Appendix G

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ANSER AHMED KHAN

57 Holford Way SW15 5GB, London

Mobile: +447900053697, +447454933753 - Email: anserahmedkhan@yahoo.com

CEO ~ SENIOR EXECUTIVE~ADVISOR

Executive leadership position or Senior policy making role in the Energy Sector

PROFESSIONAL PROFILE

- Highly analytical decision-maker with extensive experience in complex negotiations, in-depth knowledge of the global energy markets, market liberalisation, new business start up and advising State organisations on trading and Optimisation of Assets.
- Senior-level professional experienced over 22 years, specifically in the International (public and private) Oil and Gas Sector over the last 16 years.
- 11 years in the Global LNG trade. Achievements and experience in the LNG Industry are summarised as follows
  - Overseen Sales and Procurement of over 2000 LNG cargos globally.
  - Negotiated and Executed LNG Purchase contracts with Qatar, Australia, United States, Malaysia, Oman, Abu Dhabi, Nigeria, Trinidad etc.
  - Negotiated LNG Sales contracts in Korea, Japan, India, Middle East, Europe and South America.
  - In depth knowledge of Liquefaction and Regasification Plants across the Globe, including startup and operations.
  - In depth knowledge of GSPA, SPA, MSA, CN and Tender documents.
  - Deep and tested relationships with Key Suppliers and Buyers across the Globe.
  - Current employer, EDF is one of the largest Power utilities in the world, controlled by the French State.
  - Advising KOGAS (Korea Gas Corporation),the single largest LNG Buyer on optimisation and cost reduction to benefit the State of South-Korea .

AREAS OF EXPERTISE

- Leadership
- Negotiation
- Strategic Alliances
- Business Development & Start-up
- Sales and Marketing
- Trading & Asset Optimisation
- Strategic Planning and Direction
- Risk Management
- Market Liberalisation
- Credit Exposure
- Hedging
- Cost Reduction
- Profit & Loss Management
- Team Building, Coaching & Mentoring
- Project Management

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- Account manager for Middle Eastern Major resource holders (Qatar,Oman,UAE)
- Lead Supply Manager for LNG Supply into the Hazira Terminal in India

Cluster Marketing Manager – Lubricants (Shell-Dubai) April 2004 – August 2006

- Cluster Marketing responsibility for 20+ countries across ME & C Asia
- Sales Revenues exceeding USD 120 Million per annum.
- Marketing Budget exceeding USD 9 Million per annum.
- Development and Implementation of Marketing plans focusing on growth.
- Business Development- Lead for market entries in Bangladesh and Iraq.
- Project Manager for Market entry in Iran.
- New Product development and Product launch
- Line Management responsibility for a team of Brand and Merchandising managers

Category Manager- Auto Services (Shell Pakistan)2002 – 2004

- Project Manager for setting up 40 Service Centres across Pakistan.
- Developed Category plans, allocating budgets and implementation.
- Negotiated and Implemented Strategic Alliances with Business partners

HSSE Advisor with Franchisee Development Manager(Shell Pakistan)2001/2

- Franchisee development across Shell Pakistan's Fuel Network through 14 officers
- Responsible for HSE , Customer service and Dealer professionalisation.

Entrepreneur – Owner Manager (Pakistan) 1995-1999

- Owned and managed a Dine-in restaurant seating 200 guests

Formal Training:

Negotiating MSA and SPA

Project Management

Integrator for Cross Functional Teams

Cultural Awareness

Marketing Management, Chartered Institute of Marketing

Education

2009 MBA, London Business School
2000 MBA, Institute of Business Administration

Awards:

Shell East Zone President's Award 2001

Shell East Zone President's Award 2002

Special Recognition awards, Shell Markets Middle East in 2003/2004/2005/2007

Personal:

Date of Birth – January 18, 1978

Nationality - Pakistani
Marital Status- Married, 3 children Spoken Languages- English/ Urdu/ Punjabi

Interests: Sports, Physical Training, International Politics, Reading and Travelling

References: Available upon Request

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Usama Imran Khan, PMP

Email: usama.i.khan@gmail.com
Mobile:+92-301-5099677

Education Summary

University of Houston, Texas, USA

Master of Science in Mechanical Subsea Engineering (May 2016)

GIK Institute of Engineering Sciences & Technology, Pakistan

Bachelor of Engineering in Engineering Sciences (Dec 2009)

Work Experience

ENERGAS Terminal (Pvt.) Limited (ETPL)

Project Manager: **Feb 2018 – Ongoing**

- Leading engineering, procurement and construction for a 750 mmscfd capacity LNG Regasification terminal at Port Qasim. The scope of the project includes Floating Storage Regasification Unit (FSRU), RLNG offloading jetty, subsea/ onshore pipeline and gas metering station.

Bahria Foundation LNG Terminal

Senior Mechanical Engineer: **Jan 2018 – Feb 2018**

- Leading the Mechanical FEED design of a 600 mmscfd capacity FSRU LNG Regasification terminal at Sonmiani, Karachi.

Pakistan LNG Terminals Limited (PLTL)

Assistant Manager: **Nov 2016 – Dec 2017**

- Supervising engineering, procurement and construction for the 750 mmscfd capacity Pakistan Gasport LNG Regasification terminal at Port Qasim. The scope of the project includes Floating Storage Regasification Unit (FSRU), RLNG offloading jetty, subsea/ onshore pipeline and gas metering station.
- Resolving design, procurement and construction related technical issues related to the project.
- Responsible for Level-4 detailed Project Planning in Microsoft Projects of the entire project
- Developing Pre-FEED studies for future LNG Regasification terminals for Government of Pakistan
- Developing and reviewing various commissioning and operational procedures and methodologies.
- Providing technical assistance in the development of various commercial and sales agreements

University of Houston - Faculty of Mechanical Engineering

Graduate Teaching Assistant (Flow Assurance): **Jan 2016 – Jun 2016**

- Assisted the Professor in the course on Subsea Flow Assurance for pipelines and subsea equipment. Supervised labs and projects related to Steady State Multiphase flow modelling in PIPESIM software.

BP Pakistan Exploration & Production Inc. (Now UEPL)

Mechanical Engineer (Projects & Construction) **Sep 2010 – Jan 2015**

- Led multiple fast paced projects simultaneously throughout the entire project lifecycle, from conceptualization, budgeting, engineering, procurement, fabrication, installation till commissioning.

Project Categories:

- Development of new oil & gas fields
- Pipeline facilities and terminals
- Pressure Vessels
- Finger type Slug catcher installation
- Enhanced oil recovery (Jet pumps, ESP's, Gas Lift & Water Injection Setups)
- Pipelines
- Facility Water/Oil Handling Upgrades
- Natural gas processing facilities
- Centrifugal/ PD Pumps & Compressors

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MURTAZA ABBAS MOOMAN

KARACHI, PAKISTAN • +92.3222224100 • murtaza.abbas@lucky-cement.com

PROFILE

- C-level Business and Finance Executive with 20+ years of experience in Global and Local Business Conglomerates in various leadership roles.
- Led organization ***transformation (Carve outs of 3 businesses successfully*** achieved), development of business models and winning strategy in B2B and B2C scenarios.
- Worked internationally (US & Germany) to get an experience of ***Global Strategic Planning relating to financing, dividend policy, divestment etc.***
- Selected in Oct' 2009 as ***one of the "TOP 25" Talents*** within Siemens BRIC & ME region. Also in 2007 recognized as one of the top talents from Siemens Pakistan and secured membership of Siemens Global Emerging Leader Forum in 2006.

EXPERIENCE

Chief Strategy Officer & Director Investments – Lucky Cement March '19- Date
From International Investments to local investments -the degree of involvement varies depending upon the requirements and the expectations of the stakeholders.

Chief Financial Officer- ThalNova Power Thar (Pvt) Ltd Aug '16 -Dec 2018
Successfully concluded Framework Agreements with Strategic Partners and Regulators laying solid foundation for a kick-start of country's investment project involving 330 MW Coal based Power Plant in Thar.

- Built structures from primitive stage and transforming to mature Systems / infrastructure which includes on-boarding of most relevant talent pool.
- Successfully managed key relationships including foreign and local lenders. Met financing prerequisites, a key enabler for imminent Financial Close.

Chief Financial Officer – Siemens Engineering Pakistan Limited
Jan 2014 – Dec 2015 and Oct 2010 – June 2013

- Global recognition of Siemens Pakistan CFO function in a result of independent survey published in 2012
- ***Led business remodeling / divestment / strategic partnering*** resulting in exponential increase in customer outreach in a targeted portfolio.
- ***Optimal Capital management*** through debt re-profiling and minimizing off-balance sheet exposure resulted in visible bottom line gains.
- Re-shaped Company's IT's Vision towards seamless information, cultural shift towards paperless environs and use of BI / Dashboard
- Successful in raising 'Net Promoter Score' and business turnarounds through comprehensive ***'Go to Market' strategy and shifting from 'Direct' to 'Indirect' Sales strategy***

Head of West Asia Industry Cluster (Jun 2008 – Oct 2008) and Divisional Director Siemens Pakistan (April 2007 – May 2008), managed various leaderships roles in Siemens Business Segments (Jun 2003 – March 2007)

- Championed ***'New Manufacturing Concept' and turned around*** the BU's from a loss of $ 1 million to a profit of $ 3 million in a span of two years. From 2003 to 2007, top line grew by 300% and ROCE from -16.7% to 101%.
- Motors and Generating Sets' Secured first preference award by the Consumers Association of Pakistan in 2006 and 2007.

Other assignments: (Nov 2008 to August 2010 Munich),
(June 2013 to Dec 2013 & Dec 2015 to June 2016 US)

- Whilst working in Shareholders strategy function in Munich Germany able to gain insights ***on capital and risk financing / dividend policy*** for Middle East Markets (from Karachi to Cairo).
- As part of ***Global Mergers & Acquisitions team (NewYork, US)*** involved in divestment of one of the Global Business Units based in US.
- Assigned responsibility by Siemens SFS, based in New Jersey, US for developing strategy for Middle Eastern markets for potential debt or equity requirements in support of the Industry and Healthcare division using the philosophy of Investment Banking.

pwc
A. F. Ferguson & Co., Karachi, Pakistan Sep 2001 - May 2003
A member firm of PricewaterhouseCoopers network

ACADEMICS

Doctorate in Business Administration

- Harvard Business School US, GMP
- Stanford Business School (Strategy & change Mgt)
- Personal coaching - Nic Woodthorpe Wright
- Member of Institute of Chartered Accountants, Pakistan
- Member of Chartered Institute of Management Accountant, UK)
- Master of Business Administration – IBA, Pakistan

PASSION, STRENGTHS AND EXPERTISE

To bring out the best in the people and the team. I see people as a series of exceptions, and the passion is to leverage these exceptions.

Top 5 strengths are:

- Exhibiting Excellence in challenging business environment
- Stake-holders management
- Strategy formulation and execution
- Persistence and Hardworking individual
- Enabler and motivator

Areas of interest and expertise include:

- Business Turnaround & Transformational shifts
- Business partnering and Commercial Arrangements
- Business / Corporate / Financial Restructuring
- Project Finance
- Cross Functional Collaboration, Networking, Relationship Management & Mentoring

PAYING BACK TO SOCIETY / OTHER ACTIVITIES

- Visiting faculty member of University of Karachi for MBA and BBA
- Member of ICAP's committee of 'Professional Accountants in Business' and 'Syllabus'. Key initiatives include organizing ***CFO Conference***, Mentorship Program, etc.
- Member of Arbitration Committee of ***Karachi Stock Exchange***
- Attended various courses, workshops and seminars on management, leadership, innovation, sales stimulation, optimization, productivity etc. at ***Feldafing (Germany)***, LUMS, PIMS and ICAP.
- Member of Karachi Boat Club, DHA Golf Club, Karachi Gymkhana, Karachi Club and Royal Rodale.
- Bridge, Golfing, Horse Riding, Swimming, Table Tennis.

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PERSONAL

Born on July 29, 1976.

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ALI SHAHAB SIDDIQUI

EDUCATION

UNIVERSITY OF LONDON, INTERNATIONAL PROGRAMMES Bachelor of Laws with Honors (LLB)	*August 2007*

BAR ADMISSIONS

PUNJAB BAR COUNCIL Member - Admitted to practice as an Advocate of the High Courts in Pakistan.	*March 2008*

PROFESSIONAL EXPERIENCE

DAWLANCE GROUP OF COMPANIES (ARCELIK AS) — **Karachi** — February 2017 - July 2018

Head of Legal

- Worked as Chief Legal Counsel of Dawlance in Pakistan, in liaison with Global legal team of ARCELIK AS.
- Managed the litigation portfolio of the Group in liaison with external Counsels; recommended and engaged lawyers to represent the companies.
- Implemented global legal policies of ARCELIK AS in Pakistan and reporting to the head office on legal issues involving the Group. Also advised the head office on local laws and procedures.
- Advised and assisted various departments including sales, marketing, supply chain, procurement and administration in concluding transactions through contractual negotiations, highlighting legal risks, drafting agreements and opining on applicable laws.
- Also responsible for devising legal strategies to initiate recovery proceedings against defaulting customers of the Company and pursuing various legal actions against them.

HOUSE OF HABIB — **Karachi** — April 2016 - February 2017

Senior Manager Legal Affairs

(i) Primarily looked at legal affairs of **Habib METRO Pakistan** which includes:

- Advising the Board and the Management on matters relating to the merger between Makro & Metro.
- Assisting and providing overall legal support in matters relating to the Joint Venture between Metro International and Thal Limited (parent company of HMPL).
- Supervising and handling litigation of the Company pending before the Higher Courts of Pakistan in liaison with external Counsels; recommending and engaging lawyers to represent the company.
- Advising the Management on real estate matters; sorting out title and property tax issues. Appearing before and dealing with registrars and land revenue departments for such matters.
- Drafting and reviewing lease deeds, branding agreements, license agreements, service agreements and other legal documents.
- Opining and advising on disputes with licensees and tenants of the Company and various other operational matters.
- Advising on tax related issues.

(ii) Also assisted the legal team at **Indus Motor Company** with the following:

- Managing the litigation portfolio at IMC which includes consumer and various corporate cases.
- Advising the Management on government policies including taxation on auto sector, changes proposed therein and their impact on the Company.
- Responding to regulatory notices and legal notices issued by customers. Advising dealers on legal issues and consumer disputes.
- Highlighting legal risks and liaising with various departments to ensure that interests of the Company are protected. Developing SOPs and internal policies to cover all foreseeable legal risks.
- Drafting and reviewing various service related agreements, internal documents and polici

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ADDITIONAL SKILLS

• All basic computer software including Ms Office and Internet •

Fluent in spoken and written English and Urdu

Management Skills:

• Project management, report writing, analytical, presentation, negotiation, communication and advocacy skills have been developed by working in flexible work environments with adequate responsibility and authority.

Personal Skills:

• Excellent organizational, interpersonal and communication skills with the experience and flexibility required to remain highly focused and self possessed in fast paced and demanding environments.

• Superior ability to concurrently manage numerous tasks while meeting rigorous standards and deadlines.

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Appendix H

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GOVERNMENT OF PAKISTAN
Ministry of Defence
Survey of Pakistan
Directorate of Southern Circle
Office of the No.9 Survey Party
38 PNH Lines, 22nd Central Street
Phase-II, D.H.A. Karachi.
Tel : 021-99266387 Fax: 021-99266382

No. 567 /40-O-ENERGAS
Dated 19 -03-2020

To

The Chief Executive Officer,
Energas (Pvt.) Ltd.
Port Qasim, Karachi.

Sub: **TOPOGRAPHIC SURVEY ON SCALE 1:1,000 OF ONSHORE SECTION PIPELINE OF ENERGAS TERMINAL (PVT.) LTD.:**

The coordinate of centre point at Port Qasim are as under, please.

24-46-11.86454

67-17-35.72331

MSL=0.3674

(KHALID TUFAIL)
Deputy Director
Officer-in-Charge

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D:\Jamshaid Qadri 9 Party\40\40-O-ENERGAS.Docx

Appendix I

SAFETY REGULATIONS:

For compliance with respect to Health, Safety and Environment, the company requires its supplier and contractors to follow safety policies or protocols as outlined by the adopted standards and company guidelines and pertinent local regulations related to Industrial safety and Labor laws.

For specific compliance with statutory requirements, please refer to all applicable Federal and/or Provincial statutes that establish health and safety requirements, including the Pakistan Factories Act,1934, The Sindh Factories Act, 2015, Sindh Environmental Protection Act 2014 and/or any applicable Occupational Health and Safety Act(s), and regulations or codes, enacted thereunder, standards or recognized industry guidelines. Reference must also be made to the Energas's guidelines for Safety. Where the requirements of our policies or procedures exceed legislated requirements, they will take precedence. The above stated list does not however list every regulation applicable and it's the responsibility of the supplier to ensure all regulations are adhered to.

For specific compliance with respect to industrial standards please refer to OHSAS 18001:2007

The following points are Energas's summary policy guidelines:

- Hazards resulting in injuries and property damage can be controlled and further reduced.
- Safety is a condition of employment. Every contractor, subcontractor, worker, vendor and visitor must comply with the company safety policies, rules, procedures and exercise good judgment and common sense in each assignment.
- The safety and health of fellow workers, the community and the environment is the responsibility of every worker and contractor, subcontractor and vendor. Contractors, subcontractors and vendors will be evaluated on their safety performance.
- Line management (contractors, subcontractors, vendors) are responsible and accountable for providing a safe work environment.
- All persons share a responsibility as good workers to maintain a safe and healthy workplace and to work safely.

In conclusion, Safety is a common goal for both the contractor and Energas and "Accidental injury and loss" can be controlled through good management in combination with active employee involvement along with good communication and coordination between the contractor and client.

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Appendix J

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ExxonMobil LNG Market
Development Inc.
22777 Springwoods Village Parkway
EMHC/E3.6B.347
Spring, TX 77389
832 624 7710 Telephone
jim.f.muschalik@exxonmobil.com

Jim Muschalik
President

ExxonMobil

December 19, 2018

Ms. Uzma Adil Khan
Chairperson
Oil & Gas Regulatory Authority (OGRA)
Islamabad, Pakistan

SUBJECT: LNG SUPPLY TO ENERGAS MARKETING (PRIVATE) LIMITED

Dear Madam Chairwoman,

I am pleased to inform you that on 27th March, 2018, ExxonMobil LNG Market Development Inc. ("ExxonMobil") entered in to a Heads of Agreement with Energas Terminal (Pvt) Limited ("ETPL") to develop the first private LNG Import terminal in Pakistan and supply LNG to Energas Marketing (Pvt) Limited ("EMPL").

