



LICENCE AND PERMIT APPLICATION MANUAL

*For
Service Providers
in the*

NATURAL GAS SUPPLY INDUSTRY

July 2013

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PREFACE

The Licence and Permit Application Manual for Service Providers in the Natural Gas Supply Industry has been developed and issued by the Energy Commission of Ghana to formally establish the framework for licensing Natural Gas Processing, Liquefied Natural Gas (LNG) Facilities, Natural Gas Wholesale Supply, Natural Gas Transmission, Natural Gas Distribution and Natural Gas Sale and granting of permits to bulk customers as stipulated by the Energy Commission Act (Act 541), 1997.

In accordance with provisions of Act 541, 1997, natural gas shall be supplied through the open access national interconnected gas transmission system that shall interconnect various distribution utilities in identified franchise areas and several wholesale suppliers and distributors. The transmission system will make natural gas accessible to bulk customers.

The Manual has been prepared as a reference to guide prospective natural gas service providers with regard to licensing requirements as well as assisting in ensuring compliance with codes and standards governing quality, health and safety. The natural gas industry will be monitored by regulatory mechanisms that have been developed and approved to assure open access, reliability and safety of transactions and operations in the industry.

The 2012 version is the second edition of the Licence and Permit Application Manual to be issued by the Commission. This is in accordance with the mandate of the Commission to subject the manual to periodic review in order to improve its quality and to make it more amenable to its objects and functions as and when it deems it necessary. The first version was published in 2008.

Finally, users of the 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 natural gas supply industry in Ghana. Submission of any relevant comments and ideas in this regard shall be forwarded to:

The Executive Secretary, Energy Commission, PMB, Ministries Post Office, Accra, Ghana;
e-mail: info@energycom.gov.gh and telephones: (233-302) 813763, 813762 or 813756

Definitions

"Act "	<i>means</i> the Energy Commission Act, 1997 (Act 541).
"ancillary service"	<i>means</i> a service like compression, cleaning, balancing, storage or pressure regulating that ensures reliability and supports the transmission of natural gas from a supply point such as a regulating and metering station and a processing plant to customers.
"applicant"	<i>means</i> a person who has applied for a licence under the Act .
"bulk customer"	<i>means</i> a customer who purchases or receives natural gas of such amount or level as the Commission may specify.
"Commission"	<i>means</i> the Energy Commission of Ghana established under section 1 of Act 541.
"Coordination Agreement"	<i>means</i> the agreement initiated by the transmission utility and negotiated with all market participants which details the operation coordination/harmonization issues, compliance requirements and obligations of all participants under various operational scenario including contingencies and congestion management, to ensure safe, optimal and reliable operation of the NGITS.
" distribution system"	<i>means</i> the distribution network which forms an integral part of the system for the supply of natural gas to consumers in an area or zone designated by the Commission.
"ECOWAS"	<i>means</i> the Economic Community of West African States
"EPA"	<i>means</i> the Environmental Protection Agency established under the EPA Act, 1994 (490)
" Framework Agreement"	<i>means</i> the agreement entered into between the Transmission Utility and any other licensee engaged in the supply and distribution of natural gas whereby the Transmission Utility and the licensee agree to be bound by (a) the procedure for obtaining and terminating

<p>"interconnection service"</p>	<p>transmission and interconnection services for natural gas;</p> <p>(b) the method of response to requests for its services, and</p> <p>(c) maps and diagrams of its natural gas transmission facilities in the country as required under Section 24(2)(c) of the Act.</p> <p><i>means</i> the safe and reliable connection of one person's natural gas facilities to another person's natural gas facilities with due consideration for</p> <p>(a) any facilities necessary to accommodate the connection,</p> <p>(b) the coordinated operation of the connected systems; and</p> <p>(c) the economic impact of the connection on the connected systems.</p>
<p>"Interconnection Service Agreement"</p>	<p><i>means</i> the agreement of that name entered into between the Transmission Utility and any other licensee engaged in the supply and distribution of natural gas whereby the Transmission Utility and the licensee agree to be bound by the safe and reliable connection of one persons' facilities with due consideration for</p> <p>(a) any facilities necessary to accommodate the connection,</p> <p>(b) the coordinated operation of the connected systems</p> <p>(c) the economic impact of such connection on the connected systems</p>
<p>"Licence Year"</p>	<p><i>means</i> the period from 1st January to 31st December of each calendar year.</p>
<p>"licence"</p>	<p><i>means</i> a licence or permit granted under the Act by the Commission to a person to enable that person carry out activities in the natural gas industry.</p>
<p>"manual "</p>	<p><i>means</i> the Licence and Permit Application Manual</p>
<p>"Minister"</p>	<p><i>means</i> the Minister assigned responsibility for the natural gas industry.</p>
<p>"Natural Gas Sale /Purchase Agreement"</p>	<p><i>means</i> the agreement of that name entered into whereby the buyer agrees to purchase its natural gas from a seller according to terms of this agreement.</p>

"NGITS"	<i>means</i> the National Interconnected Gas Transmission System
"NGTU"	<i>means</i> the Natural Gas Transmission Utility
"off-spec gas"	<i>means</i> natural gas which fails to conform to the off-take specification when the Utility makes it available for off-take at an off-take point
"person"	includes a body corporate, whether corporation aggregate or corporation sole and an unincorporated body of persons as well as an individual.
"PURC"	<i>means</i> the Public Utilities Regulatory Commission established under Act 538.
"Siting Committee"	<i>means</i> the committee established by the Energy Commission that approves the location of a processing facility, transmission systems, distribution network and interconnection facilities.
"transmission system"	<i>means</i> the transmission pipeline transporting natural gas and associated installations that are operated by the transmission utility.
"transmission utility"	<i>means</i> a person licensed under the Act to provide transmission and interconnection services for natural gas without discrimination throughout the country.
"wholesale supplier"	<i>means</i> a producer licensed under the Act to install and operate facilities to procure natural gas for sale to bulk customers or to a distribution company along with the ancillary services and storage facilities needed to maintain reliability and gas quality of the NGTS.

CHAPTER

1

BACKGROUND

Introduction

- 1.1** The Energy Commission was established by the Energy Commission Act, 1997 (Act 541) to license and regulate the technical operations of service providers in the natural gas supply industry amongst other things. The Commission performs these regulatory functions and ensures enforcement of licensing conditions, technical rules of practice and standards of performance regulations.
- 1.2** This Licence and Permit Application Manual is to guide the Commission in the performance of its licensing obligations and to serve as a source of information for both licensed operators and prospective applicants who intend to operate in the industry.

Object of Licence and Permit Application Manual

- 1.3** The object of this Licence and Permit Application Manual is to outline the Energy Commission's framework for licensing of service providers in the natural gas supply industry. The manual provides an outline of the procedures and processes involved as well as highlights of terms and conditions that shall be expected for the various types of licences that the Commission is required to grant in order to ensure a safe, reliable, economic and cost effective operation of the natural gas supply industry.
- 1.4** This manual is based on the Energy Commission Act, 1997 (Act 541). If the legislation or other material underlying this manual is amended, the Commission reserves the right to amend the manual.

Obligation to be licensed

- 1.5** Section 11 and 25 of the Act provides that a person shall not install or operate processing facilities to procure or produce Natural Gas for sale, transmit or distribute Natural Gas unless the person is authorized to do so by a licence granted under the Act.

Framework Agreement

- 1.6** A Licensee shall in addition to the licence enter into a Framework Agreement with the Natural Gas Transmission Utility.

- 1.7** A bulk customer in the natural gas supply industry shall obtain a permit from the Commission and also conclude a Framework Agreement with the Natural Gas Transmission Utility to engage in activities relating to the supply of natural gas to the bulk Customer.
- 1.8** The conditions for a Framework Agreement shall at all times be in full compliance with all Regulations governing operations in the Natural Gas Supply Industry.
- 1.9** A Framework Agreement shall include an arrangement between the NGTU and the network user to ensure:
- (a) that the quantity of natural gas transferred through the NGITS on behalf of the network user at a connection point shall meet the entry point requirement and shall not exceed the declared sent-out capacity from the user in respect of that connection;
 - (b) that payment for services provided by the NGTU shall be subject to the approval of the PURC (reference Energy Commission Act, 1997 (Act 541), subsection 24(1)(b));
 - (c) that a network user's actual off-take at a connection point does not exceed the contracted maximum capacity for that connection;
 - (d) that the NGTU facilitates the settlement for any balancing amount of natural gas;
 - (e) full compliance with natural gas industry best practice in constructing, commissioning, operating and maintenance of the plant or equipment connected to the natural gas network to facilitate the transfer of natural gas to or from the network;
 - (f) full compliance with all technical rules and codes of practice to be issued by the Commission and any other relevant agency regarding connection to and the use of the natural gas network; and
 - (g) that a capital contribution is made in respect of the capital investment associated with the design, construction, installation and commissioning of the connection equipment or network system assets where the granting of access necessitates the augmentation of connection equipment or network system assets that would otherwise not be commercially viable.

CHAPTER

2

ROLE OF THE COMMISSION

Guiding principles

- 2.1** The Commission shall have regard to the requirements of the Act in its decision making with respect to its licensing function.
- 2.2** The Commission shall in performing its functions under the Act in respect of the natural gas supply industry;
- (a) promote competitive and fair market conduct,
 - (b) prevent misuse of monopoly or market power,
 - (c) regulate entry into and exit from the natural gas market,
 - (d) ensure that consumers benefit from competition and efficiency, and
 - (e) collaborate with the PURC to:
 - (i) protect the interests of consumers with respect to reliability and quality of natural gas supply services;
 - (ii) promote efficiency, fair, transparent and competitive operations in the natural gas supply industry; and
 - (iii) facilitate the maintenance of a financially viable natural gas supply industry.
- 2.3** The Commission shall ensure the safe and efficient processing, transmission, distribution and sale of natural gas by establishing and enforcing:
- (a) standards of safety, reliability and quality in the supply of natural gas;
 - (b) safety and technical standards for natural gas installations; and
 - (c) standards to ensure efficient natural gas end-use practices and promote productive uses of natural gas.

Licensing functions

2.4 The Commission has responsibility for the following matters:

- (a) assessing, processing and granting of licences;
- (b) specifying terms and conditions of licences;

- (c) modifying terms and conditions of licences;
- (d) maintaining a register of licences;
- (e) compliance monitoring and enforcement of licence terms and conditions; and
- (f) suspension and cancellation of licences.

Granting of a licence

2.5 The Commission may issue a licence if it is satisfied that:

- (a) the applicant is eligible to hold the licence; and
- (b) specified requirements are met for the licence.

Specifying Licence conditions

2.6 The Commission may grant a licence subject to terms and conditions determined by the Commission.

Modifying Licence conditions

2.7 The Commission may modify licence terms and conditions after prior written notice to the natural gas service providers involved.

2.8 A modification to a licence may be made by the Commission only if the Commission considers it necessary to further the objects of the Act.

Register of licences

2.9 The Commission shall keep a register of the licences granted to natural gas service providers and bulk customers.

2.10 A copy of the Register shall be made available at the Commission's office and web site.

Compliance monitoring and enforcement

2.11 The Commission shall monitor and enforce compliance with all Licence terms and conditions.

2.12 The contravention of a condition of the licence is a breach of the Act.

2.13 The Commission may suspend or cancel the licence of a natural gas service provider where that licensee contravenes a condition of the licence.

2.14 As part of the compliance monitoring procedure, the licensee shall be required to submit to the Commission the performance and incident statistics required under

the relevant natural gas regulations and the annual report at the end of each financial year.

- 2.15** An authorized officer of the Commission shall have the right of access to the premises and operational area of the licensee for the purpose of inspection and ensuring compliance with the licence terms and conditions.
- 2.16** In the course of an inspection, the licensee shall co-operate with and render assistance to any officer authorized by the Commission.
- 2.17** While on the premises of the licensee, an authorized officer shall adhere to all the internal rules and regulations of the licensee.

Suspension or cancellation of licence

2.18 The Commission may suspend or cancel a licence where:

- a) the licensee has not complied with any of the conditions stipulated in the licence;
- b) the licensee modifies the licensed facility without prior written approval of the Commission;
- c) a change in circumstances for which the licence was granted such that the natural gas service provider would no longer be entitled to a licence;
- d) the licensee contravenes a term or condition of the licence and Regulations made by the Commission and other applicable legislation;
- e) the licence is not utilized within two years from the date of its grant, after giving the licensee not less than thirty days' notice;
- f) the licensee 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;
- g) the licensee fails to pay fees or other charges within thirty days after the due date;
- h) the licensee's financial status as reasonably determined by the Commission, prevents the licensee from performing duties and obligations under the terms and conditions of the licence;
- i) the existing licensee fails to file an application for a renewal of the licence within sixty days before the expiry of the licence required to be renewed as specified in 3.12;

- j) the licensee's environmental permit is revoked by the Environmental Protection Agency, or
 - k) the licensee's actions significantly or repeatedly endangers public safety.
- 2.19** Prior to the suspension or cancellation of a licence, the Commission shall serve the licensee with 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 licensee does not comply within the period specified in the written notice.
- 2.20** The defaulting licensee served with a notice under clause 2.19 shall be given an opportunity to respond to the Commission's written complaint and the proposed remedy.
- 2.21** 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 a licence.

CHAPTER

3

TYPES AND DURATION OF LICENCES OR PERMITS

Types of services and licence

- 3.1** (a) The activities in the natural gas supply industry for which a licence or permit is required are:
- (i) processing;
 - (ii) liquified natural gas facilities;
 - (iii) wholesale supply;
 - (iv) transmission;
 - (v) distribution;
 - (vi) sale; and
 - (vii) bulk customer consumption.
- (b) A separate licence shall be required for each activity under 3.1(a).
- (c) The Commission may grant more than one license to a person provided such an action does not breach the laws.
- 3.2** Without limiting 3.1 the Commission may require a licence for any other activity in the natural gas supply industry.
- 3.3** A **Natural Gas processing licence** shall permit the licensee to install and operate facilities to process natural gas to be transported for sale to a bulk customer or to a distribution company.
- 3.4** A **Liquified Natural Gas facilities licence** shall permit the licensee to install and operate facilities to process liquified natural gas to be transported for sale to a bulk customer or to a distribution company
- 3.5** A **Natural Gas wholesale supply licence** shall permit the licensee to procure natural gas to be transported for sale to a bulk customer or to a distribution company.

