


**Bhutan**

**Sustainable Hydropower  
Development Policy**

**2008**




DIRECTOR GENERAL  
DEPARTMENT OF HYDROPOWER & POWER SYSTEMS  
MINISTRY OF ECONOMIC AFFAIRS  
THIMPHU : BHUTAN

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**ABBREVIATIONS**


BEA	Bhutan Electricity Authority
BHP	Basochhu Hydropower Plant
BOOT	Build-Own-Operate-Transfer
BPC	Bhutan Power Corporation
CA	Concession Agreement
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CHP	Chukha Hydropower Plant
DGPC	Druk Green Power Corporation
DHI	Druk Holding & Investment
DoE	Department of Energy
DPR	Detailed Project Report
EIA	Environmental Impact Assessment
EMP	Environment Management Plan
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GoI	Government of India
KHP	Kurichhu Hydropower Plant
MoEA	Ministry of Economic Affairs
MoA	Ministry of Agriculture
MoU	Memorandum of Understanding
MW	Mega Watt
PDA	Project Development Agreement
PSMP	Power System Master Plan
RfB	Request for Bid
RGoB	Royal Government of Bhutan
RoC	Registrar of Companies
SPV	Special Purpose Vehicle
THPA	Tala Hydroelectric Project Authority

  
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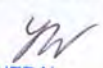
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## **1. Introduction**

- 1.1 The economy of the Kingdom of Bhutan is largely dependent on the development of Hydropower generation. Hydropower plants contribute significantly to the overall GDP growth and economy, both during construction and operation phases.
- 1.2 The domestic demand for electricity in the country is increasing at a rate that may soon exceed existing generation capacity that is presently available to meet such domestic demand, and hence, capacity augmentation is imperative. The surplus electricity is being exported to India from the existing hydropower generating plants. The revenue earned from export of electricity is a significant contributor to the overall revenues of the Kingdom. There is great potential for increasing such export and consequently earn substantial revenues. As part of the Framework Agreement entered between the Royal Government of Bhutan (RGoB) and the Government of India (GoI) for cooperation in the field of hydropower sector, GoI has agreed to a minimum import of 5,000 MW of electricity from Bhutan by the year 2020.
- 1.3 The RGoB intends to develop hydropower projects in an accelerated manner in order to have an installed capacity of at least 10,000 MW by 2020. The key reasons for acceleration of hydropower development are:
  - hydropower is the main source of revenue for the country and its development would help the country achieve its goal of economic self reliance, and
  - huge energy demand in the region offers a big opportunity for Bhutan to develop its rich hydropower resources for export.
- 1.4 The Power System Master Plan estimates the overall hydropower potential of Bhutan at 30,000 MW with production capability of about 120,000 GWh. With the commissioning of Tala hydroelectric project (1020 MW) in 2006-07, the installed hydropower capacity in Bhutan has reached 1,488 MW, which constitutes only 5% of the potential.
- 1.5 So far, all hydropower projects have been developed with bilateral grants and loans as Public sector undertakings. While this model will continue to receive priority, the ability to accelerate hydropower development through this model alone is limited mainly on account of resource constraints.
- 1.6 To facilitate accelerated hydropower development, there is a need to create enabling environment to attract public and private investments, and strengthen institutional capacity. The Hydropower Policy provides the framework and guidelines for accelerated hydropower development.
- 1.7 The Royal Government shall continue to develop hydropower projects on its own or through existing bilateral arrangements and simultaneously look for private sector and public private partnership also to contribute to the hydropower development.

  
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## **2. Objectives of the Hydropower Policy**

- 2.1 The key objectives of the policy are to:
- a) Mobilize funds and attract investments for accelerated hydropower development
  - b) Enhance the revenue contribution to the Royal Government
  - c) Contribute to socio-economic development
  - d) Ensure domestic electricity supply security and reliability
  - e) Ensure that the hydropower development is in accordance with the sustainable development policy of the Royal Government, keeping in view the fragile mountain ecosystem of the country
  - f) Contribute towards development of clean energy to mitigate problems related to global warming and climate change.

## **3. Institutional Arrangements of the Hydro Power Sector**

- 3.1 The erstwhile Department of Power under the erstwhile Ministry of Trade and Industry was responsible for all activities related to the Power sector till June 2002. The Electricity Act was passed in the 79<sup>th</sup> session of the National Assembly in July 2001 and the Power sector in Bhutan has since then undergone major restructuring. The Department of Power was split up into three organizations: the Department of Energy (DoE) for policy making and planning of all aspects of Energy and Power sector, the Bhutan Power Corporation (BPC) for transmission and distribution of electricity and the Bhutan Electricity Authority (BEA) for regulating the electricity industry.
- 3.2 The three Hydro Power Corporations (Chukha, Basochhu and Kurichhu), which have been operating as independent corporations, have been merged into a single entity, the Druk Green Power Corporation (DGPC) on 1<sup>st</sup> January 2008.

