

BHUTAN ELECTRICITY AUTHORITY

GUIDELINES FOR PROCESSING OF LICENCES

**PURSUANT TO ELECTRICITY ACT OF
BHUTAN 2001**

Table of Contents

1 Introduction	3
2 General	3
3 Exemptions	3
4 Notifications	4
5 Permit to Survey	5
6 Application for Licence	5
6.1 Legal Requirements of the Application	5
6.1.1 The legal and financial status of the applicant	6
6.1.2 Technical and economic description of the project	6
6.1.3 A description of how the project fits in with the existing and planned electricity supply system	9
6.1.4 The planned time of commencement and completion of the construction of the project	10
6.1.5 A view of the project's adaptation to the landscape, including necessary maps and drawings	10
6.1.6 The impact of the project on public interests and possible mitigation	10
6.1.7 A summary and conclusions of assessments and studies, including environmental impact assessments	11
6.1.8 Impacts of the project on private interests, including the interest of affected landowners and holders of other rights	12
6.1.9 Proposed tariff calculation	12
6.1.10 Consents and permits required under any other law	12
6.1.11 Any other documents required by the Authority	12
6.1.12 Other legal requirement for application	13
6.2 Confirmation of Receipt of the Application	13
6.3 Advertisement of the application	13
6.4 Objection to grant of a licence	14
7 Assessment of the Application	14
7.1 Statement of reason for a decision	16
8 Environmental Aspects	16
8.1 Environmental assessment process	16
8.2 Environmental clearance	16
9 Licence	16
9.1 General	16
9.2 General conditions and individual conditions	17
10 Involvement of Various Authorities in the Licensing Process	17
11 ANNEXURES	18
Annexure I Permit to Survey	18

1 Introduction

This Guidelines establishes the procedures and routines to be applied by the Bhutan Electricity Authority (BEA) in processing applications and granting licences to any person or entity intending to carry out activities related to construction, generation, transmission, system operation, distribution, sale, supply and export or import of electricity in Bhutan in accordance to the Electricity Act, 2001.

Rights and obligations of licencees engaged in these activities are defined in provisions set forth in the Act and appropriate regulations in force, and may not be deduced from or imposed through procedures and routines set forth in this Guidelines.

2 General

In processing applications and granting, modifying and revoking licences in accordance with Section 11.2 of the Electricity Act, the BEA shall:

- i) ensure the reliability, quality, security and efficiency of electricity supply;
- ii) encourage competition in generation, transmission and supply of electricity;
- iii) ensure non-discriminatory access to the transmission and distribution system;
- iv) ensure a fair balance of the interests of the public, customers and participants in the electricity sector;
- v) facilitate the development of generation, transmission and distribution of electricity throughout the country;
- vi) ensure the protection of the natural resources, the environment and other public interests affected by the development of electricity supply.

Further, the BEA will perform his functions in a manner that:

- i. is transparent and objective;
- ii. is fair, reasonable and efficient;
- iii. is non-discriminatory; and
- iv. promotes fair competition.

3 Exemptions

The BEA may exempt any person or entity from the requirement to obtain a licence under Section 18 of the Electricity Act. Such exemptions may include, but is not

limited to, the generation of electricity below 500 kilowatt. An exemption may be of general or specific application. The terms, conditions and limitations for exemption would be specified in the appropriate regulations issued by the BEA.

4 Notifications

Any person or entity who intends to implement a project or establish an operation for which a licence is required shall notify the BEA of the intended project or operation as per the Section 20.1 of the Electricity Act. The purpose of such a notification is to inform and provide the BEA an overview of the plans at an early stage in the planning process. As stated in Section 20.2 of the Electricity Act, the notification shall as far as possible contain the information required as per Section 22 of the Electricity Act for the development of the project. When a notification is received, the BEA shall check the contents of document against the referred requirements. The applicant shall then be given a notice as to whether the notification is acceptable or if further information is required within reasonable time after the notification has been received by BEA.