- 3.6** (a) The Commission shall grant a **Natural Gas transmission licence** to only one operator, the NGTU, in accordance with Sections 23 and 24 of the Act.
- (b) The NGTU shall not be licensed to operate in any other activity
- 3.7** A **Natural Gas transmission licence** shall permit the licensee
- (a) to monitor and control the operation of the national interconnected transmission system for the transmission of natural gas throughout the country, and to ensure the safe, reliable and economic transportation of natural gas within the transmission system,
- (b) to provide transmission interconnection services without discrimination to any other licensee in the natural gas industry, and
- (c) to provide transmission interconnection services to operators of natural gas networks in ECOWAS member states.
- 3.7** A **Natural Gas distribution licence** shall permit the licensee to construct and operate a network to distribute natural gas without discrimination to consumers who own or occupy premises within a designated area or zone, as specified in the licence.
- 3.8** A **Natural Gas sale licence** shall permit the licensee to sell natural gas through a distribution network without discrimination to consumers who own or occupy premises within a designated area or zone, as specified in the licence.
- 3.9** A **Bulk Customer permit** shall authorize the permit holder to operate in the deregulated natural gas market and negotiate supply contracts with any wholesale supplier of natural gas subject to terms and conditions specified in the permit. A bulk customer in respect of Natural Gas is any customer who consumes a minimum of 10 million standard cubic feet per day (10 MMSCFD)
- 3.10** A Natural Gas distribution licence or sale licence shall be specific with the location and geographical limits of the service area.
- 3.11** A modification of licence or the issuance of a new license shall be required if a licensee decides to engage in a similar service at a different location or to expand its service beyond its service area.

Duration of licence

- 3.12** A licence shall be granted for the respective period as specified in the Third Schedule and shall be subject to renewal.

Renewal of licence

- 3.13** (a) An application for renewal of a licence shall be made to the Commission not later than sixty (60) days before the expiry of the licence desired to be renewed,
- (b) The procedure for renewal of a licence granted under the Act shall be the same as that applicable to the grant of the original licence, and
- (c) A licensee who fails to renew a licence or whose application for the renewal is rejected by the Commission shall cease to provide the services to which the licence relates.

CHAPTER

4

APPLICATION FOR AND APPROVAL OF LICENCE

Qualification for a licence

- 4.1** The applicant must be
- (a) a citizen of Ghana, or
 - (b) a body corporate registered under the Companies Act, 1963 (Act 179) or under any other law of Ghana, or
 - (c) a partnership registered under the Incorporated Private Partnerships Act, 1962 (Act 152).

Application for a licence

- 4.2** An application for a licence shall be made in writing addressed to the Executive Secretary of the Commission and shall be submitted together with all relevant information as specified in the respective chapter for each licence type.
- 4.3** An application for a licence shall be made in the form which may be obtained at the Commission's Office or accessed from the Commission's website (www.energycom.gov.gh)
- 4.4.** The applicant shall complete the appropriate application form and submit all relevant requirements in the respective chapter for each licence type with supporting statutory declaration of the correctness of information required at the time an application is filed.
- 4.5** The applicant shall complete the appropriate application form in Schedule I, in its entirety and submit all required attachments, affidavits, and evidence of capability specified in the respective chapter for each licence type at the time an application is filed, for consideration for the issuance of a licence to provide the prescribed service in the natural gas supply industry.
- 4.6** An applicant shall be required to furnish the Commission with additional information on request.
- 4.7.** The Commission shall acknowledge receipt of an application for a licence within ten (10) working days after the receipt of the application.
- 4.8** An incomplete application will not be processed or may be rejected.

Application fees

- 4.9 The applicant shall pay to the Commission a non-refundable application fee as specified in the Schedule II.
- 4.10 An application shall be deemed to have been successfully lodged only if the relevant supporting documentation required is attached in addition to full payment of the required application fee.
- 4.11 Application fees are also payable for an application to renew or extend the duration of a licence.
- 4.12 The stipulated application fee will 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.
- 4.13 A licence application shall not be assessed unless the appropriate Application Fee is paid by the applicant
- 4.14 Application fee paid at the time of submitting an application as referred to in 4.10 shall cover all the stages in the licensing process.
- 4.15 An amendment application filing fee shall be charged for a request to amend an approved licence, replace a lost or destroyed licence, siting clearance, construction work permit or authorization to operate.
- 4.16 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.
- 4.17 Application fees may be revised by the Commission and announced by Public Notice.

Siting Committee

- 4.18 All applications for the installation of equipment and pipelines shall be subject to the approval of the Siting Committee of the Commission. (refer to appendix V- Membership of the Siting Committee.)
- 4.19 Siting approval shall be required for processing facilities, transmission systems, distribution networks and interconnection facilities.
- 4.20 The Commission shall review an application taking into consideration the recommendations of the Siting Committee.

Consideration and approval of application

- 4.21 The Commission shall within sixty (60) working days after acknowledging receipt of an application provide an applicant with a written notice of the Commission's decision.

CHAPTER

5

LICENCE AND PERMIT CONDITIONS

General Conditions

5.1 Every licence shall be subject to conditions that require a licensee to

- (i). comply with any applicable legislation in force at the time of application or that shall be enacted after the grant of the licence;
- (ii). comply with protocols, standards and codes related to the natural gas supply industry;
- (iii). meet specified requirements relating to the entity's capacity to continue operations under the licence;
- (iv). comply with all licence terms and conditions;
- (v). notify the Commission about any change of designations and major shareholders;
- (vi). develop and comply with customer- related standards, charters and procedures; and
- (vii). pay on time all appropriate fees and charges to the Commission.

Initial and annual licence fees

5.2 The initial licence fee for a particular type of licence shall be determined by the Commission.

5.3 Each licensee shall pay an annual fee during the period of commercial operation.

5.4 A licensee is exempted from payment of the annual licence fee during the construction period.

5.5 The licensee shall pay the annual licence fee by 1st January of the licence year.

5.6 The Commission may consider a request for payment of an annual licence fee in installment.

5.7 The Commission shall base its assessment of the annual licence fee invoiced for the next following licence year on actual returns submitted by the licensee for the first,

second and third quarters and the actual returns for the last quarter of the preceding licence year.

- 5.8 Without limiting 5.7, in the case of the first licence year of commercial operation and where there are no historical returns, the annual licence fee shall be estimated for the relevant period for payment.
- 5.9 The Commission shall reconcile the annual licence fee amount due and it shall arrange for settlement of any differences after submission of annual performance statistics.
- 5.10 The Commission shall revise the annual licence fee payable as specified in Schedule II.
- 5.11 The Commission shall by notice in the *Gazette or website*, notify the public about any revision of the annual licence fee.
- 5.12 The publication in the *Gazette or website* shall indicate the effective date of the revised annual licence fee.
- 5.13 The annual fee of a licence granted after commencement of a licence year will be based on the following 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.

- 5.14 A licence fee is not refundable.

Charges

- 5.15 A wholesale supply licence shall specify that charges for the services to distribution companies shall be subject to the approval of the Public Utilities Regulatory Commission.
- 5.16 The transmission licence shall specify that tariffs chargeable by the NGTU for its services shall be subject to the approval of the Public Utilities Regulatory Commission.
- 5.17 A distribution licence and sale licence, shall specify that the rates or charges by a distribution company for its services, shall be subject to the approval of the Public Utilities Regulatory Commission.

Processing Licence Conditions

5.18 A **Processing licence** shall require the licensee to

- (a) specify the location of processing facility,
- (b) comply with any directive given by the Natural Gas Transmission Utility in compliance with the regulations for the operation of the NGITS made under section 56(1)(a)(vii) of the Act;
- (c) supply natural gas of the quality suitable for the NGITS as specified in the licence;
- (d) avoid any act or omission that may affect the compatibility of the processing facility with any natural gas facility or network that is likely to prejudice public safety of supply;
- (e) grant to the Natural Gas Transmission Utility the right to use or have access to the facilities that are necessary for the purpose of ensuring the safe and efficient integrated operation of the NGITS; and
- (f) receive from the Siting Committee siting clearance for the processing facility prior to commencement of construction of the facility.

5.19 Without limiting 5.18 a licensee shall comply with the conditions specified in the processing licence.

Liquefied Natural Gas Facilities Licence Conditions

5.20 A **Liquefied Natural Gas Facilities (LNG) licence** shall require the licensee to

- (a) specify the location of the LNG facilities;
- (b) comply with any directive given by the Natural Gas Transmission Utility in compliance with the regulations for the operation of the NGITS made under section 56(1)(a)(vii) of the Act;
- (c) supply natural gas of the quality suitable for the NGITS as specified in the licence;
- (d) avoid any act or omission that may affect the compatibility of the LNG facilities with any natural gas facility or network that is likely to prejudice public safety of supply;
- (e) grant to the Natural Gas Transmission Utility the rights to use or have access to the facilities that are necessary for the purpose of ensuring the safe and efficient integrated operation of the NGITS; and

- (f) receive from the Siting Committee siting clearance for the LNG facilities prior to commencement of construction of the facilities.
- (g) LNG facilities located off-shore are subject to maritime regulations applicable from time to time

5.21 Without limiting 5.20 a licensee shall comply with the conditions specified in the LNG facilities licence.

Wholesale Supply Licence Conditions

5.22 A **Wholesale Supply licence** shall require the licensee to

- (a) specify the location of the wholesaler supplier's facility if any,
- (b) comply with any directive given by the Natural Gas Transmission Utility in compliance with the regulations for the operation of the NGITS made under section 56(1)(a)(vii) of the Act;
- (c) procure natural gas of the quality suitable for the NGITS as specified in the licence;
- (d) avoid any act or omission that may affect any natural gas facility network that is likely to prejudice public safety;
- (e) grant to the Natural Gas Transmission Utility the rights to use or have access to the facilities that are necessary for the purpose of ensuring the proper integrated operation of the NGITS and the proper execution of the operations expected from the Natural Gas Transmission Utility and authorized under the licence; and
- (f) receive from the Siting Committee siting clearance for the wholesale facility prior to commencement of construction of the facility.

5.23 Without limiting **5.22** a licensee shall comply with the conditions specified in the wholesale supply licence and applicable regulations.

Transmission Licence Conditions

5.24 A **Transmission licence** shall require the licensee to

- (a) establish and make available to the public at its offices
 - (i) the procedure for obtaining and terminating transmission and interconnection services for natural gas,

- (ii) the method of response to the request for its service, and
 - (iii) maps and diagrams of its natural gas transmission facilities in the country.
- (b) operate the natural gas network in co-ordination with WAGP network and other natural gas networks of ECOWAS member states to which it is connected,
- (c) exercise the functions and the powers of the system operator in the best interest of all parties operating in the NGITS,
- (d) consult with the Energy Commission and obtain written permission prior to any modification of the application of any technical and operational rules of practice concerning the operation of the NGITS,
- (e) grant to each wholesale supply licensee the rights to use or have access to those parts of the natural gas network that are necessary for the purpose of ensuring the proper integrated operation of the NGITS and the proper execution of the operations authorized under the licence,
- (f) take responsibility for control and operation and ensure the timely and proper maintenance of the NGITS for the transmission of natural gas throughout the country
- (g) receive from the Siting Committee siting clearance for the transmission infrastructure prior to the commencement of construction activities.
- (h) maintain proper books of account and make them available to users of the NGITS; and
- (i) follow the approved process to resolve any dispute it may have with another licensee concerning the provision of transmission and interconnection services.

5.25 A licensee shall not have a direct or indirect financial interest in any other segment of the natural gas supply industry without the approval of the Commission.

5.26 Without limiting 5.24 the licensee shall comply with the conditions of the transmission licence.

Distribution Licence Conditions

5.27 A **distribution licence** shall require the licensee to

- a) make available to the public for inspection at the licensee's office diagrams and maps of the natural gas facilities that the licensee is authorized to operate in the designated area relevant to the licence,

- b) take reasonable steps to ensure that there is in place at all times arrangements to distribute natural gas to customers located within the distribution entity's designated area of operation without discrimination,
- c) maintain the distribution network to ensure the integrity of the network to supply safe, reliable and standard quality service to each category of the licensee's customers,
- d) request the licensee's bulk customers to give written consent to the distribution entity to provide their personal particulars to the Commission,
- e) allow each bulk customer to operate in the deregulated market and inform the Commission accordingly,
- f) enter into and comply with all service agreements with the licensee's customers,
- g) follow the approved process to resolve disputes including arrangements for handling any complaint that a customer has about the quality of the services,
- h) comply with the minimum standards of service and safety with respect to all customers in accordance with the *Natural Gas Distribution and Sale (Standards of Performance) Regulations, 2007 L.I. 1912*, and any other legislation, and
- i) receive from the Siting Committee siting clearance for the distribution infrastructure prior to the commencement of construction activities.

5.28 Without limiting **5.27** the licensee shall comply with the conditions of a distribution licence.

Sale Licence Conditions

5.29 A **Sale licence** shall require the licensee to

- (a) make available to the public for inspection at the licensee's office diagrams and maps of the natural gas facilities that the licensee is authorized to operate or use in the designated area relevant to the licence;
- (b) take reasonable steps to ensure that there is in place at all times arrangements to procure and sell natural gas to customers who own or occupy premises within a designated area or zone, as specified in the licence;
- (c) enter into and comply with all service agreements with the licensee's customers;
- (d) follow the approved process to resolve disputes including arrangements for handling any complaint that a customer has about the quality of the services;

- (e) comply with the minimum standards of service and safety with respect to all customers in accordance with the *Natural Gas Distribution and Sale (Technical and Operational) Rules* and any other legislation, and

5.30 Without limiting **5.29** the licensee shall comply with the conditions of a sale licence.

Bulk Customer Permit Conditions

5.31 A **Bulk Customer permit** shall entitle the permit holder to negotiate for the supply of natural gas at a price negotiated between the supplier and the bulk customer.