### **Department of Energy (DoE)**

- 3.3 The DoE, a Department under the Ministry of Economic Affairs (MoEA), is responsible for developing the long term policies and plans for the energy and power sector. The functions of the Department are to:
- Be the Apex body for implementation of this policy. The body will undertake bidding processes for allotment of projects, and promotional and marketing activities for the hydro power sector under this Policy including investor facilitation for hydropower development
  - Formulate national policies, plans, programmes and guidelines related to sustainable development, efficient utilization and management of Energy, Hydropower and Hydromet services in the Kingdom;

- Serve as the Central Coordination Agency and the Focal point of the Royal Government on all matters related to Energy, Hydropower and Hydromet services;
- Responsible for planning of security of electricity supply, national transmission grid network and rural electrification;
- Lead and encourage the development of renewable energy;
- Provide technical advice and related support services to the Royal Government on various issues, options, strategies and prospects related to Energy, Hydropower and Hydromet services;
- Oversee, monitor and evaluate the implementation of plans, programmes and projects and provide feedback for improvement;
- Provide techno-economic and budgetary clearance on all major projects and programmes related to the electricity sector before implementation; and
- Be responsible for all bilateral and multilateral issues on Energy and Power.


#### **Bhutan Electricity Authority (BEA)**

3.4 The BEA is an autonomous regulator for the electricity sector. The functions of the BEA include:

- Develop and implement technical, safety and performance regulations, standards and codes for the electricity sector;
- Develop and implement principles and procedures for tariff setting, and subsidies and economic regulation of domestic tariff;
- Issue licenses and monitor Licensees as per the provision of the Electricity Act in place; and
- Develop and implement Dispute Resolutions Procedures relating to enforcement of Electricity Act, regulations, codes and standards.

#### **Bhutan Power Corporation (BPC)**

3.5 The BPC is responsible for electricity transmission, distribution and supply functions. The BPC also manages and operates some embedded generation units consisting of micro/mini hydro and diesel generating units. The BPC provides transmission access for export of surplus power to India. It is also the National System Operator.

  
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**Druk Green Power Corporation (DGPC)**

- 3.6 The DGPC is responsible for managing all hydropower plants fully owned by the Royal Government. It will also develop projects on its own or through joint ventures on behalf of the Royal Government as may be directed. Projects that are funded through bilateral assistance shall continue to be managed and supervised by the MoEA through formation of project authorities. Such fully Government owned generating plants shall be handed over to DGPC when the Project Authority is dissolved.

**Ministry of Agriculture (MoA)**

- 3.7 The MoA plays an important role in ensuring sustainable watershed management through catchment protection and other nature conservation works in order to support the availability of water for hydropower generation.

**National Environment Commission (NEC)**

- 3.8 The NEC is the apex body for overall coordination of matters relating to water resources. The NEC is also responsible for according environmental clearances of all projects as per the Environment Act and Regulations.

**4. Project Solicitation Process**

**4.1 Project Classification**

- 4.1.1 The Power System Master Plan 2003-22 shortlists 76 projects: 70 run of the river and 6 reservoir schemes. The total estimated capacity of these 76 projects is about 23,760 MW. For the purpose of this policy, the projects are classified as follows:
- (a) Micro/Mini projects – having installed capacity less than and up to 1 MW
  - (b) Small Projects - having installed capacity greater than 1 MW and up to 25 MW
  - (c) Medium Projects - having installed capacity more than 25 MW and up to 150 MW
  - (d) Large projects - having installed capacity of more than 150 MW and up to 1000 MW
  - (e) Mega Projects – having installed capacity of more than 1000 MW.

**4.2 Investment Model and Period**

- 4.2.1 The RGoB shall identify hydropower projects that would be developed under Build Own Operate and Transfer (BOOT) model. The project shall be allotted to a Developer for a concession period of thirty (30) years, excluding the construction period. Based on the performance of the incumbent operator and on terms and conditions to be agreed upon, the period can be extended for a maximum of fifteen (15) years.



