

ENERGY COMMISSION



LICENCE MANUAL

for

SERVICE PROVIDERS IN THE RENEWABLE ENERGY INDUSTRY

(WHOLESALE ELECTRICITY SUPPLY LICENCE)

September, 2012

Table of Contents

<u>PREFACE</u>	iii
<u>DEFINITIONS</u>	iv
<u>1. INTRODUCTION</u>	1
<u>Mandate of Energy Commission</u>	1
<u>Purpose of the Licence Manual</u>	1
<u>Obligation to be licensed</u>	2
<u>Exemptions</u>	2
<u>2. ROLE OF THE COMMISSION</u>	3
<u>Guiding Principles</u>	3
<u>Licensing functions</u>	3
<u>Granting of licence</u>	3
<u>Specifying licence conditions</u>	3
<u>Varying licence conditions</u>	3
<u>Register of Licences</u>	4
<u>Compliance Monitoring and Enforcement</u>	4
<u>Suspension and Cancellation of Licence</u>	5
<u>3 TYPES AND DURATION OF LICENCES</u>	6
<u>Types of Operation</u>	6
<u>Types of Licence</u>	6
<u>Duration of Licence</u>	8
<u>Renewal of Licence</u>	8
<u>Transfer of Licence</u>	9
<u>4 QUALIFICATION AND APPLICATION FOR LICENCE</u>	10
<u>Qualification for a Licence</u>	10
<u>Application</u>	10
<u>Application Fee</u>	11
<u>Approval of Application</u>	12
<u>Notice of licence decision</u>	12
<u>5 LICENCE CONDITIONS AND FEES</u>	13
<u>Licence Conditions</u>	13
<u>Licence Fees</u>	14
<u>Initial Licence Fee</u>	14
<u>6 REVIEW OF DECISION AND APPEALS</u>	16
<u>Review of decisions</u>	16

<u>Appeals</u>	17
<u>Settlement of disputes by arbitration</u>	17
<u>7 WHOLESALE ELECTRICITY SUPPLY LICENCE TO GENERATE ELECTRICITY FROM RENEWABLE ENERGY SOURCE</u>	18
<u>SCHEDULE I</u>	3
<u>APPLICATION FORM</u>	3
<u>SCHEDULE II</u>	5
<u>SCHEDULE OF LICENCE FEES</u>	5
<u>SCHEDULE III</u>	6
<u>ELECTRICITY GENERATING PLANT TECHNOLOGY AND DESCRIPTION</u>	6
<u>APPENDIX I</u>	8
<u>Siting Analysis for Electric Power Generating Facilities</u>	8

PREFACE

The Licence Manual for Service Providers in the Renewable Energy Sector has been developed by the Energy Commission of Ghana to formally establish a framework for licensing service providers as stipulated by the Renewable Energy Act 2011, Act 832.

The issue of the Licence Manual for Service Providers in the Renewable Energy Sector marks a significant development in the implementation of the recently passed Renewable Energy Act. The Act aims at providing for the development, management and utilisation of renewable energy sources for the production of heat and power in an efficient and environmentally sustainable manner. It is also to create an enabling environment to attract investment into the renewable energy sector.

It is anticipated that the Act will enhance appreciable investments in the deployment of Renewable Energy Technologies in the country, particularly towards increasing access to electricity in the rural areas, energy security as well as environmental benefits. These are expected to be achieved through the development and introduction of regulatory and institutional reforms that would assure open access and transparency of transactions and operations within the sector.

Finally, users of the Licence Manual are highly encouraged to make submissions on any part or portion of it that needs improvement and refinement to assist in the establishment of a versatile licensing framework for the renewable energy industry in Ghana. Submission of any relevant comments and ideas should be forwarded to:

The Executive Secretary,
Energy Commission,
PMB, Ministries Post Office,
Accra, Ghana;
Email: info@energycom.gov.gh,
Website: www.energycom.gov.gh
Tel: (+233) 302 813762/ 813763/ 813756
Fax: (+233) 302 813764.

DEFINITIONS

"Act "	<i>meansthe</i> Renewable Energy Act, 2011 (Act 832).
"Applicant"	<i>means</i> a person who has applied for a licence under the Act or exempted from the requirement to be licensed under Part II of the Act.
Briquettes	areflammable matter made from agricultural waste, wood waste and processed wood.
BRV	<i>means</i> Bulk Road Vehicle.
"Commission"	<i>meansthe</i> Energy Commission of the Ghana as established under Section 1 of Act 541.
Corporate performance	<i>meansthe</i> results of activity of an organisation over a given period of time.
"Distribution System"	<i>meanselectrical</i> power and energy delivery system consisting of interconnected substation and network facilities operated at voltages of 34.5 kilovolts or less located within the boundaries of the Republic of Ghana.
MW	<i>means</i> mega watts
"National Interconnected Transmission System (NITS)"	<i>meanselectrical</i> power and energy delivery system consisting of interconnected generation, substation and network facilities operated at a voltage above 34.5 kilovolts located within the boundaries of the Republic of Ghana.
"Person"	<i>means</i> any person, natural or corporate.
"Power System"	<i>means</i> generation, transmission and distribution network facilities which together are integral to the supply of electricity and are operated as an integrated arrangement.
" Wholesale Supplier	<i>means</i> a person licensed under the Act to install and operate facilities to procure or produce electricity for sale to bulk customers or to a distribution company for distribution and sale to consumers.

1. INTRODUCTION

Mandate of Energy Commission

- 1.1 The Energy Commission was established by an Act of Parliament, Energy Commission Act, 1997 (Act 541), amongst other things to license and regulate the technical operations of service providers in the Energy Sector.
- 1.2 The Commission is to regulate and manage the utilisation of energy resources in Ghana and coordinate policies in relation to them.
- 1.3 The Energy Commission Act mandates the Commission to make policies recommendations for the development and utilisation of indigenous energy resources including renewable energy.
- 1.4 The Act further enjoins the Commission to promote the development and utilisation of renewable energy.
- 1.5 Subsequently the Renewable Energy Act, 2011 (Act 832) mandates the Commission to license and regulate the operations of Renewable Energy Service Providers.

Purpose of the Licence Manual

- 1.6 This Manual provides guidelines for the application and grant of licence to service providers to conduct business in the renewable energy industry and for related matters.
- 1.7 Renewable energy refers to non-fossil energy which includes wind energy, solar energy, hydro (up to 100MW), biomass energy, geothermal energy, and ocean energy.
- 1.8 The renewable energy industry involves the production and generation of electricity, heat, biofuel, charcoal; manufacturing and assembling of renewable energy products; provision of installation and maintenance services for renewable energy technologies; bulk transportation of renewable energy products such as charcoal and biofuel; export and import of renewable energy products.