Through our interest in more than 71 million tons per annum of LNG originating from seven operating LNG projects globally, ExxonMobil possesses the demonstrated commercial and technical expertise to assist and supply integrated project developments such as this.

ExxonMobil, its affiliates and joint ventures in which we hold an interest, can provide flexible and innovative LNG supply solutions on competitive terms that meet the needs of EMPL and its customers.

We fully support EMPL in applying to OGRA for grant of a license to carry out the sale of RLNG ("Gas Sales License") and look forward to the issuance of said license to EMPL to facilitate the much needed supply of private LNG to the Pakistan market.

Best Regards,

Jim Muschalik

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ENERGAS

Project Technical Feasibility

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4.1 GENERAL

With natural gas playing a key role in Pakistan's energy balance and our indigenous resources depleting coupled with ever increasing demand a shortage was inevitable. This demand supply gap needs to be bridged for economic growth to be sustained and keeping this in mind the shareholders of Energas decided to develop an LNG terminal to ensure availability of affordable, competitive, and sustainable gas supply for their own captive use and their partners (their associated / affiliated companies), and to other gas buyers who wish to procure regasified LNG.

Energas's business model is in line with those followed by power utilities across the Far East, where operational control of the Terminal is key. The company's shareholders are progressive business groups with interest in setting up additional power projects in line with the Government of Pakistan ("GoP") Energy program. As a buyers-only Consortium with shared interests, Energas also aims to act as an aggregator for a diversified customer base, which may not be able to secure large quantities of LNG on its own.

The terminal will be located in Chara Creek in Port Qasim and will be designed for the unloading of LNG through STS operations through an FSRU. The FSRU will receive LNG from the LNG carriers, perform regasification and provide natural gas to the jetty which will then supply through a pipeline to the metering station and from there on to the SSGC natural gas grid. The regasification capacity of the FSRU is aimed at 750 mmscfd - 1bcfd and a storage capacity at 173,000m3. The LNG carrier will be moored ship to ship with the FSRU and have a max capacity of 266,000m3.

In addition to the technical standards and regulations specified in LNG Policy 2011 and the LNG Rules 2007, the project will be designed following all relevant design codes and standards including, but not limited to, PIANC, SIGTTO, API, ASME, DNV, NFPA, IEC, ANSI, EN, BS, ASTM, ISO, OCIMF, NACE, AGA and any other relevant international codes/standards.

4.2 TECHNICAL DESCRIPTION

4.2.1 Conceptual plans, layout and description of terminal facilities, equipment, roads, infrastructure, and utility network along with major design parameters and outlined specifications

4.2.2.1 Project infrastructures

The ENERGAS FSRU Project includes the following infrastructures:

- **LNG berth to accommodate for both FSRU and LNG carrier**

  - Jetty site created by dredging
  - Marine structures (unloading platform, berthing & mooring dolphins)
  - Mooring system for FSRU & LNGC
  - Gangway providing access to FSRU

- Jib crane
- Berthing service vessel
- High pressure gas transfer arms with hydraulic power unit, quick connect/disconnect coupler, monitoring & control system
- Gas piping system from unloading arms and pipeline;
- Gas vent
- Pipeline launching pig trap
- Firefighting facilities (sea water)
- N2 storage area
- Diesel storage
- Electrical power supply and distribution (normal power supply from FSRU, emergency supply by diesel generators)
- Instrumentation, control systems: Process Control System, Safety instrumented system, Fire & Gas Detection System
- Marine aid systems: berthing, environmental monitoring,
- Security: CCTV
- Telecommunications: marine VHF ship to shore, UHF, wireless radio,
- Control room and electrical room building
- Lighting poles
- Lights buoys, light beacons,

- **Offshore and onshore gas pipeline from jetty to the metering station**

  - Pipeline
  - Cathodic protection system

- **Metering and Pressure Regulating Station**

  - Station site preparation
  - Filtration
  - Gas heating
  - Pressure regulation
  - Metering
  - Instrument air system
  - Piping system
  - Pipeline receiving pig trap
  - Venting system
  - Firefighting means
  - Electrical power supply and distribution system
  - Control and electrical building
  - Instrumentation, control system, SCADA & telecommunication
  - Site infrastructures: roads, fence, sewage
  - Security : fence, CCTV
  - Tie-in to SSGC pipeline

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4.2.2.2 Project locations

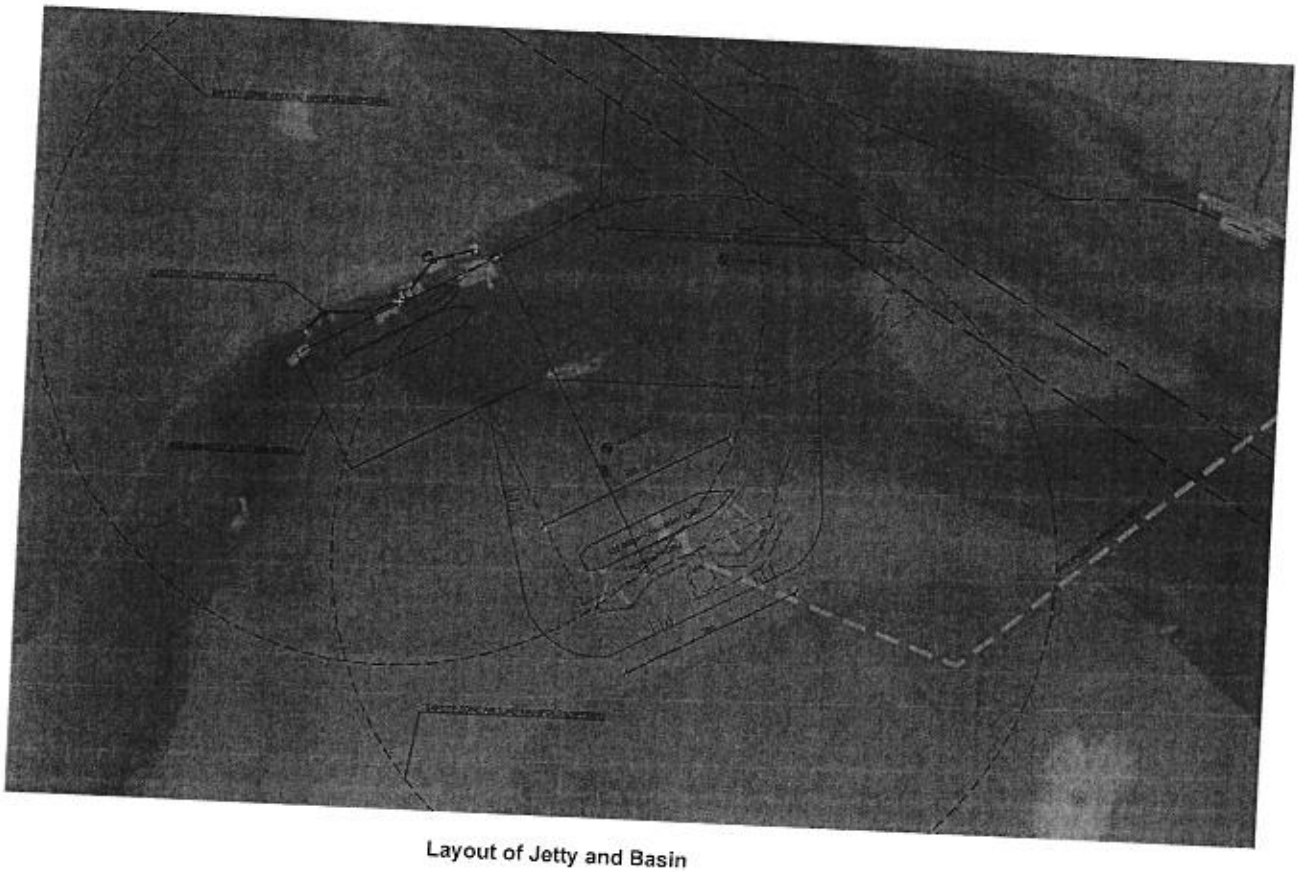
Jetty

The terminal project is located west of Port Muhammed Bin Qasim, which is at southeast of Karachi, in Sindh. It is at the intersection of Kadiro Creek and Chara Creek, approximately 1 mile west of the entrance to Port Qasim. Kadiro Creek is a maintained navigation channel, approximately 250m wide and dredged to a maintained depth of -14m below Chart Datum. It is 1000m away from the existing Iron Ore & Coal bulk berth.

Port Qasim Authority in its letter No. PQA/PSP/482/2017 Pt/ 562 dated 14th February 2020 has allocated Energas the coordinates of the center point of loading arms between FSRU and unloading platform as:

- Latitude: 24°46'11.92" North Longitude: 67°17'35.67" East

The jetty orientation that has been set by PQA in the same letter is as 62°~242°.



Layout of Jetty and Basin

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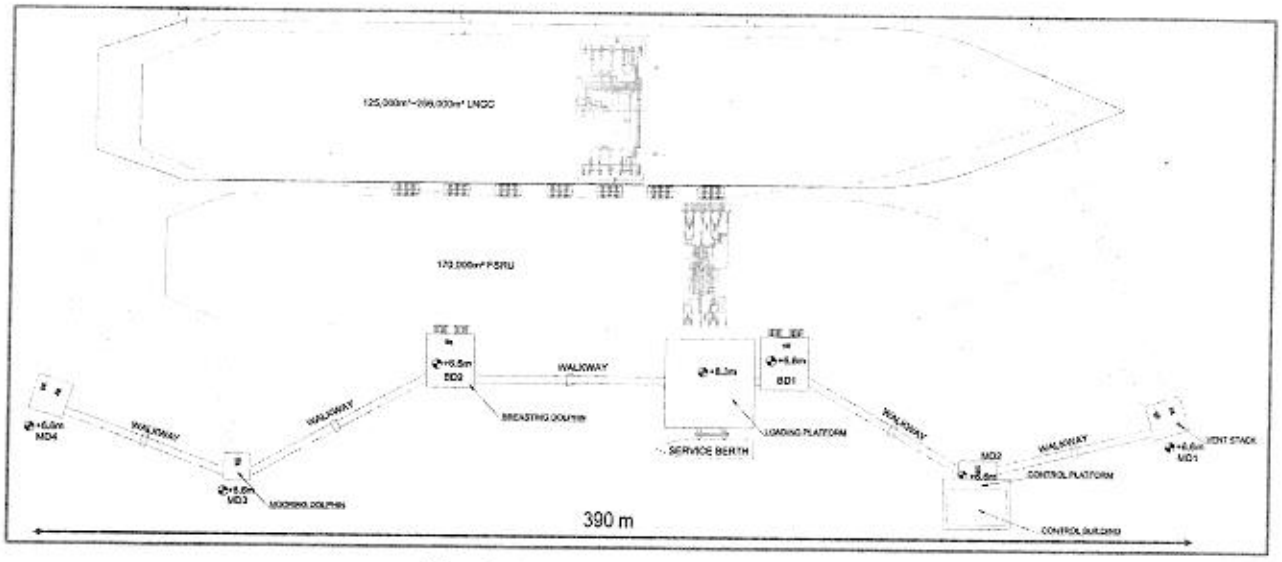
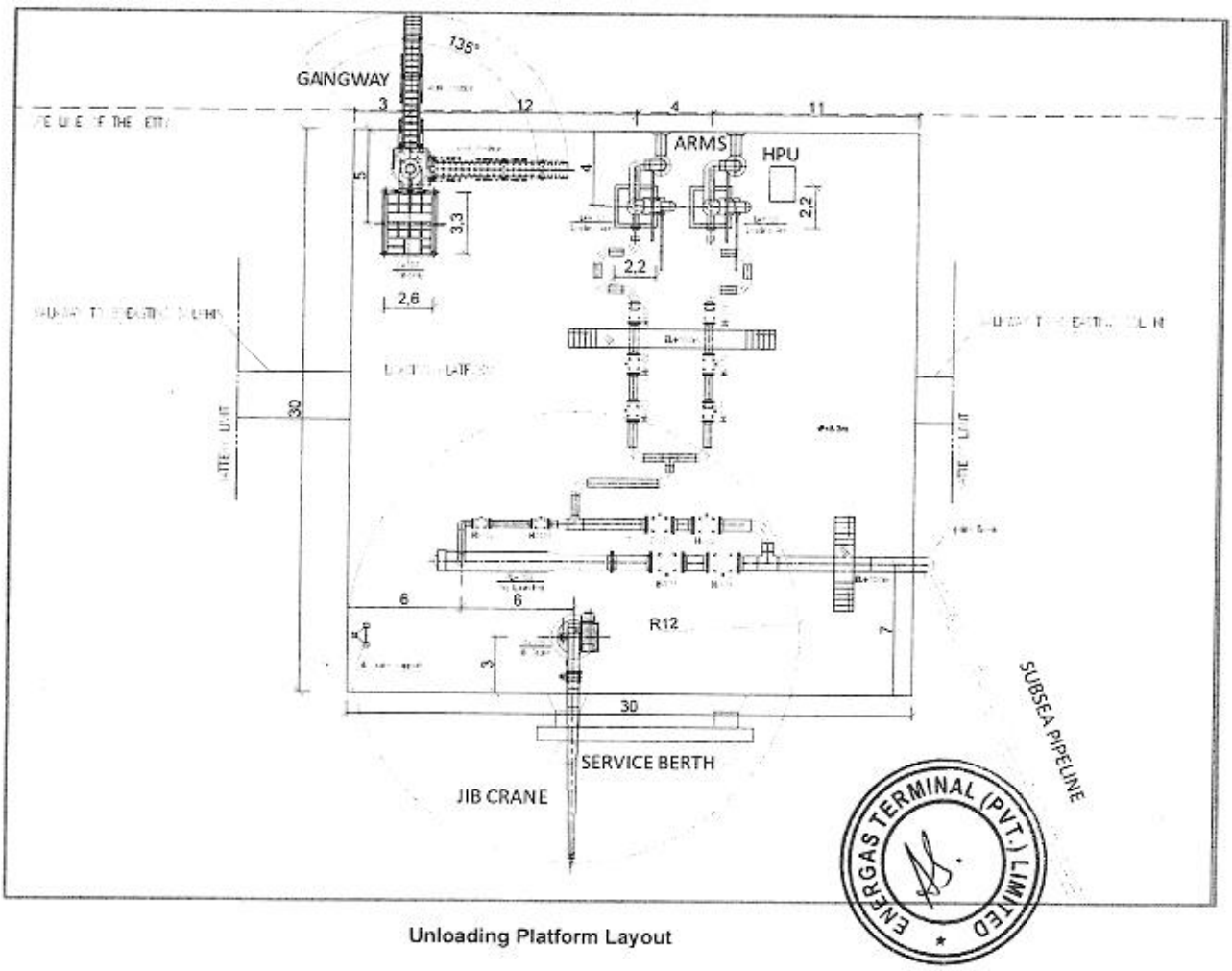


Mooring Layout



Unloading Platform Layout

Gas pipeline

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A 30" gas pipeline (approx. 10km) will link the FSRU to the metering station. The design pressure of the pipeline will be 10 MPa. The overall pipeline route layout can be seen in the image on the following page.

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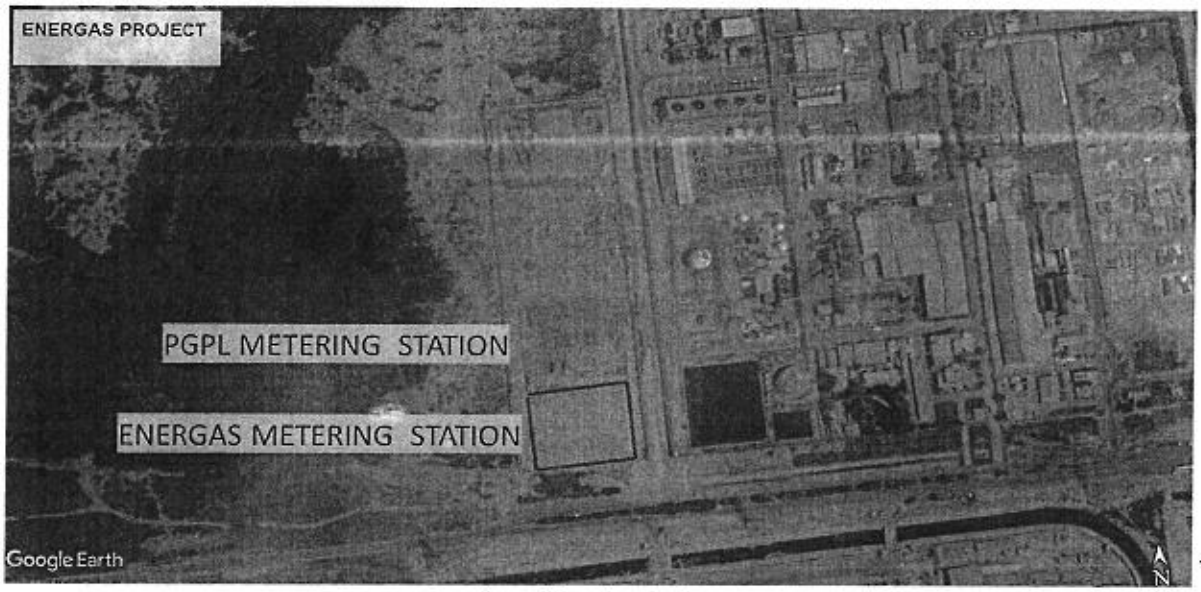
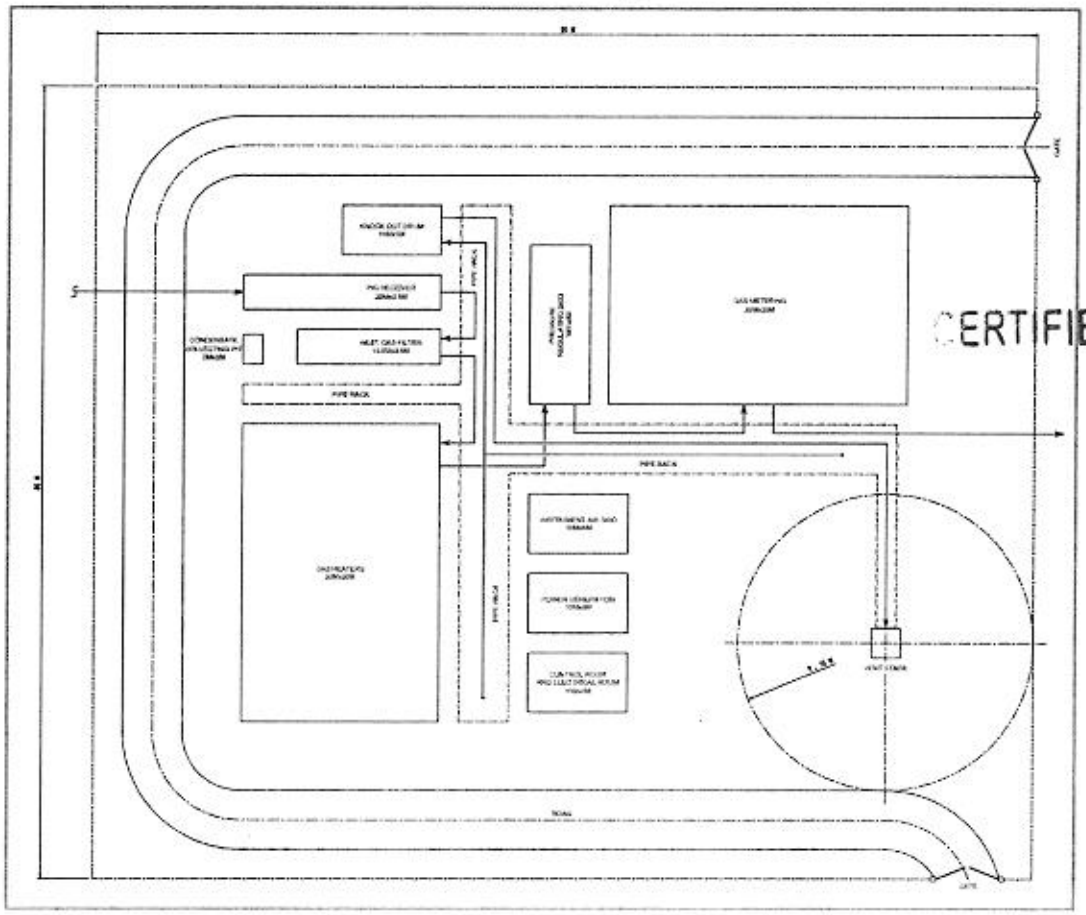
Gas metering & pressure reduction station

The RLNG will be delivered to the Sui Southern Gas Company, operator of the gas transmission system. The proposed location of the station is next to the similar station receiving gas from the PGPL FSRU, installed in 2017/18.