The BEA shall publish the accepted notification in a national newspaper (or other appropriate media) within 3 weeks after the acceptance in order to inform and to call for opinions from the public, affected parties, other authorities and non-governmental organizations (NGOs) regarding the project and its consequences. Opinions and comments could include studying of additional issues in greater details during the subsequent surveys. The BEA shall when it finds it appropriate also publish a notice on its own WebPages. Any dispute over compensation for land or agreements in relation to this specific matter shall not be a part of the BEA's licensing process.

After reviewing the notification, if the BEA considers that the environmental or any other impacts of the potential project or operation are substantial the applicant shall arrange meeting for BEA with appropriate stakeholders and affected parties. The BEA will also visit the project area.

- I. ***Stakeholder consultations:*** The BEA shall inform national affected authorities, stakeholders and NGOs about the notified project and its impacts in the meeting.
- II. ***Field visits/Public meetings:*** The BEA shall also arrange meeting in the project area for the local authorities and locally affected parties. The project sites will also

be visited by the BEA officials to be aware of the particular features of the proposed site.

These meetings may also be used as a forum for information and consultation with affected people and organisations in compliance with Section 22 of the Environmental Assessment Act if relevant. The person or entity responsible for the notification shall participate in these meetings and visits.

Any opinions, proposals or comments of the stakeholders should be presented to BEA, no later than 30 days after the notification has been published by BEA.

5 Permit to Survey

After reviewing the notification and comments received to the notification, the BEA may issue a permit in accordance to Section 21 of the Electricity Act, to the intended applicant to carry out assessments, studies and any other activity that may be necessary to enable the intended applicant to prepare an application for a licence.

The intended applicant must at his own initiative establish any agreement with and/or permission to carry out the necessary activities from affected landowners or holders of other rights that may be affected by the survey. The content of the permission to survey is provided in *Annexure I*.

6 Application for Licence

Based on various studies, investigations and surveys and other assessment(s) conducted, the applicant shall submit an application for licence to the BEA. The applicant shall also provide an executive summary of the proposed project (see Section 6.1.7).

The BEA shall endeavour to process all applications for a licence expeditiously.

6.1 Legal Requirements of the Application

The application for licence shall be accompanied with the following information, in accordance to the Section 22 of the Electricity Act, for appropriate assessment of the application. In addition, the licence application shall be accompanied with copies of all reports, studies, investigation and other relevant documents.

6.1.1 *The legal and financial status of the applicant*

The applicant shall provide relevant documents of its legal establishment. For example, if the company is established as per the Companies Act of Bhutan, the applicant shall provide copies of certificate of incorporation and article of incorporation with other relevant documents. Similarly, if the entity is established as per other relevant laws of the Kingdom of Bhutan and/or policy of the Royal Government, the documents pertaining to the necessary approval/agreement shall be provided.

The applicant shall also provide its last available and approved accounts, and clearly indicate its financial potential to fund the project in an acceptable manner. If the project is going to be funded through external sources, the applicant shall also mention the funding agency and provide all the necessary documents demonstrating the funding mechanism and plan.

6.1.2 *Technical and economic description of the project*

A. Technical Description

The applicant shall provide the technical feasibility report of the project which, in general, shall consist of overall technical description of the project, including the maps, drawings, and land use.

a) Hydropower generation

For a hydropower project, the applicant shall at least provide the following information in the form of technical feasibility report:

- i) Detailed description of the project relating to geography, geology, hydrology, seismology, and environment, etc (the project description should include (i) the geographical information of the project site such as location, landscape, elevation and map coordinates, and other relevant information; (ii) geological information of the project components such as dam, tunnels, surge chambers, penstock, powerhouse, tail race and other structures of the hydropower plant; (iii) hydrological information including the catchment area and the catchment characteristics for efficient use of the annual available water; (iv)

seismological information of the project site; and (v) description related to the construction of camps and access roads, construction power requirements, including the plans for possible public use of the roads);