Obligation to be licensed

- 1.9 Section 8 of the Renewable Energy Act, 2011 (Act 832) provides that a person must not carry on operations in Ghana's Renewable Energy Industry for which a licence is required unless the person either:
- (a) holds a licence granted under the Act authorizing the relevant operations; or
 - (b) is exempted from holding a licence.
- 1.10 A breach of this requirement is an offence under the Renewable Energy Act, 2011 (Act 832) and may be sanctioned accordingly.

Exemptions

- 1.11 The Commission may grant an exemption from some or all of the requirements in the General Provisions on Licences of the Act.
- 1.12 A request for an exemption shall be made to the Commission in writing.

2. ROLE OF THE COMMISSION

Guiding Principles

2.1 In its decision making with respect to its licensing and other functions, the Commission must have regard to the general factors specified in the Act.

2.2 The Commission, in performing its functions, will:

- a) promote competitive and fair market conduct;
- b) prevent misuse of monopoly or market power;
- c) facilitate entry into and exit from the relevant markets;
- d) ensure consumers benefit from competition and efficiency;
- e) collaborate with the Public Utilities Regulatory Commission to protect the interests of consumers with respect to reliability and quality of electricity supply services;
- f) ensure renewable energy service providers conform to environmentally sound operations and sustainability; and
- g) ensure licence holders comply with standards of safety, reliability and quality in the renewable energy industry.

Licensing functions

2.3 The Commission has responsibility for a number of licensing functions under the Act, notably:

- a) granting licence;
- b) specifying licence conditions;
- c) varying licensing terms and conditions;
- d) maintaining a register of issued licenses;
- e) compliance monitoring and enforcement of licence conditions; and
- f) suspension and cancellation of licenses

Granting of licence

2.4 The Commission may issue a licence if satisfied that:

- a) the applicant is a suitable person to hold the licence; and
- b) specified requirements are met for each licence type.

Specifying licence conditions

2.5 The Act provides that the Commission, in granting a licence, may make the licence subject to certain statutory and other conditions in a manner determined by the Commission.

Varying licence conditions

2.6 The Commission may vary licence conditions by written notice to the renewable energy service provider involved, as the Commission

considers appropriate. A variation may be made only if the Commission considers it necessary to further the objects of the Act.

Register of Licences

- 2.7 The Commission shall also keep a register of the licences granted to renewable energy service providers.
- 2.8 A copy of the register shall be available at the Commission's website (www.energycom.gov.gh).

Compliance Monitoring and Enforcement

- 2.9 The Commission shall monitor and enforce compliance with all licence conditions.
- 2.10 A contravention of the licence conditions is a breach of the Act, Energy Commission Act, (Act 541) and associated Regulations, which could give rise to penalties.
- 2.11 As part of the compliance monitoring procedure, the licence holder shall be required to submit to the Commission a detailed corporate performance statistics half yearly and an annual report at the end of each financial year.
- 2.12 The performance statistics shall include, but not limited to the benchmarks stipulated in Renewable Energy Regulations and other relevant legislations as well as benchmarks stipulated in the respective licences.
- 2.13 An authorised officer of the Commission shall have the right of access to the premises and operational area of the licence holder for the purpose of inspecting and ensuring compliance with the licence conditions.
- 2.14 In the course of an inspection, the licence holder is required to cooperate with and render assistance to the authorised officer.
- 2.15 While on the premises of the licence holder, the authorised officers shall monitor and adhere to the licence holder's internal rules and regulations, particularly relating to health and safety.

Suspension and Cancellation of Licence

- 2.16 The Commission may suspend or cancel a licence where a licence holder fails to comply with any of the conditions stipulated in the licence or relevant provisions in the Renewable Energy Act, (Act 832), Energy Commission Act, (Act 541) and associated Regulations.
- 2.17 The Commission may suspend or cancel a licence where:
- (a) the licence holder contravenes the terms or conditions of the licence, regulations made by the Commission and other applicable legislation;
 - (b) the licence is not utilised within one year from the date of its grant;
 - (c) the licence holder fails to demonstrate to the satisfaction of the Commission that it is in a position to fully and efficiently discharge its duties and obligations under the licence;
 - (d) the licence holder's financial situation, as reasonably determined by the Commission, prevents the licence holder from performing its duties and obligations under the licence;
 - (e) the licence holder's environmental permit is revoked by the Environmental Protection Agency or other permits granted by other relevant regulatory bodies, or the licence holder significantly or repeatedly jeopardises public safety by its actions; and
 - (f) the licence holder violates instructions/regulations of the Public Utilities Regulatory Commission.
- 2.18 Prior to the suspension or cancellation of a licence, the Commission shall serve the licence holder with 30 days written notice specifying:
- (a) the cause of dissatisfaction;
 - (b) the directives for rectification of the breach; and
 - (c) the Commission's proposed line of action in the event that the licence holder does not comply within the period specified in the written notice.
- 2.19 The defaulting licence holder served with a notice under clause 16.1 of RE Act shall be given an opportunity to respond to the Commission's written complaint and the proposed action for remedy.
- 2.20 The Commission shall take into consideration in its determination to suspend or cancel a licence, the extent to which any person is likely to suffer loss or damage as a result of the suspension or cancellation of the licence.

3 TYPES AND DURATION OF LICENCES

Types of Operation

3.1 The operations and services in the renewable energy industry for which a licence is required are:

- (a) production of electricity
- (b) production of renewable energy products;
- (c) transportation of renewable energy products;
- (d) storage of renewable energy products;
- (e) distribution, sale and marketing of renewable energy products;
- (f) exportation and re-exportation of renewable energy products;
- (g) importation of renewable energy products; and
- (h) installation and maintenance of renewable energy facilities.

Types of Licence

3.2 A separate licence shall be required for each commercial activity.

3.3 The Commission shall grant a licence under the Renewable Energy Act, (Act 832) for each of the following market activities:

Production of Electricity

(a) Wholesale Electricity Supply Licence:

It shall authorise the licence holder to produce electricity from renewable energy sources for supply to distribution utilities and bulk customers.

Production of Products

(b) Charcoal Production Licence:

This licence shall be issued to an applicant who wishes to produce more than 100 tonnes of charcoal per annum.

(c) Biofuel Production Licence (Small scale):

It shall authorise the licence holder to produce below 15,000 litres of biofuel (ethanol and biodiesel) per annum.

(d) Biofuel Production Licence (Medium scale):

It shall authorise the licence holder to produce from 15,000 to 50,000 litres of biofuel (ethanol and biodiesel) per annum.

(e) Biofuel Production Licence (Large scale):

It shall authorise the licence holder to produce more than 50,000 litres of biofuel (ethanol and biodiesel) per annum.

(f) Briquettes/Pellets Production:

It shall authorise the licence holder to product briquette or pellets.

Transportation

(g) Bulk Charcoal Transportation Licence:

It shall authorise the licence holder to use registered vehicles to transport charcoal.

BulkStorage

(h) Biofuel Storage Licence:

It shall authorise the licence holder to store biofuel in commercial quantities.