Location of Metering Station



Plot Plan Metering Station

4.2.2 Project Implementation Plan

4.2.5.1 General

The main work consists of four (4) sections, dredging, marine structure, process pipelines and metering stations, these four jobs are basically independent of each other and less affected by each other.

4.2.5.2 Dredging

Positioning control

(1) Horizontal control

For the execution of dredging work, serial medium range DGPS can be used as positioning system. A differential station will be set up at proper geodetic control point to give complete coverage of the work sites and dumping areas.

(2) Vertical control

Tide gauge will be established at proper location close to work site and tide data will be sent by telemetric link to dredger and survey vessel at pre-set interval, allowing for the real-time tide correction related to local tide datum. Marked poles will be set up close to the tide gauge to allow for periodic check of tide gauge datum.

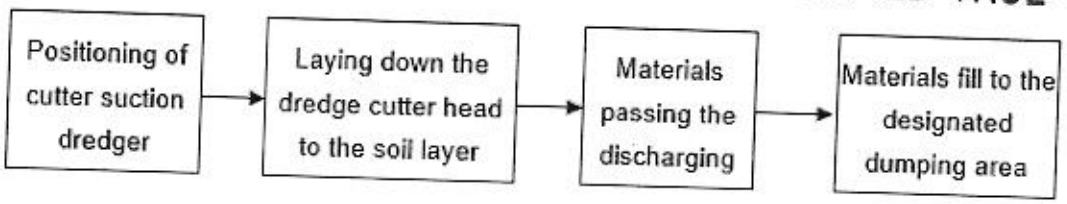
Survey

The survey should be carried out in the presence of an engineer who will then approve it.

Dredging methods

The positioning of the cutter suction dredger (or other dredger) is based on the positions that are revealed in DGPS System, and fixed with two spuds of the dredger. Firstly, lay down the dredge cutter head based on the water depth of the construction area, the dredged materials will be excavated firstly, and pumped through the floating pipeline and hydraulically filling to the reclamation area or temporary storage area. Here the materials will be placed evenly to the area by different outlets of the pipelines. When the area reaches the designed height, stop the fill and level the excessive area to the specified level.

The main construction flow chart is as follows:



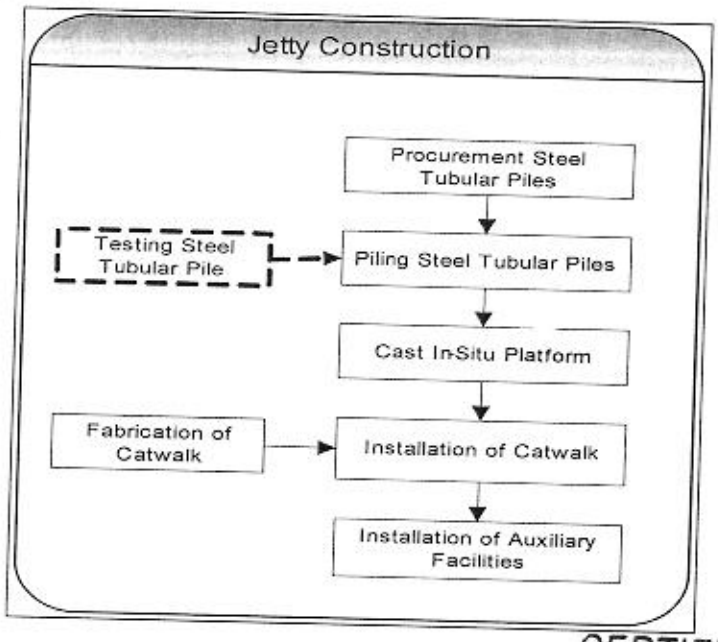
The excavation sequence should be divided into layers and bands based on the water depth, the designed levels and the vessels' capacity as the cutter suction dredger starts to work.

The discharging pipeline in water will be placed by tug boat or anchor boat. And the discharging pipeline on land will be placed by excavator.

Material Disposal

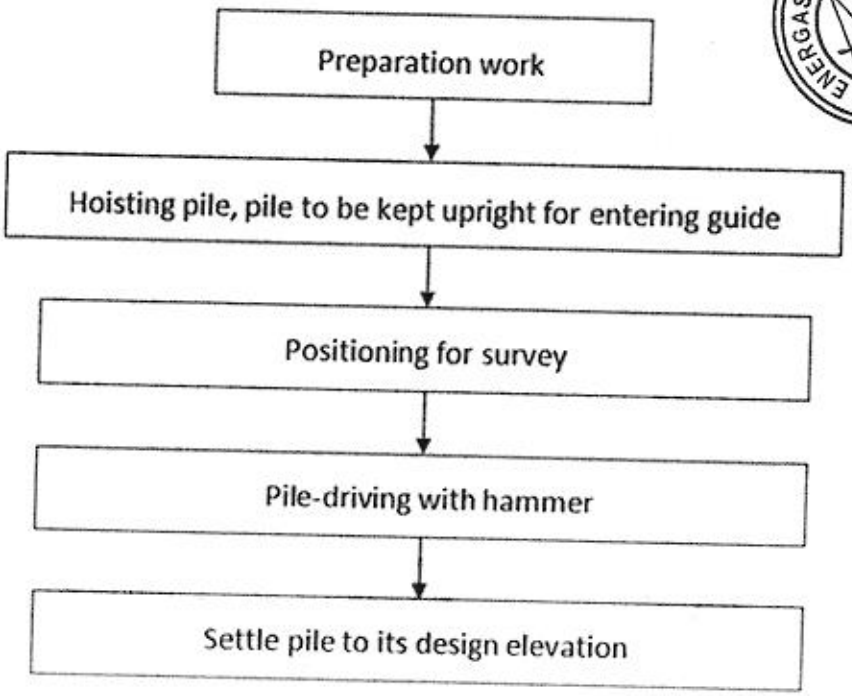
The disposal of material shall follow the local environment regulation and Law.

4.2.5.3 **Marine Structure**



Flow Chart of Jetty Construction

Pile Driving



Flow Chart of Piling Process

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Method Statement

Survey for Construction

Penetration of pile-driving shall be observed with auto level; elevation control of pile cap shall be carried out with GPS and checked with auto level, if necessary.

Selection of Pile Driving Barge

Piling work will be carried out with pile driving barge with driving hammer.

Construction Method for Pile-driving

(1) Process of Piling

Initial positioning of pile driving barge → Anchoring of pile driving barge → Positioning of pile-delivery barge →Shifting pile driving barge for hoisting pile→ Pile entering guide clutch → Accurate positioning → Compacting pile → Resurvey of pile position → Compacting hammer → Hammering for piling.

(2) Hoisting Pile

Pile driving barge shall be shifted to pile-delivery barge for hoisting steel tubular pile after positioning of pile-delivery barge. Pile as well as pile frame shall be kept upright at the time of shifting of pile driving barge. Pile holder will hold the pile to allow it going into the dolly.

(3) Positioning of Steel Tubular Pile

Pile position should be confirmed with control station and GPS.

(4) Hammering for Piling

Compact hammer and recheck pile position after pile is steady, piling will commence after hammer becomes stable. Stop piling in case of abnormity for penetration, sudden falling for pile body, excessive inclination and displacement, find out reasons and take effective measures.

(5) Standard for Stopping Hammer

Normally, it shall be controlled by the design bottom level of piles and/or penetration performance of pile driving.

(6) Record for Piling

Fill in "Record list of Hammering for piling" at the time of piling.

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Concreting

Production and Installation of Steel Bar

Steel bar shall be produced and processed as semi-finished products in reinforcement processing workshop, which will be stored after numbering and should be installed and assembled by use of manual work.

Matters to Be Concerned at the Time of Processing of Steel Bar: Surface of steel bar should be clean, oil mark and rust on the surface of steel bar will be removed and cleared before usage; Steel bar should be smooth and straight without partial bending, which shall comply with requirements of design; Assembly of steel bar should be firm, which can be reinforced by means of spot welding if necessary, lapped length of steel bar should meet the requirements of standard; Depth and intensity of frame protective layer (concrete cushion layer) for steel bar will be ascertained in accordance with requirements of design, the cushion layer will be arranged in cloverleaf type at the time of installation, whose interval shall be no more than 1m; the cushion layer should be firm. The surface of cushion layer should be clean, whose color should be consistent with structural concrete.

Construction of Concrete

(1) Mixing of Concrete should follow mix design and all tests should meet requirements before using

(2) The concrete shall be transported to the project site, and poured directly into formwork the layered thickness for pouring should follow requirements

(3) Vibration of Concrete

Bar head should be vertically inserted into lower concrete of 5~10cm, fast inserting and slow pulling shall be performed, each vibrated parts shall be checked till the parts are compacted, of which the characteristics are that concrete stops sinking without ebullition, and flat bleeding appears on the surface;

(4) Curing of Concrete

Concrete shall be cured by use of plastic membrane, sack and spraying water with curing period of required days, water should be sprayed for 8 – 10 times every day in the dry and high temperature weather.

Installation of Auxiliary Facilities

Rubber Fender Installation

The pre-embedded units for the fender shall be provided and installed as per design during the pouring stage of the platform of jetty and shall be subjected to erosion protection.

The design including shape, size, material and performance of the fender shall be submitted for approval prior to installation and the specification, quality and anti-corrosive measure for the bolts and steel units shall be checked as well. It shall be fixed after all the above items have been qualified. Exposed steel units shall be subjected to anti-corrosive measure as per design.

Bollard Installation

The material, specification, welding and anti-corrosive measures of the bollard shall be as per design and specifications.

Attention shall be paid to directivity of the object during the installation process and lean concrete would be poured into the bollard structure once the installation is completed. The bolt voids shall be filled with asphalt mortar after the bolts are fastened.

4.2.5.4 **Pipeline**

Onshore Pipeline Construction

The pipeline along the route should be constructed with the general installation procedure described below.

Line Pipe Transporters → Road Construction and Improvement → Trenching → Fabrication the pipelines → Lift prefabricated pipe by crane or lift devices, and fitted together → Weld the pipeline segment → NDT → Sand Blast the field joints → Field coating using heat shrink tapes → River crossing construction → Road crossing;

Line Pipe Transporters

Depending on the bearing capacity of the site, a number of line pipe transporters can be used to access the area. If the road is not suitable for wheel type cart, mud sleds can be used for the line pipe transport. If the area is not accessible by tractors, a light rail system can be built to move the line pipes.

Trenching

The trench can be constructed at the soft area by placing the excavator on a pontoon. Or the trench can be form by excavate the soil on both sides of the pipeline and gradually sink the line to the designed depth:

Pipeline fabrication

Fit-up first and then weld the pipes together. After finishing the welding, nondestructive testing shall be done. 100% RT shall be done for all the pipe wielding. Sandblast and Field Joint Coating shall be done after passing tests. Pipeline with certain angle can be used to cross small river or road. Concrete foundation, steel beam and structural steel frame be used for the crossing of channel smoothly. Pipeline crossing railway, highway, rivers, buildings and other obstacles in an underground construction, pipe jacking method should be considered. The condition of the trench shall be inspected before the pipe is lowered in order to assure proper protection of pipe and coating. Backfill the pipelines and protected by engineering backfill to avoid damages.

Offshore Pipeline Installation

Stringing Welding and NDT

Alignment, welding and welding consumables of line pipe and bends shall be in accordance with specification. All welds shall be 100 percent inspected radio graphically in accordance with project specifications. Ultrasonic inspection shall be in accordance with project specifications. Sufficient back-up equipment, including spare internal line-up clamps and X-ray crawler, shall be available. Welding and welders' qualifications are as per approved WPS. Visual inspection, sandblast, heat shrink tape treatment and foam coating will perform. AUT/RT will perform after welding.

The method before installation work is same with above on shore pipeline work.

Surface Tow

Surface towing will be used for installation of the offshore pipeline.

HDD Installation

The primary equipment are following:

- Excavator
- Welding Machines
- Cranes and Lift Devices
- HDD Equipment
- Winch

Suitable HDD equipment should be obtained for HDD work base on the geological report and schedule.

Measurement and Setting Out: The measurement and setting out can be divided into four steps: the first step, establish a measurement control network and set the standard level point; the second step, making measurement and setting out the platform side line of horizontal directional drill exit and entry point; the third step, after construction of the platform, lay out accurate location of the exit and entry point and set the functions of the factory; the fourth step, measure the steering parameters.

Debug mud agitating system, and check whether all agitating guns are working all right, and whether there is any leakage in all connecting pipes, find out problems and solve them timely. Check and debug whether the mud pump works all right, and whether the pressure gauge is all right. Magnetic azimuth measurement, mud preparation. Through designing the entry point and exit point, calibrate seriously following the calibration procedures of the steering system.

Fitting of the drill and related equipment

The driller is installed at the connection line between the entry point and exit point. And the angle between the driller track and the horizontal surface is always 1° bigger than the designed entry angle. The driller should be installed firmly and stably, and can be connected and run for test after being checked to be qualified, so as to guarantee that the equipment can work formally, and at the same time, adjust the dragging force in accordance with the size and length of the crossing pipe diameter and the carrying capacity of the driller.,

Mud preparation

According to the crossing land geological conditions, crossing length and crossing pipe diameter, measures should be taken when drilling directing hole, pre-reaming and back dragging, in addition to traditional proportion, the concrete measure should increase the proportion of mud, so as to improve the mud viscosity and guarantee the hole wall.

Test drilling

The drill can be tested when all systems operate all right, and the drill rod and bit have been cleaned, check operation of all parts after drilling for one to two rods, and drill in order if all parameters are right.

Drill directing holes

The direction of the directing holes are of vital importance to the crossing precision and the success of the whole project. Before drilling, the direction control person should analyze geological materials carefully, and define direction control program.

Pre-reaming hole

Apply reasonable reaming techniques in accordance with the geological conditions of the crossing stratum. In principle, when the stratum is mucky clay or silty clay which is soft plastic or in plastic state, the barrel type reamer is applied; when the stratum is in rock state, the cutter reamer is applied to guarantee the hole is in good form, and the overall curve can meet R=1500D standard. The directing hole and reaming hole at all levels should guarantee that the pipe would not be limped in the whole channel when dragged back, and it is in elastic floating state, the pipe corrosion prevention layer and hole wall have no inflexible friction. If the torque of one reaming hole is too big, use reamers of the same size to ream for1-2 times again or wash the holes. The crossing length and pre-reaming times should transship rods and clean the rod and driller and connect them in accordance with the procedure.

Towback

After completing reaming, dig the operation pit on the bit exit side with a single bucket excavator timely, then install the rod, reamer, rotating connector, U ring and crossing pipe to drag back. Check whether all channels inside the reamer and mud nozzles are unblocked, if qualified, connect them. After connecting all of them, send them for mud washing, and check whether all mud nozzles are formal, and drag after they are qualified. When dragging back, pay attention to the mud operation conditions, and connection of the rotating joint, U ring, and back dragging head to ensure they are firmly connected.

Before the pipe going into the hole, there should set a 10m vacant section, so as to lay out last leak mending before going into the hole.

There should be no hard objects in retaining wall at both sides; in order to prevent sinking of the retaining wall caused by the movement of the pipe itself when dragging back, which would make water or mud flow from the up of the pipe into the leak ditch, causing unmendable leak, there should be single bucket excavator to standby at side, so that it can strengthen the retaining wall whenever necessary.

4.2.5.5 Installation of unloading arms

The unloading arms will be installed on the platforms of LNG jetty. There are 2 loading arms for FSRU from 138,000~173,400 m3, 12", CS, 800MMSCFD, DP=10MPa, DT=-20/50°C, with ERS and hydraulic QC/DC.

Preparations before Lifting

All lifting, transportation and installation shall conform to project specification. And to the erection schedule provided by the loading arms vendor as well as per instructions. Torque wrenches are to be used to tighten the bolts.