- 4.2.2 Project Developer shall register with the Registrar of Companies (RoC) as a separate company as per the Companies Act of the Kingdom of Bhutan. The company shall be a Special Purpose Vehicle (SPV) dedicated for a specific hydroelectric project in Bhutan. The SPV shall be required to obtain licenses from BEA for construction and generation, sale, export or import of electricity as may be relevant as per the Electricity Act. The SPV will also be required to obtain a business license.
- 4.2.3 The RGoB or one of its appointed agencies shall carry out mandatory inspection of the project during the concession period to ensure that the project assets are maintained to the required standards in order to maintain the specified generation capability and residual life of the plants. If such inspections find that the plant capacity/or life of the project are being undermined by inadequate maintenance, the RGoB shall seek remedial measures from the project company.
- 4.2.4 At the end of the concession period, the entire project shall be transferred and vested in the RGoB at no cost and in good running condition. At the 25<sup>th</sup> year of operation, the RGoB and the project company shall carry out joint inspection to mutually agree upon any capital investments that may be required towards major replacement, renovation and modernization of project components, which cannot be covered by internal funds of the project. Liabilities arising out of such activities shall be transferred to the RGoB. Other liabilities and non-project assets of the project at the end of concession period shall be retained by the project or distributed among the shareholders, as mutually agreed between the shareholders. In the event the concession period is extended beyond 30 years, all liabilities shall be accrued to the project developer and not to the RGoB.
- 4.2.5 Projects that are fully owned by the RGoB/RGoB agency or where the RGoB/RGoB agency has a minimum of seventy four percent (74%) equity and the balance shares are owned by the Bhutanese nationals, such projects will not be required to be reverted to the Royal Government at the end of the Concession Period.

### **4.3 Project Ownership**

#### **Micro/Mini and Small Hydropower Projects**

- 4.3.1 Investment in Micro, Mini and Small Hydropower Projects will be addressed through a separate Renewable Energy Policy and not fall within purview of this Policy.

#### **Medium Hydropower Projects**

- 4.3.2 Investments in Medium Hydropower Projects shall have a minimum of 26% equity held by Bhutanese nationals and/or Bhutanese companies having 100% ownership by Bhutanese nationals. No single foreign investor can enter into Joint Ventures beyond five projects.



### **Large Hydropower Projects**

- 4.3.3 Investments in Large Hydropower Projects are open for joint ventures with Bhutanese companies or 100% foreign investments. The equity participation by any single foreign investor including Bhutanese FDI companies shall be limited to three large projects with total installed capacity not exceeding 2000 MW.

### **Mega Hydropower Projects**

- 4.3.4 The RGoB shall generally undertake development of Mega Hydropower Projects in collaboration with governments of development partner countries.
- 4.3.5 Such Projects may also be considered for development through models as specified for Large Hydropower Projects in the event the Projects cannot be realized through the bilateral models specified under sub-clause 4.3.4.

### **Public-Public Partnership**

- 4.3.6 The RGoB shall directly award projects for development as 100% Royal Government undertaking or through Public-Public partnership in which the RGoB and participating Governments have majority shareholding in the Public sector companies.
- 4.3.7 For Public-Public partnership, the RGoB undertaking shall have a minimum of 51% shareholding.

### **Public-Private Partnership**

- 4.3.8 The RGoB may develop hydropower projects through Public-Private Partnership. For this, the RGoB shall allocate projects directly to Royal Government undertaking. The private partner shall be selected through the project allotment process as per this policy, except in case of strategic partnership.
- 4.3.9 The RGoB may opt to have a share in Hydropower Projects developed by private investors.

### **Strategic Partnership**

- 4.3.10 Subject to special approval by the Royal Government of Bhutan, an investor can be selected without bidding as a strategic partner having maximum shareholding of twenty six percent (26%).

### **Captive Power Plants**

- 4.3.11 Power Intensive Industries located within Bhutan shall be permitted to develop hydropower plants as captive power sources for their industries under a separate Captive Power Policy.

  
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#### **4.4 Project Definition and Preparatory Studies**

- 4.4.1 All project definition and preparatory studies up to at least the Pre-feasibility level for the projects shall be carried out by the DoE or any other agencies authorized by the RGoB.
- 4.4.2 The pre-feasibility reports will identify basic parameters of the projects like gross/net head, hydrological characteristics, geological conditions, installed capacity, annual plant factor, monthly profile of energy potential, preliminary costs and development benefits. Pre-feasibility studies will be carried out in accordance with internationally accepted practices. The bidder will have the right, at its own cost, to examine, evaluate and to carry out additional studies to make its own assessment about the pre-feasibility and viability of the project, as part of its due diligence process.