Distribution, Sale and Marketing

(i) Charcoal Wholesale Licence:

It shall authorise the licence holder to store charcoal in commercial quantities for sale locally.

Export and Re-exportation

(j) Charcoal Export Licence

It shall authorise the licence holder to export charcoal.

(k) Biofuel Export Licence:

It shall authorise the licence holder to export biofuel such as ethanol and biodiesel.

(l) Briquettes/Pellets:

It shall authorise the licence holder to export briquettes or pellets produced from biomass waste.

Importation

(m) Importation Licence:

It shall allow the licence holder to import to sell renewable energy products.

Installation and Maintenance

(n) Installation and Maintenance Licence:

It shall authorise the licence holder to install and maintain renewable energy systems.

3.4 Notwithstanding 3.2, a licence is not required for the retail of charcoal and renewable energy products.

3.5 The Commission may create a licence for any other market activity in the Renewable Energy Industry for which a licence may be required and for which, at present, a provision or regulation has not been made.

Duration of Licence

3.6 A licence shall be granted for a definite period.

3.7 The validity period of a licence shall be as indicated in Table 1 and shall be renewable subject to satisfactory compliance with the conditions of the licence.

Table 1: Duration of Licence

Type of Licence	Term of Licence
Wholesale Electricity Supply Licence	20 years
Biofuel Production Licence : Small, Medium & Large scales	20 years
Bulk Biofuel Transportation Licence	5 years
Bulk Biofuel Storage Licence	20 years
Biofuel Export Licence	5 years
Charcoal Production Licence	20 years
Bulk Charcoal Transportation Licence	5 years
Charcoal Wholesale/Storage Licence	5 years
Charcoal Export Licence	1 year
Briquettes/Pellet Production	20 years
Briquettes Export Licence	10 years
Importation Licence	10 years
Installation and Maintenance Licence	10 years

Renewal of Licence

3.8 The procedure for renewal of a licence shall be the same as that applicable to the grant of the original licence.

3.9 Where a licence holder fails to renew a licence or where an application for the renewal of a licence is rejected by the

Commission, the licence holder shall cease to engage in the activity in respect of which the licence was granted.

3.10 Applications for renewal of licence shall be made to the Commission not later than 60 days before the expiry of the licence.

Transfer of Licence

3.11 A licence granted shall not be transferred or assigned except with prior written approval of the Commission.

4 QUALIFICATION AND APPLICATION FOR LICENCE

Qualification for a Licence

- 0.1 A licence may only be granted to:
- (a) a citizen of Ghana; or
 - (b) a body corporate registered under the Companies Code, 1963 (Act 179) or under any other law of Ghana; or
 - (c) a partnership registered under the Incorporated Private Partnership Act, 1962 (Act 152).

Application

- 0.2 An application for a licence shall be made in writing addressed to the Executive Secretary of the Energy Commission and shall be submitted together with all relevant information as specified in the respective chapter for each licence type.
- 0.3 An application for a licence shall be made on forms approved and supplied by the Commission. The application form can also be accessed from the Commission's website www.energycom.gov.gh. A sample of the form is provided as Schedule 1: "Application Form" of the Manual.
- 0.4 The applicant shall complete the appropriate application form in its entirety and submit all required attachments, affidavits, and evidence of capability specified by the form at the time an application is filed.
- 0.5 An incomplete application will not be processed or may be rejected. All specified exhibits required under Part A of the filing instructions shall be submitted together with the formal duly signed application form for consideration for the issue of a licence to undertake the prescribed operations in the electricity supply industry in Ghana.
- 0.6 Separate applications are required from an applicant to engage in different market activities that fall within different segments of the industry. The Commission will accept a single application from an applicant in respect of multiple activities in the same segment of the industry. While the Commission will accept applications in this form, separate licences will be issued for each market activity and for each facility where the activity is carried out and the appropriate fees charged.
- 0.7 An application shall be deemed to have been successfully lodged only if all relevant supporting documentation required as indicated in the

respective chapter for each licence type are attached in addition to full payment of the required application fee.

- 0.8 The Commission shall acknowledge receipt of an application for a licence within 5 working days of submission of an application and indicate whether the applicant's submissions fully satisfy the requirements expected for the relevant type of licence.
- 0.9 An applicant may be required to furnish the Commission with additional information when necessary.

Application Fee

- 0.10 The applicant shall pay to the Commission an application fee prescribed under LI
- 0.11 The application fee to apply is stated in Schedule II: Schedule of Licence Fees. The application fees as stated in the Schedule shall be valid for the period from January 1 through to December 31 of each year.
- 0.12 Application fees may be revised.
- 0.13 Application fees are also payable for an application to transfer a licence.
- 0.14 The stipulated application fee shall be payable in respect of each type of licence sought, regardless of whether or not applications are made separately or are aggregated into a single application document.
- 0.15 A licence application shall not be assessed unless the appropriate Application Fee is paid by the applicant.
- 0.16 Application fee paid at the time of submitting an application shall cover all the stages in the licensing process.
- 0.17 An amendment application filing fee shall be charged for a request to amend an approved licence, siting clearance, construction work permit or authorisation to operate.
- 0.18 The amendment application filing fee shall be determined by the Commission based on the amount of work involved with the amended portion of the application.

Approval of Application

0.19 All applications for electricity generation, production of biofuel, briquettes/pellets, and storage of biofuel shall be subject to the approval of the Siting Committee of the Commission.

0.20 The Commission shall in evaluating an application consider:

- (a) the technical, administrative and financial capabilities of the applicant to carry out the regulated activity.
- (b) the viability of sources of supply of the renewable energy resource for the proposed activity.
- (c) the impact of the regulated activity on the environment and the provisions of the Renewable Energy Act, (Act 832).
- (d) the technical specifications of the proposed renewable energy technologies.

Notice of licence decision

0.21 The Commission shall within 60 days after acknowledging receipt of the last relevant submission from the applicant, provide the applicant with a written notice of the Commission's determination of the status of the application for a licence.

5 LICENCE CONDITIONS AND FEES

Licence Conditions

- 5.1 Licences granted shall be subject to conditions. These conditions may include limitations and/or constraints that are determined and imposed by the Commission or statutory requirements stipulated by the Act, Energy Commission Act, (Act 541) or other relevant legislations.
- 5.2 A licensee shall not contravene a condition of its licence. A licensee that contravenes a condition of its licence may be subject to any or all of the following:
- a) a fine imposed by the Act.
 - b) an order for compensation payment.
 - c) the recovery of any profits realised by the licensee from the contravention of a licence condition.
 - d) the suspension or cancellation of the licence for a material contravention of a licence condition.
- 5.3 Any person licensed to carry on operations in the Renewable Energy Industry shall be liable for damages:
- a) arising out of a partial or total failure to provide renewable product to a customer;
 - b) arising out of a partial or total failure to provide the required service to a customer; or
 - c) for supplying electricity to an irregular or fluctuating voltage/frequency, unless the failure or irregular or fluctuating voltage/frequency is due to an act or omission NOT done or made by the electricity service provider in bad faith or through negligence.
- 5.4 All holders of a licence shall submit quarterly reports to the Commission.
- 5.5 All holders of a licence granted for ONE year or more are required to lodge with the Commission on or before 31st March an annual return each year containing information specified in the licence or requested by written notice relating to the previous year's operations and future projects.
- 5.6 Licensees who fail to submit returns for a particular quarter or year shall be deemed to have not utilised the licence and may be

sanctioned in line with Section 16 of the Act, Section 19 of the Energy Commission Act and associated Regulations.