Lifting and Transportation Sequence

According to the drawings, and the site situation, the flow of all the arms parts lifting, transportation and installation method is similar way. All parts will be loaded onshore by crawler crane, and transported to temporary jetty. From there, the parts will be transferred to the Barge. The piling

barge with crane will lift the parts from the other barge nearby the Platform, and put on the platform for installation.

Installation procedure

- Ladders, catwalk and platforms of the loading arms

Remove of transport bolting and wood bars. Installation of maintenance platforms and ladders.

- Loading truck

The loading arms are made up of the main parts and the bases. The bases of LNG loading arms can be transported by flatbed truck.

- Lifting and installation of the riser pedestals for LNG

The LNG loading arm`s base can be lifted and transported to the temporary jetty, and put on the barge which stand on the temporary jetty. Two bases shall be lifted by piling barge one by one, and be installed on the LNG platform. The lifting plan for the riser pedestals should be supplied before lifting.

- Lifting and installation loading arm main bodies
- Lifting and installation triple swivels
- Lifting and installation Counterweights

4.2.5.6 **Metering station**

The measuring station includes many major chemical pipeline process equipment, components and connectors. Most installations are fairly routine, and the two heating furnace installation need special attention, because they are skid-mounted equipment .The recommended construction flow is as follows:

General construction flow chart for static equipment

Transportation and Unloading

Transportation

For the transportation of the heavy weight equipment after unloading, a transportation method shall be determined on investigation and transportation plan shall be made out prior to the work.

Unloading

For the heavy equipment, an unloading method shall be determined on investigating the following items, and an unloading plan shall be made out prior to the work.

Unpacking & Custody of equipment

Unpacking

Upon arrival of the equipment in the field, the number and external appearance of packing shall be checked against the packing list, unpacking shall be carried out in the presence of vendor and owner, if required.

Unpacking shall be performed under witness of the Owner engineer. All spare parts and dismantling tools, etc., shall be repacked and returned to the warehouse as instructed by the Contractor engineer.

Custody

All equipment shipped with protective covers or plugs over openings, and applied rust preventive coatings on exterior machined and threaded surfaces, shall be examined by Material Controller on arrival at the site.

Preparation Work

Technical preparation

Organize all construction personnel to study and get familiar with the equipment installation technical documents, including equipment manufacturing and assembling drawing, equipment installation description, manuals for special tools, process installation drawing, packing list and quality certificates etc.

Foundation Acceptance

Prior to installation of equipment the civil group should approve the release of the plinth/base plate/anchor bolt layout to the mechanical installer.Foundation shall be checked before installation of the equipment.

Anchor Bolts

The following conditions of the anchor bolts embedded in the foundation shall be checked against the drawings or with a steel template for the major equipment.

Position --Projection - -Inclination -- Condition of bolts and nuts--Sleeve

Installation work

- Setting-out
- Chipping and Padding
- Field assembly
- Heavy Equipment Lifting
- Erection and Alignment
- Grouting
- Equipment cleaning and closure
- Bolting

Commissioning acceptance

After the installation of all the equipment is completed, the contractor should make sure all the single construction work is checked and confirmed. Only after that, the general commissioning work shall start, under the guidance of technical personnel from professional suppliers.

4.2.3 Project Schedule

Refer to LNG Terminal Project Schedule (Annex 5).

4.2.4 Operation, maintenance, repairs, QA/QC, health, safety and environmental plans

4.2.9.1 **General**

ENERGAS will operate and maintain the LNG terminal in close relation with the FSRU provider associated with the terminal. ENERGAS will maintain a close cooperation with the Port Authorities and SSGC.

During the design, procurement, construction and commissioning phases, ENERGAS will impose, through the Project Management Consultant contracts and the EPC contract, design, QA/C and HSE requirements to get after taking over a fully operational and safe terminal with the required performances.

In order to prepare the operation phase, after commissioning and performance tests, several actions will have to be implemented:

- Completion of the project documentation such as as-built documents, certificates, operating and maintenance documents issued by vendors
- Selection and training of operating staff,
- Purchase of operating spare parts
- Drafting a Terminal Operation Manual in liaison with the FSRU operator, the Port Authorities and SSGC which will cover normal operations, emergency situations, security aspects and environmental protection.
- Drafting a specific maintenance manual, integrating those provided by vendors equipment; materials and systems.

The shipping industry and the LNG industry have issued rules, regulations and good practice methods covering the LNG FSRU, terminals and downstream facilities which have been taken into consideration during design and which constitute a set of reference documents to a Terminal Operation Manual.

1. Society of International Gas Tanker and Terminal Operators (SIGTTO)
2. International Maritime Organization (IMO)
3. National Fire Protection Association (NFPA),
4. Oil Companies International Mooring Form (OCIMF)
5. International Group of Liquefied Natural Gas Importers (GIIGNL)
6. International Ship and Port facility Security (ISPS)

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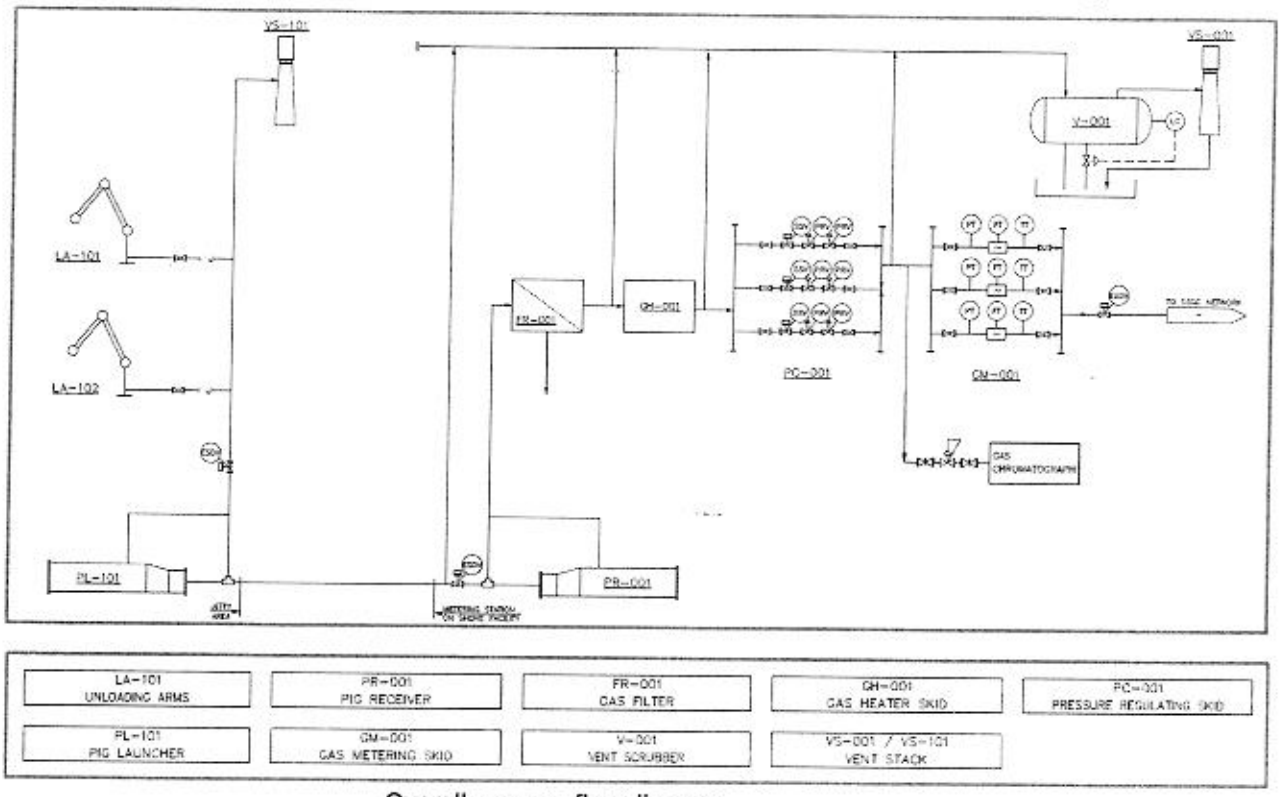
4.2.9.2 **LNG terminal operation overview**

Terminal components

The terminal includes gas unloading system on the jetty platform , the 10 km RLNG pipeline and the metering and pressure regulating station delivering the gas at the SSGC tie- in point.



Overall process flow diagram

Process operating parameters

FSRU operating parameters

Parameter		Value
Gas send-out rate from FSRU	Normal	750 MMSCFD
	Peak	1000 MMSCFD
	Minimum	50 MMSCFD
FSRU operating send-out gas pressure range		4.6 – 9.8 MPag
FSRU minimum send-out gas operating temperature		+ 5°C

Subject to confirmation by the FSRU provider, it has been assumed that the FSRU can continuously deliver any send-out flow rate from 50 to 1000 MMSCFD at any requested pressure within the operating range 4.6 – 9.8 MPag.

The FSRU is equipped with a High Integrity Pressure Protection System (HIPPS) which will ensure that the send-out pressure will not exceed the design pressure of the downstream facilities that is 10 MPag.

SSGC operating requirements at the tie-in point are shown here below:

Station operating parameters

Parameter	Value

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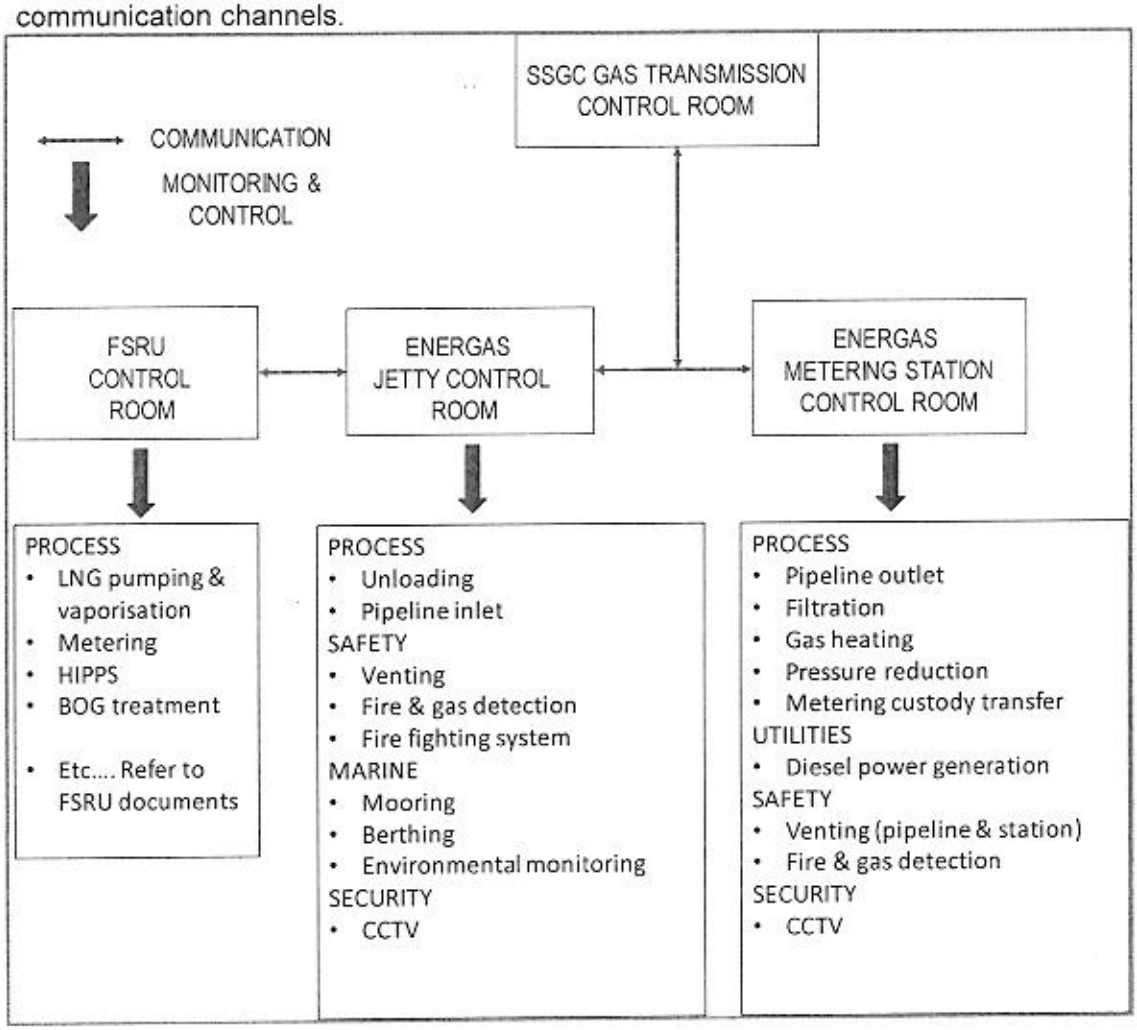
Incoming gas flow rate from FSRU via pipeline	Normal	750 MMSCFD
	Peak	1000 MMSCFD
	Minimum	50 MMSCFD
Required operating pressure range at tie-in		5.17 – 8.27 MPag
Required gas operating temperature range at tie-in		26.7 – 43.3 °C

The main functions of the pressure reduction & metering station are to adjust the gas pressure delivered by the FSRU down to the value requested by SSGC, raise the gas temperature up to the value requested by SSGC and meter the gas flow / energy delivered to SSGC.

Simplified control architecture

The following diagram shows how the main project components are controlled and the communication channels.



Simplified control architecture

4.2.9.3 **Jetty operations**

Mooring the FSRU to the jetty

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A mooring procedure shall be jointly prepared between FSRU and terminal operating teams and implemented under the supervision of Port Authorities.

Unloading

The key element is the two unloading arms, with articulated and counter balanced piping and swivel arrangements. They are operated by a hydraulic power unit and monitored by a specific control system from the jetty control room. They are fitted with Powered Emergency Release Couplers (PERCs) which can disconnect the arm(s)

The connection, disconnection and putting in operation of the arms shall be performed by trained and competent staff supervised by an engineer.

The main imperative feature is that the arms shall be kept well within their designed operating envelope. If the first operating limit is reached, the PERC valve will close and if the second limit is reached, the PERC will disconnect the arm(s), close the Emergency Shutdown Valves (ESDV) interrupting the send-out gas flow. Operators shall then drain, check and reconnect the arms.

The operating manual will include detailed instructions, check-lists for the preparation, connection, start & stop the unloading process, purging and parking the arms and procedures after an emergency release of an arm or both arms.

Nitrogen will be used for purging (normally supplied by FSRU).

Venting

Gas can be vented in case of accidental overpressure by the Pressure Safety Valves. Each or both unloading line(s) can be depressurized by opening a blowdown valve (electric/hydraulic actuated).

Safety zones

Various levels of safety zones will be defined in the manual: exclusion zones (keeping away certain ships afar from the coast and the terminal, security zones (zones with limited or restricted access) safety zones (offshore or land areas where access further limited to authorized persons, vessels, vehicles)

Emergency system

The jetty control system includes Safety Instrumented System and Fire & Gas Detection System. The system can close the ESDV (arms and outlet) and open the blow-down valves.

The operating manual will detail the list of events (FSRU and/or jetty) which can activate these systems, the check -list for investigations to determine the causes and the procedure to re-instate normal operation.

Fire fighting system

It includes sea water pumps(2 in auto mode, 1 in stand-by) powered by diesel engines which supply fire water monitor, water curtains, water spray and fire hydrants.

Fire extinguishers are located in the control, electrical and pumps buildings.

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The operating manual will indicate the list and frequency of routine checks & tests of the fire fighting system.

Monitoring & control system

The jetty control room includes the following systems

- PCS Process control System;
- SIS Safety Instrumented System;
- FGS Fire & Gas Detection System;
- Mooring Line Load Monitoring;
- Marine Environmental Monitoring.

The Mooring Line Load Monitoring System will monitor the tensions of the mooring lines and generated an alarm when a line load exceeds its limits This monitoring will be available at both FSRU control room and jetty control room.

The quick release hooks system will be controlled and monitored from the jetty control room.

Jetty & FSRU access

Given its remote location the jetty is only accessible by a service vessel berthing at the main platform. Operator will set up arrangements for the transportation of personnel, goods, etc.

From the platform, access to the FSRU will be through the FSRU gangway (if there) or the terminal gangway (tower type).

A CCTV system will operate at the jetty.

4.2.9.4 **LNG Carrier**

Entry in / Exit from Port Qasim

The incoming and outgoing LNG carrier (LNGC) will follow the applicable naval regulations to arrive to and leave the terminal area (Standard Operating Procedures for LNGC at Port Qasim).

In particular, arrival and departure scheduling, weather limits and navigation restrictions, port pilots, escort vessels, tugs, manoeuvring, emergency procedures, communications, etc...

LNGC requirements

The operating manual will define the technical requirement for carriers delivering LNG to the FSRU. These requirements drafted by the FSRU provider intends to check the compatibility of the two vessels, to list the LNGC equipment, systems; safety devices and their testing status.

LNGC communication

The LNG Carrier shall contact and maintain a listening watch on the Port Qasim Control VHF Operating Channels.

LNGC mooring

A Ship to Ship transfer (STS) procedure will be prepared by the FSRU provider.

LNG transfer and custody transfer measurement

These operations will be covered by the STS based on guidelines such as GNL Custody Transfer Hand Book from International Group of Liquefied Natural Gas Importers (GIIGNL).

4.2.9.5 **Transfer pipeline**

Pipeline configuration

The 30" pipeline will be laid underwater, underground, then will cross under the main channel through a drilled hole (HDD) and then will run to the metering station underground. The pipeline across this land section will cross several obstacles (roads, other pipelines, railway track, cables, water channel...).

Pipeline operation & monitoring

The SCADA system will monitor the pipeline operating parameters (inlet pressure, temperature, flow from the jetty) and the same at the inlet of the metering station). Any fast variation of these parameters occurring without man decided change of flow regime, will raise an alarm. Station operators can stop the flow and in required manually reduce the pipeline pressure by using the station vent

The pipeline route will be surveyed (by foot or vehicles) to check, the crossings, no digging works, etc,..

Measurements will be performed manually at cathodic protection test points. In case of suspicion of defect, an intelligent pig can be run to check the integrity of the pipeline.

4.2.9.6 **Pressure reduction and metering station**

The operation of the station will largely be automated. The FSRU delivers a nominated flow rate at an agreed pressure and temperature. This flow rate arrives at the station at slightly smaller pressure and temperature.