#### **4.5 Pre-Qualification**


- 4.5.1 Notices inviting Bids for pre-qualification to develop Medium, Large and Mega projects shall be widely advertised.
- 4.5.2 For each identified site, as notified by the RGoB from time to time, there shall be a pre-qualification of the bidders based on their past experience, and financial and technical capacity. The applicants qualifying in the pre-qualification stage will be eligible for participating in the Bid solicitation phase. Each attribute set for pre-qualification will be evaluated. Guidelines for evaluation, and the passing scores on attributes required for pre-qualification, shall be specified at the time of inviting Bids for pre qualification.
- 4.5.3 Request for Bid (RfB) will be made available to the pre-qualified bidders along with Pre-feasibility reports.

#### **4.6 Project Allotment Process**

- 4.6.1 The competitive bidding process will be based on Up-front Premium and Royalty power/energy as specified in the RfB. All Bids will have to be accompanied by Bid Security and any other fees as specified in the RfB.
- 4.6.2 The Up-front Premium shall generally be fixed and the amount shall be notified in the RfB. The successful bidder shall be required to deposit 50% of the Up-front Premium at the time of issue of Letter of Allotment (LoA). The selected Developer shall sign a Project Development Agreement (PDA) with the RGoB within three months of the issue of LoA and deposit the balance 50% of the Up-front Premium at the time of signing of the PDA.
- 4.6.3 A minimum of twelve percent (12%) of electricity generated shall be made available free of cost to the RGoB as Royalty Energy during the first 12 years of commercial operation of the project and a minimum of eighteen (18%) thereafter till the end of concession period. This free power/energy will be in addition to the Up-front Premium as indicated under sub-clause 4.6.2. The project shall be allotted to the bidder offering the highest Royalty Energy over the minimum specified.



- 4.6.4 If there are two or more identical Bids which emerge as the best Bids for the project, allotment will be made on the basis of the higher score obtained in valuation of the pre qualification among the identical bidders.
- 4.6.5 The selected Developer shall reimburse to the RGoB the expenditure incurred on investigations and infrastructure work for the project at the time of signing the Project Development Agreement (PDA). This amount will be specified in the Request for Bid (RfB) document for the Project.
- 4.6.6 The PDA shall constitute the commitments and obligations of the parties and will provide a timeline for the selected Developer to prepare a Detailed Project Report (DPR). The DPR will consist of the techno-economic feasibility studies undertaken by the selected bidder. If the submission of the DPR is delayed, an extension of a maximum of six months may be granted by the RGoB, provided that it is satisfied that the cause for delay is reasonable. The Developer must make the request for such an extension to the RGoB three months prior to the DPR submission deadline. Should the Developer submit a DPR which is not approved by the RGoB, the Developer will be given six months to review their DPR and re-submit it.
- 4.6.7 The quality of DPR, Construction and Operation & Maintenance shall be conforming to International Standards and Specifications, and shall be enforced by the RGoB.
- 4.6.8 The Developer will be permitted to withdraw from the project, if the RGoB is satisfied that the Developer has sufficient grounds to establish that the project is not techno-economically feasible. In such an event, the RGoB shall refund 50% of the Up-front Premium to the Developer, without interest. The RGoB shall not be held liable for any expenditure the selected bidder may have incurred. Withdrawal for any other reason would lead to forfeiture of the entire Up-front Premium.
- 4.6.9 After the DPR is approved by the RGoB, the selected Developer shall sign a Concession Agreement (CA) with the RGoB. The CA shall be the key legal instrument granting the concession to the Developer, specifying the rights and obligations of the parties. The CA shall also include time schedules for getting necessary legal/administrative/technical approvals, financial closure, construction, commissioning, operation, maintenance and transfer of the project.
- 4.6.10 The Developer may be allowed an extension should there be any delay in obtaining any of the approvals/licenses mentioned in the CA. This extension will be granted by the RGoB, provided the Developer shows sufficient grounds for such an extension. The terms and penalties associated with such extensions shall be stipulated in the CA. If the Developer is unable to show sufficient grounds for an extension, the project will revert to the RGoB, and the allotment shall be treated as automatically cancelled. In such a case, the Developer shall not be compensated for any expenses they may have incurred including the Up-front Premium paid.

  
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- 4.6.11 For projects allocated directly to the RGoB undertaking without bidding process, a minimum of twelve percent (12%) of electricity generated shall be made available free of cost to the RGoB as Royalty Energy during the first 12 years of commercial operation of the project and eighteen (18 %) thereafter till end of the concession period. Any exception to this shall be through the approval of the RGoB.