Licence Fees

Initial Licence Fee

- 5.7 A new licence shall not be granted unless the appropriate Initial Licence Fee is paid by the licensee.
- 5.8 The Initial Licence Fee for a particular type of licence shall be the fee prescribed under *Renewable Energy (Fees And Charges) Regulations, LI* to be paid by the licensee prior to the grant and commencement of a licence.

Annual Licence Fee (Annual Operating Fee)

- 5.9 All licences shall be subject to payment of an annual fee called Annual Licence Fee payable annually during the commercial operations period of the licence.
- 5.10 A licence granted for an activity that includes construction of a facility shall be exempted from payment of the annual licence fee during the construction period. A licensee shall commence payment of the annual licence fee on the grant of an authorisation by the Commission to start commercial operations.
- 5.11 The Annual Licence Fee for a particular type of licence shall be the fee prescribed under LI
- 5.12 The Commission may consider a request for payment of an Annual Licence Fee by instalments.
- 5.13 Annual Licence Fee for any operational year shall be demanded by the Commission by 15th November and shall be considered due on 1st January of the following year.
- 5.14 The Commission shall base its assessment of the Annual Licence Fee invoiced for the forthcoming Licence Year on actual returns submitted by the licensee for the 1st, 2nd and 3rd quarters and an estimate for the last quarter of the current Licence Year.
- 5.15 A reconciliation of the Annual Licence Fee amount due shall be effected and differences settled by 15th April following the submission of Annual Performance Statistics which is required to be lodged with the Commission by 15th March each year.

5.16 Payment of outstanding Annual Licence Fee shall be made not later than 15th April of each calendar year (i.e. 15 clear days after the deadline for lodgement of the annual returns with the Commission) after which the Commission may sanction the licensee as deemed necessary in line with Section 16 of the Act and Section 19 of the Energy Commission Act.

5.17 The Annual Licence Fees of all licences granted after commencement of a licence year will be apportioned on the basis of the formula:

$$\text{Fee Payable} = \text{Full Year Fee} \times Z / 12$$

Where:

Z = the number of months remaining in the licence year for which the licence fee is payable.

5.18 Any fee payable for a part of a licence year will be calculated in accordance with the formula above.

5.19 The Licence Year for all licences shall be the period from 1st January up to 31st December of each calendar year.

5.20 There shall be no refund of fees, whether in whole or in part on cancellation of a licence.

5.21 All data or information used to calculate an annual fee payable will be based on the latest available actual values prior to the commencement of the licence year.

5.22 Only one fee amount per licence type will be payable each year by a licensee.

6 REVIEW OF DECISION AND APPEALS

Review of decisions

6.1 The Renewable Energy Act, 2011 (Act 832) and Energy Commission Act, 1997 (Act 541) provide for:

- (a) Persons who are dissatisfied with a decision of the Commission in relation to a licence application to have the decision reviewed by the Commission; and
- (b) Persons who have had a decision reviewed by the Commission but are dissatisfied with the results of the review, to appeal the decision to the Minister responsible for Energy who shall within 30 days of receipt of the complaint make a decision. If dissatisfied with the Decision of the Minister, or where the 30 days expire without a decision, the person may within 14 days after the decision pursue the matter in the High Court (Refer to Sections 17 & 18 of the Renewable Energy Act).

6.2 An application for the review of a Decision may be made to the Commission by;

- (a) an applicant for the grant or variation of the conditions of a licence, or for agreement to transfer a licence or for review of the decision of the Commission to refuse an application; or
- (b) an electricity entity regarding the decision to suspend or cancel the entity's licence or to vary the conditions of the entity's licence.

6.3 An application for the review of a Decision shall:

- (a) be made in writing;
- (b) set out the decision to which the application relates;
- (c) set out in detail the grounds on which the applicant seeks a review of the decision in question;
- (d) be accompanied by any information or evidence that the applicant considers should be taken into account by the Commission; and
- (e) be lodged with the Commission within 14 days after the decision is given.

6.4 Once the application for the review of a decision has been received, the Commission:

- (a) shall stay the execution of the decision to which the application relates; and
- (b) will take a decision on the review within 30 days of the application being lodged, or otherwise the Commission shall

be deemed to have confirmed the decision (on expiry of the 30 days); or

- (c) may confirm, amend or substitute the Decision; and
- (d) will give the applicant written notice of the Commission's decision, and the reasons for the Decision on the review.

Appeals

6.5 An applicant who is dissatisfied with a decision of a review by the Commission has a right to appeal to the Minister responsible for Energy, and subsequently to the High Court if not satisfied as set out in Section 17 of the Renewable Energy Act.

6.6 The appeal must be made within 14 days after receipt of the written notice of the decision appealed against.

Settlement of disputes by arbitration

6.7 The Commission shall on its own initiative or at the request of a licence holder set up an arbitration panel under the Alternative Dispute Resolution Act, 2010 (Act 798) to arbitrate and settle any dispute arising between licence holders where the parties cannot reach an agreement.