The permit holder shall

- (a) specify the location of facility
- (b) operate efficiently in order to achieve the classified consumption threshold of 10 million standard cubic feet per day (10MMSCFD)
- (c) ensure its consumption does not fall short by more than 5% of the stipulated minimum consumption threshold under the classification,
- (d) negotiate supply contracts with any wholesale supplier of Natural Gas
- (e) provide the Commission with copy of the supply contract with the wholesale supplier
- (f) provide the Commission with quarterly data and information on natural gas purchases, minimum and maximum pressures experienced, frequency and duration of supply interruptions and others as may be determined by the Commission from time to time

5.32 Without limiting **5.31** the permit holder shall comply with the conditions of a bulk customer permit.

Reporting

5.33 Each licensee shall lodge with the Commission reports in accordance with relevant Regulations and reporting requirements

5.34 A licensee who fails to submit reports for a particular year shall be sanctioned in line with Section 19 of the Act.

Contravention of licence conditions

5.35 A licensee who contravenes a term and condition of the licence shall

- (a) pay a compensation to a person who suffers an injury or loss as a result of the contravention in accordance with any existing laws and Regulations

- (b) refund to the Commission any profits realized as a result of the contravention of the licence condition,
- (c) be subject to suspension or cancellation of the licence, and
- (d) pay administrative fines imposed by the Commission.

5.36 Without prejudice to (a) – (d) the offending licensee may be prosecuted in the law courts for breaches.

5.37 A person licensed to undertake operations in the natural gas supply industry is liable for damages

- (a) that arise out of a partial or total failure to supply natural gas to a customer; or
- (b) for supplying off-spec natural gas.

CHAPTER

6

REVIEW OF DECISIONS

Application for review

- 6.1** A person who is aggrieved by the decision of the Commission to grant or renew a licence or in respect of the transfer, modification, suspension or cancellation of a licence, may apply to the Commission for a review of its decision.
- 6.2** An application for the review of a decision of the Commission shall
- (a) be made in writing,
 - (b) state the decision to which the application relates,
 - (c) state in detail the grounds on which the applicant seeks a review of the decision,
 - (d) be accompanied by any information or evidence that the applicant considers shall be taken into account by the Commission, and
 - (e) be lodged with the Commission within fourteen days after the decision.
- 6.3** The Commission shall respond to the application with reasons within thirty (30) days of the receipt of the application for review.

Appeal for review of decisions

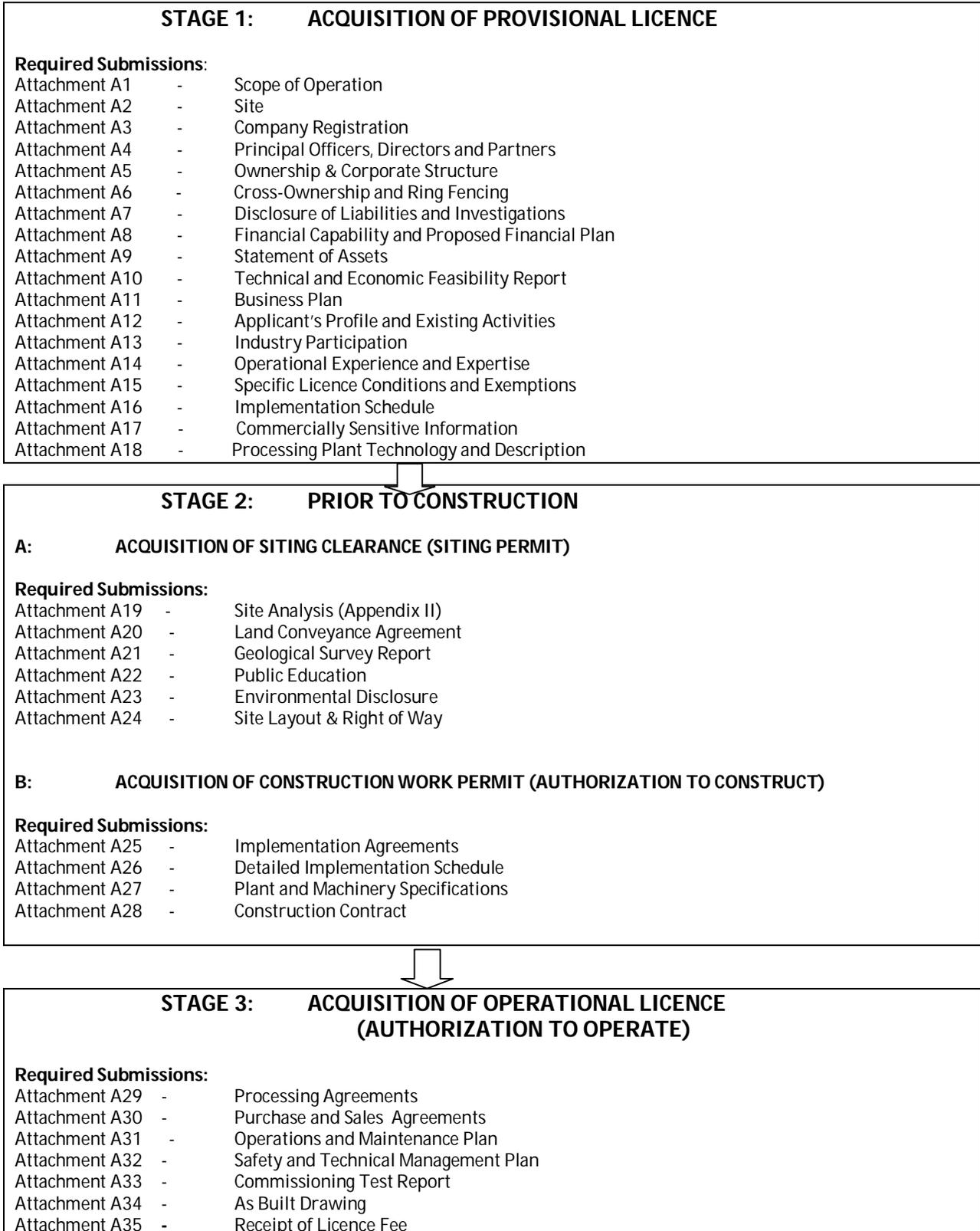
- 6.4** A person who is dissatisfied with the review of the Commission may appeal to the Minister.
- 6.5** The Minister shall make a decision within thirty days of receipt of the complaint.
- 6.6** Where a person is dissatisfied with the decision of the Minister or where thirty days have expired without a decision being taken, that person may pursue the matter in the courts.

CHAPTER

7

NATURAL GAS PROCESSING LICENCE

7.1 Stages in Acquiring Natural Gas Processing Licence



Stage 1: -Procedure for Acquisition of Provisional Natural Gas Processing Licence

- 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 the prescribed licence application fee (reference Second II)
- 7.5 Applicants shall provide ten (10) copies and a soft copies (if available) of the following exhibits as separate attachment, clearly labelled and all pages sequentially numbered,
1. **Attachment A1 - "Scope of Operation"** provide a written description of the operational nature of the applicant's business including production capacity.
 2. **Attachment A2 – "Site"** provide the geographical location of the processing facility.
 3. **Attachment A3 - "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)
 4. **Attachment A4 - "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.
 5. **Attachment A5 - "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.
 6. **Attachment A6 – "Cross-ownership and ring-fencing"** Applicants shall 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 shall 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

7. **Attachment A7 - "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.
8. **Attachment A8 - "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 gas 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.
9. **Attachment A9 - "Statement of Assets,"** provide a list of major plant and machinery to be installed and proposed layout plan.
- 10 **Attachment A10 - "Technical and Economic Feasibility Report"** provide a Feasibility Study Report on the new facility, installations or service to be used by the applicant. The report shall include, among other things, drawings of pipelines installations and equipment specifications together with proposed point(s) of interconnections to the transmission network.
11. **Attachment A11 - "Business Plan,"** provide a copy of applicant's business plan relating to activities for which the licence is sought.
- 12 **Attachment A12 - "Applicant's Profile and Existing Activities"** provide a concise description of the applicant's company history and principal business interests. It shall 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 authorization to provide natural gas supply services.
- 13 **Attachment A13 - "Industry Participation"** provide general information about applicant's existing activities, both within and outside the natural gas supply industry
- 14 **Attachment A14 - "Operational Experience and Expertise,"** provide names, titles, postal and e-mail addresses, telephone numbers, and the background of key personnel

who shall be involved in the operational aspects of the business for which the licence is sought.

1. An applicant shall submit a comprehensive description of applicant's and its principals' experience and technical capacity, relevant to carrying out the project for which a licence is sought.
2. The description shall include :
 - (a) a summary of applicant's and applicant's principals' experience in conducting activities in developing countries,
 - (b) a summary of applicant's and applicant's principals' business strategy in respect of projects of a similar nature and scope to that for which the licence is sought,
 - (c) a description of all projects similar to that for which the licence is sought in which applicant and applicant's principals have participated during the five years preceding the date of the application, including
 - (i) the locations of the project or projects;
 - (ii) descriptions of the projects, including a brief technical summary and summary of the projects' business structure;
 - (iii) volumes of gas supplied by the projects per day;
 - (iv) profiles of the customers served by the projects;
 - (v) descriptions of safety and environmental compliance, including disclosure of any major safety or environmental incidents and any safety or environmental enforcement actions commenced by relevant authorities;
 - (vi) descriptions of any community development or community impact amelioration activities associated with the projects; and
 - (vii) a summary assessment of the performance of the projects, including meeting construction and operational schedules and business objectives and targeted returns.
 - (d) description of the qualifications and experience of the key professional and technical personnel and key management personnel the applicant proposes to assign to the project for which the licence is sought.
 - (e) 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 natural gas supply industry, and technical capacity to meet the relevant requirements of the licence shall be provided.

- 15. Attachment A15 - "Specific Licence Conditions and Exemptions"** Where the applicant is seeking particular licence conditions or exemptions, the nature and reasons for seeking those conditions or exemptions shall be explained. In such circumstances, the applicant shall also provide a draft outline of the proposed licence condition(s) or exemption(s). 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.
- 16. Attachment A16 - "Implementation Schedule,"** provide timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.
- 17. Attachment A17 - "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 shall 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.
- 18. Attachment A18 – "Processing Plant Technology and Description"** provide information on the technology used and description of the technical features of the processing plant

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 as separate attachments, clearly labeled and all pages sequentially numbered,
 - 1. Attachment A 19 – "Site Analysis"** Provide details as per Appendix I-Site Analysis for the siting of Natural Gas Processing facilities
 - 2. Attachment A20 – "Land Conveyance Agreement"** provide approved documentation of proof of title to land, or leases and assignments, and zoning permit from relevant authority including the siting permit from the Commission.

3. **Attachment A21 - "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 for gas supply facility.
4. **Attachment A22 - "Public Education"** provide a plan to educate the general public about the safety requirements and hazards of natural gas infrastructure.
5. **Attachment A23 - "Environmental Disclosure"** provide an Environmental Impact Assessment (EIA) Report certified by the Environmental Protection Agency (EPA) of Ghana and an Environmental Permit or Permanent Environmental Certificate issued by the Environmental Protection Agency
6. **Attachment A24 - "Site Layout & Right of way,"** provide detailed Site-Layout and "Right-of-Way" drawings. Provide a programme for compensation payments (where applicable).

B. Procedure for Acquisition of Construction Work Permit

- 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 as separate attachment, clearly labeled and all pages sequentially numbered,
 1. **Attachment A25 - "Implementation Agreements"** provide copies of agreements and Memoranda of Understanding (MOUs) relevant to the activities for which the applicant seeks a licence.
 2. **Attachment A26 - "Detailed Implementation Schedule,"** provide detailed timelines for the specific activities that must be performed to produce the various project deliverables.
 3. **Attachment A27 - "Plant and Machinery Specifications,"** Detailed engineering design and equipment specifications and construction drawings.
 4. **Attachment A28 - "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.

Stage 3: -Procedure for acquisition of Authorization 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 as separate attachment, clearly labeled and all pages sequentially numbered,
- 1. Attachment A29 - "Processing Agreements,"** Natural Gas Processing Agreement if it is a tolling entity
 - 2. Attachment A30 - "Purchase and Sales Agreements,"** Natural Gas Purchase and Sales Agreements,
 - 3. Attachment A31 - "Operations & Maintenance Plans,"** Operations and maintenance plan including supply agreements for equipment and parts for major spare parts and frequently changed parts and equipment.
 - 4. Attachment A32 - "Safety and Technical Management Plan"** Safety and Technical Management Plan shall include the following:
 - (a) Applicant Safety Policy Statement
 - (b) Applicant's safety codes and Practices
 - (c) Demarcation, labeling, protection and prevention of unauthorized entry of a site if applicable
 - (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 and standards
 - (f) Environmental hazards impact mitigation measure, actions and plans (sampling, monitoring, analyzing of air, aquatic toxicity and noise)
 - (g) Emergency preparedness plan
 - (h) Deployment of disaster management measures
 - (i) Fire safety prevention and fighting measures
 - (j) Precautions for prevention of environmental hazards (oil spills and pollutants)
 - (k) Operational and maintenance safety rules, procedure and instructions
 - (l) Applicant's operation and maintenance culture
 - (m) Adherence to equipment manufacturer's recommended maintenance schedules specific commitment and arrangements to operate facilities and installations to ensure safe and reliable natural gas supply.