Filter separator is provided at gas arrival to ensure that any particle or debris are removed. A by-pass is disposed to enable online maintenance.

On standard operating conditions, with flow from approximately 100 MMSCFD to 750 MMSCFD, one gas heater, two pressure reduction runs and two metering runs are in operation. The required SSGC pressure and temperature are input in the station process control system which control the heaters and the pressure regulators.

From 750 to 1000 MMSCFD, the second heater is required.

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If the flow rate lowers towards the minimum 50 MMSCFD, then one pressure reduction run and on metering run shall be closed by closing the inlet valves on site.

Water bath heaters are provided as complete packaged units, including their fuel gas system, control systems. They can be bypassed. A small demineralised water tank will allow to supply make-up water

Pressure regulating is achieved by three runs (3 x 50%; capacity 50 to 550 MMSCFD). At the inlet of each run, a Shut Down Valve SDV can put a run in or out of operation on order of the station control and shut down the line on malfunction/overpressure. Each run includes two Pressure Regulating Valves having similar specs, installed in series in active monitor configuration. One pressure regulating valve acts as operating while other remains in fully open position. In case the pressure regulating valve that is operating fails, other valve will take charge and reduce the pressure as per required value.

The gas metering skid includes three 20" metering runs (3 x 50%; capacity 50 to 550 MMSCFD each equipped with an ultrasonic flow meter, pressure and temperature transmitters and a flow computer. An online chromatograph provides the gas composition which allows computing the energy delivered to SSGC pipeline.

Each of the above unit includes Pressure Safety Valves which can cope with incidental pressure increases, in particular during transients of the pressure control valves. Vented gas is directed to the station vent.

Utilities

An instrument and utility air system supply air to all pneumatic instrumentation and equipment. It is made up two 50 SCFM compressors, one operating and one stand-by, air dryers and storage.

Electrical power is provided by two diesel generators. Provision is made for future connection to the electricity grid.

Emergency shutdown (ESD)

a) ESD Level-1 Shutdown

Under the condition of fire, level-1 ESD is initiated automatically causing closure of ESDVs at inlet and outlet of station and opening of Blow Down Valves, venting the gas to the vent. A manual ESD pushbutton is also provided in control room for same.

b) ESD Level-2 Shutdown

Under the condition of process upset, level-2 ESD is initiated causing closure of ESDVs at inlet and outlet of station; however Blow Down Valves remain closed. A manual ESD pushbutton is also provided in control room for same.

Vent & drain system

PSVs, BDVs and manual depressurisation lines are connected to the vent header and discharge to the vent scrubber and then the station vent.

A pit is disposed to allow draining the filter separator and pig receiver used only during maintenance and cleaning operations. All drain lines are routed and discharge to the pit.

Fire fighting

The station will be equipped with

- Dry chemical power reel stations (1500 kg)
- Wheeled dry chemical power extinguishers (50kg)
- Portable dry chemical power extinguisher (9kg)

Operating staff shall be trained for the use of these fire fighting means.

Control room – Electrical room

A common building will house the control & electrical systems. Operating personnel will be located in the control room.

Monitoring & control systems

- SCADA Supervisory Control & Data Acquisition;
- PCS Process control System;
- SIS Safety Instrumented System;
- FGAP Fire & Gas Alarm Panel.

Access

The station will be fenced. and monitored by a CCTV system. Security personnel at gate will control access.

4.2.9.7 **Telecommunications**

The telecommunication system shall enable communications and data exchange between the FSRU, the LNGC, the jetty control room, the station control room, Port Qasim control , emergency services and SSGC control room. It includes:

- VHFwith Port Qasim control
- VHF FSRU – LNGC
- VHF ship to shore between jetty and FSRU
- Wireless radio : jetty and station control room (and SSGC contro)
- UHF trunked radio system
- Mobile phones
- Hotline system

4.2.9.8 **Security plan**

A Security Plan will be prepared in accordance with the International Ship and Port Facility Security code for the jetty facilities and American Society of Industrial Security.

A security officer will be in charge of the organization of security staff (supervisors, guards) and equipment (boats, motor vehicles for land access along pipeline and metering station).

The Security Plan will define responsibilities, duties of the security personnel and the restricted areas falling under security.

A confidential evaluation of threats, risks and their consequences will be performed by a specialized consultant for all project components in order to prepare management and security staff and identify appropriate mitigation measures and responses.

4.2.9.9 **Emergency Response Plan**

Terminal operator (including FSRU provider) shall draft an Emergency Response Plan in compliance with all applicable federal, state and local laws and regulatory requirements. All personnel (employees and contract personnel) shall know and adhere to procedures and practice.

The ERP addresses situations and conditions that require activation of the ERP in order to contain and control emergencies. It provides general guidelines and procedures for responding to emergencies within the terminal and downstream facilities. It lists actions to be taken by LNGC, FSRU, tugs, terminal (jetty) and station personnel.

The ERP shall give clear guidelines to LNGC; FSRU & terminal staff and contractors, visitors and emergency responders, and the public in the event of an emergency.

The ERP shall ensure that in case of an emergency there is a preparedness and well thought plan for how to control the situation and minimize the impact, whether to evacuate workers from the construction site, perform firefighting or supply first aid. Escape routes (incl. mustering points) shall be identified and marked. The ERP shall specify the training and exercising of personnel

Typical list of emergency situations to be addressed by the ERP.

- On board of LNGC or FSRU
  - Fire/explosion.
  - Pollution through cargo and/or bunker fuel spills.
  - Uncontrolled release of cargo of LNG or vapour
  - Mechanical failure (affecting LNG cargo operations or gas send-out operations)
  - Man overboard
  - Accident (medical emergency)
  - Failing of the carrier's or FSRU moorings
- Terminal (Jetty)
  - Fire/explosion
  - Uncontrolled release of gas
  - Mechanical failure (arms, valves, walkways)
  - Spill of diesel from tanks (fire water pumps)
  - Accident (medical emergency)
- Pipeline
  - Leaks / hole in pipeline => gas release
  - Fire / explosion

- Metering station
  - Fire / explosion
  - Mechanical failure with gas release
  - Spill of diesel from tanks (generators)
  - Accident (medical emergency)

4.2.9.10 **Maintenance / Repairs**

Terminal / station operator shall maintain a sufficient stock of spare parts. Standard maintenance & repairs can either be performed by designated operators or by contractors. Standby-contracts will allow fast mobilization of personnel for maintenance repairs. For major maintenance, vendors assistance will be required as needed.

4.2.9.11 **QA/QC plan**

The terminal/station operator (and FSRU provider) will have a QA/QC plan in place covering operation and maintenance activities.

The QA/QC plan will specify the roles and duties of the operation staff, the reporting of activities & events, the reliability of storage of operation data & records.

4.2.9.12 **Environmental Management Plan**

The Environmental Management Plan are closely linked with the Environmental Impact Assessment ("EIA") and should cover main a wide range of subjects in order to minimise impact through the environment, including unplanned emissions, upsets or discharges to the environment. Subjects can include, but are not limited to:

- Air quality;
- Water quality;
- Waste management;
- Hazardous materials;
- Noise.

Descriptions of how emissions, waste water and solid waste disposals is handled in compliance with relevant statutory requirements shall be included. It may further describe how waste produced during operation shall be collected, separated, stored and handled in an environmentally responsible manner. Good housekeeping and operating practices shall be practised, including inventory control to reduce the amount of waste from materials that are out-of-date, off-specification, damaged or exceeding the demand, and recognizing opportunities to reuse recyclable materials and equipment, such as containers.

An effort to limit noise, in order to not expose workers and the surrounding community to intolerable health risks or noise nuisance shall be made.

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4.2.5 KEY TECHNICAL ASSUMPTIONS

- **Project Throughput Usage**
  750 - 1000 MMSCFD

- **Minimum Throughput Usage**
  Min 50 MMSCFD

- **Handling Capacity**
  Up to Q-Max LNG carriers

- **Port Conditions**

  Temperature and Humidity

  The meteorological data including temperature, relative humidity and rainfall described below are referring to the memorandum of information report for Grain & Fertilizer Terminal project for the PQA (Port Qasim Authority) in 2007. These data are considered to be applicable in this design stage, and more available meteorological data will be collected and analysed in the next stage if necessary.

  Monthly average temperature ranges from 19.5° C in January to 32°C in June, with recorded minimum temperature of 3°C and maximum of 45°C.

  Relative humidity is high in the morning for about 80-90%, in the evening from April to October is about 70-80%. The minimum and maximum value is 45% and 90% respectively.

  Rainfall

  Rainfall is rare and expected only during the south-west monsoon. The annual average is about 200 mm only, but intensity of rainfall can be severe. In July a rainfall of 94 mm in 24 hours was recorded, and the extreme recorded rainfall within 24 hours was 278 mm in August 1953.

  The number of rainy days varies from 15 to 20 days per year; while there were years practically without rain and extraordinary events were observed earlier in 2005.

  Wind

  The GROW model generated by Oceanweather, Inc. (OWI) hindcast wind data were obtained for an offshore location near the Karachi coastline (GROW Point 35756).

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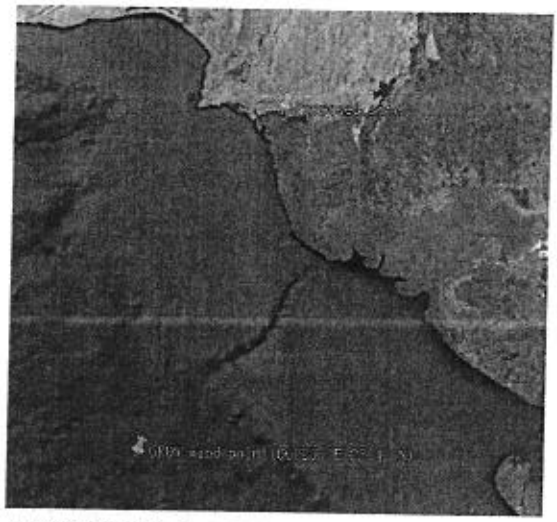
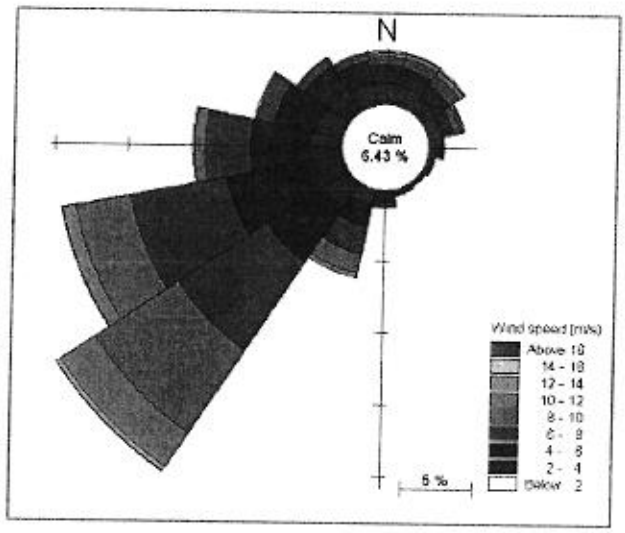


OWI GROW Hindcast Point for Wind

Wind data from the GROW model is hourly-averaged and corresponds to wind speeds at 10m above water.

An offshore wind rose has been produced based on the data and is shown as below. It can be seen that the prevailing wind directions are SW and WSW, with the average and maximum wind speed of 7.5m/s and 15.0m/s respectively.



Wind Rose at the Offshore Hindcast Location

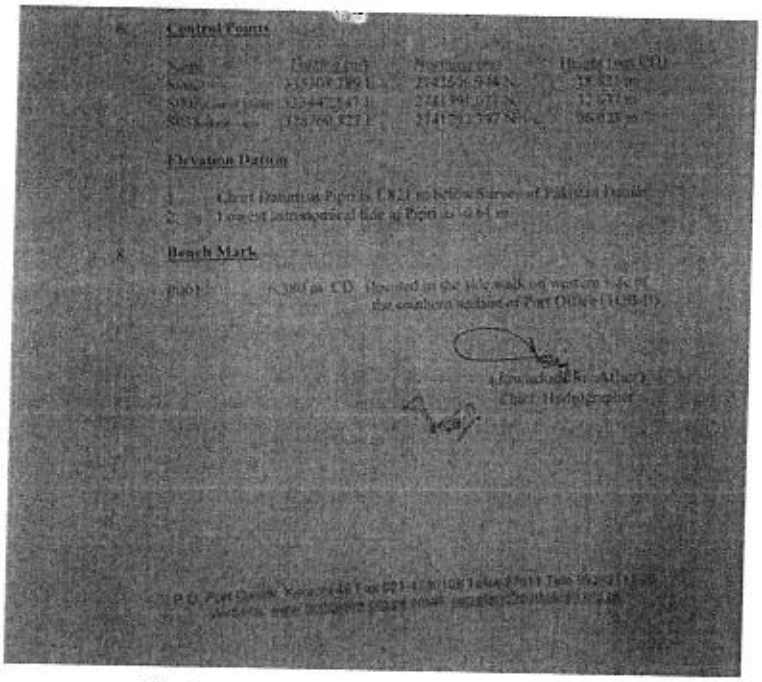
Tides

The tides in the project area are mixed with diurnal inequality. Very high tidal levels of approximately 3.5m to 4m can occur in the delta area which inundate the creek banks and erode the coastal areas. According to the Admiralty Chart for Port Muhammad Bin Qasim (Pipri) from WGS84/Chart 59 on March, 5th 2013, the statistic characteristic tidal levels based on CD are summarized in table below.

Port Muhammad Bin Qasim (Pipri) Tide levels (Unit: m)

Items	Abbreviation	Values
Highest Astronomical Tide	HAT	4.0
Mean Higher High Water	MHHW	3.1
Mean Lower High Water	MLHW	3.0
Mean Higher Low Water	MHLW	1.4
Mean Lower Low Water	MLLW	0.7
Lowest Astronomical Tide	LAT	0.0

Please note that there is some difference on the LAT value. Actually, the chief hydrographer Mr. Ather from P.O. Port Qasim has provided a letter (shown below) demonstrated that the LAT is -0.61m.



The Letter Provided by P.O. Port Qasim

Above all, the table below represents the water level values to be used in design with Chart Datum for this project.

MLLW		MHLW	MLHW	MHHW	HAT	LAT
0.7		1.4	3.0	3.1	4.0	-0.6

Tide Levels (Refer from CD, Unit: m)

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Surge Levels

The extreme surge levels are considered to be the barometer inverse effect and wind set-up components in the project area.

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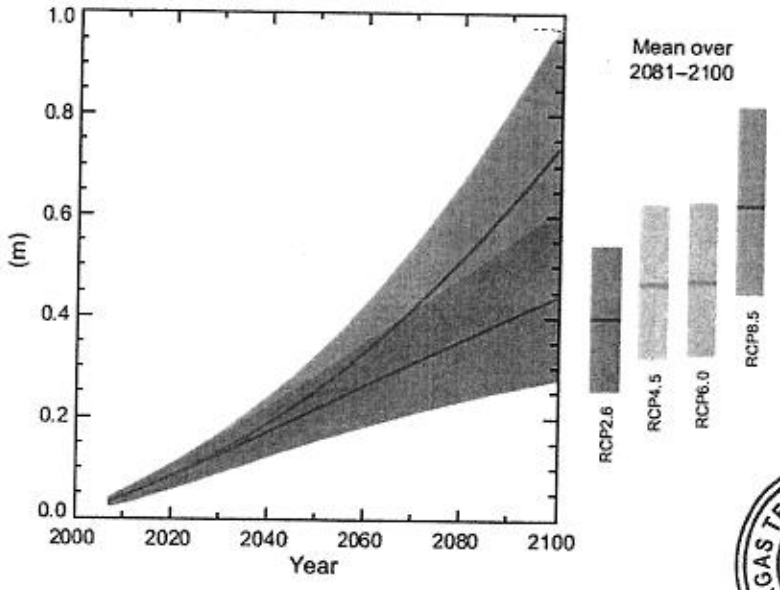
The storm PHET occurred in 2010 was selected in the water level rise calculation caused by low atmospheric pressures (depressions) with the equation 4.9 in The Rock Manual (CIRIA C683), and the results comprised between 0.13m and 0.2m.

The 100-year wind speed 21.8m/s was selected to calculate the wind set-up with equation 4.12, and the results comprised between 0.3m and 0.4m.

To be slightly conservative, the surges levels are set to be 0.6m in this design stage and this value are recommended to be verified in next stage.

Sea Level Rise

Based on the IPCC assessment report AR5, the figure of global mean sea level rise is shown as below. It can be seen that the average rate of sea level rise will probably increase to about 6mm/year, considering the 30-year design life of the jetty, the sea level rise is about 0.2m for this project.



Global Mean Sea Level Rise

Design water level

The total design water level is made up of the tidal component and the non-tidal components. Therefore, the 100 years return period high water level can be estimated as: HAT + Surge Levels+ Sea Level Rise =4m+0.6m+0.2m =4.8m.

Waves

The proposed project site is very sheltered from ocean swell and only local wind-waves from channels are likely, and the design waves are calculated by limited-fetch wave method (SMB formula) according to the Rock Manual (CIRIA C683). The general layout is shown in figure below, and the design wave parameters are summarized in table below.