7

**WHOLESALE ELECTRICITY SUPPLY
LICENCE TO GENERATE ELECTRICITY FROM RENEWABLE
ENERGY SOURCE**

7.1 Acquisition of Wholesale Electricity Supply Licence

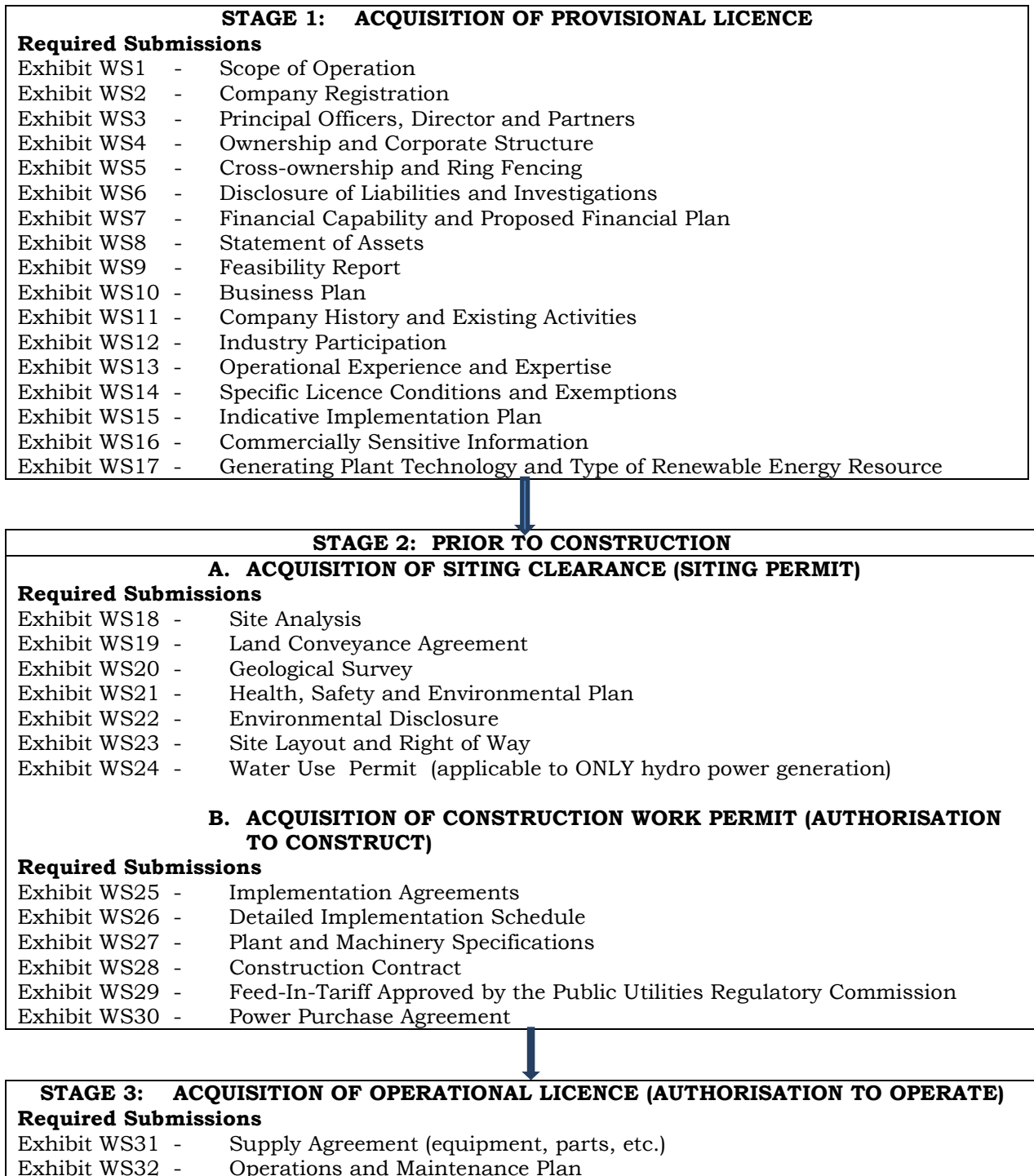


Exhibit WS33 -	Safety and Technical Management Plan
Exhibit WS34 -	Commissioning Report
Exhibit WS35 -	Plant Drawing
Exhibit WS36 -	Receipt of Initial Licence Fee

Stage 1: Procedure for Acquisition of Provisional Wholesale Supply Licence to generate electricity from Resource Energy Source

- 7.2 An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission.
- 7.3 Applicants shall fill and submit one original application form signed by a Principal Officer (reference schedule I - Application Form).
- 7.4 Applicants shall attach receipt confirming the payment of prescribed licence application fee (reference schedule II – Schedule of Licence Fee).
- 7.5 Applicants shall provide ten (10) hard copies and a soft copy if available of the following exhibits as separate attachment, clearly labelled and all pages sequentially numbered.
1. **Exhibit WS1 – “Scope of Operation”** provide a written description of the operational nature of the applicant’s business.
 2. **Exhibit WS2 - "Company Registration"** provide evidence that the applicant has registered with the Registrar General’s Department. Exhibits required include
 - a. Certificate of Registration.
 - b. Certificate to Commence Business.
 - c. Regulations 8 to 82; Second schedule to the Companies Code, 1963 (Act 179).
 3. **Exhibit WS3 - "Principal Officers, Directors and Partners"** provide the names, titles, nationality, addresses and telephone numbers of the applicant’s principal officers, directors, partners, or other similar officials.
 4. **Exhibit WS4 - "Ownership & Corporate Structure"** provide a description of the applicant’s corporate and ownership structures, including a graphical depiction of such structure, and a list of all affiliate and subsidiary companies.
 5. **Exhibit WS5 - “Cross-ownership and Ring Fencing”** Applicants should outline the following:

- a) The basis on which services and resources will be transacted between relevant operating areas of the applicants, or the applicant and its other related entities;
 - b) In the case of applicants that are wholly owned subsidiaries, information on proposed audit arrangements should be provided and also stated whether separate reports for the licensee and its parent company (if applicable) are to be prepared and made publicly available; and
 - c) Other guidelines or standards relating to financial separation, ring-fencing and separate audit arrangements which the applicant intends to follow.
6. **Exhibit WS6 – "Disclosure of Liabilities and Investigations"** provide a description of all existing, pending or past rulings, judgments, contingent liabilities, revocation of authority, regulatory investigations, or any other matter that could adversely impact the applicant's financial or operational status or ability to provide the services it is seeking to be certified to provide. Also include a statement whether the applicant or any of his associates, or partners, or promoters, or Directors was ever refused licence or had licence cancelled, and if so, the particulars of such application, date of making the application, date of order refusing or cancelling licence and reasons for such refusal or cancellation.
7. **Exhibit WS7 – "Financial Capability and Proposed Financial Plan"** provide the two most recent Annual Reports to Shareholders and copies of the applicant's three most recent years of audited financial statements (balance sheet, income statement, and cash flow statement). If audited financial statements are not available, provide officer certified financial statements. If the applicant has not been in business long enough to satisfy this requirement, it shall file audited or officer certified financial statements covering the life of the business. Provide copies of the applicant's financial arrangements to conduct electricity business as a business activity (e.g., guarantees, bank commitments, contractual arrangements, credit agreements, etc). Provide two years of forecasted financial statements (balance sheet, income statement, and cash flow statement) for the applicant's operation, along with a list of assumptions.
8. **Exhibit WS8 – "Statement of Assets, Technology & Type of Renewable Energy Resource"** provide a list of major plant and machinery to be installed, stating technology and type of renewable energy resources and proposed layout plan. In the case of hydro power plant indicate whether the reservoir or run-of-river and type of turbines to be used.
9. **Exhibit WS9 – "Feasibility Report"** provide a Feasibility Study Report on the new facility or installations to be used by the applicant. The

report should include, among other things, drawings of generator's and/or substation's installations and equipment specifications together with proposed interconnections to the relevant distribution or transmission network.