- ii) Detail description of all main civil structures including the dams and water course installations such as intakes, de-silting chambers and tunnels, headrace tunnels, surge chambers, penstock and pipelines, powerhouse, and tailrace tunnels etc, accompanied with the engineering design/calculation of each structure of plants;
- iii) Detail description of all main hydro electro-mechanical and the switchyard equipments accompanied with the engineering design/calculation and the applied technical standard, where relevant; and
- iv) Description of alternative technical solutions if there are any, but mentioning the preferred solution.

Also, since the capacity of the hydropower plant is based on the hydrology regime, the technical feasibility report must contain detail information on hydrological data and calculations, and design of the hydropower plant capacity. Data from at least one gauging station from the catchment area in question should be included. On the basis of the plan of operation of the reservoir and/or power plant, the following hydrological data must be provided:

- i) variations in water level and rate of flow expressed in terms of contours and in m^3/s ;
- ii) extreme values of water level and rate of flow and frequency and duration ;
- iii) flooded area after inundation, draining of areas and important river sections during normal and extreme years;
- iv) analysis of residual rate of flow and water-covered areas for all affected river sections in normal and extreme years with statistical processing information in the form of graphs (100, 75, 50, 25 and 0 percentiles) showing actual years, (e.g. one «dry», one «average», and one «wet» year) and comparison conditions before and after implementation of the project; and
- v) normal margins of error in the hydrological material used.

The proposals for the 'Rules of Operation' related to the following, during the operation phase of the hydropower project, shall also be provided:

- i) Maximum and minimum regulated level of reservoir;
- ii) Rate of minimum flow of downstream of the dam; and
- iii) Water level restrictions.

A proposal for 'Rules of Operation' shall include draw-down strategy, plans for peak power operation, and plan to deal with floods etc.

b) *Grid*

The applicant shall provide detailed technical feasibility report of grid project, which shall include the transmission and distribution infrastructures. The application for the licence to construct the hydropower generation, which has transmission or distribution lines as part of the project shall also provide the detail technical feasibility report for the transmission and distribution infrastructure as per the requirement provided herein. The report shall, beside other information, include the following:

- i) Detailed description of the project, including the route map of the transmission line to be constructed and showing location of each transmission tower or distribution pole where possible; reliable satellite map and/or topographical map of the transmission line route; information on the necessary camps and access roads related to the construction and the subsequent maintenance work for the installation; the transport needs of equipment; and the plan for possible public use of the project facilities such as roads during and after the construction works, if any;
- ii) Detailed description of the transmission or distribution lines project including design and technical specification (substation, transformer, tower/poles, lines, protection system and the associated equipments and structures based on the different topography), together with justification/reasons for such design, technical/scientific calculation and applied technical standards, where relevant;

- iii) Information related to power system studies conducted using the load flow analysis and other power system analysis on the feasibility of the grid project, covering the efficiency, energy security, and reliability aspect; and
- iv) Alternative routing for grid.

B. Economical Description

The applicant shall provide the following information related to the economic description of the projects:

- i) Total cost of projects with cost breakdowns such as land acquisition cost, operation and maintenance cost, civil and electro-mechanical cost, network cost, cost of averting measures, and other tangible and intangible cost to the society and environment etc;
- ii) Overall benefits of the project, including the generated revenue (for example, from domestic market as well as through export), and other socio-economic benefits (for example, electricity supply, access roads, hospitals, schools and other public facilities from the project);
- iii) Description of the analytical methods applied to in the financial and economic calculations and the results from economic analysis and/or calculations (Net Present Value, Economic Internal Rate of Return etc);
- iv) All the basic and important parameters used in the financial and economic analysis including the debt equity ratio, cost of capitals, losses, interruptions, etc; and
- v) Sensitivity analyses with respect to key parameters such as investment cost, load forecast, energy prices etc.