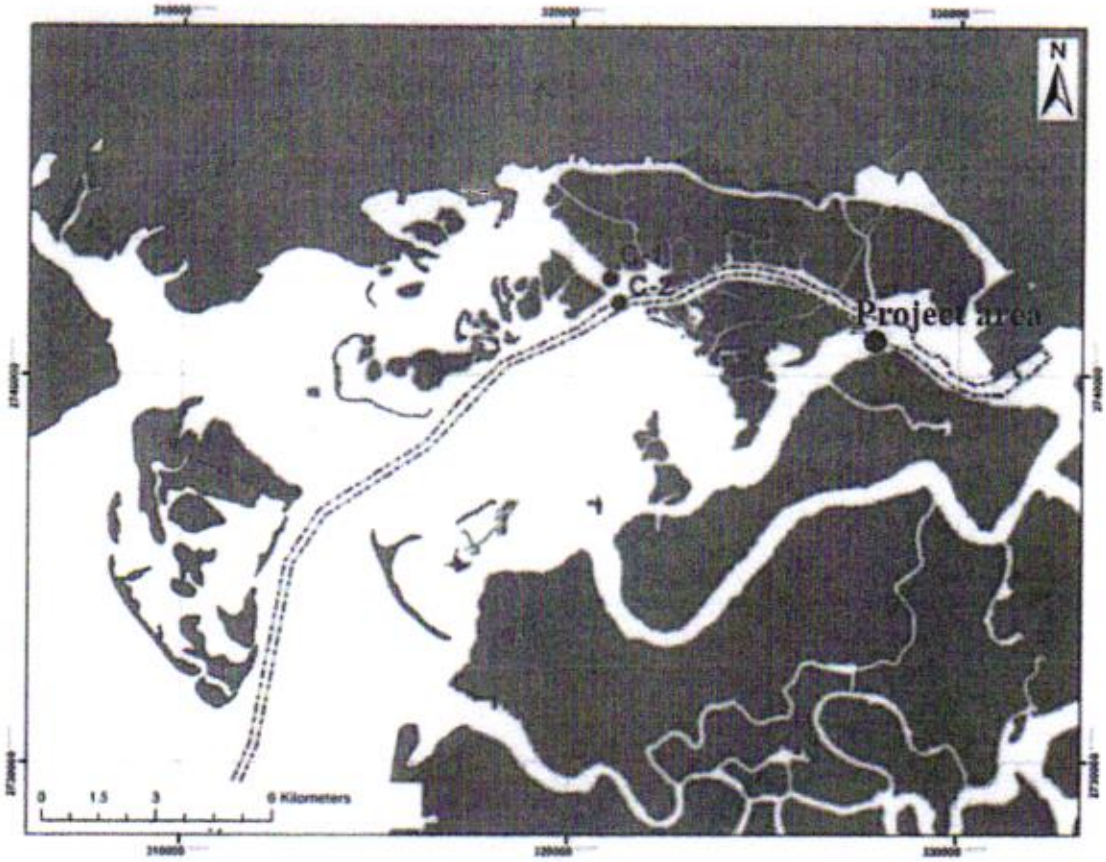
Current

China Harbour Engineering Company (CHEC) had carried out a measurement relate to current speed and current direction at two stations C1 and C2 (shown in figure below) covers a 25-hour

window during typical spring and neap tides in 2006, from the current measurement results, the maximum current speeds vary from 1.2m/s to 1.4m/s at two stations.

The stations C1 and C2 are about 6 kilometres away from the proposed project site, the hydrodynamic condition between the stations and the project area are considered to be similar, the currents in project area could be referred by the measured data above.

The maximum current velocity during flood (from NE to ENE direction) and ebb tide (from WSW to SW direction) are set to be 1.3m/s at this design stage. For more detailed current values, it is recommended to carry out further collection, investigation and simulation at next design stage to account for the associated uncertainties.



Location of Measured Current Data (CHEC, 2006)

Sedimentation

Siltation for the project is mainly induced by the planned dredging course. The sedimentation rate is calculated with the siltation formula developed by Liu Jiaju, which is proved to be applicable in the Silty Mud port in some China harbours like Lianyungang harbour. Mean sediment concentration of 0.120 kg/m3 and mean sediment median grain of 0.003 mm are assumed in this formula, and the result shows that the sedimentation rate in the basin is about 0.9 m/a.

However, due to the limitation knowledge of the sediment concentration, sediment characteristic and the morphology, this value remains uncertain to some degrees. It is recommended that the sediment rate will necessitate further investigation at next design stage to account for the associated uncertainties.

ANNEXURES

Annex 1: Port Qasim Authority letter No. PQA/PSP/482/2017 Pt/ 562 dated 14th February 2020
Annex 2: LNG Terminal Project Schedule

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PORT QASIM AUTHORITY

Gateway to National Prosperity

No. PQA / PSP / 482 / 2017 Pt/562
Date: 14th February 2020

M/s ENERGAS Terminal (Pvt) Limited
6-A, Muhammad Ali Housing Society
Abdul Aziz Hashmi Tabba Street Karachi

Subject:- **ESTABLISHMENT OF FLOATING / OFFSHORE LIQUEFIED NATURAL GAS TERMINAL ON BOT BASIS AT PORT QASIM**
- Confirmation of Site Location Coordinates

Reference to the Technical & Financial proposals submitted by M/s ENERGAS vide letter dated 29th November 2019 on the subject cited above.

2. It is informed that PQA's Consultant M/s DNV.GL has reviewed the coordinates proposed by M/s ENERGAS in the proposals considering the future traffic development, safety requirement and the HR Wallingford study for commissioning of alternate channel. M/s DNV.GL in report No. GLO-20-0001,Rev.0 has finalized the position of the center point of the loading arms between FSRU and jetty manifold platform as 24° 46' 11.92"N 067° 17' 35.67"E. Besides, the Consultant has also confirmed the alignment of the jetty as proposed 062°/242° as it is parallel with the margins of the planned alternate channel.

3. This is for your information and further necessary action please.

(Syed Aijaz Ali Rizvi)
Secretary

ENERGAS TERMINAL (PVT.) LIMITED

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Appendix L

MASTER SCHEDULE FOR PAKISTAN FSRU BASED

ID	WBS	Task Name	Duration	Commencement Date	Completion Date	Q4
0	0	**ENERGAS FSRU-LNG PROJECT**	**582 days**	**Mon 6/1/20**	**Mon 1/3/22**	
1	1	**EPC Contract Awarding (depending on issuance of OGRA construction license)**	**1 day**	**Mon 6/1/20**	**Mon 6/1/20**	
2	2	**Engineering**	**240 days**	**Tue 6/2/20**	**Wed 1/27/21**	
3	2.1	Investigation and Survey	**165 days**	**Tue 6/2/20**	**Fri 11/13/20**	
4	2.1.1	Topographic Survey	45 days	Tue 6/2/20	Thu 7/16/20	
5	2.1.2	Geophysical Survey	60 days	Tue 6/2/20	Fri 7/31/20	
6	2.1.3	Geotechnical Investigation	165 days	Tue 6/2/20	Fri 11/13/20	
7	2.2	Studies	120 days	Wed 6/17/20	Wed 10/14/20	
8	2.2.1	numerical current & sediment transportation model study	75 days	Wed 6/17/20	Sun 8/30/20	
9	2.2.2	Vessel Navigating & Maneuvering Simulation Study	60 days	Sun 8/16/20	Wed 10/14/20	
10	2.2.3	Ship Mooring Study & Downtime Assessment	60 days	Sun 8/16/20	Wed 10/14/20	
11	2.3	Engineering Design	210 days	Thu 7/2/20	Wed 1/27/21	
12	2.3.1	Basic Design	120 days	Thu 7/2/20	Thu 10/29/20	
13	2.3.1.1	Basic Design of Jetty	75 days	Thu 7/2/20	Mon 9/14/20	
14	2.3.1.2	Basic Design of Metering Station	45 days	Thu 7/2/20	Sat 8/15/20	
15	2.3.1.3	Basic Design of Pipeline	45 days	Sun 8/16/20	Tue 9/29/20	
16	2.3.1.4	Design Review & Approval (Jetty)	30 days	Tue 9/15/20	Wed 10/14/20	
17	2.3.1.5	Design Review & Approval (Metering Station)	30 days	Sun 8/16/20	Mon 9/14/20	
18	2.3.1.6	Design Review & Approval (Pipeline)	30 days	Wed 9/30/20	Thu 10/29/20	
19	2.3.2	Detail Design	135 days	Tue 9/15/20	Wed 1/27/21	
20	2.3.2.1	Detail Design of Jetty	90 days	Wed 9/30/20	Mon 12/28/20	
21	2.3.2.2	Detail Design of Metering Station	60 days	Tue 9/15/20	Fri 11/13/20	
22	2.3.2.3	Detail Design of Pipeline	60 days	Wed 9/30/20	Sat 11/28/20	
23	2.3.2.4	Design Review & Approval (Jetty)	30 days	Tue 12/29/20	Wed 1/27/21	
24	2.3.2.5	Design Review & Approval (Metering Station)	30 days	Sat 11/14/20	Sun 12/13/20	
25	2.3.2.6	Design Review & Approval (Pipeline)	30 days	Sun 11/29/20	Mon 12/28/20	
26	3	**Dredging**	**210 days**	**Thu 1/28/21**	**Wed 8/25/21**	
27	4	**Procurement and Construction of Jetty**	**460 days**	**Wed 6/17/20**	**Sun 9/19/21**	
28	4.1	Construction Preparation Work	180 days	Wed 6/17/20	Sun 12/13/20	
29	4.1.1	Personnel Mobilization	30 days	Wed 6/17/20	Thu 7/16/20	
30	4.1.2	Equipment Mobilization	150 days	Thu 7/2/20	Sat 11/28/20	
31	4.1.3	Temporary Works	150 days	Fri 7/17/20	Sun 12/13/20	
32	4.2	Procurement	300 days	Sun 8/16/20	Fri 6/11/21	
33	4.2.1	Farbrication of Steel Piles	90 days	Thu 11/5/20	Tue 2/2/21	
34	4.2.2	Walkway & Handrail	120 days	Thu 1/28/21	Thu 5/27/21	
35	4.2.3	Rubber Fender & Bollard	90 days	Thu 1/28/21	Tue 4/27/21	
36	4.2.4	Processing Equipments	300 days	Sun 8/16/20	Fri 6/11/21	
37	4.2.5	Utility Equipments	120 days	Thu 1/28/21	Thu 5/27/21	
38	4.3	Marine Structure Construction	294 days	Sat 11/14/20	Fri 9/3/21	
39	4.3.1	Static Loading Test	45 days	Sat 11/14/20	Mon 12/28/20	
40	4.3.2	Loading Platform (30m*30m)	151 days	Sun 1/31/21	Wed 6/30/21	
41	4.3.2.1	Driving of Steel Tubular Pile (20nos)	10 days	Sun 1/31/21	Tue 2/9/21	
42	4.3.2.2	Cast-in-situ Conclere Plug in Pile (106m3)	25 days	Fri 2/5/21	Mon 3/1/21	
43	4.3.2.3	Cast-in-situ Dolphin (1990m3)	70 days	Tue 3/2/21	Mon 5/10/21	
44	4.3.2.4	Ancillary Facilities	30 days	Tue 6/1/21	Wed 6/30/21	
45	4.3.3	Breast Dolphins (2nos)	169 days	Wed 2/10/21	Wed 7/28/21	
46	4.3.3.1	Driving of Steel Tubular Pile (36nos)	20 days	Wed 2/10/21	Mon 3/1/21	
47	4.3.3.2	Pile Clip and Head Treatment (174m3)	18 days	Sat 2/20/21	Tue 3/9/21	
48	4.3.3.3	Cast-in-situ Dolphin (1768m3)	90 days	Wed 3/10/21	Mon 6/7/21	
49	4.3.3.4	Ancillary Facilities	30 days	Tue 6/29/21	Wed 7/28/21	
50	4.3.4	Control Platform (23m*17m)	176 days	Tue 3/2/21	Tue 8/24/21	
51	4.3.4.1	Driving of Steel Tubular Pile (15nos)	8 days	Tue 3/2/21	Tue 3/9/21	
52	4.3.4.2	Pile Clip and Head Treatment (72m3)	8 days	Sun 3/7/21	Sun 3/14/21	
53	4.3.4.3	Cast-in-situ Dolphin (821m3)	55 days	Sun 5/16/21	Fri 7/9/21	
54	4.3.4.4	Ancillary Facilities	25 days	Sat 7/31/21	Tue 8/24/21	
55	4.3.5	Mooring Dolphins (4nos)	175 days	Wed 3/10/21	Tue 8/31/21	
56	4.3.5.1	Driving of Piles (43nos)	18 days	Wed 3/10/21	Sat 3/27/21	
57	4.3.5.2	Pile Clip and Head Treatment (222m3)	20 days	Thu 3/18/21	Tue 4/6/21	
58	4.3.5.3	Cast-in-situ Dolphin (1132m3)	60 days	Tue 5/18/21	Fri 7/16/21	
59	4.3.5.4	Ancillary Facilities	25 days	Sat 8/7/21	Tue 8/31/21	
60	4.3.6	Supporting Dolphins (5nos)	160 days	Sun 3/28/21	Fri 9/3/21	
61	4.3.6.1	Driving of Piles (10 nos)	5 days	Sun 3/28/21	Thu 4/1/21	
62	4.3.6.2	Pile Clip and Head Treatment (10m3)	5 days	Fri 4/2/21	Tue 4/6/21	
63	4.3.6.3	Cast-in-situ Dolphin (77.9m3)	60 days	Fri 5/21/21	Mon 7/19/21	

Key Resolution ..... Task ▬▬▬ Summary

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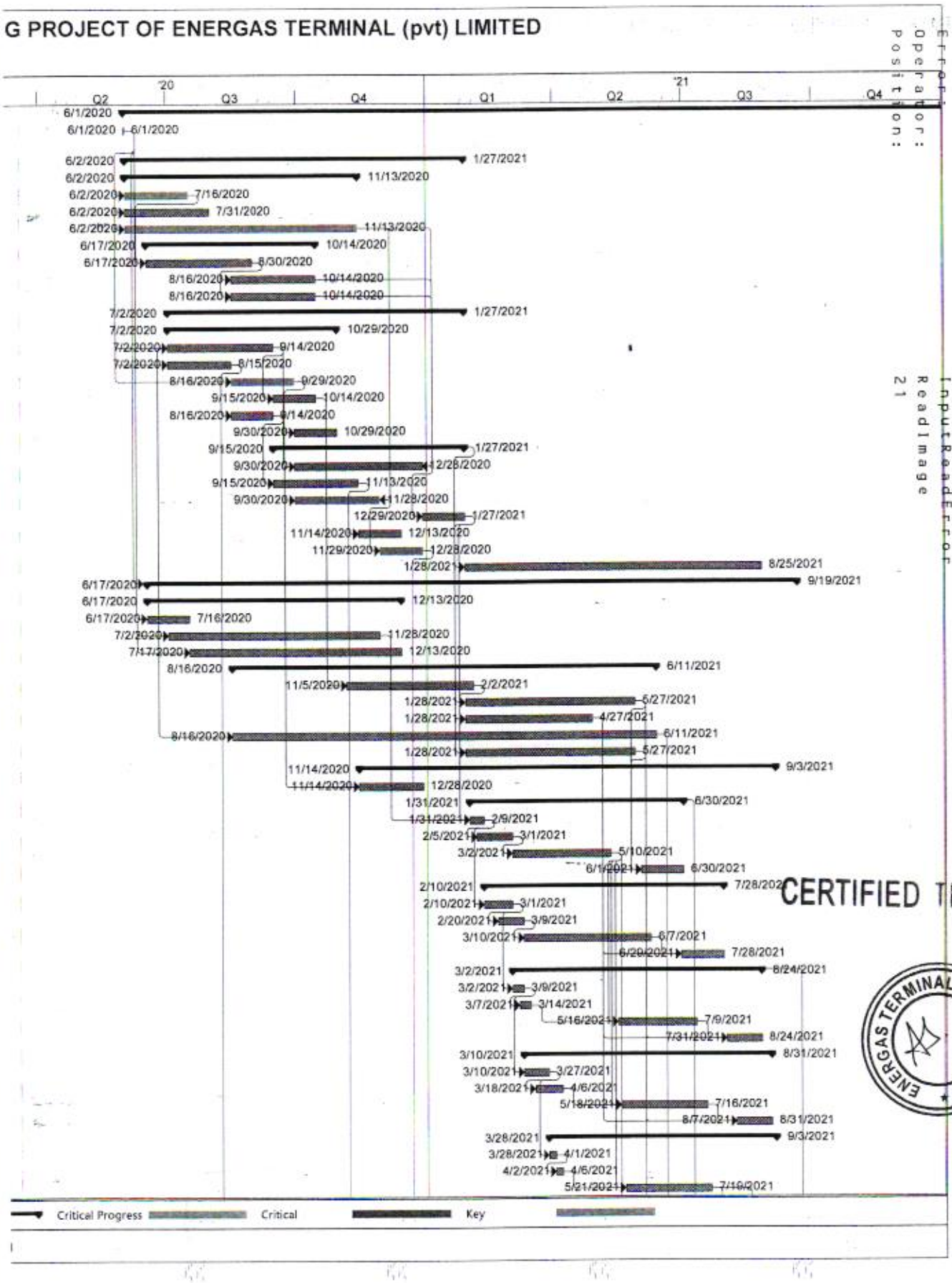

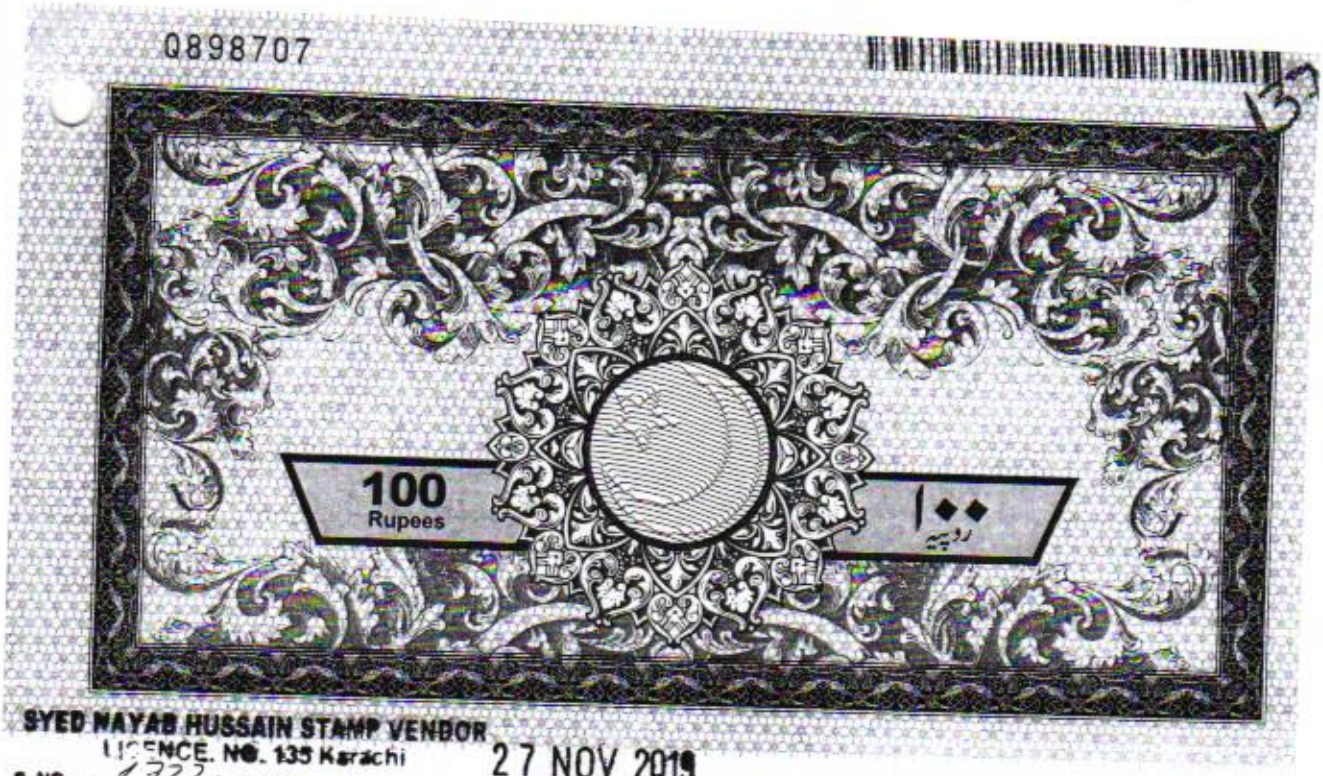

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ISSUED TO WITH ADDRESS MUBASHIR ALI SHAH
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STAMP VENDOR's SIGNATURE

RUPEES ONE HUNDRED O

18th March 2020

The Registrar,
Oil and Gas Regulatory Authority,
Islamabad, Pakistan,

UNDERTAKING

This is to certify that the project employs proven technology and meets the criteria specified for setting up an LNG Terminal in the LNG Policy 2011.