10. **Exhibit WS10 – “Business Plan”** provide a written explanation of the company's business model for the venture.
11. **Exhibit WS11 – “Company’s History & Existing Activities”** provide a concise description of the applicant's company history and principal business interests. It should include all jurisdictions in which the applicant or any affiliated interest of the applicant is, at the date of filing the application with respect to licensing or otherwise authorisation to provide retail or wholesale electric services.
12. **Exhibit WS12 – “Industry Participation”** provide general information about its existing activities, both within and outside the renewable energy industry. The application should summarise the reasons why the applicant intends to participate in the Ghanaian renewable energy industry, and the broad nature of that participation. In providing the above explanation, the applicant should address the Commission's objectives as set out in Section 2 of the Act and the objects of the Act, and explain how the granting of a licence would be consistent with those requirements.
13. **Exhibit WS13 – “Operational Experience & Expertise”** provide names, titles, e-mail addresses, telephone numbers, and the background of key personnel involved in the operational aspects of the applicant's business. Provide the following information:
 - (a) details of their experience in and knowledge of the renewable energy industry;
 - (b) a summary of the skills and experience of the directors and senior managers, and their relevance to meeting the requirements of the licence;
 - (c) evidence that the applicant has the capacity to comply with the licence conditions, codes and guidelines relevant to its application; and
 - (d) if the applicant is to rely on another entity to provide staff and resources, a summary of the relationship between the applicant and this entity, including any formal agreements to provide services, and a summary of this other entity's experience in and knowledge of the renewable energy industry, and technical capacity to meet the relevant requirements of the licence should be provided.
14. **Exhibit WS14 – “Specific Licence Conditions and Exemptions”**
Where the applicant is seeking particular licence conditions, the

nature and reasons for seeking those conditions should be explained. In such circumstances, the applicant should also provide a draft outline of the proposed licence condition(s) or exemptions. The Commission may waive any of the requirements for a licence in respect of a particular applicant provided the waiver does not compromise on public safety.

15. **Exhibit WS15 – “Indicative Implementation Schedule”** provide indicative timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.

16. **Exhibit WS16 – “Commercially sensitive information”**
The Commission may make public the information included in an application for a licence. Where the applicant considers information contained in an application to be commercially sensitive, the applicant should clearly identify such information and state the reasons why they are to be regarded as commercially sensitive, to enable the Commission determine its consideration of the confidentiality request.

17. **Exhibit WS17 – “Generating Plant Technology and Description”** provides details as per Schedule III – Generating Plant Technology and Description.

Stage 2

A. Procedure for Acquisition of Siting Clearance

- 7.6 An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission.

- 7.7 Proof of payment of prescribed licence application fee.

- 7.8 Applicants shall provide ten (10) copies and a soft if available of the following exhibits as separate attachment, clearly labelled and all pages sequentially numbered.
 1. **Exhibit WS18 – “Site Analysis”** provides details as per Appendix I - Site Analysis for the siting of Electric Power generating Plant.

 2. **Exhibit WS19 – “Land Conveyance Agreement”** provide appropriately approved documentation of proof of title to land, site plan, and relevant municipal permits for construction (i.e. Town & Country Planning Permit), etc.

3. **Exhibit WS20 – “Geological Survey”** provide a report from the Geological Survey Department of Ghana attesting to either the absence of or acceptable levels of seismic activity on and around the proposed site.
4. **Exhibit WS21 – “Health, Safety & Environmental Plan”** provide plans to comply with all legislation and standards relevant to the firm’s activities and implement systems and structures that prevent the recurrence of injuries, ill health and hazardous conditions.
5. **Exhibit WS22 – “Environmental Permit/Certificate”** provide an Environmental Assessment permit or certificate granted by the Environmental Protection Agency.
6. **Exhibit WS23 – “Site Layout & Right-of-Way”** provide detailed Site-Layout and “Right-of-Way” drawings. Provide a programme for compensation payments (where relevant).
7. **Exhibit WS24 – “Water Use Permit”** provide a permit granted by the Water Resources Commission (**applicable ONLY to hydro power generation**).

B. Procedure for Acquisition of Siting Clearance

- 7.9 An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission.
- 7.10 Proof of payment of prescribed licence application fee.
- 7.11 Applicants shall provide ten (10) copies and a soft if available of the following exhibits as separate attachment, clearly labelled and all pages sequentially numbered.
 1. **Exhibit WS25 – “Implementation Agreements”** provide copies of licences, Memorandum of Understanding (MOUs), etc with agencies relevant to the implementation.
 2. **Exhibit WS26 – “Detailed Implementation Schedule”** provide detailed timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.
 3. **Exhibit WS27 – “Plant and Machinery Specifications”** detailed engineering design and equipment specifications.
 4. **Exhibit WS28 – “Construction Contract”** provide basic terms between the owner and the contractor. This details the contractor's basic duties

and responsibilities, including bonds and insurance, progress and final payments, and substantial completion.

5. **Exhibit WS29 – “Feed-In-Tariff”** provide approved feed-in-tariff from the Public Utilities Regulatory Commission.
6. **Exhibit WS30 – “Power Sales and Purchase Agreement”** provide power purchase agreement signed between wholesale supplier and electricity distribution utility or bulk customer.

Stage 3: Procedure for acquisition of Authorisation to Operate

7.12 An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission.

7.13 Applicants shall provide ten (10) copies and a soft if available of the following exhibits as separate attachment, clearly labelled and all pages sequentially numbered.

1. **Exhibit WS31 – “Supply Agreement (equipment, parts, etc)”** provide equipment and parts agreement for major spare parts and frequently changed parts or equipment. Provide supply agreement for network access, supply of biomass waste (in the case of biomass power plant), etc.
2. **Exhibit WS32 – “Operations & Maintenance Plans”** Operations and maintenance agreement, and plan.
3. **Exhibit WS33– “Safety & Technical Management Plan”** Safety & Technical Management Plan (STMP) approved by the Energy Commission and shall include:
 - a) Company safety policy statement.
 - b) Company’s safety codes and practices.
 - c) Demarcation, protection and prevention of unauthorised entry of site.
 - d) Employee health and safety requirements in accordance with Ghana’s labour regulations.
 - e) Waste Management policy and plan in line with EPA or WHO regulations & standards (effluents, cooling water, drainage of runoff water etc.).
 - f) Compliance Plan.

- g) Environmental hazards impact mitigation measure, actions and plans (sampling, monitoring analysing of air, aquatic toxicity, noise etc.).
- h) Emergency preparedness.
- i) Deployment of disaster management measures.
- j) Fire safety (prevention and fighting measures).
- k) Precautions for prevention of environmental hazards (battery contamination, pollutants, etc).
- l) Operational and maintenance safety rules, procedure and instructions.
- m) Company's operation and maintenance culture.
- n) Adherence to equipment manufacturer's recommended maintenance schedules.
- o) Specific commitment and arrangements to operate facilities/installation to ensure safe and reliable electricity supply.