6.1.3 A description of how the project fits in with the existing and planned electricity supply system

The applicant shall provide detail information on the arrangement for connecting the proposed project with the existing and/or planned electricity supply system, including the following:

- i) Copies of the connection agreement and other related information/documents;
- ii) Maps, drawing and descriptions; and

- iii) Any additional information related to the description on how the project interacts with the existing and/or planned electricity supply system from the construction and operational perspectives.

6.1.4 The planned time of commencement and completion of the construction of the project

The applicant shall provide detail construction schedule in the form of Gantt Sheet to carry out the construction of the project, including the commencement date and completion date of the project. The applicant is expected to predict and indicate how they are to cope with possible delay factors, such as acquisition of land, transport of heavy or special equipment, challenging weather conditions, and other factors beyond their control. A description of the coordination of different stages should also be included, for example a plan for the transmission lines completion in relation to the commissioning of the power plant etc.

6.1.5 A view of the project's adaptation to the landscape, including necessary maps and drawings

The applicant shall provide detailed information from the perspectives of the project's adaptability in that location/site/landscape. The information shall include detailed characteristics/features of the landscape of the project site, including the following information:

- i) existence of forested areas, human settlements, wildlife, cultural and historical structures or significance with significant physical description of project sites;
- ii) intervention/influence of the project to the landscape and the environment in broad aspect;
- iii) Mechanism/reason for adaptability of the project on that particular site; and
- iv) Comparison of the project area before and after the project.

6.1.6 The impact of the project on public interests and possible mitigation

The impacts of the various structures of the project during the (i) pre-construction period (ii) construction period and (iii) operation period of the project on the public interest should be described in detail with the proposed mitigation measures. In other words, the applicant should provide in detail (i) how the project will impact the public interest; (ii) when the project will impact the public interest; and (iii) how the

applicant is proposing to undertake mitigation measures. The applicant shall provide in detail the impact on the public interest due to:

- (i) pre-construction activities of the project such as construction of approach road, construction of camps and dwellings, electric lines construction etc;
- (ii) construction activities of the project such as the dam, headrace tunnels, surge chambers and penstocks, power house, transmission tower/poles, substation and other structures of the project;
- (iii) operation activities of the project such as dam reservoir, minimum flow on the downstream of the dam, summer flood due to increase river flow, and other operational aspect of the project.

The impacts of the project on public interests may be:

- i) Any public facilities such as roads, bridges, and path;
- ii) All cultural monuments and historical sites of public or national interest;
- iii) Air and water;
- iv) Natural resources such as public land, river, forest including the flora and fauna, minerals and other material deposits;
- v) Any other matter of public interest, including the environment that bears public interest.

The applicant shall describe in detail the proposed acceptable mitigation measures with the environmental management plan for each impact of the project on the public interest as per the Environment Assessment Act of Bhutan and other relevant laws.

6.1.7 A summary and conclusions of assessments and studies, including environmental impact assessments

The applicant shall provide well documented summary and conclusion of the proposed project related to:

- i. Environment Impact Assessment;
- ii. Socio-economic Assessment;
- iii. Technical Assessment including the geology, hydrology and seismology; and
- iv. Any other assessments and studies carried out.

Summary and conclusion provided herein by the applicant should be able to present clear and correct assessment of the proposed project in a very conclusive manner.

6.1.8 Impacts of the project on private interests, including the interest of affected landowners and holders of other rights

The applicant shall provide in detail the impact of various structures of the projects on private interests such as the number of households, people, areas, type of properties etc, with the proposed or agreed resolving measures, as the case may be. For example, the applicant shall provide the impact of the project on the private interest and holders of other rights due to:

- (i) pre-construction activities of the project such as construction of approach road, construction of camps and dwellings, construction of electric lines etc;
- (ii) construction activities of the project such as the construction of the dam, headrace tunnels, surge chambers and penstocks, power house, substation, tower/poles and other associated structures;
- (iii) operational activities of the project such as from the dam reservoir, minimum flow on the downstream of the dam, summer flood due to increase river flow, and other operational aspect of the project.