Chief Executive Officer
Energas Terminal (Pvt.) Limited

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ENERGAS TERMINAL (PVT.) LIMITED

GOVERNMENT OF PAKISTAN
Ministry of Petroleum & Natural Resources

LIQUEFIED NATURAL GAS (LNG)POLICY, 2011

TABLE OF CONTENTS

1. Introduction

Pakistan's policy for the sustainable development of the energy sector, including the provision of reliable and competitively-priced energy is based on the following objectives:

(a) Optimization of the primary energy mix, based on economic and strategic considerations;

(b) Maximizing the utilization of indigenous energy resources;

(c) Enhancing private sector participation in the energy sector by strengthening the regulatory framework and institutional capacity;

(d) Developing energy infrastructure; and

(e) Developing human resources with emphasis on energy sector-specific technical skills and expertise

Natural gas plays a key role in Pakistan's energy balance which is currently around 50% of the country's primary energy supplies. With accelerating economic growth, the demand for gas is projected to increase sharply and the country's recoverable indigenous gas reserves will be insufficient to meet this demand. Gas shortages have already emerged and shall increase substantially in the following years if indigenous supply is not supplemented through imports. In order to address the shortage, strong emphasis is being laid on importing gas from neighbouring gas-producing countries through cross-border gas pipelines and also in the form of liquefied natural gas ("LNG"). Necessary measures are being taken for installation of LNG receiving, storage, re-gasification facilities and expansion of gas transmission infrastructure, for the distribution and sale of regasified LNG ("RLNG") in the domestic market.

The LNG Policy 2006 has been modified to facilitate expeditious implementation of the LNG Projects.

2. LNG Import Project Structure

An LNG import project may be structured under one of the following alternatives:

(a) **Integrated project structure**, under which a private or public sector party, joint venture or consortium (hereinafter referred to as "LNG Developer") is responsible for purchasing LNG supplies, transporting them to its LNG import terminal (comprising of receiving, storage and re-gasification facilities) and supplying RLNG to the domestic market and/or for its own use. The LNG Developer would enter into a Gas Sales and Purchase Agreement (GSPA) directly with a Government-designated buyer, gas utility or any customers (hereinafter referred to as "RLNG Buyer(s)"); or

(b) **Unbundled project structure**, under which:

i. A Government designated buyer, gas utility, any consumer or any LNG supplier (hereinafter referred to as "LNG Buyer(s) would directly import the LNG under a LNG Sale and Purchase Agreement ("SPA") either on a delivered ex ship (DES) basis, or a free-on-board (FOB) basis, or C&F basis.

ii. For FOB purchase, the LNG Buyer would in addition, enter into an agreement with a shipping company to transport LNG to the receiving terminal.

iii. The LNG Buyer(s) would enter into an agreement with the LNG Terminal Owner and/or Operator (hereinafter referred to as the "LNG TO/O") for the provision of LNG receiving, storage and re-gasification services at its terminal under a tolling agreement.

3. LNG Procurement

3.1. An LNG Developer or LNG Buyer as the case may be, will be allowed to import LNG in accordance with applicable import laws, rules and regulation. While issuing licence to an LNG Developer or RLNG Seller, the Oil and Gas Regulatory Authority (OGRA will take into account Government policy guidelines and will adopt following criteria to ensure sustainability of LNG chain:

(a) For the LNG Developer, at least one member of the consortium will be required to have technical and commercial experience along the LNG supply chain.

(b) LNG Developer or LNG Buyer /RLNG Seller will provide evidence of sufficient purchase commitment (in the form of a HOA) from end users for a minimum volume of RLNG sufficient to support the terminal investment and the potential for further sales, if necessary, in order to cover the full contractual LNG purchase commitment.

(c) Notwithstanding the above, LNG imports can also be made on spot purchases based on market and commercial considerations.

(d) For avoidance of any doubt, it is stated that a licence will not be required for import of LNG by LNG Developer and LNG Buyer, as the case may be.

3.2. Procurement of LNG by the LNG Buyer(s) will be undertaken through one of the following approaches:

(a) Direct negotiations with one or more LNG suppliers for supply of LNG for a reasonable time to be determined by OGRA;

or

(b) International competitive bidding for the supply of LNG for a reasonable time to be determined by OGRA;

or

(c) Direct purchase from the LNG spot market based on market and commercial considerations on a competitive basis, excluding supply to public sector gas utilities.

3.3. If procurement of LNG is undertaken by a public sector entity, the Government may authorize the entity to adopt the direct negotiation approach with a group of LNG suppliers if the demand-supply dynamics of LNG require this approach to be adopted.

4. Ownership & Operation of the LNG Terminal

4.1 The LNG Developer or LNG TO/O, as the case may be, will obtain a license to design, construct, operate and own a LNG terminal from OGRA under the Oil and Gas Regulatory Authority Ordinance, 2002 subject to satisfying the following criteria:

(a) **Technical:** At least one member of the consortium of LNG Developer or LNG TO/O, as the case may be, should have experience in developing and operating a liquefaction plant or a regasification terminal. The LNG terminal will be constructed based on technical standards as prescribed by the OGRA from time to time, in consultation and approval of Department of Explosives, including internationally acceptable industry technical standards as stipulated in Appendix-1.

(b) **Financial:** The LNG Developer or LNG TO/O consortium (on a several or joint and several basis) should have liquidity, revenues, net income and net worth above prescribed minimum thresholds (to be set by OGRA taking into consideration the financial obligations associated with the development and operation of the LNG import terminal).

(c) **Health, Safety & Environmental ("HSE") Standards:**

i. The LNG Developer, LNG TO/O or LNG Buyer as the case may be, will ensure that the project complies with World Bank HSE Guidelines, Pakistan's Environmental Protection Act 1997 rules, regulations and guidelines made thereunder, National Environmental Quality Standards, Pakistan's health, environment and safety standards and is consistent with the best international LNG industry practices.

ii. The LNG Developer or LNG TO/O will undertake a comprehensive environmental impact assessment of the design, construction and operational aspects of the project including impact assessment of shipping associated with the project, in accordance with international standards and practices. The studies and approvals required at the planning, construction, commissioning and operating phases are defined in the Pakistan Environmental Protection Act, 1997.

iii. All LNG terminals shall be surrounded by safety zones which shall meet the industry standards set forth in safety codes of the National Fire Protection Association of USA and as per the risk assessment studies so as to ensure protection of neighbouring communities and shipping traffic.

(d) **Site approval:** The site (either land based terminal or offshore terminal of any type) for setting up an LNG terminal shall be selected by LNG Developer or LNG TO/O, as the case may be, taking into account the following factors:

i. Existing and projected population and demographic characteristics of the location;

ii. Existing and proposed land use near the location;

iii. Physical aspects of the location;

iv. Medical, law enforcement and fire protection capabilities near the location that can cope with a risk caused by the facility;

v. Exclusion zone distances from the terminal to property and population as per international standards are complied with;

vi. Proximity to existing gas infrastructure and market;

vii. Need to encourage remote sitting;

viii. Any other significant community concerns; and

ix. Environmental considerations.

4.2 In applying for the licence, the LNG Developer or LNG TO/O will have the onus of demonstrating compliance with the above criteria through risk assessment and simulation studies.

4.3 Port Authorities will convey their decision on acceptance of site within one month of submission of NOC from SEPA, QRA study and navigational simulation study.

4.4 The licensee shall:

(a) ensure delivery of LNG on fast track basis.

(b) furnish guarantee against it commitment.

4.5 In case of licensee's failure to deliver LNG by stipulated date its right to Third Party Access will be subject to cancellation / review by OGRA.

5. RLNG Marketing & Transportation

5.1. An LNG Developer or LNG Seller, as the case may be, will obtain a license to market and sell RLNG in the domestic market including in the areas covered by the gas pipeline network of SSGC and SNGPL from OGRA under the provisions of OGRA Ordinance, 2002 and subject to the terms and conditions of the licenses issued by OGRA to SSGC and SNGPL.

5.2. Subject to para 6.4 below, an LNG Developer or LNG Seller, as the case may be, will be required to obtain a license to construct and operate gas pipelines from OGRA under the provisions of the OGRA Ordinance 2002.

5.3. Parties interested in the local small scale production, transportation and distribution of LNG produced from domestic gas, for example through LNG trucks will be required to obtain a license from OGRA.

6. Regulatory Framework

6.1. **Construction period:** At the construction stage, OGRA will ensure that the following parameters are included in the license to be issued to the LNG Developer or LNG TO/O, as the case may be, and the licensee comply with the same:

(a) **Technical parameters:** The terminal complies with internationally recognized and proven standards for LNG installations prescribed by OGRA from time to time including those specified in Appendix-1.

(b) **HSE standards:** The project meets the HSE standards specified in the license.

(c) **Other permits and approvals:** Permits and licenses from Government departments such as Ministry of Defence, Port Authorities, Environmental Protection Agency, Chief Inspector of Explosives and provincial and local government agencies have been obtained.

6.2. **Operating period:** During the operating period, OGRA will regulate the following:

(a) **Access rights:** All LNG terminals and associated facilities will be operated on a system of regulated third party access ("RTPA") based on published / negotiated tolling tariffs in an objective competitive environment without discrimination excluding however tolling tariff for public sector shall require OGRA's approval.

Exceptions from such regulation will be given to those LNG terminals and associated facilities that are developed for own or dedicated use. Access to such terminals will be based on negotiated third party access ("NTPA"). RTPA and NTPA will be administered by OGRA through a clear regulatory mechanism. It is clarified that the LNG Developer will have priority access to its own LNG terminal capacity provided it has firm capacity utilization plan for own or dedicated use for a minimum period of 10 years.

(b) **Terminal tariff and returns:** In case of sale to public sector gas utility OGRA will approve tolling tariff negotiated between the utility companies and LNG TO/O on the basis of following components:

i. Capacity or fixed element covering capacity reservation and other fixed charges;

ii. Variable elements covering the variable operation and maintenance charges of the LNG terminal.

iii. Utilization of capacity.

(c) In order to ensure that the capacity of an LNG terminal is optimally utilized, OGRA will adopt and implement the mechanism of "Use-it-or-lose-it".

(d) **Reporting requirements:** The LNG Developer or LNG TO/O, as the case may be, will have to publish capacity utilization rates and tariffs as approved by OGRA and at such regular intervals as may be determined by OGRA.

(e) **LNG Storage Facility:** Gas storage facility may be developed by the LNG Developer/ LNG TO/O. Gas Storage may be allowed at a tariff determined by OGRA.

6.3. **Gas Pricing:**

(a) For RLNG supply to SSGC and SNGPL, the RLNG price will be an input for determining the weighted average cost of gas in Pakistan, determined by OGRA, for GoP specified consumers and industry.

(b) The LNG Developer/ LNG Buyer will have the right to sell RLNG to end users directly based on a negotiated price.

(c) SSGCL/SNGPL will not sell gas priced under 6.3 (a) to industries which are selected by GoP to use RLNG from time to time.

6.4. **Gas Transmission:** OGRA will ensure that subject to capacity being available, the LNG Developer or LNG Seller or RLNG Buyer, as the case may be, will have access to the SSGC and SNGPL pipeline network or any other new entity at a transportation tariff to be determined under Third Party Access (TPA) Rules even after privatization of these two entities. If SSGC/SNGPL do not have available capacity, the LNG Developer or LNG Buyer or RLNG Buyer, as the case may be, can request SSGC/SNGPL or any other operator of pipeline to expand capacity based on technical and economical considerations or may construct its own pipeline subject to grant of license by OGRA. In determining available capacity, OGRA would consider the capacity that could be made available by swapping gas between SSGC and SNGPL systems.

6.5. **RLNG Quality:** The quality of RLNG which is to be injected into the transmission and distribution network of the gas companies shall be compatible with the quality of gas in such system and which shall be reviewed by the Gas Companies according to OGRA's notified gas specifications.

(a) The blending/dilution of RLNG to meet the quality required shall be the responsibility of the LNG Developer / LNG Seller.

7. Government Incentives

7.1 The following fiscal incentives will be granted to the LNG Developer, LNG TO/O or LNG Buyer as applicable:

(a) Zero percent customs duty will be charged on imported LNG. LNG Buyer or LNG Developer importing LNG will also be exempted from withholding tax at import stage in respect of such import. FBR will issue necessary notification in this regard.

(b) Exemption from custom duty in excess of 5% with total exemption from sales tax in respect of plant, equipment and machinery, not locally manufactured, imported by that LNG Developer or LNG TO/O, as the case may be, by expanding the scope of SRO 678(1)/2004, dated 7/08/2004. Import of such plant, machinery and equipment and parts will also be exempted from withholding tax at import stage as allowed under clause 56(vii) of the part (vi) of the second schedule to the Income Tax Ordinance, 2001;

(c) Initial Allowance will be admissible at the rate of 50% of the cost of depreciable assets under section 23 of the Income Tax Ordinance, 2001. In addition, normal deprecation at the rate of 10% will be also allowed on plant and machinery.

(d) Exemption from withholding tax on interest payments to foreign lenders will be allowed as permissible under various provisions of the Income Tax Ordinance, 2001.

(e) Sales tax and Federal excise duty will be charged on import and supply of LNG at applicable rates.

7.2 When an LNG Developer or LNG TO/O, as the case may be, has identified a suitable site (whether land based or offshore), the Government will actively assist the LNG Developer or LNG TO/O, as the case may be, in obtaining land and port facilities for an LNG terminal at a reasonable cost and within a reasonable time frame.

7.3 The Government will encourage the participation of multi-lateral development banks (MDBs) in LNG import projects to facilitate the financing of such projects inter alia through equity participation by MDBs and MDB instruments such as political risk guarantees and partial credit guarantees.

7.4 A Task Force headed by the Secretary, Petroleum and Natural Resources and comprising Additional Secretary of Finance, Defence, Industries, Ports and Shipping Divisions, a representative of OGRA, Member (Customs)-FBR, Chairman of the concerned seaport authority, Director Generals of the concerned EPA, Coast Guards and Maritime Security Agency and Commander Karachi or COMCOAST Gawadar, to facilitate the implementation of LNG import Projects, as notified under LNG Policy, 2006, will remain intact. This Task Force will act as a "one-stop-shop" to address all issues concerning LNG import projects, including the interpretation of policies and regulations.

8. Pricing of RLNG

8.1. With an integrated or an unbundled approach, RLNG will be procured by gas utilities / RLNG Buyer(s) in the public / Private sector for Medium / Long Term from a LNG Developer or RLNG Seller who offers the lowest price at a designated point of delivery. This price will be the input price to the weighted average cost of gas in Pakistan as per para 6.3(a) above.

8.2. In case LNG/RLNG is procured by the public sector, the price of RLNG will be determined by the OGRA at the terminal flange based on (i) the LNG purchase price; (ii) the direct and indirect costs of transportation, storage, and re-gasification incurred by the LNG Developer / TO/O, and (iii) a reasonable return on the investment made by the LNG Developer / TO/O.

8.3. RLNG can also be procured by private sector, by public sector or in public-private partnership based on lowest price demonstrable to the regulator.

9. Government Guarantee

The Government shall not provide any guarantee for LNG import projects. However, Government support may be considered, if needed, to secure long term, LNG supplies to Pakistan.

10. Freedom to Participate in the LNG Business

All interested parties who meet the criteria provided herein will be free to participate in any segment of the LNG value chain.

11. Technical Codes and Standards

11.1 The design, construction and operation of the LNG import project facilities will comply with internationally recognized and proven codes and standards for LNG installations including those specified in Appendix-1.

11.2 No second-hand or refurbished LNG plant, equipment, machinery or part thereof will be installed at the LNG terminal or at associated facilities. In case of offshore LNG terminals, used LNG ships utilized for either conversion into a floating LNG terminal or for storage of LNG in association with an offshore LNG terminal will be allowed by OGRA as long as the vessels maintain their classification status certified by one of the IACS member classification

societies as approved by Director General Port and Shipping and hold all valid class and flag state statutory certificates.

11.3 OGRA will issue a license for an LNG terminal based on a suitable, tested and proven internationally acceptable technology for the design, construction, and operation of the LNG terminal and associated facilities.

11.4 Following receipt of a complete application, covering all relevant aspects of the proposed LNG project including a comprehensive feasibility study undertaken by a project proponent through a consultant of international repute, OGRA will undertake a full review and audit of the proposed project at the cost of the project proponent (including the cost related to outsourcing of the expertise, if necessary) and take a decision regarding issuance of a license or rejection of the application within 90 days.

11.5 All LNG ships entering Pakistan's maritime zones shall comply with International Maritime Organization's regulations.

12. Shipping of LNG

All LNG ships transporting LNG to Pakistan will have to be registered with an acceptable international classification society.