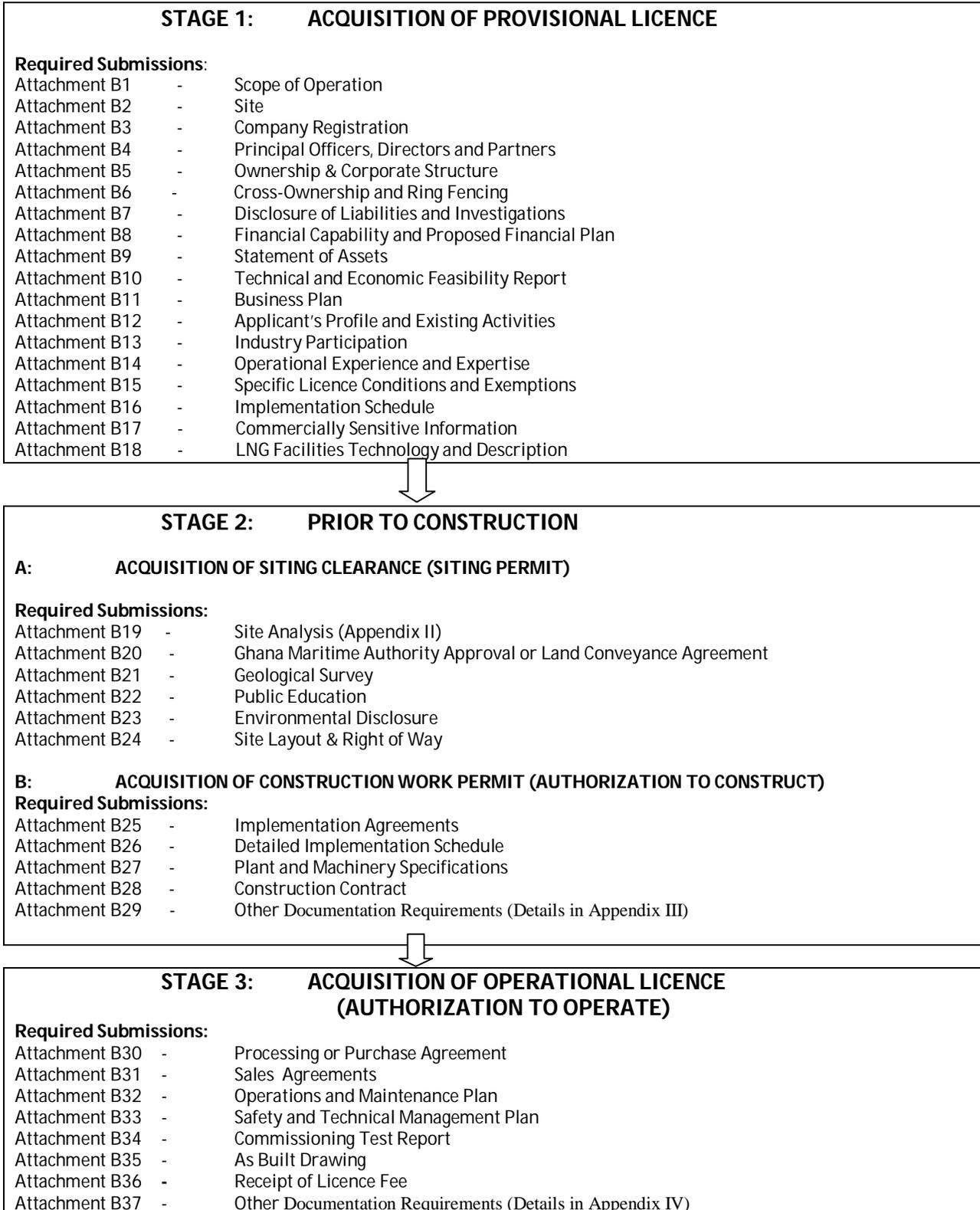
5. **Attachment A33 - "Commissioning Test Report,"** Satisfactory commissioning test report.
6. **Attachment A34 - "As Built Drawings"** As-built drawings and layout of facilities
7. **Attachment A35 - "Receipt of Licence Fee,"** Evidence of payment of the appropriate prevailing licence fee to the Energy Commission.

CHAPTER

8

LIQUIFIED NATURAL GAS (LNG) FACILITIES LICENCE

8.1 Stages in Acquiring Liquefied Natural Gas (LNG) Facilities Licence



Stage 1: -Procedure for Acquisition of Liquefied Natural Gas (LNG) Facilities Licence

- 8.2** An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 8.3** Applicants shall fill and submit one original application form signed by a Principal Officer (reference Schedule I: Application Form)
- 8.4** Applicants shall attach receipt confirming the payment of the prescribed licence application fee (reference Schedule II)
- 8.5** Applicants shall provide ten (10) copies and a soft copy on CD if available of the following exhibits as separate attachment, clearly labelled and all pages sequentially numbered,
- 1. Attachment B1 - "Scope of Operation"** provide a written description of the operational nature of the applicant's business including production capacity.
 - 2. Attachment B2 - "Site"** provide the geographical location of the LNG facilities.
 - 3. Attachments B3- "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)
 - 4. Attachment B4 - "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.
 - 5. Attachment B5 - "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.
- 6. Attachment B6 - "Cross-ownership and ring-fencing"** Applicants shall 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 shall 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
7. **Attachment B7 - "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.
8. **Attachment B8 - "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 gas 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.
9. **Attachment B9 - "Statement of Assets,"** provide a list of major plant and machinery to be installed and proposed layout plan.
- 10 **Attachment B10 - "Technical and Economic Feasibility Report"** provide a Feasibility Study Report on the new facility, installations or service to be used by the applicant. The report shall include, among other things, drawings of installations and equipment specifications together with proposed point(s) of interconnections to the transmission network.
11. **Attachment B11 - "Business Plan,"** provide a copy of applicant's business plan relating to activities for which the licence is sought.
- 12 **Attachment B12 - "Applicant's Profile and Existing Activities"** provide a concise description of the applicant's company history and principal business interests. It shall 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 authorization to provide natural gas supply services.
- 13 **Attachment B13 - "Industry Participation"** provide general information about applicant's existing activities, both within and outside the LNG industry

14 Attachment B14 - "Operational Experience and Expertise," provide names, titles, postal and e-mail addresses, telephone numbers, and the background of key personnel who shall be involved in the operational aspects of the business for which licence is sought.

1. An applicant shall submit a comprehensive description of applicant's and its principals' experience and technical capacity, relevant to carrying out the project for which a licence is sought.
2. The description shall include a
 - (a) summary of applicant's and applicant's principals' experience in conducting activities in developing countries,
 - (b) summary of applicant's and applicant's principals' business strategy in respect of projects of a similar nature and scope to that for which the licence is sought,
 - (c) description of all projects similar to that for which the licence is sought in which applicant and applicant's principals have participated during the five years preceding the date of the application, including
 - i. the locations of the project or projects;
 - ii. descriptions of the projects, including a brief technical summary and summary of the projects' business structure;
 - iii. volumes of gas supplied by the projects per day;
 - iv. profiles of the customers served by the projects;
 - v. descriptions of safety and environmental compliance, including disclosure of any major safety or environmental incidents and any safety or environmental enforcement actions commenced by relevant authorities;
 - vi. descriptions of any community development or community impact amelioration activities associated with the projects; and
 - vii. a summary assessment of the performance of the projects, including meeting construction and operational schedules and business objectives and targeted returns.
 - (d) description of the qualifications and experience of the key professional and technical personnel and key management personnel the applicant proposes to assign to the project for which the licence is sought.

(e) 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 natural gas supply industry, and technical capacity to meet the relevant requirements of the licence shall be provided.

15. Attachment B15 - "Specific Licence Conditions and Exemptions" Where the applicant is seeking particular licence conditions or exemptions, the nature and reasons for seeking those conditions or exemptions shall be explained. In such circumstances, the applicant shall also provide a draft outline of the proposed licence condition(s) or exemption(s). 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.

16. Attachment B16 - "Implementation Schedule," provide timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.

17. Attachment B17 - "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 shall 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.

18. Attachment B18 - "Technology and Description" provide information on the technology used and description of the technical features of the facilities.

Stage 2: A. Procedure for Acquisition of Siting Clearance

8.6 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

8.7 Proof of payment of prescribed licence application fee

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

1. **Attachment B 19 – "Site Analysis"** Provide details as per Appendix III-Site Analysis for the siting of the facilities

2. **Attachment B20 - "Ghana Maritime Authority Approval or Land Conveyance Agreement"** Clearance or permit from Ghana Maritime Authority (GMA) for offshore facilities or Land Clearance Agreement for onshore facilities. In each case provide approved documentation of proof of title to land, or leases and assignments, and zoning permit from relevant authority including the siting permit from the Commission.
3. **Attachment B21 - "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 for the facilities.
4. **Attachment B22 - "Public Education"** provide a plan to educate the general public about the safety requirements and hazards of LNG facilities.
5. **Attachment B23 - "Environmental Disclosure"** provide an Environmental Impact Assessment (EIA) Report certified by the Environmental Protection Agency (EPA) of Ghana and an Environmental Permit or Permanent Environmental Certificate issued by the Environmental Protection Agency
6. **Attachment B24 - "Site Layout & Right of way,"** provide detailed Site-Layout and "Right-of-Way" drawings. Provide a programme for compensation payments (where applicable).

B. Procedure for Acquisition of Construction Work Permit

- 8.9 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 8.10 Proof of payment of prescribed licence application fee
- 8.11 Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered,
 1. **Attachment B25 - "Implementation Agreements"** provide copies of agreements and Memoranda of Understanding (MOUs) relevant to the activities for which the applicant seeks a licence.
 2. **Attachment B26 - "Detailed Implementation Schedule,"** provide detailed timelines for the specific activities that must be performed to produce the various project deliverables.

3. **Attachment B27 - "Plant and Machinery Specifications,"** Detailed engineering design and equipment specifications and construction drawings.
4. **Attachment B28 - "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. **Attachment B29 - "Other Documentations"** other documentations that must accompany application to construct shall include the following (Details of these requirements are contained in Appendix III):
 1. Front End Engineering Design (FEED) information
 2. Climatology and Site Study
 3. Seismic Review
 4. Preliminary Hazard and Operability (HAZOP) Study
 5. Facility Siting and Layout Analysis
 6. Preliminary Facility Security Assessment

Stage 3:- Acquisition of Operational Licence (Authorization To Operate)

- 8.12 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 8.13 Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered,
 1. **Attachment B30 - "Processing (Tolling) Agreement or Purchase Agreements,"** if the owners of the LNG facility are regasifying on behalf of another entity that owns the LNG then a Processing (Tolling) Agreement is required.

A Purchase Agreement is required if the owners of the facility are also the purchasers of the LNG for regasification for onward sales.
 2. **Attachment B31 - "Sales Agreements,"** An LNG Supply and Sales Agreements
 3. **Attachment B32 - "Operations & Maintenance Plans,"** Operations and maintenance plan including supply agreements for equipment and parts for major spare parts and frequently changed parts and equipment.
 4. **Attachment B33 - "Safety and Technical Management Plan"** Safety and Technical Management Plan shall include the following:
 - (a) Applicant Safety Policy Statement
 - (b) Applicant's safety codes and Practices
 - (c) Demarcation, labeling, protection and prevention of unauthorized entry of a

site applicable

- (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 and standards
 - (f) Environmental hazards impact mitigation measure, actions and plans (sampling, monitoring, analyzing of air, aquatic toxicity and noise)
 - (g) Emergency preparedness plan
 - (h) Deployment of disaster management measures
 - (i) Fire safety prevention and fighting measures
 - (j) Precautions for prevention of environmental hazards (oil spills and pollutants)
 - (k) Operational and maintenance safety rules, procedure and instructions
 - (l) Applicant's operation and maintenance culture
 - (m) Adherence to equipment manufacturer's recommended maintenance schedules specific commitment and arrangements to operate facilities and installations to ensure safe and reliable natural gas supply.
5. **Attachment B34- "Commissioning Test Report,"** Satisfactory commissioning test report.
6. **Attachment B35 – "As Built Drawings"** As-built drawings and layout of facilities
7. **Attachment B36 - "Receipt of Licence Fee,"** Evidence of payment of the appropriate prevailing licence fee to the Energy Commission.
8. **Attachment B37 - "Other documentation Requirements"** The following other documentation shall accompany the application to construct :(Details of these requirements are contained in Appendix IV)
- 1. Chemical Hazard Information
 - 2. Process Chemistry
 - 3. Plot Plans for Siting and Layout
 - 4. Fire Protection System
 - 5. Plot Plan for layout of Detection, Control and Interlock Systems
 - 6. Plot Plan of Spill Containment System Layout

7. Plot Plan of Area Electrical Classification
8. Block Flow Diagram Of Isolation and Shut Down Systems
9. Process Flow Diagrams
10. Equipment, Piping and Building Specifications
11. Applicable Codes and Standards
12. Piping and Instrument Diagrams
13. Relieve System Design and Sizing Basis
14. Ventilation System Design and Sizing Basis
15. Basic Process Control System
16. Safety Instrumented Systems (SIS)
17. Interlock Cause and Effect Chart
18. Design and Safety Studies
19. Details of Electrical Power Systems
20. Compliance with Regulations
21. HAZOP Report
22. Emergency Response Plan
23. Facility Security Assessment And Plan
24. Pre-Startup Safety Review Report
25. Preventive Maintenance Report
26. Process Safety Management System Procedures