## **5. Project Investment Issues**


### **5.1 Lock-in Period**

- 5.1.1 The “Developer” identified as the "Principal Developer" in the application for pre-qualification, having a lead role and possessing sufficient financial strength, is required to hold 100 % of his equity invested in the SPV during the “lock-in period” which will be from the signing of Project Development Agreement till the end of the fifth year of commercial operation.

### **5.2 Treatment of Royalty Power/Energy**

- 5.2.1 The RGoB shall have the option to avail the Royalty Energy either as energy or as cash in lieu thereof based on the highest off take rate at which the power/energy from the plant is sold by the Developer to its buyers. The conditions of supply of the free energy or cash in lieu thereof shall be stipulated in the CA.
- 5.2.2 Completion of the project prior to the scheduled date as stipulated in the CA shall attract incentive to the Developer and penalty in case of delay. A rebate by way of reduction of one percent (1%) in the Royalty Energy for every year of earlier completion or prorated thereof shall be given as incentive for early completion. This rebate shall be applicable for the first five (5) years from the date of commercial operation. Likewise delay in completion will also entail penalty by way of increase of one percent (1%) in the Royalty Energy for every year of delay or prorated thereof, for first five (5) years from the commercial operation date (for instance, if the royalty energy for a project is 15% and the developer completes the project 6 months prior to the scheduled date as stipulated in the CA, then the developer shall be required to pay 14.5% Royalty Energy for the first 5 years from the date of commercial operation. Similarly, if the royalty energy for a project is 15% and the developer completes the project with a delay of 6 months from the scheduled date as stipulated in the CA, then the developer shall be required to pay 15.5% Royalty Energy for the first 5 years from the date of commercial operation). The terms and conditions of such incentives and penalties shall be stipulated in the CA.

However, in case there is substantial delay in completion from the time period stipulated, the allotment of the Project may be cancelled for which terms and conditions will be stipulated in the CA.

  
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### **5.3 Foreign Direct Investment**

- 5.3.1 Hydropower shall be developed through domestic and foreign investments. Foreign investors shall be encouraged to develop projects through joint ventures with Bhutanese investors. For medium size hydropower projects, the maximum limit for FDI shall be seventy four percent (74%) of the equity. For large and mega size hydropower projects, one hundred percent (100%) foreign equity participation is permitted. Other aspects of FDI shall be based on the prevailing Foreign Direct Investment Policy and Foreign Direct Investment Rules and Regulations.
- 5.3.2 Foreign Investors other than Indian nationals/companies will be required to invest in freely convertible currency.
- 5.3.3 Investments by Indian national/companies shall be permitted in Indian Rupees. Any hard currency requirements shall be arranged by the Indian nationals/companies.

### **5.4 Repatriation**

- 5.4.1 Repatriation of capital and Remittance of dividends shall be governed by the Income Tax Act of the Kingdom of Bhutan, the Foreign Exchange Regulations of Bhutan, the Foreign Direct Investment Policy, and Foreign Direct Investment Rules and Regulations.

### **5.5 Expatriate employment and work permits**


- 5.5.1 Foreign companies will be allowed to bring in expatriate personnel in areas where there are shortages of Bhutanese with requisite skills and in accordance with prevailing laws of the Kingdom of Bhutan.

### **5.6 Water Use Charges**

- 5.6.1 No additional charges associated with water usage related to the project will be charged.
- 5.6.2 Sub-clause 5.6.1 does not exempt the Developer from being required to obtain and abide by the terms specified in the Composite License as specified in Sub-clause 11.1.2.

### **5.7 Renewable Energy Development Fund**

- 5.7.1 A part of the Up-front Premium received from the Developers shall be allocated to a Renewable Energy Development Fund. The RGoB will use the Fund for project development activities including preparation of project profiles and reports, site investigation and studies, processing of clearances, acquisition of land, promotion of projects, and facilitation for accelerated development of hydropower resources.

  
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- 5.7.2 This fund will also be utilized for environmental services rendered in the form of hydropower upstream catchment protection and for renewable energy initiatives. The manner in which this fund would be allocated would be determined and notified separately by the RGoB.

## **5.8 Risk Mitigation**

### **5.8.1 Extension of Concession period**

- 5.8.1.1 In case of an adverse geological and hydrological conditions during construction or concession period that have not been anticipated at the time of granting the license or in case of a force majeure event, the concession term can be extended up to a period not exceeding five years. The extension will be decided by the RGoB after evaluating the impact of such an event. The incentive/penalty provided under Sub-clause 5.2.2 shall not apply under such an event.