The applicant shall also provide information in detail related to impact on the settlement of the people and on other social conditions, including health.

6.1.9 Proposed tariff calculation

The applicant shall provide proposed tariff calculation as per the Tariff Determination Regulation of the Bhutan Electricity Authority and state in detail the sustainability/viability of the project. The applicant shall also provide other relevant documents, including the power purchase agreement, and loan agreement. The information shall be provided as per the Annexure-II: Format to calculate the tariff.

6.1.10 Consents and permits required under any other law

The applicant shall provide any consents, permits and clearance required under any other relevant law. This may be, but not limited to, Forestry Clearance from the Ministry of Agriculture and Forest, Environmental Clearance from National Environment Commission, Mine Lease Clearance from Department of Geology and Mines, and necessary clearances from Ministry of Home and Cultural Affairs, Dzongkhag and Gewog.

6.1.11 Any other documents required by the Authority

The applicant shall provide Environment Impact Assessment report as mentioned in Section 8.1; Detail Project Report; and any other documents required by the BEA while processing the licence application.

6.1.12 Other legal requirement for application

In line with Sub-section 22.4 of the Electricity Act, the BEA may specify the requirements of an application under subsection 22.1, 22.2, and 22.3 of the Electricity Act according to the type and extent of impact of the project or operation applied for.

The applicant shall provide the following to the BEA:

- i) Two hard copies of the application with complete assessment report;
- ii) One soft copy of the application with complete assessment report on CD;
- iii) An application containing information and content that allows non-expert readers to get the necessary and appropriate information for review and to make up their opinions on the plans.

In accordance to Sub-section 22.5 of the Electricity Act, the application for licence shall be accompanied with the fees as provided in the Regulatory Fees Regulation of the BEA.

6.2 Confirmation of Receipt of the Application

In accordance to Sub-Section 22.6 of the Electricity Act, the BEA shall as soon as possible after receipt of an application either request additional information or confirm in writing to the applicant, that the application is complete in all important aspects. However, the confirmation is subject to a reservation that the BEA may demand further information in case the licensing process renders it necessary.

6.3 Advertisement of the application

In accordance to Sub-section 23.1 of the Electricity Act, the BEA shall within a reasonable time, after confirming that the application is complete in all aspects, publish the application at least in one national newspaper of wide circulation and on its WebPages. As per Sub-section 23.2, a notice published under Sub-section 23.1 shall:

- i. Indicate the receipt of an application for a licence;
- ii. Contain a description of the nature and location of the project applied for;

- iii. Inform the members of the public that the application may, within the limits of commercial confidentiality, be inspected at a office of the BEA or at a public office in the area where the project applied for is supposed to be located; and
- iv. Invite directly affected parties and local authorities in areas affected by the project who object to granting of the licence, whether on personal, environmental or other grounds, to lodge with the Authority an objection or other comments within a specified time, being not less than thirty days from the date of the notice.

In addition, the BEA may initiate the appropriate meetings and information processes, where necessary. The intention of these meetings will be to provide opportunity for an open forum where stakeholders, national and local authorities, and other affected parties can receive appropriate information of the project and present their opinions in a transparent manner. In these meetings, the applicant would be required to present the application and the results from survey/studies and assessment made in order to illustrate the consequences, benefits and disadvantages related to the implementation of the project. Where required, the BEA may present the processing of an application for licence.

6.4 Objection to grant of a licence

Section 24 of the Electricity Act states, *‘an affected party may lodge with the Authority an objection to the grant of a licence, setting out the grounds of the objection’*. Therefore, all affected parties and authorities shall provide their opinions, comments or objection to the proposed project to BEA in writing within the published deadline. If any objections are lodged, the applicant shall be invited to comment on the objections and give his/her views. Any views by the applicant shall then be included in the BEA’s assessment of the application.