CHAPTER

9

NATURAL GAS TRANSMISSION LICENCE

9.1 Stages in Acquiring Natural Gas Transmission Licence

STAGE 1: ACQUISITION OF PROVISIONAL LICENCE	
Required Submissions:	
Attachment C1	- Scope of Operation
Attachment C2	- Pipeline Layout
Attachment C3	- Company Registration
Attachment C4	- Principal Officers, Directors and Partners
Attachment C5	- Ownership & Corporate Structure
Attachment C6	- Cross-Ownership and Ring Fencing
AttachmentCB7	- Disclosure of Liabilities and Investigations
Attachment C8	- Financial Capability and Proposed Financial Plan
Attachment C9	- Statement of Assets
Attachment C10	- Technical and Economic Feasibility Report
Attachment C11	- Business Plan
Attachment C12	- Applicant's Profile and Existing Activities
Attachment C13	- Industry Participation
Attachment C14	- Operational Experience and Expertise
Attachment C15	- Specific Licence Conditions and Exemptions
Attachment C16	- Implementation Schedule
Attachment C17	- Commercial Sensitive Information
Attachment C18	- Transmission System Technology and Description

STAGE 2: PRIOR TO CONSTRUCTION	
A: ACQUISITION OF SITING CLEARANCE (SITING PERMIT)	
Required Submissions:	
Attachment C19	- Site Analysis (Appendix I)
Attachment C20	- Land Conveyance Agreement
Attachment C21	- Geological Survey
Attachment C22	- Public Education
Attachment C23	- Environmental Disclosure
Attachment C24	- Site Layout & Right of Way
B: ACQUISITION OF CONSTRUCTION WORK PERMIT (AUTHORIZATION TO CONSTRUCT)	
Required Submissions:	
Attachment C25	- Implementation Agreements
Attachment C26	- Detailed Implementation Schedule
Attachment C27	- Plant and Machinery Specifications
Attachment C28	- Construction Contract



STAGE 3: ACQUISITION OF OPERATIONAL LICENCE (AUTHORIZATION TO OPERATE)	
Required Submissions:	
Attachment C29	- Framework Agreements
Attachment C30	- Interconnection Service Agreements
Attachment C31	- Supply Agreement(equipment and parts)
Attachment C32	- Operations and Maintenance Plan
Attachment C33	- Safety and Technical Management Plan
Attachment C34	- Commissioning Test Report
Attachment C35	- As Built Drawing
Attachment C36	- Receipt of Licence Fee

Stage 1:-Procedure for Acquisition of Provisional Natural Gas Transmission Licence

- 9.2 An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 9.3 Applicants shall fill and submit one original application form signed by a Principal Officer (reference Schedule I-Application Form)
- 9.4 Applicants shall attach receipt confirming the payment of the prescribed licence application fee (reference Schedule II)
- 9.5 Applicants shall provide ten (10) copies and a soft if available of the following exhibits as separate attachment, clearly labeled and all pages sequentially numbered,
1. **Attachment C1 - "Scope of Operation"** provide a written description of the operational nature of the applicant's business including capacity scheduling for delivery of natural gas, as well as other services used to arrange for the supply and delivery of natural gas.
 2. **Attachment C2 - "Pipeline Layout"** provide maps and diagrams of the natural gas transmission facility.
 3. **Attachments C3-"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)
 4. **Attachment C4 - "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.
 5. **Attachment C5 - "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.
 6. **Attachment C6 - "Cross-ownership and ring-fencing"** Applicants shall 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 shall 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
7. **Attachment C7 - "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.
8. **Attachment C8 - "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 gas 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.
9. **Attachment C9 - "Statement of Assets,"** provide a list of major plant and machinery to be installed and proposed layout plan.
10. **Attachment C10 - "Technical and Economic Feasibility Report"** provide a Feasibility Study Report on the new facility, installations or service to be used by the applicant. The report shall include, among other things, drawings of pipelines installations and equipment specifications together with proposed point(s) of interconnections to the transmission network.
11. **Attachment C11 - "Business Plan,"** provide a copy of applicant's business plan relating to activities for which the licence is sought.
12. **Attachment C12 - "Applicant's Profile and Existing Activities"** provide a concise description of the applicant's company history and principal business interests. It shall 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 authorization to provide natural gas supply services.

13. Attachment C13 - "Industry Participation" provide general information about applicant's existing activities, both within and outside the natural gas supply industry

14. Attachment C14 - "Operational Experience and Expertise," provide names, titles, postal and e-mail addresses, telephone numbers, and the background of key personnel who shall be involved in the operational aspects of the business for which licence is sought.

- (1) An applicant shall submit a comprehensive description of applicant's and its principals' experience and technical capacity, relevant to carrying out the project for which a licence is sought.
- (2) The description shall include a
 - (a) summary of applicant's and applicant's principals' experience in conducting activities in developing countries,
 - (b) summary of applicant's and applicant's principals' business strategy in respect of projects of a similar nature and scope to that for which the licence is sought,
 - (c) description of all projects similar to that for which the licence is sought in which applicant and applicant's principals have participated during the five years preceding the date of the application, including
 - i. the locations of the project or projects;
 - ii. descriptions of the projects, including a brief technical summary and summary of the projects' business structure;
 - iii. volumes of gas supplied by the projects per day;
 - iv. profiles of the customers served by the projects;
 - v. descriptions of safety and environmental compliance, including disclosure of any major safety or environmental incidents and any safety or environmental enforcement actions commenced by relevant authorities;
 - vi. descriptions of any community development or community impact amelioration activities associated with the projects; and

vii. a summary assessment of the performance of the projects, including meeting construction and operational schedules and business objectives and targeted returns.

(d) description of the qualifications and experience of the key professional and technical personnel and key management personnel the applicant proposes to assign to the project for which the licence is sought.

(e) 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 natural gas supply industry, and technical capacity to meet the relevant requirements of the licence shall be provided.

15. Attachment C15 - "Specific Licence Conditions and Exemptions" Where the applicant is seeking particular licence conditions or exemptions, the nature and reasons for seeking those conditions or exemptions shall be explained. In such circumstances, the applicant shall also provide a draft outline of the proposed licence condition(s) or exemption(s). 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.

16. Attachment C16 - "Implementation Schedule," provide timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.

17. Attachment C17 - "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 shall 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.

18. Attachment C18 - "Transmission System Technology and Description" provide information on the technology used and description of the technical features of the transmission system

Stage 2:- A. Procedure for Acquisition of Siting Clearance

9.6 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

9.7 Proof of payment of prescribed licence application fee

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

1. **Attachment C19 – “Site Analysis”** Provide details as per Appendix I-Site Analysis for the siting of Natural Gas Transmission and Distribution Facilities
2. **Attachment C20 – “Land Conveyance Agreement”** provide approved documentation of proof of title to land, or leases and assignments, and zoning permit from relevant authority including the siting permit from the Commission.
3. **Attachment C21 - “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 for gas supply equipment.
4. **Attachment C22 – “Public Education”** provide a plan to educate the general public about the safety requirements and hazards of natural gas infrastructure.
5. **Attachment C23 - “Environmental Disclosure”** provide an Environmental Impact Assessment (EIA) Report certified by the Environmental Protection Agency (EPA) of Ghana and an Environmental Permit or Permanent Environmental Certificate issued by the Environmental Protection Agency
6. **Attachment C24 - “Site Layout & Right of way,”** provide detailed Site-Layout and “Right-of-Way” drawings. Provide a programme for compensation payments (where applicable).

B. Procedure for Acquisition of Construction Work Permit

9.9 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

9.10 Proof of payment of prescribed licence application fee

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

1. **Attachment C25 - “Implementation Agreements”** provide copies of agreements and Memoranda of Understanding (MOUs) relevant to the activities for which the applicant seeks a licence.

2. **Attachment C26 - "Detailed Implementation Schedule,"** provide detailed timelines for the specific activities that must be performed to produce the various project deliverables.
3. **Attachment C27 - "Plant and Machinery Specifications,"** Detailed engineering design and equipment specifications and construction drawings.
4. **Attachment C28 - "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.

Stage 3:-Procedure for Acquisition of Authorization to Operate

9.12 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

9.13 Applicants shall provide as separate attachment and clearly label as indicated, ten (10) copies and a soft if available of the following exhibits

1. **Attachment C29 - "Framework Agreements,"** Natural Gas Framework Agreements which includes natural gas Transportation Agreement,
2. **Attachment C30 - "Interconnection Service Agreement"** Natural Gas Interconnection Service Agreements,
3. **Attachment C31 - "Supply Agreement (equipment and parts)"** Provide Equipment and Parts Agreements for major spare parts and frequently changed parts and equipment
4. **Attachment C32 - "Operations & Maintenance Plans,"** Operations and maintenance plan.
5. **Attachment C33 - "Safety and Technical Management Plan"** Safety and Technical Management Plan shall include the following:
 - (a) Applicant Safety Policy Statement
 - (b) Applicant's safety codes and Practices
 - (c) Demarcation, labeling, protection and prevention of unauthorized entry of a site as applicable
 - (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 and standards
 - (f) Environmental hazards impact mitigation measure, actions and plans (sampling, monitoring, analyzing of air, aquatic toxicity and noise)
 - (g) Emergency preparedness plan
 - (h) Deployment of disaster management measures
 - (i) Fire safety prevention and fighting measures
 - (j) Precautions for prevention of environmental hazards (oil spills and pollutants)
 - (k) Operational and maintenance safety rules, procedure and instructions
 - (l) Applicant's operation and maintenance culture
 - (m) Adherence to equipment manufacturer's recommended maintenance schedules specific commitment and arrangements to operate facilities and installations to ensure safe and reliable natural gas supply.
-
- 6. **Attachment C34 - "Commissioning Test Report,"** Satisfactory commissioning test report.
 - 7. **Attachment C35 - "As Built Drawings"** As-built drawings and layout of facilities
 - 8. **Attachment C36 - "Receipt of Licence Fee,"** Evidence of payment of the appropriate prevailing licence fee to the Energy Commission.

CHAPTER

10

NATURAL GAS DISTRIBUTION LICENCE

10.1 Stages in Acquiring Natural Gas Distribution Licence

STAGE 1: ACQUISITION OF PROVISIONAL LICENCE

Required Submissions:

Attachment D1	-	Scope of Operation
Attachment D2	-	Service Coverage Areas
Attachment D3	-	Company Registration
Attachment D4	-	Principal Officers, Directors and Partners
Attachment D5	-	Ownership & Corporate Structure
Attachment D6	-	Cross-Ownership and Ring Fencing
Attachment D7	-	Disclosure of Liabilities and Investigations
Attachment D8	-	Financial Capability and Proposed Financial Plan
Attachment D9	-	Statement of Assets
Attachment CD10	-	Technical and Economic Feasibility Report
Attachment D11	-	Business Plan
Attachment D12	-	Applicant's Profile and Existing Activities
Attachment D13	-	Industry Participation
Attachment D14	-	Operational Experience and Expertise
Attachment D15	-	Specific Licence Conditions and Exemptions
Attachment D16	-	Implementation Schedule
Attachment D17	-	Commercially Sensitive Information
Attachment D18	-	Distribution System Technology and Description



STAGE 2: PRIOR TO CONSTRUCTION

A: ACQUISITION OF SITING CLEARANCE (SITING PERMIT)

Required Submissions:

Attachment D19	-	Site Analysis (Appendix I)
Attachment D20	-	Land Conveyance Agreement
Attachment D21	-	Geological Survey
Attachment D22	-	Public Education
Attachment D23	-	Environmental Disclosure
Attachment D24	-	Site Layout & Right of Way

B: ACQUISITION OF CONSTRUCTION WORK PERMIT (AUTHORIZATION TO CONSTRUCT)

Required Submissions:

Attachment D25	-	Implementation Agreements
Attachment D26	-	Detailed Implementation Schedule
Attachment D27	-	Plant and Machinery Specifications
Attachment D28	-	Construction Contract



STAGE 3: ACQUISITION OF OPERATIONAL LICENCE (AUTHORIZATION TO OPERATE)

Required Submissions:

Attachment D29	-	Purchase Agreements
Attachment D30	-	Sales Agreements
Attachment D31	-	Framework Agreement
Attachment D32	-	Interconnection Service Agreement
Attachment D33	-	Operations and Maintenance Plan
Attachment D34	-	Safety and Technical Management Plan
Attachment D35	-	Vested Ownership Agreement
Attachment D36	-	Commissioning Test Report
Attachment D37	-	As Built Drawing
Attachment D38	-	Receipt of Licence Fee

Stage 1:-Procedure for Acquisition of Provisional Natural Gas Distribution Licence

- 10.2** An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 10.3** Applicants shall fill and submit one original application form signed by a Principal Officer (reference Schedule I-Application Form)
- 10.4** Applicants shall attach receipt confirming the payment of the prescribed licence application fee (reference Schedule II)
- 10.5** Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered,
- 1. Attachment D1 - "Scope of Operation"** provide a written description of the operational nature of the applicant's business including capacity scheduling for delivery of natural gas, as well as other services used to arrange for the purchase and delivery of natural gas.
 - 2. Attachment D2 - "Service Coverage Areas"** provide list of
 - (a) cities, towns and rural areas (supported with maps) in which the applicant intends to establish and provide the service; and
 - (b) major customers.
 - 3. Attachment D3- "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)
 - 4. Attachment D4 - "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.
 - 5. Attachment D5 - "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.
 - 6. Attachment D6 - "Cross-ownership and ring-fencing"** Applicants shall 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 shall 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
7. **Attachment D7 - "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.
8. **Attachment D8 - "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 gas 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.
9. **Attachment D9 - "Statement of Assets,"** provide a list of major plant and machinery to be installed and proposed layout plan.
10. **Attachment D10 - "Technical and Economic Feasibility Report"** provide a Feasibility Study Report on the new facility, installations or service to be used by the applicant. The report shall include, among other things, drawings of pipelines installations and equipment specifications together with proposed point(s) of interconnections to the transmission network.
11. **Attachment D11 - "Business Plan,"** provide a copy of applicant's business plan relating to activities for which the licence is sought.