### **5.8.2 Political**

- 5.8.2.1 In case of occurrence of any Bhutan sovereign event impacting the continuation or operation of the project, the compensation that is to be provided to the Developer shall be decided as per the dispute resolution mechanism provided under Sub-clause 7.1.

## **6. Fiscal Incentives**

- 6.1 The Developer will be exempted from payment of corporate income tax for a period of ten (10) years from the commercial operation date of the hydropower plant. This exemption shall not apply to projects that have been directly awarded without any bidding process.
- 6.2 The Project Developer will be exempted from payment of all import duties and Bhutan sales taxes on import of plant and equipment as direct input to the project during the construction period. No sales tax or duty shall be levied on the export of electricity.

## **7. Dispute Resolution**

- 7.1 Any difference and/or disputes arising at any time between the parties shall be resolved through mutual negotiations, failing which the matter may be resolved through dispute resolution mechanism as specified in the PDA and CA.

## **8. Clean Development Mechanism (CDM)**

- 8.1 By facilitating accelerated hydropower development, the RGoB is promoting a form of renewable energy generation which does not produce waste products that contribute to air pollution, acid rain, and greenhouse gases. Export of such energy across borders would displace or reduce the energy generation from sources which contribute to global warming and environmental damages.



- 8.2 The RGoB will allocate any benefits derived from the Kyoto Protocol or any future International mechanisms in terms of limitation or reduction of emissions of greenhouse gases to the Project Proponents. Certified Emission Reduction (CER) or any other credits will be the property of the Project Proponents. The RGoB shall levy tax on the income from sale of CER and the terms and conditions shall be specified in the CA.

## **9. Off-take of Electricity**

- 9.1 After adjusting for Royalty Power/Energy, the Project Developer can contract and export the electricity generated after complying with licensing regulations.
- 9.2 The RGoB shall have the first right to purchase any power/energy that it requires at the off-take rate applicable at the generating station bus bar.

## **10. Transmission and Load Dispatch**

- 10.1 The Project Developer will be required to have a power evacuation agreement with Bhutan Power Corporation at the time of CA. The Developer shall be responsible for laying transmission lines and connect to the nearest Grid sub-station of the Bhutan Power Corporation beyond which the Bhutan Power Corporation will provide the transmission facilities for wheeling the electricity within Bhutan and if it is for export, till the delivery point at the International border in coordination with the Importing Country's transmission entity. The Developer has to enter into an agreement with BPC for the transmission service and will also be required to pay transmission and wheeling charges as determined by the BEA from time to time for usage of BPC transmission system.
- 10.2 The Project Developer will be required to arrange, negotiate and manage the transmission infrastructure facilities beyond Bhutan's international boundary. The RGoB will provide support required for facilitating the transmission of power with the Importing Country's transmission entities.
- 10.3 The load dispatch procedures will be as notified by the System Operator designated by the BEA.

## **11. Regulatory Aspects**

### **11.1 Licensing requirement**

- 11.1.1 All Project Developers will be required to obtain construction and generation license from BEA as per provisions of Electricity Act.
- 11.1.2 The RGoB shall facilitate provision of Composite License (electricity, water, trade, bulk supply etc.)



## **11.2 Regulatory Provisions**

- 11.2.1 Apart from licensing provisions, the project shall be required to comply with all regulations, codes and standards pertaining to construction, operation and maintenance of the plant.

## **12. Environmental Requirements**

- 12.1 The Royal Government shall ensure that hydropower development, generation and transmission are in line with the environmental legislations of the Kingdom of Bhutan.
- 12.2 Initial pre-feasibility study for environmental aspects shall be carried out by the concerned RGoB agencies. The developer shall be required to carry out comprehensive EIA as per the environmental legislations of the Kingdom of Bhutan.

### **Environment Management Plan**

- 12.3 The Project Developer shall make suitable provisions for mitigation of adverse impacts as per approved EIA Report. The implementation of Environment Management Plan (EMP) and other risk management measures shall be the responsibility of the Project Developer at all stages of the project.

### **Integrated Sustainable Water Resources Management**

- 12.4 In order to utilize water resources in a sustainable manner for hydropower generation, it is important to protect water catchment areas by promoting sustainable agricultural/land use practices and nature conservation works. The MoA in collaboration with MoEA shall work out the modalities for integrated sustainable water resources management. A minimum of 1% of royalty energy in cash shall be made available on annual basis to MoA for this purpose.