7 Assessment of the Application

Sub-section 25.1 of the Electricity Act states, *‘when granting or rejecting applications, the Authority shall take into consideration, as far as adequate for the project applied for:*

- i. *the needs for electricity, or revenues for export of electricity, of the country, region or community;*

- ii. *the impact of the operation of the undertaking on the social, cultural and recreational life of the community;*
- iii. *the needs to protect the environment and to conserve the natural resources;*
- iv. *land use and siting or route of the project;*
- v. *the costs of the project;*
- vi. *the ability of the applicant to operate in a manner designed to protect the health and safety of users of the service for which the licence is required and other members of the public who would be affected by the operations of the applicant;*
- vii. *the technical, economic and financial capacity of the applicant to render the service for which the licence is required;*
- viii. *energy efficiency;*
- ix. *any representations and objections made under section 24;*
- x. *the price or tariff offered (as and when found appropriate); and*
- xi. *other public and private interests affected by the operation for which the licence is required*’.

In order to enable the BEA to provide fair and fast decision, the applicants shall ensure that the applications are accompanied by detailed information from the perspective of Sub-section 25.1 of the Electricity Act.

When granting the licence or rejecting the application, the BEA shall also take into consideration the policies of the Government and any other matter that may be considered likely to have a bearing on the operations of the applicant in accordance to Sub-section 25.2 of the Electricity Act.

In order for the BEA to award a licence, the benefits should normally exceed the negative consequences of the project. While processing the application, the BEA shall also consider the alternatives in order to obtain the most efficient use of the financial and available natural resources. Where the negative consequences are significant, the BEA may still carry out licensing process for constructive discussions between the authorities, applicant, and the affected parties with the aim of agreeing on minor or larger adjustments of the plans and appropriate mitigation measures so as to reduce the negative consequences to acceptable limit, since adjusting the plans or introducing alternative solutions to reduce negative consequences would normally be a more realistic outcome of the licensing process rather than rejecting the application totally.

7.1 Statement of reason for a decision

Based on the application, and comments and opinions presented by stakeholders, affected parties, national and local authorities, and the applicant, the BEA shall decide whether to grant or reject application for licence. After making the decision, the BEA shall in accordance to Sub-section 26.1 of the Electricity Act, produce statement of reasons within thirty days.

The statement of reasons for decision and other necessary relevant documents shall be provided to the applicant by the BEA and it shall be made available to the interested parties on request in accordance to Sub-section 26.2 to demonstrate that the considerations preceding the decision have been fair, reasonable, transparent, objective, and non-discriminatory.

8 Environmental Aspects

8.1 Environmental assessment process

The applicant shall submit Environmental Impact Assessment Report and other related information of the proposed projects required as per the Environmental Assessment Act, to the Secretariat of the National Environment Commission (NEC) for screening.

8.2 Environmental clearance

Section 8 of the Environment Assessment Act states that issuance of an environmental clearances shall be pre-requisite to the issuance of a ‘development consent’. The development consent as per the definition of the Environment Assessment Act is the ‘approval issued or renewed in the form of a licence, lease, or permit for land use or construction’. Therefore, environmental clearance shall be attached by the applicant with the application for licence and it shall be an integral part of the application.

9 Licence

9.1 General

If the BEA after due process, grants a licence with subsequent licence conditions as required by the Sub-section 34.1 of the Electricity Act, the licence conditions shall consist of the terms and conditions for the operation of the licenced activities.

9.2 General conditions and individual conditions

Each licence shall include general and individual conditions. The general conditions are common conditions generally applicable to all the licencees of similar nature, while the individual conditions are applicable to the holder of a specific licence, which are intended to cover the special situations or needs related to specific project. The individual conditions may consist of conditions related to minimum water flow, or special types of poles and/or lines, related to the specific project.