12. **Attachment D12 - "Applicant's Profile and Existing Activities"** provide a concise description of the applicant's company history and principal business interests. It shall 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 authorization to provide natural gas supply services.
13. **Attachment D13 - "Industry Participation"** provide general information about applicant's existing activities, both within and outside the natural gas supply industry
14. **Attachment D14 - "Operational Experience and Expertise,"** provide names, titles, postal and e-mail addresses, telephone numbers, and the background of key personnel who shall be involved in the operational aspects of the business for which licence is sought.
 - 1) An applicant shall submit a comprehensive description of applicant's and its principals' experience and technical capacity, relevant to carrying out the project for which a licence is sought.
 - 2) The description shall include a
 - (a) summary of applicant's and applicant's principals' experience in conducting activities in developing countries,
 - (b) summary of applicant's and applicant's principals' business strategy in respect of projects of a similar nature and scope to that for which the licence is sought,
 - (c) description of all projects similar to that for which the licence is sought in which applicant and applicant's principals have participated during the five years preceding the date of the application, including
 - (i) the locations of the project or projects;
 - (ii) descriptions of the projects, including a brief technical summary and summary of the projects' business structure;
 - (iii) volumes of gas supplied by the projects per day;
 - (iv) profiles of the customers served by the projects;
 - (v) descriptions of safety and environmental compliance, including disclosure of any major safety or environmental incidents and any safety or environmental enforcement actions commenced by relevant authorities;

- (vi) descriptions of any community development or community impact amelioration activities associated with the projects; and
 - (vii) a summary assessment of the performance of the projects, including meeting construction and operational schedules and business objectives and targeted returns.
- (d) description of the qualifications and experience of the key professional and technical personnel and key management personnel the applicant proposes to assign to the project for which the licence is sought.
- (e) 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 natural gas supply industry, and technical capacity to meet the relevant requirements of the licence shall be provided.

- 15. Attachment D15 – “Specific Licence Conditions and Exemptions”** Where the applicant is seeking particular licence conditions or exemptions, the nature and reasons for seeking those conditions or exemptions shall be explained. In such circumstances, the applicant shall also provide a draft outline of the proposed licence condition(s) or exemption(s). 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.
- 16. Attachment D16 - “Implementation Schedule,”** provide timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.
- 17. Attachment D17 - “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 shall 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.
- 18. Attachment D18 – “Distribution System Technology and Description”** provide information on the technology used and description of the technical features of the distribution system.

Stage 2:- A. Procedure for Acquisition of Siting Clearance

- 10.6** An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 10.7** Proof of payment of prescribed licence application fee
- 10.8** Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered:
- 1. Attachment D19 - "Site Analysis"** Provide details as per Appendix I-Site Analysis for the siting of Natural Gas Transmission and Distribution Facilities)
 - 2. Attachment D20 - "Land Conveyance Agreement"** provide approved documentation of proof of title to land, or leases and assignments, and zoning permit from relevant authority including the siting permit from the Commission.
 - 3. Attachment D21 - "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 for gas supply equipment.
 - 4. Attachment D22 - "Public Education"** provide a plan to educate the general public about the safety requirements and hazards of natural gas infrastructure.
 - 5. Attachment D23 - "Environmental Disclosure"** provide an Environmental Impact Assessment (EIA) Report certified by the Environmental Protection Agency (EPA) of Ghana and an Environmental Permit or Permanent Environmental Certificate issued by the Environmental Protection Agency
 - 6. Attachment D24 - "Site Layout & Right of way,"** provide detailed Site-Layout and "Right-of-Way" drawings. Provide a programme for compensation payments (where applicable).

B. Procedure for Acquisition of Construction Work Permit

- 10.9** An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 10.10** Proof of payment of prescribed licence application fee
- 10.11** Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered,
- 1. Attachment D25 - "Implementation Agreements"** provide copies of agreements and Memoranda of Understanding (MOUs) relevant to the activities for which the applicant seeks a licence.

2. **Attachment D26 - "Detailed Implementation Schedule,"** provide detailed timelines for the specific activities that must be performed to produce the various project deliverables.
3. **Attachment D27 - "Plant and Machinery Specifications,"** Detailed engineering design and equipment specifications and construction drawings.
4. **Attachment D28 - "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.

Stage 3:-Procedure for acquisition of Authorization to Operate

10.12 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

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

1. **Attachment D29 - "Purchase Agreements,"** Natural Gas Purchase Agreement
2. **Attachment D30 - "Sales Agreements,"** Natural Gas Sales Agreements,
3. **Attachment D31 - "Framework Agreement"** Natural Gas Framework Agreement,
4. **Attachment D32 - "Interconnection Service Agreement"** Natural Gas Interconnection Service Agreement,
5. **Attachment D33 - "Operations & Maintenance Plans,"** Operations and maintenance plan including supply agreements for equipment and parts for major spare parts and frequently changed parts and equipment.
6. **Attachment D34 - "Safety and Technical Management Plan"** Safety and Technical Management Plan shall include the following:

- (a) Applicant Safety Policy Statement
- (b) Applicant's safety codes and Practices
- (a) Demarcation, labeling, protection and prevention of unauthorized entry of a site as applicable
- (b) Employee health and safety requirements in accordance with Ghana's labour regulations
- (c) Waste Management Policy and Plan in line with EPA or WHO regulations and standards
- (d) Environmental hazards impact mitigation measure, actions and plans (sampling, monitoring, analyzing of air, aquatic toxicity and noise)
- (e) Emergency preparedness plan
- (f) Deployment of disaster management measures
- (g) Fire safety prevention and fighting measures

- (h) Precautions for prevention of environmental hazards (oil spills and pollutants)
 - (i) Operational and maintenance safety rules, procedure and instructions
 - (j) Applicant's operation and maintenance culture
 - (m) Adherence to equipment manufacturer's recommended maintenance schedules specific commitment and arrangements to operate facilities and installations to ensure safe and reliable natural gas supply.
- (7) **Attachment D35 - "Vested Ownership Agreement"** Agreement between the NGTU and the owner of any of the NGITS which belongs to third parties, vesting ownership for operational purposes in the NGTU
- (8) **Attachment D36 - "Commissioning Test Report,"** Satisfactory commissioning test report.
- (9) **Attachment D37- "As Built Drawings"** As-built drawings and layout of facilities
- (10) **Attachment D38 - "Receipt of Licence Fee,"** Evidence of payment of the appropriate prevailing licence fee to the Energy Commission.

CHAPTER

11

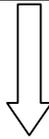
NATURAL GAS WHOLESALE SUPPLY LICENCE

11.1 Stages in Acquiring Natural Gas Wholesale Supply Licence

STAGE 1: ACQUISITION OF PROVISIONAL LICENCE

Required Submissions:

- Attachment E1 - Scope of Operation
- Attachment E2 - Company Registration
- Attachment E3 - Principal Officers, Directors and Partners
- Attachment E4 - Ownership & Corporate Structure
- Attachment E5 - Cross -Ownership and Ring Fencing
- Attachment E6 - Disclosure of Liabilities and Investigations
- Attachment E7 - Financial Capability and Proposed Financial Plan
- Attachment E8 - Statement of Assets
- Attachment E9 - Technical and Economic Feasibility Report
- Attachment E10 - Business Plan
- Attachment E11 - Applicant's Profile and Existing Activities
- Attachment E12 - Industry Participation
- Attachment E13 - Operational Experience and Expertise
- Attachment E14 - Specific Licence Conditions and Exemptions
- Attachment E15 - Indicative Implementation Schedule
- Attachment E16 - Commercially Sensitive Information



STAGE 2: ACQUISITION OF OPERATIONAL LICENCE (AUTHORIZATION TO OPERATE)

Required Submissions:

- Attachment E17 - Purchase Agreements
- Attachment E18 - Framework Agreements
- Attachment E19 - Transmission Service Agreement
- Attachment E20 - Receipt of Licence Fee

Stage 1:-Procedure for Acquisition of Provisional Natural Gas Wholesale Supply Licence

- 11.2** An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 11.3** Applicants shall fill and submit one original application form signed by a Principal Officer (reference Schedule I-Application Form)
- 11.4** Applicants shall attach receipt confirming the payment of the prescribed licence application fee (reference Schedule II)
- 11.5** Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered,
- 1. Attachment E1 - "Scope of Operation"** provide a written description of the operational nature of the applicant's business including capacity scheduling for delivery of natural gas, as well as other services used to arrange for the purchase and delivery of natural gas.
 - 2. Attachment E2- "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. Attachment E3 - "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. Attachment E4 - "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. Attachment E5 - "Cross-ownership and ring-fencing"** Applicants shall 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 shall 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. **Attachment E6 - "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.
7. **Attachment E7 – "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 gas 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. **Attachment E8 - "Statement of Assets,"** provide a list of major plant and machinery to be installed and proposed layout plan.
9. **Attachment E9 - "Technical and Economic Feasibility Report"** provide a Feasibility Study Report on the new facility, installations or service to be used by the applicant. The report shall include, among other things, drawings of pipelines installations and equipment specifications together with proposed point(s) of interconnections to the transmission network.
10. **Attachment E10 - "Business Plan,"** provide a copy of applicant's business plan relating to activities for which the licence is sought.
11. **Attachment E11 - "Applicant's Profile and Existing Activities"** provide a concise description of the applicant's company history and principal business interests. It shall 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 authorization to provide natural gas supply services.
12. **Attachment E12 - "Industry Participation"** provide general information about applicant's existing activities, both within and outside the natural gas supply industry
13. **Attachment E13 - "Operational Experience and Expertise,"** provide names, titles, postal and e-mail addresses, telephone numbers, and the background of key

personnel who shall be involved in the operational aspects of the business for which licence is sought.

- (1) An applicant shall submit a comprehensive description of applicant's and its principals' experience and technical capacity, relevant to carrying out the project for which a licence is sought.
- (2) The description shall include a
 - (a) summary of applicant's and applicant's principals' experience in conducting activities in developing countries,
 - (b) summary of applicant's and applicant's principals' business strategy in respect of projects of a similar nature and scope to that for which the licence is sought,
 - (c) description of all projects similar to that for which the licence is sought in which applicant and applicant's principals have participated during the five years preceding the date of the application, including
 - (i) the locations of the project or projects;
 - (ii) descriptions of the projects, including a brief technical summary and summary of the projects' business structure;
 - (iii) volumes of gas supplied by the projects per day;
 - (iv) profiles of the customers served by the projects;
 - (v) descriptions of safety and environmental compliance, including disclosure of any major safety or environmental incidents and any safety or environmental enforcement actions commenced by relevant authorities;
 - (vi) descriptions of any community development or community impact
 - (vii) amelioration activities associated with the projects; and
 - (viii) a summary assessment of the performance of the projects, including meeting construction and operational schedules and business objectives and targeted returns.
 - (d) description of the qualifications and experience of the key professional and technical personnel and key management personnel the applicant proposes to assign to the project for which the licence is sought.
 - (e) 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 natural gas supply industry, and technical capacity to meet the relevant requirements of the licence shall be provided.

14.Attachment E14 –“Specific Licence Conditions and Exemptions” Where the applicant is seeking particular licence conditions or exemptions, the nature and reasons for seeking those conditions or exemptions shall be explained. In such circumstances, the applicant shall also provide a draft outline of the proposed licence condition(s) or exemption(s). 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.Attachment E15 - “Implementation Schedule,” provide timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.

16. Attachment E16 - “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 shall 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.

Stage 2:- Procedure for acquisition of Authorization to Operate

11.6 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

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

1. **Attachment E17 - “Purchase Agreements,”** Natural Gas Purchase Agreement
2. **Attachment E18 – “Sales Agreement”** Natural Gas Sales Agreement
3. **Attachment E19 - “Framework Agreements,”** Agreements with the NGTU for network access which includes natural gas Transportation Agreement.
4. **Attachment E20 - “Receipt of Licence Fee,”** Evidence of payment of the appropriate prevailing licence fee to the Energy Commission.

CHAPTER

12

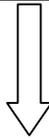
NATURAL GAS SALES LICENCE

12.1 Stages in Acquiring Natural Gas Sales Licence

STAGE 1: ACQUISITION OF PROVISIONAL LICENCE

Required Submissions:

- Attachment F1 - Scope of Operation
- Attachment F2 - Company Registration
- Attachment F3 - Principal Officers, Directors and Partners
- Attachment F4 - Ownership & Corporate Structure
- Attachment F5 - Cross-Ownership and Ring Fencing
- Attachment F6 - Disclosure of Liabilities and Investigations
- Attachment F7 - Financial Capability and Proposed Financial Plan
- Attachment F8 - Statement of Assets
- Attachment F9 - Technical and Economic Feasibility Report
- Attachment F10 - Business Plan
- Attachment F11 - Applicant's Profile and Existing Activities
- Attachment F12 - Industry Participation
- Attachment F13 - Operational Experience and Expertise
- Attachment F14 - Specific Licence Conditions and Exemptions
- Attachment F15 - Indicative Implementation Schedule
- Attachment F16 - Commercially Sensitive Information



STAGE 2: ACQUISITION OF OPERATIONAL LICENCE (AUTHORIZATION TO OPERATE)

Required Submissions:

- Attachment F17 - Purchase Agreements
- Attachment F18 - Sample Sales Agreements
- Attachment F19 - Network Access Agreement
- Attachment F20 - Receipt of Licence Fee

Stage 1:- Procedure for Acquisition of Provisional Natural Gas Sales Licence

- 12.2** An applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission
- 12.3** Applicants shall fill and submit one original application form signed by a Principal Officer (reference Schedule I-Application Form)
- 12.4** Applicants shall attach receipt confirming the payment of the prescribed licence application fee (reference Schedule II)
- 12.5** Applicants shall provide ten (10) copies and a soft if available of the following as separate attachment, clearly labeled and all pages sequentially numbered,
- 1. Attachment F1 - "Scope of Operation"** provide a written description of the operational nature of the applicant's business including capacity scheduling for delivery of natural gas, as well as other services used to arrange for the purchase and delivery of natural gas.
 - 2. Attachment F2- "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. Attachment F3 - "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.Attachment F4 - "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.
 - 2. Attachment F5 - "Cross-ownership and ring-fencing"** Applicants shall 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 shall 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
3. **Attachment F6 - "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.
 4. **Attachment F7 - "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 gas 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.
 5. **Attachment F8 - "Statement of Assets,"** provide a list of buildings and equipment for the provision of service .
 6. **Attachment F9 - "Technical and Economic Feasibility Report"** provide a Feasibility Study Report on the sales service
 7. **Attachment F10 - "Business Plan,"** provide a copy of applicant's business plan relating to activities for which the licence is sought.
 8. **Attachment F11 - "Applicant's Profile and Existing Activities"** provide a concise description of the applicant's company history and principal business interests. It shall 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 authorization to provide natural gas supply services.