13. Other Permits and Licenses

The LNG Developer, LNG TO/O, LNG Buyer or RLNG Seller will have to obtain permits and licenses from Government departments such as Ministry of Defence, Naval Headquarters, Port Authorities, Environmental Protection Agency, Chief Inspector of Explosives, and provincial and local government agencies, as per applicable laws, rules and regulations.

14. Other Measures

14.1 In order to facilitate early start of an LNG import project, OGRA will take a decision regarding issuance of a license or rejection of the application under OGRA Ordinance, 2002 for setting-up and operation of an LNG terminal and related facilities to a qualified selected applicant, having the requisite technical and financial credentials, for a specified location within 90 days provided however, that the applicant has submitted a complete application along with detailed feasibility study. If the applicant does not achieve financial close within 12 months of issuance of the license, OGRA may terminate the license on one month's notice.

14.2 The Government may issue instructions to OGRA from time to time for implementation of this Policy and/or in respect of matters related thereto, as may be considered necessary.

14.3 If any difficulty arises in giving effect to any provision of this Policy, the Government may issue such order as may appear to it to be necessary for the purpose of removing the difficulty.

15. Applicability and Effect of the Policy

This Policy will come in force with immediate effect and will apply to all LNG import projects in Pakistan.

Appendix: 1

TECHNICAL CODES AND STANDARDS

The design, construction and operation of the LNG terminal and allied facilities will satisfy *inter-alia* the following internationally recognized and proven codes, standards and guidelines for land based and offshore LNG installations (or equivalent):

Shipping and Marine Facilities

Standards

- Standard for the Production, Storage and Handling of Liquefied Natural Gas (LNG) – 2006, NFPA 59A, NFPA.
- Installations and Equipment for Liquefied Natural Gas – Design of Onshore Installations – 1997, (BS EN 1473) CEN.
- Installations and Equipment for Liquefied Natural Gas – Design and Testing of Loading/Unloading Arms – 1996, (BS EN 1474) CEN.
- Installations and Equipment for Liquefied Natural Gas – Ship to Shore Interface for Liquefied Natural Gas – 1996, (BS EN 1532) CEN.
- Installations and Equipment for Liquefied Natural Gas – General Characteristics of Liquefied Natural Gas – 1997, (BS EN 1160) CEN.
- Maritime Structures – Part 1, General Criteria – 1984. (BS 6349), BSI.
- Maritime Structures – Part 4. Code of Practice for Design of Fendering and Mooring Systems – 1994, (BS 6349), BSI.
- IGC Code – IMO-104E – International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk – IGC Code, 1993 including amendments.
- Guidance Notes, Classification and Certification of Floating Offshore Liquefied Gas Installations – Lloyd's Register, April 2004, Revision 2.
- Guidance Notes, Classification and Certification of Offshore Gravity Based Liquefied Gas Terminals – Lloyd's Register, April 2004, Revision 1.

Guidelines

- Site Selection and Design for LNG Ports and Jetties – 1997. SIGTTO, ISBN 1 85609 129 5.
- Recommendations on the Safe Transport of Dangerous Cargoes and Related Activities in Port Areas – 1995, (IMO 290E) IMO, ISBN 92-801-1329-1.
- Dangerous Goods in Ports: Recommendations for Port Designers and Port Operators – 1985, PIANC.
- Mooring Equipment Guidelines – 1996, (OCIMF) Oil Companies International Marine Forum, ISBN 1 85609 088 4.

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- Prediction of Wind Loads on Large Liquefied Gas Carriers – 1985, SIGTTO, ISBN 0 90088697 8.
- Big Tankers and their Reception – 1974, PIANC.
- Guidelines on Port Safety and Environmental Protection – 1989, IAPH.

Operating Practices

- Accident Prevention – the Use of Hoses and Hard-Arms at Marine Terminals Handling Liquefied Gas – 1996 SIGTTO, ISBN 1 85609 1147.
- Manual on Chemical Pollution; Section 1: Problem Assessment and Response Arrangements – 1987, (IMO 630E) IMO, ISBN 92-801-1223-6.

□ A Guide to Contingency Planning for Marine Terminals Handling Liquefied Gases in Bulk – 1989, SIGTTO, ISBN 0 948691 81 6.
□ APELL: Awareness and Preparedness for Emergencies at Local Level – 1988, (UNEP) United Nations Environment Programme, ISBN 92807 1183 0 – 00900P.
□ Offshore Loading Safety Guidelines with Special Relevance to Harsh Weather Zones – 1999, OCIMF, ISBN 1 85609 1481.
□ Tug Use in Port – H Hensen, Nautical Institute, 1997, ISBN 1 870077 39 3.
□ Guidelines for Hazard Analysis as an Aid to Management of Safe Operations – 1992, SIGTTO, ISBN 1 85609 054 X.

Onshore LNG Terminal

Standards

□ Standard for the Production, Storage and Handling of Liquefied Natural Gas (LNG) – 2006, NFPA 59A, NFPA.
□ Design and Construction of Large, Welded, Low – Pressure Storage Tanks, Appendix R - Low pressure Storage tanks for Refrigerated Products, (API 620 R).
□ Installations and Equipment for Liquefied Natural Gas – Design of Onshore Installations – 1997, (BS EN 1473) CEN.
□ Flat-Bottomed, Vertical, Cylindrical Storage Tanks for Low Temperature Service, (BS 7777).
□ Installations and Equipment for Liquefied Natural Gas – General Characteristics of Liquefied Natural Gas – 1997, (BS EN 1160) CEN.
□ Criteria for design and construction of refrigerated liquefied gas storage tanks – 'EEMUA 147'.

GOVERNMENT OF PAKISTAN
CABINET DIVISION
Islamabad, the 26th May 2007

NOTIFICATION

S.R.O. 458(I)/2007 —In exercise of the powers conferred by section 41 of the Oil and Gas Regulatory Authority Ordinance, 2002 (XVII of 2002), the Oil and Gas Regulatory Authority, with the approval of the Federal Government, is pleased to make the following rules, namely: —

PART I
PRELIMINARY

1. Short title and commencement. — (1) These rules may be called the Oil and Gas Regulatory Authority (Liquefied Natural Gas) Rules, 2007.

(2) They shall come into force at once.

2. Definitions. — (1) In these rules, unless there is anything repugnant in the subject or context,—

(a) "applicant" means the company making the application and includes, in the case of a consortium or joint-venture, each company individually;
(b) "application" means an application made to the Authority in accordance with the provisions of these rules for obtaining a licence from the Authority;
(c) "communication" means the pleadings and any other correspondence with the Authority in connection with the proceedings;
(d) "consent" includes any licence, lease, right, exemption, approval, concession, permission, sanction, permit, authorization, certification, clearance, privilege, option, entitlement, benefit or validation;
(e) "LNG" means Liquefied Natural Gas;
(f) "LNG Policy" means policy guidelines, relating to LNG, issued by the Federal Government, from time to time, pursuant to section 21 of the Ordinance;
(g) "LNG Processing" means all that process which is required to convert LNG into RLNG including by use of open rack vaporizers, submerged combustion vaporizers, or heat exchanging vaporizers;
(h) "LNG Production" means all that process which is required to convert natural gas into LNG including, natural gas

treatment, natural gas liquefaction, LNG storage and LNG filling;

(i) "LNG Terminal" means fixed or movable facilities, whether located on land or sea, used for loading, unloading, storage and re-gasification of LNG including all ancillary and auxiliary equipment and pipelines;

(j) "licence" means a licence granted by the Authority in accordance with these rules;

(k) "motion" means any written or, if so permitted by the Authority, oral application in relation to any matter under these rules;

(l) "Mtpa " means million tons per annum;

(m) "Ordinance" means the Oil and Gas Regulatory Authority Ordinance, 2002 (XVII of 2002);

(n) "pipeline" means all parts of those physical facilities through which LNG, RLNG or natural gas moves, including pipes, valves and other appurtenances attached to pipes, compressor units, refrigeration units, metering stations, regulated stations, delivery stations, holders and fabricated assemblies;

(o) "pleadings" means the application, the replies to the application and rejoinders;

(p) "proceedings" means the process beginning with the filing of an application and ending when the Authority makes its final determination and includes the process of a review by the Authority of its final determination;

(q) "register" means the record maintained by the Registrar wherein shall be entered the title and number of all applications and communications in such manner and with such details as the Authority may, from time to time, direct;

(r) "RLNG" means re-gasified LNG;

(s) "Registrar" means a person designated as such by the Authority to register and record the receipt of communications and applications submitted to the Authority, and to perform such other duties under these rules as may, from time to time, be assigned by the Authority;

(t) "regulated activity" means any one or a combination of more than one activity relating to LNG that requires a licence from the Authority pursuant to the Ordinance, namely: construction of LNG Production Facility, operation of LNG Production Facility, construction of LNG Processing Facility, operation of LNG Processing Facility, construction of LNG Testing Facility, operation of LNG Testing Facility, construction of LNG Storage Facility, operation of LNG Storage Facility, construction of LNG Terminal, operation of LNG Terminal, Transportation of LNG, Filling of LNG,

Marketing of LNG, Distributing of LNG; and

(u) "special accounts" means accounts of the licensee maintained in such form as the Authority may require for enabling it to review the licensee's progress in undertaking a regulated activity.

(2) The words and expressions used but not defined in these rules shall have the meanings respectively assigned to them in the Ordinance.

PART II
LICENCING OF REGULATED ACTIVITIES

3. Licence. —

(1) A licence may be restricted by the category of regulated activity, area of operation, period of authorization and such other terms as the Authority may determine.

(2) The Authority may grant a licence to carry on any regulated activity to such persons, and on such terms, and for such periods, as it may, in accordance with these rules and the LNG Policy, determine:

Provided that a licence granted by the Authority shall be valid for a maximum period of twenty years and in determining the period of a licence, the Authority shall keep in view, inter alia, the investment to be made by the applicant.

4. Application for a licence. — (1) Any company incorporated inside or outside Pakistan may submit an application to the Authority for obtaining or renewing a licence to undertake a regulated activity, by filing it with the Registrar along with such fees based on the estimated cost of the project as the Authority, may, from time to time, determine.

(2) An application filed under sub-rule (1) shall be made in the format specified in Schedule-I to these rules, clearly specifying the information required therein.

(3) An application filed under sub-rule (1) shall be accompanied by ---

(a) attested copy of the applicant's certificate of incorporation;
(b) attested copies of the memorandum and articles of association of the applicant;
(c) attested copy of the applicant's certificate of commencement of

business;

(d) attested copy of the applicant's latest yearly submission to the Corporate regulator;

(e) attested copy of the latest audited annual financial statements of the applicant;

(f) attested copy of the corporate authorizations allowing the submission of the application;

(g) in the case of an applicant being a subsidiary company, the documents specified in clauses (a) to (d) of this sub-rule, pertaining to its holding company;

(h) details of the consents required under applicable laws, from persons other than the Authority, for carrying on the relevant regulated activities and the status of such consents;

(i) details of the technical and financial expertise and resources available for carrying on the relevant regulated activities;

(j) details of the resources and expertise available to handle emergency situations arising out of natural calamities, accidental or criminal acts or omissions, specifying which such resources are available and which are to be procured;

(k) a list of the names and business addresses of the applicant's senior management, including without limitation, departmental and/or divisional heads;

(l) a concise statement setting forth the methodology to be adopted in undertaking the project including, without limitation, the expected time frame for completing the project and the principle activities to be undertaken;

(m) if the applicant or any of its officers or directors, directly or indirectly, owns, controls, or holds ten percent or more of the voting interest in any other person engaged in a regulated activity, a detailed explanation of each such relationship, including the percentage of voting interest owned, held or controlled;

(n) a list of all other applications, petitions or filings filed by the applicant which are pending before the Authority at the time of the filing of this application and which directly and significantly affect this application, including an explanation of any material effect the grant or denial of those other applications, petitions or filings will have on this application and of any material effect the grant or denial of this application will have on those other applications, petitions or filings;

(o) maps issued or certified by the Survey of Pakistan, drawn to an appropriate scale showing details of area where the project is proposed to be located and the principal geographical features of the said areas;

(p) a statement setting out complete details of health, safety and

environmental policy to be adopted by the applicant in relation to the project;

(q) details of the sources and quality of supply of LNG including forecasts of the available quantity from such sources;

(r) a project implementation plan consisting of —

(i) a detailed feasibility report of the project;

(ii) a description of the project, its purpose and cost, including conceptual engineering design, capacity, location option and preference, as well as all ancillary or related facilities that are proposed to be constructed, owned or operated by the applicant; and

(iii) an outline of the anticipated time table for construction and operation, together with dates on which critical events, including approvals required from other persons, shall take place;

(s) a description of any new or expanded public works, undertakings or infrastructure that will be entailed by the project, together with an estimate of the costs and necessary completion dates;

(t) a statement identifying any significant risks to successful completion of the project;

(u) any data or information which the applicant proposes to rely on showing the adequacy and availability to it of resources for financing the project;

(v) a concise statement setting forth arrangements for supervision, management, engineering, accounting, legal, or other similar services to be rendered in connection with the construction or operation of the project, if not to be performed by employees of the applicant, including reference to any existing or contemplated agreements therefor;

(w) a certificate, duly signed by the chief executive of the applicant, stating that the proposed project employs proven technology and, in the case of a licence for an LNG terminal, that the criteria set out in the LNG Policy for selecting the site has been met; and

(x) such other information or documentation as the Authority may, from time to time, require, including without limitation, supplementary information or documentation required by the Authority to clarify the information contained in the application.

(4) The Registrar shall examine the contents of the application in order to satisfy himself as to the conformity thereof with the provisions of sub-rules (2) and (3) ,—

(a) where the application is found to be in conformity with the requirements of these rules, he shall accept the application and endorse thereon a stamp acknowledging the filing along with the number given thereto in the register; or

(b) where the application is found not to be in conformity with the requirements of these rules, he shall as soon as may be, but no later than seven days of filing thereof, return the application to the applicant with directions to amend and resubmit the application in accordance with the provisions of sub-rules (2) and (3):

Provided that, where an application is resubmitted by the applicant, and the Registrar is not satisfied of the conformity thereof with the requirements of sub-rules (2) and (3), the Registrar shall place the application before the Authority for such directions as it may deem necessary, no later than three days of the date of resubmission thereof by the applicant. The Authority shall not reject an application on the grounds of any defect therein without giving the applicant an opportunity of rectifying the defect within the time specified for the purpose by the Authority.

(5) Any communication filed by a person in connection with the proceedings shall contain his or its, name and address, the subject-matter of the communication and the title of the proceedings, and shall be filed with the Registrar who shall acknowledge receipt thereof either on a copy of the communication or through a written receipt in a format to be determined by the Authority and shall also endorse on the filing receipt the number of the application in connection with which the communication is filed and the number assigned to the communication on the register.

(6) All applications shall be deemed to be filed on the date of acceptance thereof by the Registrar, and where resubmitted in accordance with the provisions of sub-rule (4), on the date the Registrar or the Authority, as the case may be, accepts the filing thereof and a communication shall be deemed to be filed on the date on which it is filed with the Registrar.

(7) The contents of any communication shall pertain to a single application in respect of which it is filed.

(8) An application or communication shall be signed by the communicator or by one or more of the applicant's or communicator's

authorized representatives in their individual names on behalf of the applicant or the communicator.

(9) Any application or communication, wherein any statement of fact or opinion is made by the applicant or the communicator, shall be verified by an affidavit, drawn up in the first person stating the full name, age, occupation and address of the deponent and the capacity in which he is signing, indicating that the statement made therein is true to the best of the knowledge of the deponent, information received by the deponent and belief of the deponent, and shall be signed and sworn before a person lawfully authorized to take and receive affidavits:

Provided that, a communication filed during the course of a hearing may be affirmed in person before the Authority by the person filing the same and where any statement in an affidavit is stated to be true according to the information received by the deponent, the affidavit shall also disclose the source of such information.

(10) An application or communication shall be filed with such number of copies as the Authority may, from time to time, determine.

(11) An application or communication shall be filed for registration during office hours at the principal office of the Authority, or such other office as may be directed by the Authority. An application or communication may be forwarded to the Authority through registered post or courier service. If an authorized agent files an application or communication on behalf of any party, the document authorizing the agent to do so shall be filed along with the application or communication, if not already filed in the record of the case.

5. Admission of application. —(1) As soon as may be, but not later than fourteen days of the date of filing of the application, an application shall be placed before the Authority for appropriate action.

(2) The Authority may call for submission by the applicant of any further supporting communication for the purposes of evaluation of the application for admission, within such time as it may specify. The Authority shall not be required to entertain or admit any application until such supporting communication is furnished.

(3) The Authority may, if a *prima facie* case for evaluation exists, admit the application for consideration without requiring attendance of the applicant. The Authority shall not pass an order refusing admission without giving the applicant an opportunity of being heard or making a written representation.

(4) In case the Authority admits the application, it may give such orders and directions for the service of notices as it deems appropriate to--

(a) all persons affected by or interested in the application who in the opinion of the Authority are likely to be affected or interested ; and

(b) persons who, by reason of their calling or expertise, may be of assistance to the Authority in arriving at a just and informed determination of the proceedings.

(5) The Authority may, if it deems appropriate, direct the advertisement by publication of the title and brief description of the application in any one or more newspapers specified for the purpose by the Authority. Such publication shall also contain a notice of the availability of a copy of the application at the office of the Authority on payment of the fee determined for the purpose by the Authority.

(6) At the request of the applicant, the Authority may issue a certificate certifying the admission of the application and stating the date on which the application was admitted and such certificate shall be signed by the Registrar and shall be issued within fourteen days of the request therefor.

6. Publication and service of notices. —(1) A notice or process issued on the directions of the Authority may be served by the Registrar or the party concerned as the Authority may direct, and the Authority may direct the service to be effected through any one or more of the following modes of service, namely:--

(a) by hand delivery through a messenger;
(b) by registered post acknowledgment due ; or
(c) by publication in one or more national daily newspaper(s) where the Authority is satisfied that it is not reasonably practicable to serve notices in any other manner.

(2) Every notice or process required to be served on, or delivered to, any person may be sent to the person at the address furnished by him for service or at the place where the person or his agent ordinarily resides or conducts business or personally works for gain and where a person is to be served during the course of the proceedings and such person has authorized an agent or representative to represent him in the proceedings, such agent or representative shall be considered duly authorized to accept service of a notice or process on behalf of the person concerned.