the above two types of investments in the analytical framework.

FS Level Financial and Economic analysis

Financial and economic analysis of the alternatives has been discussed in the Report, However,

- Missing cost and revenue items need to address in determining financial and economic analysis of the alternatives.
- The report has said that financial modeling has been carried out. If so, the model printout should be include as an annexure of the report

Develop benefit/cost comparisons for each site

- Study Report describes cost benefit comparison of three alternative sites in Nepal.
- The report covers three sites adequately.
- If data is easily available, one of the sites can be in Bhutan.

Site Description, Project General Arrangement and Preliminary Plant Design; Environmental and social Aspects

- Adequately covered in the Report

Assessment with respect to electricity trade

- This is not clearly addressed in respect of power exchanges for cross-border trade and proposed power sharing mechanism.
- A separate chapter needs to be included in the study report including
 - ✓ Different business models of cross border power trading complying with MOU signed between the countries and
 - ✓ in line with the existing policies, laws and regulations of the member countries.

Assessment with respect to Power trade (Contd.)

- **The following may be the broad components for power trading:**

Components	Needed for the Study
1. Seller Country Power Generation	<ul style="list-style-type: none">• Location, costs, design of power generating station• Broad elements of PPA• Govt. policies and regulations for cross border power trade• Royalty payable to seller country (if any)• Institutions for power generation

Assessment with respect to Power trade (Contd.)

Components	Needed for the Study
2. Seller Country Power Transmission	<ul style="list-style-type: none">• Institutions for power transmission• Route, costs, design of new power transmission lines• Usage of existing transmission lines• Govt. policies and regulations for cross border power trade
3. Intermediate Country Power Transmission	<ul style="list-style-type: none">• Institutions for power transmission• Route, costs, design of power transmission line• Usage of existing transmission lines• Govt. policies and regulations for cross border power wheeling• Royalty requirements (if any)

Assessment with respect to Power trade (Contd.)

Components	Needed for the Study
4. Buyer Country Power Transmission	<ul style="list-style-type: none">• Institutions for power transmission• Route, costs, design of power transmission line• Usage of existing transmission lines• Govt. policies and regulations for power wheeling
5. Buyer Country Power Purchaser	<ul style="list-style-type: none">• Institutions for power purchase• Govt. policies and regulations for power wheeling• Broad elements of PPA

Compliance with Comments in the Revised Pre-Feasibility Study Report

- Most of the Comments and suggestions are covered in the Revised Pre-feasibility Study Report.
- Some of comments are not covered due to
 - ✓ Limitations of man-months for the study
 - ✓ Constraint of time
 - ✓ Constraint of budget of the study

Thank You