9. Attachment F12 - "Industry Participation" provide general information about applicant's existing activities, both within and outside the natural gas supply industry

10.Attachment F13 - "Operational Experience and Expertise," provide names, titles, postal and e-mail addresses, telephone numbers, and the background of key personnel who shall be involved in the operational aspects of the business for which licence is sought.

- 1) An applicant shall submit a comprehensive description of applicant's and its principals' experience and technical capacity, relevant to carrying out the project for which a licence is sought.
- 2) The description shall include a
 - (a) summary of applicant's and applicant's principals' experience in conducting activities in developing countries,
 - (b) summary of applicant's and applicant's principals' business strategy in respect of projects of a similar nature and scope to that for which the licence is sought,
 - (c) description of all projects similar to that for which the licence is sought in which applicant and applicant's principals have participated during the five years preceding the date of the application, including
 - (i) the locations of the project or projects;
 - (ii) descriptions of the projects, including a brief technical summary and summary of the projects' business structure;
 - (iii) volumes of gas supplied by the projects per day;
 - (iv) profiles of the customers served by the projects;
 - (v) descriptions of safety and environmental compliance, including disclosure of any major safety or environmental incidents and any safety or environmental enforcement actions commenced by relevant authorities;
 - (vi) descriptions of any community development or community impact amelioration activities associated with the projects; and
 - (vii) a summary assessment of the performance of the projects, including meeting construction and operational schedules and business objectives and targeted returns.

- (d) description of the qualifications and experience of the key professional and technical personnel and key management personnel the applicant proposes to assign to the project for which the licence is sought.
- (e) 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 natural gas supply industry, and technical capacity to meet the relevant requirements of the licence shall be provided.

11.Attachment F14 – “Specific Licence Conditions and Exemptions” Where the applicant is seeking particular licence conditions or exemptions, the nature and reasons for seeking those conditions or exemptions shall be explained. In such circumstances, the applicant shall also provide a draft outline of the proposed licence condition(s) or exemption(s). 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

12.Attachment F15 - “Indicative Implementation Schedule,” provide timelines for the specific activities that must be performed to produce the various project deliverables, establishing interdependences and sequencing.

13. Attachment F16 – “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 shall 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.

Stage 2-Procedure for acquisition of Authorization to Operate

12.6 An Applicant shall submit a signed application letter addressed to the Executive Secretary of the Commission

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

1. Attachment F17 - “Purchase Agreements,” Natural Gas Purchase Agreement

2. **Attachment F18 - "Sample Sales Agreement"** Natural Gas sample sales Agreement with potential customers
3. **Attachment F19 - "Network Access Agreement"** Agreements with the distribution companies.
4. **Attachment F20 - "Receipt of Licence Fee,"** Evidence of payment of the appropriate prevailing licence fee to the Energy Commission.

CHAPTER

13

NATURAL GAS BULK CUSTOMER PERMIT

Procedure for Acquisition of Natural Gas Bulk Customer Permit

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

13.2 Copies of natural gas consumption bills (last 3 months) from the wholesale supplier or distribution company **OR** *a Business Plan indicating the planned consumption of natural gas by the customer in place of the 3 months natural gas consumption bill for applicants who are yet to start production or plan to increase natural gas consumption to the levels required for Bulk Customer Classification.*

13.3 An applicant shall fill and submit one original application form signed by a Principal Officer (reference Schedule I-Application Form)

13.4 An applicant shall provide proof of registration with the Registrar General's Department by submitting the following :

- (a) Certificate of Registration
- (b) Certificate to Commence Business
- (c) Regulations 8 to 82; Second schedule to the Companies Code, 1963 (Act 179)

13.5 An applicant shall attach receipt confirming the payment of the prescribed permit application fee (reference Second Schedule II)

Schedule I: Application Form

A-1 Applicant intends to be licensed for the service of: (tick as applicable)

- Natural Gas Processing
- Liquefied Natural Gas Facilities
- Natural Gas Wholesale Supply
- Natural Gas Transmission
- Natural Gas Distribution
- Natural Gas Sale.
- Natural Gas Bulk Customer.

A-2 Applicant's registered name, postal address, telephone number, fax and web site address

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

A-3 Office location address / Principal place of Business

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 Location of franchise zone.

Community _____
Town/City _____
District _____
Region _____

A-6 Provide the approximate start date that the applicant proposes to begin delivering services

A-7 Proposed duration of licence

Signature of Applicant and Title

Date

Schedule II: Natural Gas Supply Industry Licence Fees

Industry Segment	Application Fee (US\$)	Initial Licence Fee (US\$)	Annual Operating Fee
Processing	10,000.00	100,000.00	US\$2,000.00/MMSCF of installed capacity
Liquified Natural Gas Facilities	10,000.00	50,000.00	US\$2,000.00 /MMSCF of contracted capacity
Wholesale Supply	10,000.00	50,000.00	US\$2,000.00 /MMSCF of contracted capacity
Transmission Services	10,000.00	75,000.00	US\$11.00 /MMSCF of gas transmitted
Distribution Services	10,000.00	60,000.00	US\$53.00 /MMSCF of gas distributed
Sale Services	10,000.00	50,000.00	US\$79.00 /MMSCF of gas purchased
Bulk Customer Permit	5, 000.00	NIL	US\$79.00 /MMSCF of gas consumed

Schedule III: Duration of Licences

Type of Licence	Duration
Processing	Up to 25 years
Liquefied Natural Gas (LNG) Facilities	Up to 25 years
Wholesale Supply	Up to 15 years
Transmission	Up to 25 years
Distribution	Up to 20 years
Sale	Up to 20 years
Bulk Customer	Up to 20 years

Appendix I: Site analysis for the siting of Natural Gas Transmission and Distribution Facilities

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

A. Project summary and facility overview

1. An applicant for clearance to site an electric power or natural gas transmission facility shall provide a project summary and overview of the proposed project. The summary and overview shall include:
 - (a) a statement explaining the general purpose of the facility;
 - (b) a description of the proposed facility;
 - (c) a description of the site or route selection process, including descriptions of the major alternatives considered;
 - (d) a discussion of the principal environmental and socioeconomic considerations of the preferred and alternative sites; and
 - (e) an explanation of the project schedule (a bar chart is acceptable).
2. Information filed by the applicant in response to the requirements of section (A) shall not be deemed responses to any other section [from (B) to (F)] of the application requirements.

B. Review of need for proposed project

1. An applicant 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. The statement shall also include, but not be limited to, the following:
 - (a) a statement of the purpose of the proposed facility;

- (b) specific projections of system conditions or local requirements that impacted the applicant's opinion on the need for the proposed facility;
 - (c) relevant load flow studies and contingency analyses, if appropriate, identifying the need for system improvement;
 - (d) transmission and facilities, one copy of the relevant power flow base case model data with appropriate directions to recover data if compressed; and
 - (e) for natural gas transmission and distribution projects, one copy in electronic format of the relevant base case system data, with a description of the analysis program and the data format.
3. **Expansion plans:** Natural gas For the natural gas transmission and distribution lines and associated facilities, the applicant shall provide a brief statement of how the proposed facility and site/route alternatives fit into the applicant's most recent long-term natural gas demand forecast report, including the following:
- (i) reference to any description of the proposed facility and site/route alternatives in the most recent long-term natural gas demand forecast report of the applicant;
 - (ii) if no description was contained in the most recent long-term natural gas demand forecast report, an explanation as to why none was filed in the most recent long-term natural gas demand forecast report.
4. The applicant shall describe why the proposed facility was selected to meet the projected need.
5. **Facility schedule:**
- (a) *Schedule:* The applicant shall provide a proposed schedule in bar chart format covering all applicable major activities and milestones for the project, including:
 - (i) preparation and submission of the Siting Clearance application;
 - (ii) consideration and grant of Siting Clearance;
 - (iii) acquisition of rights-of-way and land rights for the facility;
 - (v) preparation of the final design;
 - (vi) construction of the facility; and
 - (vii) commercial operation of the facility.

- (b) *Delays*: The applicant shall describe the impact of critical delays on the eventual commercial operation date.

C. Site and route alternative analyses

1. The applicant shall conduct a site and route selection study prior to submitting an application for a natural gas transmission line, or compressor station. The study shall be designed to evaluate all practicable sites, routes, and route segments for the proposed facility identified within the project area.

- (a) The applicant shall provide the following:

a description of the study area or geographic boundaries selected, including the rationale for the selection;

a map of suitable scale which includes the study area and which depicts the general routes, route segments, and sites which were evaluated;

a comprehensive list of all siting criteria utilized by the applicant, including any quantitative or weighting values assigned to each;

a description of relevant factors or constraints identified by the applicant and utilized in the route and site selection process;

- (v) a description of the process by which the applicant utilized the siting criteria to determine the preferred and alternative routes and sites;

- (vi) a description of the routes and sites selected for evaluation, their final ranking, and the rationale for selecting the preferred and alternative routes and sites; and

- (vii) a description of any qualitative or other factors utilized by the applicant in the selection of the preferred and alternative routes or sites.

- (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 routes, route segments, and 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 route and site selection study report 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

1. *Site/route alternatives*: Information on the location, major features, and the topographic, geologic, and hydrologic suitability of site/route alternatives shall be submitted by the applicant. This information may be derived from the best available reference materials.
 - (a) **Geography and topography**: The applicant shall provide map(s) of not less than 1:50,000 scale, including the area
 - 4.5 to 5.5 meters on each side of a 155mm (6-inch) pipeline alignment,
 - 5.5 to 7 meters on each side of a 200-300mm (8 to 12-inch) pipeline alignment,
 - 7 to 8.5 meters on each side of a 400-600mm (16 to 24-inch) pipeline alignment,
 - 8.5 to 15 meters on each side of a 660-900mm (26 to 36-inch) pipeline alignment,
 - 30 meters from the centre of a road where the facility is routed or sited along a road; and
 - the area within the immediate vicinity of a compressor station site, or
 - (b) **Map features**: The map(s) required in paragraph (a) shall include the following features:
 - (i) the proposed pipeline alignments, including proposed turning points;
 - (ii) the proposed compressor station site locations;
 - (iii) major highway and railroad routes;
 - (iv) identifiable air transportation facilities, existing or proposed;
 - (v) utility corridors;
 - (vi) proposed permanent access roads;
 - (vii) lakes, ponds, reservoirs, streams, canals, rivers, and swamps;
 - (viii) topographic contours;
 - (ix) soil associations or series; and
 - (x) population centers and legal boundaries of cities, villages and townships.
 - (c) **Slope and soil mechanics**: The applicant shall:

- (i) provide a brief, but specific description of the soils in the areas depicted on the above map(s) where slopes exceed twelve per cent. This information may be extracted from published sources; and
 - (ii) discuss the rationale as to suitability of the soils for foundation construction.
 2. **Layout and construction:** The applicant shall provide information on the proposed layout and preparation of route/site alternatives, and the description of the proposed major structures and their installation as detailed below.
 - (a) **Site activities** - The applicant shall describe the proposed site clearing, construction methods and reclamation operations, including:
 - (i) surveying and soil testing;
 - (ii) grading and excavation;
 - (iii) construction of temporary and permanent access roads and trenches;
 - (iv) laying of pipe;
 - (v) removal and disposal of construction debris such as crates, pallets, etc; and
 - (vi) post-construction reclamation.
 - (b) **Layout for associated facilities-** The applicant shall:
 - (i) provide a map of 1:2,500 scale of the site of major associated facilities such as, compressor stations and other stations, showing the following proposed features:
 - Final grades after construction, including the site and access roads,
 - Proposed location of major structures and buildings,
 - Fenced-in or secured areas, and
 - Estimated overall dimensions;
 - (ii) describe reasons for the proposed layout and any unusual features; and
 - (iii) describe plans for any future modifications in the proposed layout, including the nature and approximate timing of contemplated changes.
3. **Transmission equipment:** The applicant shall provide a description of the proposed natural gas transmission lines, as well as capacity, metering, safety and other equipment pertinent to the operation of the proposed gas transmission lines and associated facilities. Include any provisions for future expansion.

- (a) the applicant shall provide the following data for the natural gas transmission lines:
 - (i) maximum allowable operating pressure;
 - (ii) pipe material;
 - (iii) pipe dimensions and specifications; and
 - (iv) other major equipment.
- (b) The applicant shall provide a description of natural gas transmission facilities such as:
 - (i) control buildings;
 - (ii) heaters, odorizers, and above-ground facilities; and
 - (iii) any other major equipment.

E. Financial and Economic impact data

1. **Ownership:** The applicant shall state the current and proposed ownership status of the proposed facility, including sites, rights-of-way, structures, and equipment. The information shall cover sole and combined ownerships, any leases, options to purchase, or franchises, and shall specify the extent, terms, and conditions of ownership, or other contracts or agreements.
2. **Natural Gas transmission facility capital cost:** The applicant shall submit estimates of applicable capital and intangible costs for the various components of gas transmission facility alternatives. The data submitted shall be classified according to Public Utilities Regulatory Commission uniform system of accounts for utility companies (i.e. a natural gas supply company). The estimates shall include:
 - (a) land and land rights;
 - (b) structures and improvements;
 - (c) pipes;
 - (d) valves, meters, boosters, regulators, tanks, and other equipment; and
 - (e) roads, trails, or other access.