## **13. Social Considerations**

### **13.1 Land Acquisition and Compensation**

- 13.1.1 The RGoB shall acquire private land as per the Land Act 2007, required to construct the hydropower project, the cost of which shall be charged to the project through an annual lease rent. All land required for the project shall be leased to the Developer during the Concession period.
- 13.1.2 In addition to land compensation provided above, the RGoB shall provide free electricity of 10,000 kWh per annum for every acre of land (or prorated thereof) acquired for the Project from the Royalty Energy after the Project comes into commercial operation till the end of the initial CA. The land owner may either avail free electricity or cash in lieu thereof at the export rates from the project. Such benefits will continue beyond the concession period.



### **13.2 Rehabilitation and Resettlement**

- 13.2.1 The Developer shall provide an amount not exceeding one percent (1%) of the Project cost for the rehabilitation and resettlement of the displaced persons from the project area and other local development activities, which shall be specified in the RfB. This amount shall be paid at the time of signing the CA. The RGoB shall implement the Rehabilitation, Resettlement and Local Development Plan in consultation with the Local Development Committee.

### **13.3 Basic infrastructure as part of project**

- 13.3.1 The necessary infrastructure for the construction/development of the project and local area development will be part of the project and shall be developed by the Developer, the scope of which will be indicated in the RfB and elaborated in the DPR. In case the RGoB intends to bear a part of such cost, it will be specified in the RfB and the CA.

### **13.4 Local Employment**

- 13.4.1 The Project Developer shall provide employment to one member of each of the displaced families adversely affected as a result of acquisition of land for the project during the construction period of the project.
- 13.4.2 The Project Developer shall submit a Human Resources plan for the project implementation and Operation and Maintenance (O & M) phases to the Ministry of Labour and Human Resources (MoLHR) which shall facilitate timely recruitment or development of skills in collaboration with the Project Developer. At least seventy five percent (75%) of the employees shall be Bhutanese nationals during O & M phase.
- 13.4.3 For the purpose of employment, the Developer shall also provide training to such eligible persons based on their educational qualification so that they are in a position to get employment for various jobs in the project. The Company shall implement a training program endorsed by the MoLHR for transfer of technology and enhancement of skills of Bhutanese workers.

## **14. Exclusions**

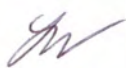
- 14.1 The RGoB may implement hydropower projects outside of this Policy through any other models as deemed necessary in order to achieve the goal of accelerated hydropower development.

## **15. Amendments**

- 15.1 The RGoB may amend this policy as and when required. However, the terms and conditions of the PDA and CA which are in effect shall not be subject to these amendments.

**16. Interpretation of the Policy**

- 16.1 In the event of conflict of interpretation, the Ministry of Economic Affairs shall, on behalf of the RGoB, be the authority to interpret various provisions of this policy which shall be final and binding.

  
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DEPARTMENT OF HYDROPOWER & POWER SYSTEMS  
MINISTRY OF ECONOMIC AFFAIRS  
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## **17. Definitions**

Unless specifically included in the list below, words and expressions are to be interpreted in good faith, in accordance with the ordinary meaning of its terms, in their context, and in light of the objective and purpose of this Policy. Whenever the following capitalised terms are used in the Policy, whether in the singular or the plural, in the future or past, they shall have the meanings ascribed to each of them below, unless the context otherwise requires:

- i. **Bhutanese Company:** A Company registered under the Companies Act of the Kingdom of Bhutan either owned wholly by the RGoB or 100% owned Public Corporation of the RGoB or Companies owned by Bhutanese nationals having 100% equity.
- ii. **Bid:** Is an offer to participate in the project, made in accordance with the terms and conditions set out in a document inviting such offers. The term “tender” is synonymous with the term “bid”.
- iii. **Bid Security:** The deposit of an unconditional bank guarantee; or an irrevocable letter of credit; or a cashier’s or certified check, submitted with a Bid and serving to guarantee to the RGoB that the bidder, if awarded the project, will execute the project in accordance with the bidding requirements and the contract documents.
- iv. **Certified Emission Reductions (CER):** A CER is the technical term for the output of Clean Development Mechanism (CDM) projects, as defined by the Kyoto Protocol. One Certified Emission Reduction unit represents one tonne of carbon dioxide (CO<sub>2</sub>) equivalent reduced.
- v. **Clean Development Mechanism (CDM):** The CDM is an arrangement under the Kyoto Protocol allowing industrialised countries (called Annex 1 countries) with a greenhouse gas reduction commitment to invest in projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.
- vi. **Commercial Operation Date (COD):** The commercial operation date shall be reckoned as the date on which the each unit of generating plant and equipment is jointly declared as commissioned by the RGoB and the Project Developer.
- vii. **Composite License:** A license to be obtained by Developers under this policy, which covers the distinct areas of electricity, water, trade, bulk supply etc. Under such a License, Developers no longer will have to obtain the licenses in the above-mentioned categories separately.
- viii. **Concession Agreement (CA):** The CA outlines the implementation agreement between the Government and the Developer and broadly consists of the following:
  - Project Commissioning Schedule and Construction Period Requirements from the parties as per the Techno Economic Clearances of the approved DPR
  - Terms and Conditions for the project during the operation period i.e. From the Commercial Operation Date of the Project.