4. **Exhibit WS34 - "Commissioning Report"** Satisfactory commissioning test report.
5. **Exhibit WS35 - "Plant Drawing"** As-built drawings and layout of plant and/or facilities.
6. **Exhibit WS36 - "Receipt of Initial Licence Fee"** Evidence of payment of initial licence fee to Energy Commission.

SCHEDULE I
APPLICATION FORM

A-1 Applicant/Company intends to be licensed for the service of: (check all that apply)

- Wholesale Supply
- Biofuel Production
- Bulk Biofuel Transportation
- Bulk Biofuel Storage
- Biofuel Export
- Charcoal Production
- Bulk Charcoal Transportation
- Charcoal Wholesale/Storage
- Charcoal Export
- Briquettes Production
- Briquettes Export
- Importation of Renewable Energy Products
- Installation and Maintenance

A-2 Applicant/Company's legal name, postal address, telephone number and web site address

Legal Name _____
Postal Address _____
Telephone # _____ Fax # _____
Website address (if any) _____

A-3 Office location address

House/Plot Number _____
Street Name _____
Town/City _____ Region _____

A-4 Contact person for regulatory matters

Name _____
Title _____
Business address _____
Telephone # _____ Fax # _____
E-mail address (if any) _____

A-5 Customer Segment (Check all that apply)

- Distribution Company
- Bulk Customer
- Refinery
- Oil Marketing Company
- Public
- Overseas customer
- Industrial, commercial and residential

A-6 Location where applicant intends to establish production or service facility

Community_____

Town/City_____

District_____

Region_____

A-7 Provide the approximate start date that the applicant proposes to begin delivering service

A-8 Number of years in the Renewable Energy Industry _____

SIGNATURE_____

DATE_____

SCHEDULE II
SCHEDULE OF LICENCE FEES

TYPE OF PERMIT	APPLICATION FEE (GHC)	SITING FEE (GHC)	SIZE OF PLANT	INITIAL LICENCE FEE (GHC)	ANNUAL OPERATING FEE (GHC)	
					FIXED	VARIABLE
Wholesale Electricity Supply	12,500.00	25,000.00	<ul style="list-style-type: none"> • Small scale 10kW - <10MW 	5,000.00	5,000.00	1,250.00 per MW installed
			<ul style="list-style-type: none"> • Medium scale: 10MW –<100MW 	20,000.00	25,000.00	
			<ul style="list-style-type: none"> • Large scale: ≥100MW 	37,500.00	37,500.00	

** The fees shall be reviewed annually.*

SCHEDULE III

ELECTRICITY GENERATING PLANT TECHNOLOGY AND DESCRIPTION

A. Solar PV Generating Plant

Type of Solar PV Modules	Number of modules	Name of Manufacturer	Installed Capacity (MW)	Available Output (MW)	Generating Voltage	Frequency	Age of Plant	Remarks

B. Wind Power Generating Plant

Type/ Model of Wind Turbines	Number of Wind Turbines	Name of Manufacturer	Installed Capacity (MW)	Available Output (MW)	Generating Voltage	Frequency	Age of Plant	Remarks

C. Cogeneration Plant

Type/ Model of Biomass Plant	Name of Manufacturer	Installed Capacity (MW)	Available Output (MW)	Gross Heat Rate (KJ/kWh)	Cycle Mode	Generating Voltage	Frequency	Emission Parameters	Age of Plant	Remarks

D. Hydro Power Plant

Type of Dam	Type/ Model of Plant	Name of Manufacturer	Installed Capacity (MW)	Available Output (MW)	Head		Generating Voltage	Frequency	Flow Rate	Age of Plant	Remarks
					Max	Min					

APPENDIX I

Siting Analysis for Electric Power Generating Facilities

- A. Project summary and facility overview
- B. Review of need for proposed project
- C. Site alternatives analyses
- D. Technical data
- E. Financial and Economic impact data

A. Project summary and facility overview

1. An applicant for clearance to site an electric power generating facility shall provide a project summary and overview of the proposed project. The summary and overview shall include:
 - (i) an explanation of the general purpose of the facility;
 - (ii) a description of the proposed facility;
 - (iii) a description of the site selection process, including descriptions of the major alternatives considered;
 - (iv) a discussion of the principal environmental and socioeconomic considerations of the preferred and alternate sites; and
 - (v) an explanation of the project schedule for which purpose a bar chart is acceptable.
2. Information filed by the applicant in response to the requirements under this section (A) shall not be deemed as responses to any other section [from (B) to (F)] of the application requirements.

B. Review of need for proposed project

1. ***Need statement:*** An applicant for a clearance to site an electric power generating facility under this guidelines shall provide a statement explaining the need for the proposed facility, including a listing of the factors upon which it relied to reach that conclusion and references to the most recent long-term forecast report (if applicable).
2. ***Description of proposed generation and associated facility:***
 - (a) The applicant shall submit for each alternative:

- (i) type, number of units, and designed ISO rating, annual capacity factor and hours of annual generation;
 - (ii) land area requirement;
 - (iii) fuel type, quantity and quality;
 - (iv) a list of types of pollutant emissions; and
 - (v) water requirement, source of water, treatment, quantity of any discharge and names of receiving streams.
- (b) The applicant shall submit a summary description of the major equipment.
- (c) The applicant shall submit a brief description of the need for new transmission line(s) associated with the proposed facility.

3. ***Project schedule:***

- (a) The applicant shall provide a proposed schedule in bar chart format covering all applicable major activities and milestones, including:
- (i) acquisition of land and land rights;
 - (ii) preparation and submission of the Siting Clearance application;
 - (iii) consideration and grant of Siting Clearance;
 - (iv) issuance of the wholesale supply licence;
 - (v) preparation of the final design;
 - (vi) construction of the facility; and
 - (vii) commercial operation of the facility.
- (b) The applicant shall describe the impact of critical delays on the eventual date of commencement of operations.

C. Site alternative analyses

1. The applicant shall conduct a site selection study prior to submitting a Siting Clearance application for an electric power generating facility. The study shall be designed to evaluate at least two alternate sites for the proposed facility.
- (a) The applicant shall provide the following:
- (i) a description of the study area or geographic boundaries selected, including the rationale for the selection;
 - (ii) a map of suitable scale which includes the study area and which depicts the general sites which were evaluated;
 - (iii) a comprehensive list of all siting criteria utilized by the applicant, including any quantitative or weighting values assigned to each;
 - (iv) a description of relevant factors, or constraints, identified by the applicant and utilized in the site selection process;

- (v) a description of the process by which the applicant utilized the siting criteria to determine the proposed site and any proposed alternative site(s);
 - (vi) a description of the sites selected for evaluation, their final ranking, and the rationale for selecting the proposed site and any proposed alternative site(s); and
 - (vii) a description of any qualitative or other factor utilized by the applicant in the selection of the proposed site and any proposed alternative site(s).
- (b) The applicant shall provide one copy of any constraint map utilized for the study to the Committee for review.
2. The applicant shall provide a summary table comparing the sites, utilizing the technical, financial, environmental, socioeconomic, and other factors identified in the study. Design and equipment alternatives shall be included where the use of such alternatives influenced the siting decision.
3. The applicant may provide a copy of any site selection study produced by or for the applicant for the proposed project as an attachment to the application. The study report may be submitted in response to paragraphs 1 and 2 of this section, provided that the information contained therein is responsive to the requirements of the referenced paragraphs.