F. Environmental data

1. The information requested in this section shall be used to assess the environmental effects of the proposed facility.
2. The requirements for environmental disclosure on the facility at the proposed site and all alternatives considered shall be in accordance with Environmental Protection Agency Regulations, LI 1652 and Energy Sector Guidelines for environmental assessment.

Appendix II: Instructions for the Preparation of Siting Clearance applications for a Natural Gas Facility (Processing & LNG)

- 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
- F. Environmental data

A. Project summary and facility overview

1. An applicant for a clearance to site a natural gas processing 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 a natural gas processing facility under these 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 facility:**

- (a) The applicant shall submit for each alternative site:
 - (i) type, number of units and the designed plant capacity;
 - (ii) preliminary product slate, indicating volumes or tonnage and product specifications;
 - (iii) preliminary feedstock slate and short description of the feedstock;
 - (iv) feedstock supply source and product evacuation scheme;
 - (v) target market (specifying whether domestic or export or for both and the respective quantities);
 - (vi) brief description of proposed process technologies and licensors;
 - (vii) block flow scheme and preliminary flow diagram showing process configurations and capacities;
 - (viii) land area requirement;
 - (ix) a list of types of pollutant emissions; and
 - (x) utilities, source and requirements of water, off site and wastewater treatment facilities, quantity of any discharge and names of receiving streams.
 - (b) The applicant shall submit a summary description of the plant design philosophy and the major equipment constituting the facility or plant.
 - (c) The applicant shall submit a brief description of the need for the production facility or refinery plant and any other proposed associated 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 relevant production 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 analysis

1. The applicant shall conduct a site selection study prior to submitting a Siting Clearance application for natural gas processing 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-kilometer 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;
 - (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) topographic contours;
 - (ii) land use and classifications;
 - (iii) existing vegetative cover and the vegetative cover that may be removed during construction;
 - (iv) individual structures and installations;
 - (v) surface water bodies; and
 - (vi) water and gas wells.

- (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 of 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 site for natural gas processing facility or plant site, showing the following features of the proposed facility and associated facilities including existing facilities, where applicable:
 - (i) proposed natural gas processing plant;

- (ii) feedstock, fuel, waste, and other storage facilities;
 - (iii) fuel and waste processing facilities, if any;
 - (iv) water supply and sewage lines;
 - (v) power supply source and associated supply lines;
 - (vi) transportation facilities and access roads;
 - (vii) security facilities;
 - (viii) grade elevations where modified during construction; and
 - (ix) 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 to the natural gas processing facility earmarked for the site (including the type and timing) and the maximum anticipated production capacity for the site.

3. **Equipment**

- (a) The applicant shall describe the proposed *process plant equipment* for the proposed site and any proposed alternative site(s).
- (b) The applicant shall describe all *emission control and safety equipment* including:
 - (i) all proposed major flue gas emission control equipment, including tabulations of expected efficiency, power consumption, and operating costs for supplies and maintenance;
 - (ii) the reliability of the equipment and the reduction in efficiency for partial failure;

(iii) the equipment proposed for control of effluents discharged into bodies of water and receiving streams; and

(iv) 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. **Natural Gas processing output evacuation arrangement and facilities**

The applicant shall describe the method for the evacuation of the output of the facility for local distribution and marketing or for export.

E. Financial & Economic impact data

1. The applicant shall provide the Financing Plan for the project and also state the type, current and proposed ownership status of the proposed facility, including site(s), structures and equipment.

2. **Capital and intangible costs.** The applicant shall:

(a) Submit estimates of applicable capital and intangible costs for the various alternative sites; and

(b) Provide and tabulate total costs per unit production capacity, the present worth and annualized cost for capital costs and any additional cost details as required to compare capital cost of the alternative sites considered (using the start of construction date as reference date), and describe techniques and all factors used in calculating present worth and annualized 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.

(b) Tabulate the total operation and maintenance cost per unit production capacity, the present worth and annualized 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 annualized 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 or locality;
- (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.

F. Environmental data

1. The information requested in this section shall be used to assess the environmental effects of the proposed facility.
2. The requirements for environmental disclosure on the facility at the proposed site and all alternatives considered shall be in accordance with Environmental Protection Agency Regulations, LI 1652 and Energy Sector Guidelines for environmental assessment.

Appendix III: Other Documentation Requirements

1 Front End Engineering Design Information

The front end engineering design is an early stage of design where process flow diagrams are available as well as preliminary piping and instrument diagrams. Equipment and instrumentation design has been developed in sufficient detail in order to conduct siting and layout analyses. Since there is no standard definition for what is included in a FEED, the specific information requirements for what needs to be submitted with the application for the Permit to Construct are summarized below.

- a. Chemical Hazard Information
- b. Process Chemistry and Systems
- c. Plot Plans for Siting and Layout
- d. Plot Plan for Layout of Fire Protection System

The application shall include a layout of the fire protection system showing the location of fire water pumps, piping, hydrants, hose reels, dry chemical systems, high expansion foam systems, and auxiliary or appurtenant service facilities.

- e. Plot Plan for Layout of Detection, Control and Interlock Systems
- f. Plot Plan of Spill Containment and Drainage System Layout
- g. Plot Plan of Area Electrical Classification
- h. Block Flow Diagram of Isolation and Shutdown Systems
- i. Process Flow Diagrams
- j. Piping and Instrument Diagrams (PIDs)

The application shall include preliminary piping and instrument diagrams showing all major process and utility equipment and interconnecting piping, valves and instrumentation. Instrumentation shall include at least the detection, control and interlock systems. A legend showing all equipment, piping and instrument symbols, nomenclature and label identification shall be included.

- k. Equipment, Piping and Building Specifications

The application shall contain an equipment list, piping specifications and a building list. Specifications for the LNG tanks, LNG pumps and marine unloading arms shall also be provided (if applicable)

l. Applicable Codes and Standards

m. Relief System Design and Sizing Basis

The application shall contain a description of the methodology for determining the sizing basis for relief systems and shall include the sizing basis for relief devices on the LNG storage tanks, LNG pumps, LNG vaporizers and LNG liquefaction system. The sizing basis for any vent headers or flare systems shall be provided.

n. Ventilation System Design and Sizing Basis

The application shall contain the methodology and the sizing basis for all building ventilation systems.

o. Basic Process Control System

The application shall include a description of the process control philosophy, architecture, data communications, type of instrumentation (pneumatic, electronic), use of computer technology, and control room display and operation (operator interface). Describe the basic process controls on each piece of equipment. All process related interlocks and shutdowns, such as pressure, level, temperature, excess flow, shall be identified. A description of the alarm system, including any hardwired systems, and any alarm prioritization system shall be provided.

p. Safety Instrumented Systems (SISs)

The application shall contain a preliminary list of SISs and their required safety integrity levels (SILs) based on the preliminary HAZOP study.

q. Interlock Cause and Effect Chart

The application shall contain a cause and effect chart for all process shutdowns.

r. Design and Safety Studies

s. Electrical Power Systems

The application shall provide a description of the electrical power supply system and backup or emergency systems including any uninterruptible power supplies (UPSs) and the equipment that will be supplied with a UPS

2. Climatology and Site Study

A climatology and site study shall be conducted. These studies shall investigate the items listed below

a. Site study:

- i. A soil survey that includes a geotechnical survey to define the geomechanical, geological and tectonic characteristics of the subsoil,
- ii. A study of terrain to assess the dispersion of liquid and gas clouds,
- iii. A study of vegetation to identify, in particular, vegetation fire risks,
- iv. Groundwater tables,
- v. Sea water quality and temperature (if sea water is used for cooling or fire water then the seal water quality will need to be determined in order to select the proper materials of construction, filtration equipment and means for control of micro-organisms and mollusks),
- vi. Tidal conditions,
- vii. Shock waves and flooding (such as tsunami or failure of dams),
- viii. A survey of the surrounding infrastructure (e.g., industrial sites, built up areas, communications).

b. Climatology study:

- i. Prevailing wind direction,
- ii. Maximum wind velocity and gust duration, and hurricane and tornado frequencies,
- iii. Lightning frequency,
- iv. Maximum and minimum temperature data and max and min design temperatures to be used for equipment and buildings,
- v. Atmospheric stability ,
- vi. Relative humidity,
- vii. Corrosive nature of the air (e.g., salt),
- viii. Rainfall (max, yearly and seasonal averages),
- ix. Snow loads and potential for freezing rain or ice buildup on equipment,
- x. Frost line depth,
- xi. Site elevation and standard atmospheric pressure, as well as the rate of change of barometric pressure.

3. Seismic Review

Provide a seismic study for any land based LNG tanks, impoundments and other critical structures or systems

The buildings shall be designed to keep their integrity in case of a safe shutdown earthquake (SSE).

4. Preliminary Hazard and Operability (HAZOP) Study

A preliminary HAZOP shall be conducted based on the process safety information developed during the FEED and focus on identification of major hazards, siting/layout and inherent safety issues. An independent third party shall lead the HAZOP study.

While conducting the HAZOP, the applicant shall assess opportunities to make the process inherently safer. A preliminary list of SISs shall be developed during the preliminary HAZOP and finalized in the HAZOP of the detailed engineering design. The required SILs may alternately be determined through the use of a Layer of Protection Analysis (LOPA).

The study shall review any known historical incidents and ensure the design is adequately protected against such an incident at this facility. The study shall consider human factors issues, such as design or procedural deficiencies that could lead to an undesirable event caused by human error during operation of the facility.

Each scenario of the HAZOP that has potential undesirable consequences shall be risk ranked. Intolerable risks must have recommendations to mitigate risk to a tolerable level and an action plan for resolving each recommendation. Any unresolved recommendations from the preliminary HAZOP must be reviewed and resolved at the HAZOP of the detailed engineering design.

5. Facility Siting and Layout Analysis

The location of plant buildings shall be evaluated using a facility siting analysis. The analysis shall consider releases of LNG liquid and vapor as well as releases of other flammable or toxic materials handled or stored onsite. The following building occupancy criteria shall be used to determine which occupied buildings need to be included in the analysis:

- a. Occupancy load (total integrated time for all occupants in the building) over 400 hours per week;
- b. Peak occupancy of 25 individuals for one hour;

- c. Individual occupancy of at least one individual for more than 50% of their total time onsite.

Initiating events for the risk assessment shall be determined from the preliminary HAZOP study and shall include both internal and externally induced scenarios leading to fires, explosions or toxic releases. For the facility siting analysis the impact frequency ranges shall be used. Risks may also be determined quantitatively by conducting consequence modeling of scenarios and determining risk through event tree and fault tree analysis.

Layout of equipment and buildings shall consider prevailing wind direction and avoid locating buildings, critical equipment and ignitions sources downwind of potential flammable material inventories. Layout shall also consider safe access for construction, operation, maintenance and firefighting.

Spacing of equipment and buildings, including impoundments and drainage systems, shall take into account potential thermal radiation levels, flammable vapor concentrations, blast effects and noise levels.

6. Preliminary Facility Security Assessment

A marine facility security assessment and plan is required. This security assessment is limited to the jetty and marine terminal. A facility security assessment shall also be performed for the land-based facilities. The application shall contain the following preliminary security information:

- a. The physical aspects of the marine facility that are the most important to protect,
- b. Possible threats to the marine facility, and
- c. The potential vulnerabilities.

Appendix IV : Other Documentation Requirements

1. Chemical Hazard Information
2. Process Chemistry
3. Plot Plans for Siting and Layout
4. Fire Protection System
5. Plot Plan for Layout of Detection, Control and Interlock Systems
6. Plot Plan of Spill Containment System Layout
7. Plot Plan of Area Electrical Classification
8. Block Flow Diagram of Isolation and Shutdown Systems
9. Process Flow Diagrams
10. Equipment, Piping and Building Specifications
11. Applicable Codes and Standards
12. Piping and Instrument Diagrams
13. Relief System Design and Sizing Basis
14. Ventilation System Design and Sizing Basis
15. Basic Process Control System
16. Safety Instrumented Systems (SIS)
17. Interlock Cause and Effect Chart
18. Design and Safety Studies
19. Details of Electrical Power Systems
20. Compliance with Regulations

The following additional documentation will also be submitted:

21 HAZOP Report

A report of the HAZOP of the detailed engineering design which includes a list of all changes made after the completion of the HAZOP and a copy of the action plan showing the resolution of all action items .

22 Emergency Response Plan

An emergency response plan that is developed in conjunction with the Facility Security Assessment .

23 Facility Security Assessment and Plan

A facility security assessment and plan for the land-based facilities .

24 Pre-startup Safety Review Report

A report summarizing the pre-startup safety review that was conducted, the action items identified and documentation of the resolution of all action items.

25 Preventive Maintenance Program

A summary of the testing and inspection frequencies, acceptable limits and their basis for all equipment, piping and instrumentation.

26 Process Safety Management System procedures.

A complete set of PSM procedures to be followed during operation shall be developed; specifically the remaining procedures not already developed during design and construction shall be developed including:

- i. Mechanical Integrity – requirements for maintenance, testing and inspection of all components
- ii. Training – refresher training program
- iii. Pre-startup safety review - conducted before startup of each change
- iv. Process hazard analysis – revalidation of the HAZOP
- v. Incident investigation
- vi. Emergency planning and response
- vii. Auditing

Appendix V : Membership of The Siting Committee

1. Representative of Energy Commission (chair+1).
2. Representative of Environmental Protection Agency.
3. Representative of Geological Survey Department.
4. Representative of the Ministry of Defence.
5. Representative of Town and Country Planning Department.
6. Representative of Water Resources Commission.
7. Representative of Natural Gas Transmission Utility (NGTU).
8. Representative of the District Assembly where the facility is to be built.
9. Public Stakeholder from the community where the facility is to be built.