- ix. **Detailed Project Report (DPR):** The preparation of a DPR is further step in firming up a Developer's Bid for the techno-economic costs as well as the various other project facilities. Thus, once a Bid has been approved and selected by the RGoB according to the criteria mentioned in this policy, the DPR will be undertaken by the Developer in accordance with the information specific to the Project contained in the Bid Documents, letter of allotment, and Project Development Agreement.
- x. **Developer:** A person or body of persons, company, firm and such other private or government undertaking, who finances, designs, processes, constructs, commissions, operates and maintains the Project facilities and, at the end of the concession term, transfers them to the RGoB.
- xi. **Environment Impact Assessment (EIA):** Is a study which provides a description of the potential environmental effects of the project. The EIA would usually involve an analysis of the likely effects on the environment, a recording of those effects in a report, undertaking a public consultation, and taking into account the comments and the report when making the final decision as to whether to go ahead with the project, and how best to go about it in an environmentally conscious manner.
- xii. **Foreign Direct Investment (FDI):** As defined in the FDI Policy of Bhutan.
- xiii. **Importing Country:** Means the country that is the final destination to which the electricity generated is being sent to.
- xiv. **Letter of Allotment (LoA):** This notifies the successful Bidder, in writing, that its Bid has been accepted. Until a formal PDA is prepared and executed, the LoA shall constitute a binding Contract.
- xv. **Local:** For the purposes of this Policy a local is either:
- A person who is a citizen of Bhutan; or
  - An entity which is incorporated/registered within Bhutan
- xvi. **Parties:** Collectively includes any individual, firm, company, legal entity, agency or partnership between whom an Agreement or a Contract has been executed under this Policy.
- xvii. **Private:** The private sector consists of all that is outside the state. This includes a variety of entities such as for-profit and non-profit enterprises, corporations (including those in foreign control), banks (other than central banks), any other non-governmental organizations, as well as individuals not employed by the state. It is the part of the economy which is not under the direct control of government.
- xviii. **Project Development Agreement (PDA):** The PDA is a legal document expressing a convergence of will between the parties, outlining the terms and details of the agreement between the RGoB and the Project Company till signing of the Concession Agreement, including each parties requirements and responsibilities. The PDA serves as a basis for a future formal contract in the form of the Concession Agreement (CA),



and lays out the time periods in which crucial milestones must be reached prior to further progression with the deal.

- xix. **Principal Developer:** Is the “Developer” identified as the "Principal Developer" in the application for pre-qualification and holding at least fifty one percent (51%) of the Developers’ Share of the equity in the investment.
- xx. **Public:** Refers to an agency as well as corporations owned by the Royal Government or/and sectors of the general government of foreign countries (e.g. central, state and local government units) as well as their state owned enterprises. Any public partnerships mentioned in this policy shall in the first place mean the RGoB agency.
- xxi. **Request for Bid (RfB):** Is the document an organisation posts to elicit Bids from potential developers of a project. Ideally, RfBs stipulate the requesting organization's requirements and delineates the deliverables associated with the project and establishes a framework for project execution so as to minimize the possibility of misunderstandings and errors.
- xxii. **Royalty Power/Energy:** The free Power/Energy that would be made available to the RGoB under a project during the concession period i.e. the period starting from the commercial operation date of the project.
- xxiii. **Special Purposes Vehicle (SPV):** Is a body corporate created to fulfil narrow, specific or temporary objectives, primarily to isolate financial risk,
- xxiv. **Strategic Partnership:** A partnership where the RGoB agency chooses a partner based on market access, technology transfer, human capacity building and franchise reasons. In such partnership, the equity of the foreign/private partner shall be limited to twenty six percent (26%).
- xxv. **Up-front Premium:** The premium payable to the RGoB by the successful bidder for utilization of resources for hydropower generation.
- xxvi. **Wheeling Charges:** Means charges for transfer of power per unit of energy payable to the owner of the transmission network.

  
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