D. Technical data

Site

1. Information on the location, major features, and the topographic, geologic, and hydrologic suitability of the proposed site and any proposed alternative site(s) shall be submitted by the applicant. Specifically, the applicant shall provide the following for each site alternative:
- (a) **Geography and topography:** The applicant shall provide a map of 1:50,000 scale containing a five-kilometre radius from the proposed facility and showing the following features:
 - (i) the proposed facility;
 - (ii) major population centers and geographic boundaries;
 - (iii) major transportation routes and utility corridors;
 - (iv) bodies of water which may be directly affected by the proposed facility;
 - (v) topographic contours;
 - (vi) major institutions, parks, recreational areas; and
 - (vii) residential, commercial and industrial buildings and installations.

- (b) A digital survey map of 1:2,500 scale of the site, showing the following existing features shall be provided:
- (i) GPS coordinates of the site;
 - (ii) topographic contours;
 - (iii) land use and classifications;
 - (iv) existing vegetative cover and the vegetative cover that may be removed during construction;
 - (v) individual structures and installations;and
 - (vi) surface water bodies.
- (c) **Geology and seismology:** The applicant shall provide a geological and structural map of suitable scale of the proposed facility site and also describe:
- (i) the suitability of the site with respect to seismic sensitivity status; and
 - (ii) the suitability of soil for grading, compaction, and drainage, and describe plans to remedy any identified inadequacies.
- (d) **Hydrology and wind:** The applicant shall provide
- (i) the natural and the man-made water bodies, and if available, daily and monthly river/stream flows likely to be directly affected by the proposed facility;
 - (ii) an analysis of the prospects of floods for the area, including the probability of occurrences and likely consequences of various flood stages, and describe plans to mitigate any likely adverse consequences; and
 - (iii) an analysis of the prospects high winds for the area, including the probability of occurrences and likely consequences of wind velocities, and describe plans to mitigate any likely adverse consequences.

Layout and construction

2. The applicant shall provide information on the proposed layout and preparation of the proposed site and any proposed alternative site(s) and the description of proposed major structures and installations located thereon.
- (a) **Site activities:** The applicant shall describe the proposed site preparation and reclamation operations, including:
- (i) test borings;

- (ii) removal of vegetation;
 - (iii) grading and drainage provisions;
 - (iv) access roads;
 - (v) removal and disposal of debris; and
 - (vi) post-construction reclamation.
- (b) **Layout:** The applicant shall supply a map of 1:2,500 scale of the proposed electric power generating plant site, showing the following features of the proposed and existing facility and associated facilities:
- (i) electric power generating plant;
 - (ii) fuel, waste, and other storage facilities;
 - (iii) fuel and waste processing facilities, if any;
 - (iv) water supply and sewage lines;
 - (v) transmission lines;
 - (vi) substations;
 - (vii) transportation facilities and access roads;
 - (viii) security facilities;
 - (ix) grade elevations where modified during construction; and
 - (x) other pertinent installations.
- (c) **Structures:** The applicant shall describe, in as much detail as is available at the time of submission of the application, all major proposed structures, including the following:
- (i) estimated overall dimensions;
 - (ii) construction materials;
 - (iii) colour and texture of facing surfaces;
 - (iv) artist's pictorial sketches of the proposed facility from public vantage points; and
 - (v) any unusual features.
- (d) **Plans for construction:** The applicant shall describe the proposed construction sequence.
- (e) **Future plans:** The applicant shall describe any plans for future additions of electric power generating units earmarked for the site (including the type and timing) and the maximum electric power generating capacity anticipated for the site.

3. **Equipment**

- (a) The applicant shall describe the proposed major *electric power generating equipment* for the proposed site and any proposed alternative site(s).
- (b) The applicant shall describe all *safety equipment* including:
 - (i) the reliability of the equipment and the reduction in efficiency for partial failure; and
 - (ii) all proposed major public safety equipment.
- (c) The applicant shall describe any other major equipment constituting the proposed facility that is not discussed in paragraph 3(b).

4. **Power Evacuation arrangement and facilities**

- (a) The applicant shall submit the following documentation relating to the facilities required for the adequate evacuation of the power to be generated into the distribution or national interconnected transmission system:
 - (i) the electrical single line diagram and equipment layout design showing how the new system would connect with the existing network;
 - (ii) the steady-state power flow calculations for the interconnected grid with special emphasis on the simulated performance of the new plant and the determination of losses resulting from power production from the new plant at the proposed point of interconnection; and
 - (iii) the short circuit calculations to determine the impact of the new generation facility on the short circuit capability of the existing power system.
- (b) Applicants should note that the granting of an operating licence would require full compliance with the national electricity grid code, especially in the areas of machine size of generating units, system stability considerations etc.

E. Financial and Economic impact data

1. The applicant shall state the type, current and proposed ownership status of the proposed facility, including site(s), rights-of-way, structures, and equipment.
2. **Capital and intangible costs:** The applicant shall:
 - (a) Submit estimates of applicable capital and intangible costs for the various alternatives. The data submitted shall be classified according to

- Public Utilities Regulatory Commission uniform system of accounts for utility companies (i.e. electricity generation or supply company, or a natural gas supply company).
- (b) Provide and tabulate total costs per kilowatt, the present worth and annualised cost for capital costs and any additional cost details as required to compare capital cost of alternative sites considered (using the start of construction date as reference date), and describe techniques and all factors used in calculating present worth and annualised costs.
3. **Operation and maintenance expenses:** The applicant shall:
- (a) Supply applicable estimated annual operation and maintenance expenses for the first two years of commercial operation. The data submitted shall be classified according to Public Utilities Regulatory Commission uniform system of accounts for utility companies (i.e. electricity generation or supply company, or a natural gas supply company).
- (b) Tabulate the total operation and maintenance cost per kilowatt, the present worth and annualised expenditures for operating and maintenance costs as well as any additional cost breakdowns as required to compare alternative sites, and describe techniques and factors used in calculating present worth and annualised costs.
4. **Delays:** The applicant shall submit an estimate of the cost for a delay prorated to a monthly basis beyond the projected commercial operation date.
5. **Economic impact data:** The applicant shall provide estimates of:
- (a) the annual total and present worth of construction and operation payroll;
- (b) the construction and operation employment and estimate the number that will be employed from the area, locality and region;
- (c) the increase in national and local tax revenue accruing from the facility; and
- (d) the economic impact of the proposed facility on local commercial and industrial activities.