10 Involvement of Various Authorities in the Licensing Process

In addition to the requirement for licence according to the Electricity Act, the planning and implementation of electricity projects will be subject to regulation according to a various additional Acts and/or regulations, managed by different authorities such as the the National Environment Commission pursuant to the Environmental Assessment Act, the authorities pursuant to the Forest and Nature Conservation Act, the authorities pursuant to the Land Act, and the local authorities. As various legal frameworks function side by side, it shall be the legal responsibility of the applicant to obtain all necessary permits and licences before applying for the licence to the BEA or commencement of the proposed project, as the case may be.

11 ANNEXURES

Annexure I

Permit to Survey

The Bhutan Electricity Authority (BEA) pursuant to the Section 21 of the Electricity Act of Bhutan, 2001, hereby grants this **Permit to Survey** to the (herein after referred to as the “Intended Applicant”) to carry out the assessments, studies and other activity to enable intended applicant to prepare for an appropriate application for licence for the development of the Project, subject to following terms and conditions.

1. The Permit to Survey shall be valid till
2. The Intended Applicant shall carry out
3. The personnel of the Intended Applicant carrying out the survey/studies shall be professionals covering all the required specialized fields.
4. All documents prepared as part of the survey/studies shall be the property of the Intended Applicant but may be used by the BEA where necessary.
5. The Intended Applicant shall bear all risks and cover all costs related to the performance of the survey, including all fees and charges for obtaining data and information, cost of field investigations/surveys, design, calculations, analyses, reporting and any other studies conducted pertaining to the Project.
6. The studies shall be carried out by the Intended Applicant to provide all the information required as per Section 22 of the Electricity Act of Bhutan, 2001.
7. It shall be the responsibility of the Intended Applicant to obtain the consents, clearances and permits from the concerned authorities and affected parties as may be required under any other law or policy of the Royal Government before the commencement of the survey/studies.
8. The Intended Applicant shall not carry out any works other than the survey/studies permitted herein.
9. The issuance of this Permit does not grant the right for subsequent investment and development of the Project by the Intended Applicant. Based on the findings of the detailed project studies, the Intended Applicant shall apply for separate approval(s) from the Royal Government and/or the BEA, whichever applicable, for the

development of the Project under appropriate mechanism/policy prior to the actual implementation of the project.

- 10. Based on the consultation/public meetings held with national, regional and local authorities, stakeholders and other affected parties, the applicant shall conduct the following additional studies and assessment as an integral part of the survey.

.....
.....
.....

Chief Executive Officer of the Authority

Annexure II **GENERATION TARIFF COMPUTATION**

	Hard Cost	Nu/Rs. Million			
Design Energy Generation	Total cost including IDC	Nu/Rs. Million	0	O&M ratio	1.50%
Auxiliary Consumption	1.20%	Cost of land	Nu/Rs. Million	Inventories ratio	1.00%
Availability	98.00%	Depreciation	3.33 %	Inflation	5.00%
Technical losses		IDC add	10.00%	Arrears	60
Royalty Energy					
Net saleable energy in MU					
Domestic sales portion					
Export Price					
					Cost of Debt
					Cost of Equity
					Gearing
					Tax
					WACC

Year	Net asset value	Return on Assets	Dep	Capital Cost	O&M Costs	Cost of Losses	Revenue	Inventories	Interest on Working Capital		Total Cost	Sales	Tariffs
									Working Capital	Interest			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-	-	-	-	-	-	-
33	-	-	-	-	-	-	-	-	-	-	-	-	-
34	-	-	-	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-	-	-	-
													Levelized Generation Tariff

Approved in the 25th Commission Meeting of the Bhutan Electricity Authority held on April 7, 2011.

(Dasho Sonam Tshering)
Hon'ble Chairman

(Karma Tshering)
Member Secretary